February 12, 2008

Ken Houser
Managing Principal
SWCA Environmental Consultants
343 West Franklin Street
Tucson, Arizona 85701

RE: THIRD PARTY ENVIRONMENTAL CONTRACTOR (PRIME CONSULTANT) RELATED TO THE PROPOSED ROSEMONT COPPER PROJECT

Dear Mr. Houser:

This letter serves to inform you that SWCA Environmental Consultants has been selected to provide third-party NEPA consulting services for the Proposed Rosemont Copper Mine project. This selection is in accordance with the Memorandum of Understanding (MOU) dated January 30, 2008, whereby Rosemont Copper Company (RCC) has reviewed the Coronado National Forest (CNF)'s list of environmental consultants and recommends that the Forest select SWCA as the third-party environmental contractor (Prime Consultant). This selection was based on your local presence, familiarity with the CNF, and NEPA qualifications.

RCC provided the attached contract and Disclosure Statement between SWCA and RCC to the CNF to assure that the terms and conditions specified in the MOU are clearly met. This contract is for the completion of the Scope of Work (SOW) as provided in Attachment 1 of the MOU. It is our intention that SWCA's team work under the direction of the CNF to help prepare the documentation as required for compliance with NEPA, provide technical support, conduct independent resource studies and any other tasks the U.S. Forest Service considers relevant to evaluating the proposed project under NEPA. We look forward to SWCA serving at the convenience of the CNF and working directly with your staff to assist them in their responsibilities.

Sincerely,

Jeanine A. Derby
Forest Supervisor
Concurrence/Selection

Sincerely,

James A. Sturgess
VP and Environmental Projects
Recommending

Attachments: RCC's Contract with SWCA
Scope of Work (Attachment 1)
Disclosure Statement

SWCA℠
ENVIRONMENTAL CONSULTANTS

SERVICES AGREEMENT

Tucson Office
343 West Franklin Street
Tucson, Arizona 85701
Tel 520.325.9194 Fax 520.325.2033
Tax I.D. Number 860483317

Date: 2/5/08
Project Title: Rosemont Mine EIS
Project Number:
Client Contact Person: Gil Clausen
Company Name: Rosemont Copper Company
State of Incorporation:
Street Address or P.O. Box: 4500 Cherry Creek South, Suite 1040
City: Denver **State:** Colorado **Zip:** 80246
Telephone No: 303-300-0134 **Fax No:** 303-300-0135

Scope of Services (check one):

☐ Services to be performed are:

☒ Scope of services is described in a separate document prepared or approved by SWCA (such document is incorporated herein and may be attached).

Fees for SWCA Services (check one):

☐ $ on a Fixed Fee basis.
☒ Time and Materials basis*
☐ Time and Materials basis* not-to-exceed (NTE) $
*SWCA rate schedule to be attached for Time and Materials/NTE contracts

Reimbursement of Other Direct Costs (ODCs) (check one):

☒ ODCs are included in Professional Services Fees.
☐ ODCs not to exceed $ without Client approval.

Retainer: A retainer of $0.00 must be received by xxxx , 2007 . SWCA may delay work until receipt of retainer. Retainer will be applied to fees/costs incurred. SWCA reserves right to apply retainer to final invoice.

Payment Terms: Unless otherwise agreed to in writing by SWCA, Client will be invoiced monthly for services rendered and costs incurred (based on percentage of completion/hours expended, as applicable). All billed amounts not covered by a retainer are due and payable upon presentation of the invoice and become overdue if payment is not received within thirty (30) days after the date of the invoice. In no event shall payment to SWCA be withheld pending Client's receipt of payment by a third-party. Overdue amounts bear interest at the rate of 1.5% per month until paid and are subject to a monthly late-payment service charge equal to the greater of $200 or 1% of the overdue balance. **Payment should be remitted to: P.O. Box 92170, Elk Grove, IL 60009.**

Prices and terms quoted are subject to Client's acceptance within thirty (30) days of the date set forth above.

☐ Special terms:

SWCA ENVIRONMENTAL CONSULTANTS SWCA Incorporated, an Arizona corporation	Client: Rosemont Copper Company
	a(n)
By: (signature)	By: (signature)
Name: Tom Furgason	Name:
Title: Program Director	Title:
Date:	Date:

Attached Terms (including disclaimers) are a part of this Agreement

SWCA Standard Terms of Service

1. Scope of Services. Subject to the terms set forth on the face hereof and those contained herein (collectively "this Agreement"), SWCA shall provide those services that SWCA has agreed in writing to provide under this Agreement ("the Services"). Any other services provided by SWCA in connection with this Agreement shall constitute "Additional Services". Any Additional Services are to be authorized on SWCA's standard Change Order form, which shall be incorporated herein, describing changes in the scope of work and any adjustment in pricing and terms. Unless otherwise agreed in writing by SWCA, Client shall pay for any Additional Services at SWCA's standard hourly rates, and fees for Additional Services shall be due and payable as incurred and invoiced.

2. Payment. In the event of late payment, the failure to provide a retainer or other breach of this Agreement by Client, SWCA reserves the right to (i) stop work; and/or (ii) apply any existing retainer and condition the performance of further services on obtaining payment in full of any unpaid balance and an additional retainer; and/or (iii) terminate this Agreement; and/or (iv) pursue all other rights and remedies available under this Agreement or applicable law. SWCA reserves the right to withhold its work product pending payment in full. Unless Client objects in writing to any charges set forth in an invoice within 10 days of receipt of the invoice, such invoice shall be deemed accepted. Client shall be responsible for any sales tax, transaction privilege tax, use tax, excise tax or similar taxes, if applicable, on the work performed under this Agreement.

3. Termination. In the event that this Agreement is terminated and the Services are priced on a fixed fee basis SWCA shall be entitled to payment from Client based on the percentage of work completed as reasonably estimated by SWCA, and in the event that this Agreement is terminated and the Services are priced on a Time and Materials basis, SWCA shall be entitled to payment based on the number of hours worked at the applicable rate, and in all events SWCA shall be entitled to reimbursement of costs incurred prior to termination. All provisions of this Agreement that expressly or by their nature continue in effect (such as warranty disclaimers and remedy limitations) shall survive termination.

4. Client Cooperation and Compliance. Client shall fully cooperate with SWCA as requested by SWCA and as necessary or appropriate to facilitate the completion of the Services. Client is responsible for providing SWCA with all information relevant to the Services available to Client and for complying with all applicable laws and requirements in connection with this Agreement. The Client Contact identified on the face hereof shall have complete authority on behalf of Client with respect to this Agreement and the Services, including the authority to provide or obtain any necessary information and approvals, and SWCA may rely on such authority. In the event that a Client Contact is not identified, SWCA may treat any representative of the Client that communicates with SWCA with respect to this Agreement or the Services as the Client Contact.

5. Third-Party Services and Costs. SWCA may, at its discretion, use subcontractors to complete the Services. SWCA shall not be responsible for acts or omissions of subcontractors and Client hereby releases SWCA from any claims related thereto. Client shall reimburse SWCA for costs incurred in connection with the Services as provided in this Agreement. Unless otherwise agreed by SWCA in writing, subcontractor costs shall be subject to a 20% administrative fee and other costs shall be subject to a 15% administrative fee.

6. Delays. In the event that SWCA provides an estimated completion date, SWCA will use reasonable efforts to complete the Services on or prior to that date subject to Client's compliance with this Agreement and other factors beyond SWCA's reasonable control. SWCA is not responsible for delays or other circumstances caused by the unavailability of third-party services, delays in government approvals, or other factors beyond SWCA's reasonable control.

7. Limited Warranty; Disclaimer. SWCA warrants that the Services performed by its employees will be performed substantially in conformance with the standard of care observed by similarly situated companies providing services under similar conditions. In the event of a breach of the foregoing warranty, SWCA's sole obligation shall be to use commercially reasonable efforts to re-perform the Services in compliance with such warranty, if possible, or at SWCA's option, refund the fees paid by Client for the Services. EXCEPT FOR THE FOREGOING WARRANTY, THE SERVICES AND INFORMATION PROVIDED UNDER THIS AGREEMENT ARE PROVIDED "AS-IS" AND SWCA DISCLAIMS TO THE MAXIMUM EXTENT PERMITTED BY LAW ALL WARRANTIES RELATING TO SUCH SERVICES AND INFORMATION INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Client understands that for various reasons investigations conducted by SWCA may not uncover all relevant information and that reports generated by SWCA may rely on various third-party-information which SWCA may assume to be accurate without independent verification. Any maps or similar materials provided by SWCA are for illustration only and should not be relied on as surveys. No opinions are intended to be expressed by SWCA for matters that require legal expertise or other specialized knowledge beyond that customarily possessed by similarly situated environmental consulting companies.

8. Limitation of Remedies. In the event that Client incurs any damages in connection with this Agreement or the Services, SWCA's liability shall in no event exceed the amount actually paid by Client to SWCA for the Services. TO THE MAXIMUM EXTENT PERMITTED BY LAW, SWCA SHALL HAVE NO OTHER LIABILITY TO CLIENT FOR ANY DAMAGES, WHETHER GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL, INCLUDING ANY LOST PROFITS OR LOST SAVINGS, WHETHER OR NOT FORESEEABLE. CLIENT EXPRESSLY ACKNOWLEDGES AND AGREES THAT SWCA IS ENTERING INTO THIS AGREEMENT IN RELIANCE ON THE DISCLAIMERS AND LIMITATIONS SET FORTH HEREIN.

9. Choice of Law and Forum; Attorneys' Fees. This Agreement shall be governed exclusively by its terms and by the laws of the State of Arizona as applied to contracts entered into in Arizona between Arizona residents without regard to the State's rules concerning choice of law. Client hereby consents and agrees to exclusive jurisdiction and venue in Maricopa County, Arizona, provided that SWCA may pursue collection efforts for any amounts payable under this Agreement in any forum having jurisdiction. Client shall reimburse SWCA on demand for all attorneys' fees, costs and expenses incurred by SWCA (including any commissions payable to collection agencies) in seeking to collect amounts payable under this Agreement (including fees, costs and interest) or otherwise seeking to enforce its rights under this Agreement.

10. Severability. In the event that any provision of this Agreement is held to be invalid or unenforceable, the remainder of this Agreement shall continue in full force and effect, and the provision held to be invalid or unenforceable shall be automatically amended to most closely approximate the original provision on terms that are valid and enforceable and the court or other adjudicating authority shall make such amendment accordingly.

11. Assignment; Successors; Third-Parties. Client may not assign its rights under this Agreement without SWCA's written consent and, unless otherwise expressly agreed by SWCA in writing, Client shall in all events remain responsible for the performance of its obligations hereunder notwithstanding any such assignment. This Agreement shall be binding upon assignees and other successors. Any services and information provided by SWCA are being furnished solely for Client's benefit and only with respect to the project that is the subject of this Agreement and no third-party may rely thereon and no third-party shall be construed to be a beneficiary of this Agreement.

12. Integration; Modification; Waiver. This Agreement reflects the entire agreement of the parties relating to the subject matter hereof, and any prior understandings, agreements or representations related to such subject matter are hereby superseded. This Agreement shall control over any conflicting documents and shall be the sole source of any obligations of SWCA. No provision of this Agreement shall be deemed amended or waived by SWCA unless a written amendment or a form of waiver is signed by SWCA. All attachments authorized by SWCA are hereby incorporated into this Agreement. This Agreement may be executed in counterparts and delivered by any reasonable means including facsimile.

13. Interpretation; Notices. The terms of this Agreement constitute the written expression of the mutual agreement of the parties and shall be construed neutrally and not for or against either party. When used in this Agreement the term "include" or "including" shall be construed as illustrative and not exhaustive. The headings in this Agreement are inserted for convenience; the provisions of this Agreement shall control. Periods of time established by this Agreement in days shall be calculated using calendar days and not business days unless otherwise specified. Notices and communications given and made in connection with this Agreement may be given and made by any reasonable means including facsimile or email if reasonable in the circumstances.

14. Relationship; Authority. The relationship of the parties hereunder is that of independent contractors and not principal-agent, partners, or otherwise. Except as expressly provided under this Agreement, neither party shall have any authority to act on behalf of or bind the other party. Only SWCA's project manager or an officer of SWCA shall be authorized to bind SWCA.

15. Non-Discrimination. SWCA shall not discriminate or allow parties under its control to discriminate in violation of the Rehabilitation Act, 29 U.S.C § 793, the Vietnam Era Readjustment Assistance Act, 38 U.S.C. § 4212 or Executive Order 11246 or similar requirements to the extent applicable, and shall, to the extent required, take affirmative action to employ and advance in employment qualified individuals.

SCOPE OF WORK

ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE PROPOSED ROSEMONT MINE

SWCA's scope of work for completing third-party NEPA services include the responsibilities outlined in "Attachment 1, THIRD-PARTY CONTRACT SPECIFICATIONS, Rosemont Copper Project" of the Memorandum of Understanding (MOU) between the USDA Forest Service, Coronado National Forest and Rosemont Copper Company dated 29 January 2008 (FS Agreement No. 08-MU-11030510-010). SWCA will provide all requisite resources, including Forest Service approved subcontractors, to complete the following Consultant responsibilities outlined in the MOU.

I. RESPONSIBILITIES

The Consultant will be responsible for:

1. Assisting the Forest Service in identifying all environmental compliance requirements that must be met prior to implementation of the project;

2. Planning and conducting any field studies needed to support the NEPA impacts analysis, which may include, but are not be limited to, a cultural resources survey and a biological resources survey, both of which will be prepared in the format specified by the Forest in cooperation with Forest archaeologists, biologists, and other resource specialists;

3. Distributing all NEPA notices for public review;

4. Analyzing the potential environmental impacts of the proposed action and reporting the results in an environmental impact statement (EIS);

5. Preparing the preliminary, draft and final EISs that disclose the impacts of the Project;

6. Assisting the Forest in government-to-government consultation with agencies and Indian tribes;

7. Preparing responses to comments on the Draft EIS;

8. Printing and distributing pre-decisional and final NEPA documents; and

9. Identifying a primary and secondary point of contact for the Forest Service.

Each of the above responsibilities will be carried out with the oversight and input of Forest Service technical resources specialists assigned to the Project interdisciplinary team. Following is a list of specific duties and responsibilities associated with these tasks.

A. Environmental Compliance Planning

The Consultant will:

1. At Forest Service request, attend meetings with agencies and other parties regarding environmental compliance efforts. Meeting sites would be at the Forest Supervisor's Office in Tucson, Arizona; however, the need may arise to schedule meetings at regulatory agency or other sites or offices, such as the Nogales Ranger District.

2. Prepare a checklist of all environmental compliance requirements (including those from Forest Service directives, handbooks, and manuals) that must be satisfied before project implementation, and identify agency points-of-contact, where applicable.

3. Prepare a description of the proposed action, in consultation with Forest staff, and identify potential environmental resource issues and concerns.

4. Collect and review environmental baseline data and information, then identify the need for field studies and other research.

5. Review and concur on the EIS timeline in Attachment 2 of the MOU for third-party NEPA review of the Project.

B. Environmental Field Studies

Based on information and data needs identified during project scoping, the Consultant will conduct field studies where data and information gaps exist. Studies may include, but are not limited to, field surveys of cultural and heritage resources and biological resources, including threatened and endangered species.

C. Consultation with Other Agencies

The Consultant will provide the necessary technical expertise to conduct the following activities:

1. In accordance with the Fish and Wildlife Coordination Act; Section 7, Endangered Species Act; and state species protection regulations, assist the Forest Service in conducting consultation with U.S. Fish and Wildlife Service (FWS), and Arizona Game and Fish Department (AGFD) regarding protected species and habitat;

2. Assist with community and Tribal outreach in cooperation with the Forest Supervisor and Forest heritage staff.

D. NEPA Review

The Consultant will support the Forest in completing the NEPA review process. Tasks will include, but are not limited to, the following:

1. Maintain an administrative record of the NEPA review process for transfer to Forest archives. The administrative record will include, but not be limited to, original written correspondence, meeting notes, email messages, field notes, field reports, comment letters, public notices, mailing lists, and the EIS in preliminary, draft and final form. Only those items relevant to the NEPA analysis will be retained in the administrative record.

2. Develop an EIS outline for Forest Service approval.

3. Revise the EIS outline in response to comments by Forest resource specialists.

4. Evaluate scoping comments received in response to the Notice of Intent and, with the Forest Service, determine how they will be addressed in the NEPA review.

5 Prepare a preliminary DEIS for review by Forest resource specialists.

6. Revise the PDEIS in response to Forest Service comments and prepare a Draft EIS for publication.

7. Copy and distribute the DEIS for public review.

8. Evaluate public comments on the DEIS, prepare a Comment-Response Summary, and revise the EIS to address comments.

The Forest Service will be responsible for transmitting the DEIS and Notice of Availability to the U.S. Environmental Protection Agency and will prepare the Record of Decision and Legal Notice of Decision.

II. DELIVERABLES

Deliverables will include, but are not limited to, those listed below. The Consultant will provide reports and other deliverables to the Forest in both written and electronic formats. Electronic versions will be delivered as attachments in the latest MS Word software either by electronic mail and/or on compact disks. Maps will be prepared in consultation with Forest GIS staff in a format consistent with Forest Service format.

Deliverables

- NEPA Administrative Record
- Checklist of Environmental Requirements
- Project Description
- Field Surveys
- Field Survey Reports
- Annotated Outline of EIS
- Evaluation and Summary of Scoping Comments
- *Biological Assessment and Evaluation
- *Draft Letter to Fish and Wildlife Service for Endangered Species Act Consultation
- *Heritage Assessment
- Draft Letter to State Historic Preservation Office for National Historic Preservation Act Consultation

- Preliminary (Internal Review) EIS
- Draft EIS for Public
- Release
- DEIS Comment Summary and Evaluation
- Comment-Response Summary for FEIS
- Final EIS

III. CONSULTANT STAFF QUALIFICATIONS

All consultant staff must possess, at a minimum, a Bachelor's degree (or equivalent combination of experience and education) in the field of expertise for which support is provided and at least 5 years experience in performing NEPA analysis. Proof of such experience will be required prior to contract award.

For this contract, the following technical positions will be necessary:

Interdisciplinary NEPA Team Leader: minimum of 10 years experience in this capacity

Geologist: equivalent to a GS-12 Geologist, with at least 10 years experience (emphasis on hardrock mineral exploration and extraction)

Geochemist: equivalent to a GS-12 Geologist, with at least 10 years experience in hardrock mining, mineral processing, and reclamation

Mining Engineer: equivalent to a GS-12 Engineer, with at least 10 years experience in hardrock mining and reclamation

Hydrogeologist: the equivalent of a GS-12 Hydrogeologist with at least 10 years in hardrock mine development and remediation geohydrology

Hydrologist: the equivalent of a GS-12 Hydrologist with at least 10 years experience in hardrock mine development and remediation hydrology

Biologist: (Terrestrial, Aquatic) the equivalent of a GS-12 Biologist with at least 5 years experience in wildlife biology

Soils Scientist: the equivalent of a GS-12 Soils Scientist with at least 5 years of experience

Air Quality Specialist: the equivalent of a GS-12 Air Quality Specialist with at least of 5 years of experience in Air Quality and NEPA impacts analysis

Cultural Resource Specialist: (Historian, Native American, Archaeologist, Anthropologist); must meet the Secretary of the Interior's qualification standards for archaeology as published in the Code of Federal Regulations, 36 CFR Part 61

Visual Resources Specialist: the equivalent of a GS-11 Landscape Architect with at least 5 years of experience in visual resources and NEPA impacts analysis; expertise in the application of the Forest Service's Visual Resource Management System and the Forest Service's Scenery Management System

Recreation Specialist: the equivalent of a GS-11 Recreation Specialist with 5 years experience in Recreation/Trails and NEPA impacts analysis

Socioeconomist: at least 5 years experience with collaboration, community outreach and environmental justice issues

SUBCONTRACTORS: The Forest Service's Contracting Officer must review and approve potential subcontractors to the Consultant who will contribute to fulfillment of the tasks described herein, and any future additions to the approved list of subcontractors once established.

IV. DATA AND INFORMATION MANAGEMENT

All data and information collected under this contract will become the property of the U.S. Government.

Consultant performance and products will be subject to review by the Forest's technical staff and management to ensure adequacy, accuracy and completeness. The Forest may request that advance copies of specific sections of the NEPA document be provided for review by Forest resource specialists prior to submittal of the final deliverable. At its discretion, the Forest may seek additional review of Consultant products by other non-Forest resource experts.

SWCA
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Tucson Office
343 West Franklin Street
Tucson, AZ 85701
Tel 520.325.9194 Fax 520.325.2033
www.swca.com

DISCLOSURE STATEMENT
concerning the preparation of the Environmental Impact Statement
for the Proposed Rosemont Copper Project,
Coronado National Forest, Arizona

We, Ken Houser, Arizona Managing Principal, Tom Furgason, Arizona Natural Resources Program Director, and John MacIvor, Rosemont Project Leader of SWCA Environmental Consultants, have made inquiry and to the best of our knowledge and belief declare that executing the contracted work of preparing the Environmental Impact Statement for the Rosemont Copper Project does not represent an actual or potential conflict of interest and SWCA does not have any financial or other interest in the outcome of this project.

We understand the term "conflict of interest" to mean that because of other activities or relationships with other persons, the contractor is unable or potentially unable to render impartial assistance or advice to the Government, or the contractor's objectivity in performing the contract work is or might be otherwise impaired, or the contractor may have an unfair competitive advantage. We understand the phrase "no financial or other special interest in the outcome of the project" to include any financial benefits such as a promise of future construction or design work on the project, as well as indirect benefits the consultant is aware of other than the enhancement of the contractor's professional reputation.

Signed: Kenneth J. Houser — Ken Houser
Tom Furgason — Tom Furgason
John MacIvor

Employers name: SWCA Environmental Consultants

Address: 3033 North Central Avenue, Suite 145
Phoenix, Arizona 85012

Phone number: (602) 274-3831

Date: February 12, 2008

United States Department of Agriculture
Forest Service
Coronado National Forest
Nogales Ranger District
303 Old Tucson Road
Nogales, Arizona 85621
Phone (520) 281-2296
FAX (520) 281-2396

File Code: 2810
Date: March 6, 2008

Jamie Sturgess
VP Projects and Environment
Rosemont Copper Company
4500 Cherry Creek South Drive, Suite 1040
Denver, CO 80246

Dear Mr. Sturgess;

I am writing to advise you of my conditional approval of a Plan of Operations (PoO) dated February 8, 2008 and submitted to the Coronado National Forest (CNF) by Rosemont Copper Company (RCR) on February 13, 2008. I evaluated the PoO pursuant to statutory authority, Title 36 of the Code of Federal Regulations, and Forest Service policy and direction.

The conditionally approved PoO describes RCC's proposed short term geotechnical and hydrogeologic drilling and related activities on the CNF. In addition to the drilling of 15 geotechnical boreholes and 11 hydrogeologic characterization wells, the PoO calls for drill pad construction, road maintenance and construction of 800' of new access road. Please note that although it is understood that a significant objective of the approved drilling is the gathering of baseline groundwater data, the activity does not preclude the Forest Service requesting additional similar information or permanent monitoring wells, in the process of National Environmental Policy Act (NEPA) analysis of the Rosemont Copper Project.

The drilling project would be implemented on the east side of the Santa Rita Mountains, approximately 30 miles southeast of the town of Tucson, Arizona, in parts of Sections 20, 28, 29, 30, 31, 32 and 33, Township 18 South, Range 16 East, and Sections 5 and 6, Township 19 South, Range 16 East, Gila and Salt River Base and Meridian. It is anticipated that all work, including reclamation, will be completed within one year of commencement of operations.

Enclosed please find a list of stipulations and amendments to the PoO, which will be incorporated into the plan for final approval. If you agree to these terms and conditions, please sign and date where indicated below, and return the signed page to me at your convenience. Please note that final approval will not be effective until the signed copy (of the conditions) is received by the CNF and a reclamation bond in the amount of nineteen thousand dollars ($19,000.00) has been received from you by the Forest. Note that the required amount of bonding may be adjusted at some future date, if the Forest Service deems that the extent of estimated reclamation has changed.

Be advised that you have the right to appeal my decision under 36 CFR 251, Subpart C. A written Notice of Appeal must be submitted to the Forest Supervisor, Coronado National Forest, 300 West Congress Street, Tucson, Arizona, 85701, and simultaneously with the Nogales

District Ranger at 303 Old Tucson Rd., Nogales, AZ 85621, within 45 days of the date of this letter. A Notice of Appeal must contain the specific information required in 36 CFR 251.90.

Please address any questions that you may have about this decision to Forest Geologist Beverley Everson, Coronado National Forest, 300 W. Congress, Tucson Arizona 85701; by telephone at (520) 388-8428; or by electronic mail at beverson@fs.fed.us.

Sincerely,

/s/ Keith L. Graves
KEITH L. GRAVES
District Ranger

AMENDMENTS TO THE ROSEMONT COPPER COMPANY PLAN OF OPERATIONS FOR GEOTECHNICAL AND HYDROGEOLOGIC DRILLING IN THE EASTERN SANTA RITA MOUNTAINS

The following conditions shall apply to the Rosemont Copper Company's (RCR) drilling in the eastern Santa Rita Mountains:

1. The operator or authorized agent shall have in his possession a copy of the approved Plan of Operation whenever he or she is operating. This approval letter and attached appended conditions must be shown upon request to any State, Federal, or local officer in the administration of their official duties.

2. RCC (Rosemont Copper Company) will be provided, and will follow, all new road construction and road maintenance (repair) specifications and guidelines provided by Coronado National Forest (CNF) engineering as the company begins construction of new access road segments and repair of existing roads, for access to project drill pads.

3. Storage and handling of fuels and oil will meet all pertinent State and Federal Regulations. No pollutants will be disposed of on Forest Service land.

Service, maintenance and refueling areas for equipment used in this operation will be located well away from wet areas, surface water and drainages.

Drilling circulation mud and fluids will be contained on the drill pads and in sumps and tanks, and away from and out of all drainages.

Any spillage of hazardous materials will be cleaned up immediately by the operator, according to all pertinent laws and regulations.

4. Throughout the operation, silt fences, wattles, or similar structures will be positioned downstream of disturbances, anchored properly, and cleaned out after storm events, to prevent turbidity in drainages and stream channels. Visqueen, polysheeting, or comparable materials will be placed and secured under drill rigs at each drill site. Ancillary equipment will be underlain by similar spill containment materials wherever and whenever needed to prevent soil contamination.

No sediment will discharge into, or obstruct, any natural drainage channels in the course of new ground disturbing activities associated with this operation.

Sidecasting of material will be minimized in the process of new road construction, road repair, and drill pad construction.

5. Unprotected fill slopes created in the course of the operation will be equal or less than 3:1.

6. No new channeling will be created in the course of project road maintenance activities.

7. Water will be used in all phases of the operation for dust abatement.

8. Trash, sewage, human waste and debris generated with the operation will be removed from National Forest land and disposed of at public waste facilities.

9. All internal combustion engines utilized with this project will be equipped with an approved spark arrestor while in operation on National Forest land.

10. This operation will be subject to all fire restrictions in place at the time it occurs.

11. All agave plants located on the pad sites will be dug and transplanted. Any agaves too large or difficult to transplant will be replaced with a plant of the same species purchased from a nursery. Transplanted plants will be watered after planting. Gel-filled containers will be placed with the plant to provide slow-release moisture to each plant for the next 30-90 days.

All agave transplanting and planting of agave nursery stock will require on-site monitoring by an SWCA Environmental Consultants (SWCA) wildlife biologist with oversight and coordination of the activities by a Forest Service wildlife biologist.

12. Open sumps at unoccupied sites will be covered or fenced to prevent wildlife from becoming trapped in them.

13. Prior to any drill pad construction activities, an SWCA archeologist along with individuals from Tetra Tech and Errol Montgomery & Associates (who will be directing the drilling), will visit each proposed well and borehole location and flag the boundaries of the proposed disturbance. The coordinates of these boundaries will be recorded with a sub-meter GPS and provided to CNF staff to confirm that the proposed disturbance is outside any identified cultural resource site boundaries.

If, after the coordinates have been provided, the CNF determines that an archaeological monitor is warranted, one will be provided by SWCA for any ground disturbing activities in the area of concern.

14. RCC understands that any activity beyond that described here and in the Plan of Operations will require an amendment to the approved operation, or a new Notice of Intent or Plan of Operations, and may require additional bonding and environmental analysis.

15. Reclamation of all disturbances associated with the geotechnical borehole drilling will be completed within thirty days of the completion of the drilling, with the exception of boreholes that are utilized for groundwater monitoring activities. These boreholes may be reclaimed at the end of the monitoring period, not to exceed one year from the date of Forest Service authorization of the drilling activity.

16. Reclamation of all disturbances associated with the hydrogeologic drilling will be completed within thirty days of the completion of the drilling or at completion of well monitoring activity (within a one year period of the Forest Service authorization of the operation),

17. Reclamation of all disturbances associated with this operation includes the following:

Removal of the drill and all other equipment and supplies at the drill site.

Filling in of sumps and re-contouring of all new disturbances to match the surrounding topography.

Secure capping of drill holes to prevent any surface contaminants from entering the subsurface or groundwater.

Seeding and mulching of all new disturbances per Forest Service direction.

18. The approval of this Plan of Operations expires on March 10, 2009.

I accept the above listed terms and conditions.

Signature:_____ Date: _____

ROSEMONT COPPER

DENVER OFFICE
4500 Cherry Creek South Drive - Suite 1040
Denver, Colorado 80246 USA

TEL: (303) 300 0134
FAX: (303) 300 0135
CORPORATE WEB: www.augustaresource.com
PROJECT WEB: www.rosemontcopper.com

April 1, 2008

Tucson, AZ 85701
Received
APR 03 2008
Coronado National Forest

By Overnight Courier and Facsimile:

Mr. Corbin Newman
Regional Forester
U.S. Forest Service Region 3
Office of the Regional Forester
333 Broadway SE
Albuquerque, New Mexico 87102

Ms. Jeanine Derby
Forest Supervisor
Coronado National Forest
Office of the Forest Supervisor
300 West Congress Street
Tucson, Arizona 85701

Re: Letter Dated March 27, 2008 from Congresswoman Gabrielle Giffords; Rosemont Copper Company

Dear Mr. Corbin and Ms. Derby:

I am in receipt of the aforementioned letter, which is attached to this letter as Exhibit A. As the authorized officer for the lead agency on the NEPA process for the Rosemont Mine Plan of Operations review, please acknowledge this request for a meeting date at the soonest possible time. We request that the meeting be held in Albuquerque at the Regional Foresters office, or other suitable location that allows attendance of the regional and supervising Foresters, as well as our legal counsel.

As the proponent of the project that is the subject of the ongoing NEPA process, we were dismayed to first learn of the letter, subsequent meeting and purported agreement after the fact. We believe that failure to provide reasonable notice or consultation with project proponent was a serious oversight. Assuming that Congresswoman Giffords was indeed speaking for the USFS in her letter and subsequent press conference (see comments attached to this letter as Exhibit B), we seek to discuss the items announced by Congresswoman Giffords. We have requested to meet with Congressman Giffords to brief her regarding this project in the past and have met with her once. As any other member of the public, we welcome her input and involvement on our project during the scheduled public comment period.

In the aforementioned letter and the public statements made following the meeting referenced in the letter, there are three items of concern. First, we have an existing Memorandum of Understanding, FS Agreement No. 08-MU-11030510-010 dated March 5, 2008 (the "MOU") entered into between the USDA Forest Service Coronado National Forest (the "USFS") and Rosemont Copper Company. The MOU provides, in Section D.5, that the agreed upon timetable and schedule set forth in Attachment 2 will not be changed without working with Rosemont on a "mutually acceptable schedule revision." Since we were never contacted about a purported schedule change, we are sure that there must be some misunderstanding about this change in schedule. The MOU does not permit unilateral changes to the agreed upon timetable by the USFS, so we need to discuss this item further.

If it is the desire of the USFS to discuss a revision to the agreed upon timetable based on changed factors, we are happy to discuss it further with you. As you will recall, we were agreeable to the addition of another public meeting in Vail, Arizona. Rosemont Copper Company is in favor of allowing extensive public participation in the NEPA process, as it will result in a more thorough and defensible analysis. However, given the tremendous amount of knowledge and information already available about this project, as well as the organized groups that have been monitoring the project for many years and have websites devoted to news and information about the project, we fail to understand why we need expand the period for scoping by four times the amount of time as originally scheduled. We should talk about what is appropriate under the circumstances, to allow the public an even fuller opportunity to participate in the process.

The second item of concern arises from certain statements regarding the selection process for SWCA as the USFS's NEPA Contractor. As you know, while Rosemont Copper Company stated a preference for SWCA because of its mining experience, the ultimate selection of SWCA was made by the USFS. Please let us know what issues there are regarding the selection of SWCA. We believe that the process followed is the normal and customary process. Also, we would like some clarification about what role a senior member of Congressman Giffords staff will play in this review.

Finally, there is mention of a group being formed with appropriate government officials, community groups and members of Congressman Giffords staff. Again, while we welcome the comments and input of any stakeholder group, we need clarity on the exact nature and role they intend to play in the process. Rosemont Copper Company is fully supportive of all public participation so long as it is absolutely clear that the decisions regarding actions are those of the USFS alone.

We believe that our extensive engagement with the public and stakeholder groups already and outside of the NEPA process has helped us make a good project an even better project. We are confident that this process will be helpful to us and the USFS in the ultimate decision making process. I look forward to hearing from you regarding a scheduled meeting at your earliest convenience.

Best regards,

ROSEMONT COPPER COMPANY

Gil Clausen
President

Cc: The Honorable Gabrielle Giffords
J. Sturgess
S. Strunk, Esq.
R. Anderson, Esq.
N. James, Esq.

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May 16, 2008

Ms. Beverly Everson
Coronado National Forest
300 West Congress Street, 6th Floor
Tucson, Arizona 85701

Re: Expanded Statement of Qualifications for Third-Party Environmental Consulting Services

Dear Bev:

SWCA Environmental Consultants (SWCA) is pleased to submit the attached Statement of Qualifications (SOQ) in response to Congresswoman Gifford's interest in the U.S. Department of Agriculture Forest Service's (Forest Service's) selection of SWCA. We understand that Ms. Gifford's concern was primarily with the Forest Service selection process and not necessarily with our qualifications per se. However, we feel that this would be an appropriate time to submit a more robust SOQ for your records. Our previous SOQ focused on SWCA's experience with mining projects. We feel that the attached SOQ reinforces our experience working on mining projects and, more importantly, demonstrates SWCA's extensive experience working with the Forest Service. SWCA will continue to provide the Forest Service with the highest-quality National Environmental Policy Act (NEPA) and other compliance services as specified in the Memorandum of Understanding (MOU) dated March 5, 2008.

SWCA would like to reiterate our commitment to the Coronado National Forest (CNF) to provide key personnel, support staff, and physical resources to assist the Forest Service with the Rosemont Copper Project Environmental Impact Statement (EIS). SWCA is also committed to assisting the Forest Service in the identification and retention of outside technical support to complete a thorough and objective analysis of Rosemont Copper Company's Mine Plan of Operation.

SWCA has already contracted with Mr. John MacIvor, who retired in 2006 from his position as a District Ranger on the Apache-Sitgreaves National Forest. His 20 years of experience as a District Ranger substantially strengthens SWCA's ability to provide objective NEPA expertise to the CNF in accordance with Forest Service regulations.

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Among the key qualifications SWCA brings to the Forest Service are:

- Extensive individual and combined professional Forest Service-specific regulatory experience and expertise with NEPA, National Historic Preservation Act, Endangered Species Act, and Clean Water Act compliance in southern Arizona;
- A proven administrative and organizational structure designed for large EIS projects;
- Responsive and effective project management that will ensure quality and cost control;
- Locally based personnel—our Tucson office is just two blocks north of the Federal Building;
- Ability to quickly contract individuals or other firms as directed to provide additional technical expertise.

We have organized the following SOQ into four sections:

- Company Qualifications
- Relevant Experience
- Project Team
- Attachments (White Paper on third-party contracting and MOU)

We hope that you find SWCA's SOQ useful in demonstrating that the selection of our firm is appropriate for assisting as an objective, highly experienced, third-party contractor to the Forest Service.

Sincerely,

Kenneth L. Houser

Tom Furgason

Ken Houser
Managing Principal
Arizona Operations

Tom Furgason
Program Director/Senior Project Manager

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Statement of Qualifications for Third-Party Contracting Services

Submitted to:
Coronado National Forest
300 W. Congress St.
Tucson, AZ 85701

Submitted by:
SWCA Environmental Consultants
343 West Franklin Street
Tucson, Arizona 85701
520.325.9194

April 11, 2008

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Company Qualifications

Company Qualifications

COMPANY QUALIFICATIONS

SWCA Environmental Consultants (SWCA) is an employee-owned company of cultural and natural resource scientists and planners. SWCA's professionals specialize in environmental and cultural resource permitting, compliance, and management. Headquartered in Phoenix, Arizona, SWCA has offices throughout the West, Pacific Northwest, and Hawaii. SWCA is an *Engineering News-Record* Top 200 Environmental Firm and has been among the top 20 firms in environmental science revenue. We have an established record of providing sound science and creative solutions for private- and public-sector clients from coast to coast.

Our program managers understand the importance of effective planning and regulatory liaising in meeting schedule and budget objectives. We complement our technical efforts with effective public participation and conflict resolution services when required.

Environmental Program Management Services

We use a comprehensive, full-service approach to managing permitting and environmental compliance efforts, employing proven strategies to meet client objectives.

We work collaboratively with our clients, regulators, and the public to effectively scope and plan project activities to achieve technically sound, cost-effective solutions to a full spectrum of environmental projects, from routine permitting efforts to technically complex and controversial resource management issues.

Permitting and Regulatory Compliance

SWCA scientists assist our clients with requirements of local, state, and federal environmental regulations, including the following laws and regulations that guide their implementation.

- ***National Environmental Policy Act***
  Resource inventories, environmental assessments (EAs), environmental impact statements (EISs), facilitation of the public participation process, mediation of environmental disputes, and management and preparation of administrative records.

- ***Clean Water Act***
  Section 401 and 404 permitting, National Pollutant Discharge Elimination System and stormwater permitting and inspections, wetland delineations and functional assessments, wetland mitigation plan development and implementation, total maximum daily load development for Section 303(d) impaired waters, surface water quality, and aquatic biota monitoring.

- ***Endangered Species Act***
  Listed species habitat assessments and presence/absence studies, biological assessments (BAs), Section 7 consultation, preparation of Section 9 incidental take permits and habitat conservation plans.

- ***National Forest Management Act/Federal Land Policy and Management Act***
  Resource inventories, preparation of biological evaluations (BEs), impact and mitigation assessments.

- ***National Historic Preservation Act***
  Regulatory agency liaison, field surveys, testing and treatment plans, data recovery and analysis, and report preparation.

Environmental Planning and National Environmental Policy Act Compliance

SWCA's environmental planners have the knowledge and experience to assist clients with every phase of their planning projects. While focused on the enhancement and/or preservation of environmental resources, our planners also are capable of addressing economic development issues and opportunities to help communities accomplish their goals.

We work with all parties involved in the planning process, including residents, local organizations, and government agencies. We are highly experienced in conducting assessments and preparing the necessary documents that comply with National Environmental Policy Act (NEPA) requirements, such as categorical exclusions, EAs, and EISs. Other documents we provide through our multi-disciplinary planning teams include resource management plans (RMPs) and habitat conservation plans, as well as watershed and fire management plans. Tasks associated with our planning and compliance experience include data collection and analysis, third-party technical review of project plans, and preparation and submittal of mitigated negative declarations.

Natural Resource Management

SWCA scientists conduct soils, vegetation, wildlife, fishery, and aquatic biota investigations in support of resource management planning, permitting, impact assessment, and mitigation evaluations. We design and implement quantitative and qualitative investigations of terrestrial and aquatic ecosystems and provide monitoring services to address permit stipulations, mitigation requirements, and reclamation standards. Our scientists are experienced in all ecosystems of the western United States and are capable of providing client-focused solutions to all facets of biological resource issues addressed by the mining industry.

SWCA's team of more than 150 biologists provides our clients with local and regional expertise to provide the following support services to the mining industry:

- Resource inventories and planning services to support remediation, reclamation, and closure of abandoned mine properties, incorporating comprehensive multidisciplinary approaches.
- Terrestrial and aquatic ecosystem investigations, classification, and mapping.
- Watershed, riparian, and aquatic habitat restoration programs.
- Evaluations of the distribution, abundance, habitat selection, and monitoring of game, birds of prey, waterfowl, and other migratory birds, employing aerial and ground surveys, including telemetry.
- Soil survey, classification, and mapping; reclamation planning, implementation, and monitoring.
- Wetland delineation, functional analysis, mitigation planning, implementation, and monitoring; mapping and control of weeds and other terrestrial and aquatic exotic species.

Cultural Resource Management Services

SWCA's archaeologists, applied anthropologists, and historic preservationists provide a wide range of cultural resource management services to assist our clients in complying with federal, state, and local regulations. Compliance activities to protect cultural resources fall within three disciplines: archaeology (archaeological sites), historic preservation (historic properties and National Historic Landmarks), and applied anthropology (consultation regarding traditional cultural properties [TCPs] and Native American burials, sacred sites, and religious practices).

Archaeological Services

Our professional archaeologists are thoroughly familiar with applicable regulations governing the treatment of cultural resources, and SWCA maintains the laboratories and equipment required for any cultural resource undertaking. SWCA provides a broad range of archaeological services, including

- Literature searches;
- Reconnaissance studies;
- Intensive archaeological surveys;
- Preservation and treatment plans;
- Memoranda of agreement;
- Site testing/evaluations;
- Full-scale excavation for data recovery; and
- Construction monitoring, impact mitigation management, and ruins stabilization.

Historic Preservation Services

The historic preservation areas of history and architectural history are increasingly understood as part of community planning, quality of life, and a total cultural resource compliance package.

- Extensive experience in determinations of eligibility for listing in the National Register of Historic Places (NRHP) qualifies SWCA staff to evaluate the significance of historic properties with efficiency and accuracy.
- SWCA negotiates preservation strategies for clients through the State Historic Preservation Office (SHPO) and the National Park Service (NPS), including nominations to the NRHP.
- SWCA historical specialists meet the Secretary of the Interior's Standards for Professional Qualifications in the areas of history, architectural history, and historic archeology and offer additional expertise in cultural geography, cultural landscapes, public history, oral history, heritage tourism, and preservation education.

Tribal and Ethnographic Consultation

SWCA has helped public agencies and private companies consult with more than 30 Native American groups in the western United States, as well as with other traditional communities. SWCA's professionals assist clients with all forms of tribal and ethnographic consultations, including

- National Historic Preservation Act (NHPA) Section 106 consultations to identify and evaluate properties that have religious and cultural significance for traditional communities;
- Native American Graves Protection and Repatriation Act consultations to establish tribal affiliations with burials encountered during archaeological investigations and other project-related activities; and
- American Indian Religious Freedom Act consultations to identify and evaluate project impacts on places that are considered sacred by Native American groups.

Managing Sub-contractors on Large Projects

SWCA recognizes that to complete a thorough and technical NEPA review, it is occasionally necessary to subcontract outside firms that are specialized or that have extensive regional experience. This allows for the Project Manager to create an extended team of resource specialists, engineers, and local experts that satisfy the Council on Environmental Quality (CEQ) requirements for an interdisciplinary approach when completing an EIS.

SWCA Office Locations

SWCA has offices located throughout the U.S. and in the Territory of Guam to provide clients with local environmental consulting services. In the years since its inception, SWCA has expanded from a sole proprietorship to an employee-owned corporation with 22 offices. These offices are located in Phoenix (corporate office), Flagstaff, and Tucson, Arizona; Sacramento, Pasadena, Mission Viejo, and San Luis Obispo, California; Denver and Durango, Colorado; Honolulu, Hawaii; Boise, Idaho; Las Vegas, Nevada; Albuquerque, New Mexico; Portland, Oregon; Austin, San Antonio, and Houston, Texas; Salt Lake City and Vernal, Utah; Spokane, Washington; Sheridan, Wyoming; and Guam.

For more information on SWCA and our services, please visit www.swca.com.

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Relevant Experience

Relevant Experience

Relevant Experience

SWCA has extensive experience working as a third-party NEPA consultant for Federal agencies in addition to the U.S. Forest Service (Forest Service). Other agencies include the Bureau of Land Management (BLM), NPS, Department of Justice, Federal Highway Administration (through the Arizona Department of Transportation), and U.S. Department of Housing and Urban Development. In addition to our NEPA experience, SWCA has completed thousands of cultural, biological, and other resource projects in southern Arizona. Following is a project and team matrix that provides the names of projects that are relevant to Forest Service NEPA and mining-related projects and that indicates the areas in which the projects are of interest. Key projects are discussed in greater detail after the table. Our ability to provide an objective analysis is demonstrated by our clients' repeat business and their recommending us to other agencies.

Project and Team Matrix

Project Name	Key Staff	Relevance			
		Forest Service	Mining	EIS	Arizona
Tucson Electric Power Company Sahuarita to Nogales Transmission Line	T. Furgason, K. Kertell, J. Hesse, L. Mitchell	×		×	×
Very Energetic Radio Imaging Telescope Array System (Nogales RD)	T. Furgason, K. Kertell, L. Mitchell	×			×
Rodeo-Chediski Fire Salvage Area Heritage and Ethnographic Resource Inventory	C. Bellavia, C. Ensle, J. Hesse, L. Mitchell	×			×
Prescott National Forest Boundary Fuels Management	G. Dunno, L. Mitchell	×			×
Prescott National Forest EA	G. Dunno	×			×
Verde Wild and Scenic River Corridor Project	C. Bellavia	×			×
Loon Mountain Resort EIS	E. Petersen	×		×	
Tusayan Land Exchange EIS	R. Borkin, D. House	×		×	×
Dos Pobres/San Juan Land Exchange Data Recovery and EIS	C. Bellavia, G. Dunno, C. Ensle, T. Euler, J. Ezzo, T. Furgason, J. Hesse, K. Kertell, L. Mitchell, M. Reichard		×	×	×
ASARCO Ray Land Exchange EIS	T. Euler, T. Furgason, J. Hesse, K. Kertell		×	×	×
Morenci Mine Land Exchange EIS	T. Euler		×	×	×
Alton Coal Hollow EIS	E. Petersen		×	×	
Safford EIS	K. Kertell		×	×	×
Vernal Resource Management Plan and EIS	K. Kertell			×	
Moxa Arch Area Infill Gas Development Project EIS	C. Coyle			×	
Colorado River Recreation Management Plan and EIS	C. Bellavia, G. Dunno, C. Ensle			×	×
Alamogordo Regional Water Supply EIS	E. Petersen			×	
Desert National Wildlife Refuge CCP and EIS	J. Connell, G. Dunno			×	
Upper Las Vegas Wash Conservation Transfer Area SEIS	C. Bellavia, C. Bingaman, J. Connell, G. Dunno, R. Ellis, C. Ensle, H. Hall, H. Gachiri, K. Pohs, M. Reichard			×	
Hiawatha Regional Energy Development EIS	C. Bellavia, M. Bidwell, C. Bingaman, J. Connell, G. Dunno, H. Gachiri			×	
Jonah Infill Drilling Project EIS	J. Connell, G. Dunno, C. Ensle, J. Hesse			×	
Middle Rio Grande PEIS	J. Connell			×	
Upper Snake River Wildland Fire Management Policy Implementation EIS	E. Petersen			×	
PEIS LCR Basin Flood Damage Reduction and Ecosystem Restoration	T. Euler, M. Petersen			×	
Clark County Wetland Park Master Plan and EIS	H. Gachiri			×	
Diamond Bar Road EIS	G. Dunno, C. Ensle			×	×
Grand Canyon Railway Spurline and Transportation Hub EIS	R. Borkin, D. House			×	×
Cottonwood Wash Environmental Assessment	E. Petersen		×		
Queenstake Jerritt Canyon Mine	E. Petersen		×		
Socioeconomic Study for Black Mesa/Kayenta Mines, Life-of-Mine Permit Revision	J. Connell, G. Dunno		×		×
McKinley Mine Reuse Plan	J. Connell, G. Dunno, R. Ellis		×		

U.S. Forest Service Projects in Arizona

Rodeo-Chediski Fire Salvage Area Heritage and Ethnographic Resource Inventory; Navajo and Gila Counties, Arizona

Project Owner & SWCA Client: U.S. Forest Service
Dates of Service Contract: September 16, 2002–September 30, 2005
Project Budget: $445,359
Summary of Services Provided:
SWCA conducted a cultural resources survey of approximately 19,000 acres of forest land that burned during the Rodeo-Chediski fire, the largest wildfire in Arizona history. Between June 18 and July 7, 2002, the Rodeo-Chediski complex burned 467,066 acres in east-central Arizona. The fire forced the evacuation of several towns along the Mogollon Rim, including Heber, Overgaard, Pinedale, and Show Low. Of the acres burned, 167,215 fall within the Apache-Sitgreaves National Forest (ASNF) boundary; 10,667 acres fall within lands administered by the Tonto National Forest (TNF); and all remaining acres fall within the Fort Apache Indian Reservation boundary. The ASNF contracted with SWCA to survey areas that would potentially be affected by timber salvage operations. The archaeological inventory was completed to satisfy compliance with NHPA and NEPA. Along with the archaeological survey, SWCA also conducted an ethnohistorical study that will be incorporated into the EIS for the burn area.

Prescott National Forest Boundary Fuels Management Project; Yavapai County, Arizona

Project Owner: Prescott National Forest
SWCA Client: EG&G Technical Services, Inc.
Dates of Service Contract: May 29, 2001–February 1, 2002
Project Budget: $276,502
Summary of Services Provided:
SWCA teamed with EG&G Technical Services, Inc., to prepare an EA and fuels management plan for vegetation management on approximately 29,500 acres of the Prescott National Forest (PNF), which borders the town of Prescott, Arizona. Several thousand homes and assorted outbuildings are within wildland urban interface areas adjacent to the project area, with structures found in a variety of vegetation, slope, and aspect combinations. Proposed actions considered in the EA included prescribed burns, timber harvest, and brush crushing. Vegetation types in the project area were widely varied, including ponderosa pine and chaparral, as were slopes, soils, and proximity to habitation. All of this made public scoping a particular challenge for the boundary project. The beneficial effects of managing vegetation and fuels in this area include reducing risk of catastrophic wildfires and improving forest health, vegetation structural diversity, and wildlife habitat.

SWCA evaluated the effects of the fuels management activities on a variety of resources, including archaeological sites and other cultural resources. SWCA evaluated each proposed action by focusing on the individual micro-scale processes that each action would cause, then extrapolating from that to determine the impacts to all resources. For instance, prescribed burns in chaparral were expected to change the micro-scale processes of interception, infiltration, and runoff, which would in turn lead to greater erosion and sediment yield on the watershed unless mitigated.

SWCA designed a series of project-specific best management practices (BMPs), based on Forest Service guidance, to mitigate impacts. BMPs selected include buffer zones, restrictions on timing of timber harvest, prescribed burn, and brush crushing activities, and limits to activities on sensitive soils and slopes. SWCA completed all cultural and biological surveys and reports for the project, as well as

conducting tribal consultation with seven tribes on PNF's behalf. All findings were incorporated into the overall EA for the project.

Prescott National Forest Environmental Assessment; Yavapai County, Arizona

Project Owner & SWCA Client: Prescott National Forest
Dates of Service Contract: November 14, 2001–February 15, 2002
Project Budget: $65,480
Summary of Services Provided:
SWCA was contracted by the PNF to prepare an EA to describe the effects of amending the PNF Land and Resource Management Plan. The proposed amendment is to update management direction in the areas of fuelwood management, fire management (specifically, wildland fire use), and forest plan monitoring.

The current Prescott Forest Plan, developed in 1986, reflects some values and policies that are no longer consistent with forest management objectives. Although this amendment did not constitute a significant change in PNF management direction, any amendment to a Forest Plan is considered a major federal action and is therefore subject to compliance with NEPA as amended (42 United States Code 4321, *et seq.*). Because this amendment to the Prescott Forest Plan was determined to be non-significant, an EIS was not required; therefore, an EA was prepared to address the impacts of the proposed action.

Verde Wild and Scenic River Corridor Project; Gila and Yavapai Counties, Arizona

Project Owner & SWCA Client: Tonto National Forest
Dates of Service Contract: June 3, 2002–June 30, 2003
Project Budget: $93,176
Summary of Services Provided:
SWCA conducted archaeological survey and site recording to provide baseline data for a Comprehensive Management Plan for the Forest Service. The Verde Wild and Scenic River Corridor consists of land managed by the Tonto, Prescott, and Coconino national forests. The project area consists of a 40.5-mile section that stretches from 5 miles south of Camp Verde to 10 miles north of Horseshoe Reservoir. Thirty-three sites were recorded, and 805 acres were surveyed. The more complex sites included 20- to 100-room PIII-PIV settlements. Concurrent with the archaeological survey, SWCA conducted an ethnohistoric study of the Verde Wild and Scenic River Corridor.

Other U.S. Forest Service Planning Projects

Loon Mountain Resort Environmental Impact Statement; Lincoln and Grafton Counties, New Hampshire

Project Owner: Loon Mountain Recreation Corporation
SWCA Client: U.S. Forest Service–Rochester Ranger District
Dates of Service Contract: March 10, 2000–May 1, 2002
Project Budget: $875,389
Summary of Services Provided:
Loon Mountain Ski Resort in New Hampshire was expanded from 500 to 800 acres to meet increased recreational demands and provide a balanced ski area design that meets current and future visitor expectations. The resort expansion includes the addition of new and diverse ski terrain, upgraded high-speed chair lifts, and a new ski lodge.

SWCA developed the draft and final EIS documents for Loon Mountain Ski Resort. The EIS was controversial, and the public involvement plan for the project was comprehensive, involving multiple

scoping periods, project newsletters, and public meetings. The EIS disclosure process involved several cooperating agencies, including the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency, New Hampshire Game and Fish Department, and New Hampshire Department of Environmental Services. These agencies used the EIS as part of their permitting processes.

SWCA project responsibilities included coordination and management of seven subconsultants with varying resource specialties and evaluation of impacts to wildlife habitat, wetlands, aquatic systems, socioeconomics, transportation, and recreation.

Lincoln National Forest Sacramento Grazing Allotment Environmental Impact Statement; Otero County, New Mexico

Project Owner: Lincoln National Forest
SWCA Client: EG&G Technical Services, Inc.
Dates of Service Contract: January 18, 2002–November 30, 2004
Project Budget: $13,885
Summary of Services Provided:
SWCA provided ongoing assistance in the Lincoln National Forest in southern New Mexico for the Sacramento Grazing Allotment EIS. As part of the NEPA process, SWCA developed a description of existing conditions in various grazing pastures on the allotment and identified potential impacts to different soil types, riparian communities, and water resources from various grazing management and stock rotation alternatives. Potential alternatives were developed for: fuels management and loading, wildland urban interface management, impacts to water resources and soils, effects on wildlife habitat, land management planning. SWCA also completed the geographic information system (GIS) deliverables for the EIS, including site maps and relevant graphics, a technical report, and related EIS chapters.

Relevant Mining Environmental Impact Statement Projects

Dos Pobres / San Juan Land Exchange Data Recovery and Environmental Impact Statement; Safford and Graham Counties, Arizona

Project Owner: Bureau of Land Management
SWCA Client: Phelps Dodge Safford, Inc.
Dates of Service Contract: September 8, 1997–2005
Project Budget: $2,080,550
Summary of Services Provided:
In 1994, SWCA was selected as the third-party NEPA contractor to prepare an EIS in response to a proposed land exchange between the BLM and Phelps Dodge. Phelps Dodge sought to acquire ownership of the public lands on which it had mining claims to develop its Dos Pobres/San Juan ore bodies.

SWCA prepared an EIS for the proposed land exchange and a Mine Plan of Operations (MPO) to develop two open-pit copper mines in east-central Arizona. Two land exchange and three MPO alternatives were analyzed. SWCA researched legal constraints and opportunities to guide development of an approach that the BLM used to address issues in the EIS. Staff completed baseline data collection for resources for which prior information was inadequate. SWCA produced the draft and final EISs, responded to more than 1,000 public comments on the draft, and completed the Record of Decision (ROD).

The final EIS resulted in the identification and preservation of dozens of properties that contain rare and important natural and cultural resources. The land exchange, in progress for more than 10 years, involved the transfer of nearly 4,000 acres of sensitive land from Phelps Dodge to the BLM. In return, the BLM transferred 16,000 acres to the mining company.

ASARCO Ray Land Exchange Environmental Impact Statement; Kearney and Pinal Counties, Arizona

Project Owner & SWCA Client: ASARCO Ray Mine
Dates of Service Contract: September 8, 1997–December 31, 2002
Project Budget: $788,460
Summary of Services Provided:
The Ray Land Exchange was a proposal by ASARCO to exchange five privately held parcels for BLM-administered lands around the Ray Mine. The privately held parcels, totaling 6,940 acres, supported a variety of sensitive lands that the BLM desired to acquire within the state of Arizona. Thirty-one BLM-administered parcels totaling 8,196 acres were near or adjacent to the Ray Mine. SWCA produced baseline resource studies for cultural, biological, and physical resources and land use, including preparation of a BA in support of a Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) along with data recovery plans for cultural resources. SWCA completed all aspects of the EIS process under the direction of the BLM.

Morenci Mine Land Exchange Environmental Impact Statement; Morenci, Greenlee County, Arizona

Project Owner: Bureau of Land Management
SWCA Client: Phelps Dodge Morenci, Inc.
Dates of Service Contract: September 8, 1997–December 31, 1998
Project Budget: $680,107
Summary of Services Provided:
SWCA was selected by Phelps Dodge and approved by the BLM as the third-party contractor to conduct baseline resource studies and to prepare an EIS for the proposed Morenci Land Exchange. Phelps Dodge proposed the land exchange with the BLM for approximately 4,000 acres of lands adjacent to its existing Morenci Mine operations. These selected lands comprised 29 parcels ranging in size from less than 1 acre to more than 2,500 acres. In exchange, Phelps Dodge offered approximately 1,200 acres of private lands of equal value that were identified by the BLM as having desirable natural and cultural resources values for federal land management.

SWCA produced baseline resource studies for cultural, biological, and physical resources, and land use, including preparation of a BA in support of a Section 7 consultation with the USFWS for potential impacts to a cactus that is morphologically similar to the endangered Arizona hedgehog cactus. As part of SWCA's scope of work, SWCA anthropologists undertook tribal consultations with 10 tribes in Arizona, New Mexico, and Oklahoma in compliance with Section 106 of the NHPA. In the draft EIS, SWCA clearly outlined the context for analysis of impacts; under the Mining Law of 1872, Phelps Dodge had staked mining claims to all the selected lands, which gave them the legal right to use the selected lands for mining support regardless of whether they acquired the lands through the exchange or not. Thus, the EIS included analysis of impacts of the exchange as well as anticipated impacts of the foreseeable mining-related uses of the selected lands. A final EIS was published in 1996, and the exchange was formally completed in 2000 after an appeal was denied by the U.S. Department of the Interior Board of Land Appeals.

Alcoa Three Oaks Mine Environmental Impact Statement; Bastrop and Lee Counties, Texas

Project Owner: Aluminum Company of America
SWCA Client: ENSR International
Dates of Service Contract: August 1, 2001–May 1, 2003
Project Budget: $130,266
Summary of Services Provided:
Aluminum Company of America proposed to open a new lignite mine (Three Oaks) in Lee and Bastrop counties, Texas, to provide fuel for its power generation facility in Rockdale, Texas. The project called for the open-pit mining of approximately 16,000 acres over a 25-year period and resulted in the placement of fill material into waters subject to Section 404 of the Clean Water Act. The Fort Worth District of the USACE determined it must complete an EIS before a permit could be issued.

USACE Fort Worth District selected SWCA to co-author a third-party EIS for the proposed Three Oaks Mine in Bastrop and Lee counties. SWCA was specifically selected to assist in the development of the purpose and need statement and the development of the alternatives analysis. SWCA authored the Section 404(b)(1) evaluation.

SWCA, drawing on local knowledge, provided expertise in impacts to threatened and endangered species and cultural resources; NEPA document preparation; and evaluation of alternatives. SWCA co-authored the threatened and endangered species and cultural resources sections of the EIS.

Other Environmental Impact Statements Projects

Juneau International Airport Environmental Impact Statement; Juneau, Borough of Juneau, Alaska

Project Owner: Alaskan Region Federal Aviation Administration
SWCA Client: City and Borough of Juneau
Dates of Service Contract: March 1, 2001–December 31, 2007
Project Budget: $2,854,688
Summary of Services Provided:
As the prime, third-party contractor to the Federal Aviation Administration (FAA) and the City and Borough of Juneau, Alaska, SWCA prepared an EIS for the expansion of the Juneau International Airport, located in southeast Alaska. Runways at the airport need to be lengthened to comply with FAA regulations. The existing runway is constrained on either end by high-value, intertidal wetlands and a game refuge that provides habitat for birds, raptors, mammals, and anadromous fisheries. The EIS identified key issues such as safety requirements, aircraft noise, wetlands and possible mitigation programs, essential fish habitat, rehabilitation of Duck Creek for salmon habitat, and stormwater and discharge concerns.

SWCA has completed a wetland delineation covering several hundred acres of estuarine, palustrine, lacustrine, and riverine wetlands using the Adamus Wetland Evaluation Technique developed for the Juneau area in the late 1980s. Once project-related impacts have been assessed, SWCA will develop conceptual wetland mitigation measures and submit an individual 404 permit application to the USACE Juneau Regulatory Office for this highly controversial project. Additionally, SWCA's responsibilities include coordination with the USFWS and the National Marine Fisheries Service in formulating a BA that addresses threatened and endangered terrestrial, freshwater, and marine species.

SWCA staff members are an integral part of the public involvement team that works to keep local stakeholders informed about project issues. Through a series of public meetings, SWCA staff presented the results of their fieldwork to local stakeholder groups. SWCA compiled myriad public comments

through the scoping process and completed a content analysis of these comments, cross-referencing common themes and identifying significant issues. Comments were solicited through scoping meetings, mailed flyers, and the project website, which was designed to provide key project information and allow the public to submit comments online. SWCA also developed a database for the project's administrative record. All pertinent project communications, supporting documentation, and relevant scientific literature have been entered into this database for tracking and future reference. SWCA designed and administers a website (www.jnu-eis.org) that provides project updates and allows the public to comment on the EIS. Other project responsibilities included the identification and description of existing environmental resources in the vicinity of the airport, as well as an assessment of potential project-related and cumulative impacts to these resources.

Vernal Resource Management Plan and Environmental Impact Statement; Vernal, Uintah, Duchesne, and Daggett Counties, Utah

Project Owner & SWCA Client: Bureau of Land Management
Dates of Service Contract: August 29, 2001–December 30, 2006
Project Budget: $1,903,926
Summary of Services Provided:
Over the past decade, residents in the Vernal County, Utah, area have seen many changes in the use of their surrounding public lands. The Vernal Field Office (VFO) of the BLM faces the challenges of managing these changes of increased population growth, the need for recreational land space, and the need for energy exploration in the area.

SWCA assisted the VFO to revise and combine two existing RMPs into a single RMP. The planning area included in the RMP consists of all public lands and federal mineral estate lands managed by the VFO in Daggett, Duchesne, and Uintah counties in northeastern Utah, plus a small portion of Grand County. The scope of work includes completion of the Analysis of the Management Situation, EIS and subsequent ROD. This comprehensive planning effort will address a wide variety of issues, including cultural resources, oil and gas development, socioeconomics, transportation, wildlife, and wilderness designation. Because of the diverse nature of the project, several SWCA natural and cultural resource specialists are contributing their expertise in areas ranging from fire management to wildlife habitat and fisheries management.

While developing the RMP, SWCA staff are facilitating a collaborative community-based Public Involvement Plan (PIP) for the project in cooperation with the Association of County Governments, Uintah and Ouray Indian Reservation, and other state and federal agencies. Developing planning bulletins and conducting public scoping meetings are part of the PIP strategy to involve various stakeholders and solicit input. This inclusive planning approach focuses on updating existing management decisions and resource allocations by addressing new data, changing resource conditions, and changes in the use of public land since completion of the initial RMPs. Additionally, SWCA is facilitating, for the BLM, the formulation of MOUs with surrounding counties and the Ute Tribe to enlist their participation as Cooperating Agencies.

Moxa Arch Area Infill Gas Development Project Environmental Impact Statement; Sweetwater County, Wyoming

Project Owner & SWCA Client: EOG Resources, Inc.
Dates of Service Contract: October 7, 2005–November 30, 2007
Project Budget: $1,373,891
Summary of Services Provided:
SWCA has been contracted by EOG Resources to complete the Moxa Arch Area Gas Development Project EIS for the BLM Kemmerer Field Office in southwest Wyoming. The SWCA team completed all aspects of the NEPA process, including scoping, alternatives development, draft and final EIS completion, administrative record maintenance, Endangered Species Act (ESA) Section 7 consultation compliance, air quality modeling, and resource evaluations.

Colorado River Recreation Management Plan and Environmental Impact Statement; Grand Canyon and Coconino Counties, Arizona

Project Owner & SWCA Client: National Park Service
Dates of Service Contract: September 27, 2002–December 31, 2004
Project Budget: $1,290,533
Summary of Services Provided:
SWCA was contracted by the NPS to assist Grand Canyon National Park (GRCA) in producing an EIS for an updated Colorado River Recreation Management Plan (CRRMP). SWCA personnel worked closely with GRCA staff to develop a set of alternatives that addressed appropriate levels of visitor use (carrying capacity), allocation of use between commercial and private boaters, demand for use by commercial and private boaters, the permit system for non-commercial river uses, motorized versus non-motorized craft, helicopter use for passenger transfer, and impacts on resources as a result of visitor use. SWCA also provided a preliminary assessment of environmental impacts, which the NPS used as a basis for their final CRRMP/EIS.

Gun Barrel, Madden and Iron Horse Environmental Impact Statement; Fremont and Natrona Counties, Wyoming

Project Owner: Bureau of Land Management
SWCA Client: Burlington Resources Oil & Gas Company, LP
Dates of Service Contract: April 1, 2008–ongoing
Project Budget: $1,207,830
Summary of Services Provided:
SWCA is providing full NEPA assistance services to the BLM Lander Field Office for the Gun Barrel, Madden, and Iron Horse Natural Gas Development Project EIS. SWCA is preparing an EIS and providing all accompanying services, including cultural resource inventory, paleontological assessment, and tribal consultation. SWCA will also assist the BLM with scoping, public involvement, alternatives development, and cooperating agency facilitation. The project is located in Fremont and Natrona counties, Wyoming, and covers 146,000 acres. Up to 1,370 new natural gas wells are proposed by the companies within the three units to be analyzed.

Kodiak Airport Environmental Impact Statement; City of Kodiak, Alaska

Project Owner: City of Kodiak
SWCA Client: Barnard Dunkelberg & Company, Inc.
Dates of Service Contract: March 15, 2006–June 30, 2007
Project Budget: $1,222,171
Summary of Services Provided:
SWCA's role in Phase 1 of the Kodiak Airport EIS consisted of assisting the prime contractor and FAA in project identification and alternatives formulation. SWCA also acquired and reviewed existing information related to marine, freshwater, and terrestrial ecology and cultural resources; coordinated with resource and regulatory agencies; participated in agency and public scoping meetings; and assisted Barnard Dunkelberg & Company, Inc., in developing the detailed scope of work for preparing the draft EIS. For cultural resources, SWCA led the FAA through consultation with the Alaska Office of History and Archaeology, local Native Alaskan tribal groups, and other agencies/groups. SWCA also prepared a Section 106 consultation report and cultural resource sections of an EIS related to proposed improvements at the airport. Work was carried out on behalf of the City and Borough of Kodiak.

Alamogordo Regional Water Supply Environmental Impact Statement; Alamogordo and Otero Counties, New Mexico

Project Owner & SWCA Client: City of Alamogordo
Dates of Service Contract: April 21, 2004–December 31, 2007
Project Budget: $979,845
Summary of Services Provided:
Under the direction of the BLM and Bureau of Reclamation (Reclamation), SWCA is preparing an EIS as a third-party contractor for the City of Alamogordo's municipal drinking water supply project. The project proposes to drill 10 new groundwater wells that would produce mildly brackish water, construct a desalination plant to treat the water to drinking water standards, and construct associated water delivery pipelines. Public concern for the effects of developing a new water resource in the basin necessitate a thorough analysis of the project's effects on water resources and the economy of this rural agricultural community in the EIS. More than 100 participants, including project opponents, attended the public scoping meeting that we brought to a successful conclusion. SWCA is responsible for coordinating the NEPA process, developing alternatives, completing impacts analyses, and conducting field surveys for natural and cultural resources on 1,700 acres for proposed project facilities.

Desert National Wildlife Refuge Complex Comprehensive Conservation Plan and Environmental Impact Statement; Clark, Lincoln, and Nye Counties, Nevada

Project Owner: U.S. Fish and Wildlife Service
SWCA Client: U.S. Fish and Wildlife Service
Dates of Service Contract: October 23, 2001–December 31, 2008
Project Budget: $819,572
Summary of Services Provided:
The USFWS California-Nevada Operations retained SWCA, through a General Services Administration (GSA) contract, to prepare a Comprehensive Conservation Plan (CCP) and EIS for the Desert National Wildlife Refuge Complex in southern Nevada. The Desert Complex consists of four separate refuges: Ash Meadows National Wildlife Refuge (NWR), Pahranagat NWR, Moapa Valley NWR, and Desert NWR.

The CCP will provide the USFWS with management guidelines and priorities for the Desert Complex over the next 15 years. Goals, objectives, and strategies have been developed as part of the NEPA process to ensure resource protection and provide conservation management strategies for the unique native

species and habitats that have come to represent some of the last best wild places in the Mojave Desert and the southwestern region of the United States. SWCA is responsible for

- Planning and ongoing coordination with USFWS staff and the Core Planning Team;
- Coordinating development of vision statements, goals, and alternatives for each refuge;
- Preparation of the affected environment and environmental consequences sections of the EIS;
- Development of the draft CCP/EIS;
- Public scoping and response to public comments and preparation of the final EIS and CCP;
- Preparation of a cultural resources overview and research context for historic and prehistoric resources; and
- Spatial database management.

SWCA will address the following issues of concern in the EIS: protection, management, and recovery of federally listed species; control of noxious weeds; fire management; wilderness proposal; public use management; habitat restoration and management; water rights; water quality; groundwater management; and cultural resources.

Upper Las Vegas Wash Conservation Transfer Area Supplemental Environmental Impact Statement; Las Vegas and Clark Counties, Nevada

Project Owner & SWCA Client: Bureau of Land Management
Dates of Service Contract: June 1, 2007–September 30, 2008
Project Budget: $878,518
Summary of Services Provided:
In June 2007, SWCA was contracted by the BLM Las Vegas Field Office to complete a Supplemental Environmental Impact Statement (SEIS) for potential disposal of up to 13,400 acres within and adjacent to an extensive riparian channel known as the Upper Las Vegas Wash, located immediately north of the Cities of Las Vegas and North Las Vegas. This area (also called the Conservation Transfer Area, or CTA) was identified in the December 2004 ROD for the Las Vegas Valley Disposal Boundary EIS as ineligible for disposal until additional NEPA analysis had been conducted, primarily because of the presence of three special-status plant species, several sensitive wildlife species, and hundreds of Pleistocene-era paleontological sites. The Cities of Las Vegas and North Las Vegas wish to acquire rights to develop portions of the CTA to accommodate the rapidly expanding population and infrastructure needs within the Las Vegas Valley. SWCA is currently scheduled to complete the final SEIS in September 2008.

Clark County Supplemental Environmental Impact Statement; Clark County, Nevada

Project Owner: Bureau of Land Management
SWCA Client: Clark County Regional Flood Control District
Dates of Service Contract: September 1, 2002–January 1, 2005
Project Budget: $682,601
Summary of Services Provided:
SWCA was selected by the BLM Las Vegas Field Office to prepare a draft and final SEIS for the Clark County Regional Flood Control District (CCRFCD) 2002 Master Plan. This SEIS analyzed the impacts of current and future master-planned flood control facilities within the Las Vegas Valley and Boulder City. The project involved analyzing approximately 750 miles of conveyance facilities and 70 detentions facilities identified in the Master Plan. This project expanded on the "Section 14" process by integrating it into a GIS-capable format, allowing for greater efficiency in regulatory compliance and consistency in day-to-day facility planning efforts.

SWCA provided the full range of environmental impact analyses associated with the preparation of the SEIS, including biological, cultural, geological, soils, hydrology (surface and geohydrology), recreation, visual resources, socioeconomics, environmental justice, air quality, and hazardous materials. Further, SWCA prepared a GIS-based tool for assessing the impacts associated with proposed flood control facilities throughout the Las Vegas Valley. This tool can also be applied to evaluate other proposed land uses in the valley. SWCA will provide the CCRFCD with both expert NEPA consulting services and resource-specific analytical services leading to the preparation of the SEIS, resulting in the cost-effective preparation of a legally defensible NEPA document and planning tool for the next 10 years. The unique issues facing this project are those associated with the rapid growth with the Las Vegas Valley and the adaptive requirements of flood control systems needed to meet the needs of this population. The SEIS project will support the Master Plan and enable the CCRFCD to have substantial flexibility in the implementation of its plan.

Hiawatha Regional Energy Development Environmental Impact Statement; Wyoming and Colorado

Project Owner & SWCA Client: Questar Exploration and Production Company
Dates of Service Contract: March 27, 2006–June 30, 2008
Project Budget: $762,674
Summary of Services Provided:
In 2006, Questar Exploration and Production Company contracted with SWCA to prepare a third-party EIS for the BLM for the Hiawatha Regional Energy Development Project. SWCA will provide environmental studies and NEPA compliance for the proposed development of natural gas resources on 157,000 acres in southwestern Wyoming. The project proponents propose to drill up to 4,208 conventional gas wells over 30 years. SWCA is preparing the EIS for the proposed project for the Rock Springs and Little Snake Field Offices in Wyoming and Colorado. As part of the full scope of NEPA services, SWCA is assisting the BLM with tribal consultation, public involvement, cooperating agency consultation, meeting facilitation, and public comment analysis. SWCA is preparing the environmental analysis for all potentially affected resources and land uses, including socioeconomics, wildlife, water resources, air quality, plants, recreation, and cultural resources. Field studies may involve wildlife surveys, historic trails, and vegetation mapping. SWCA will develop mitigation measures for potential impacts of the gas development and is collecting and indexing the administrative record for the project.

Jonah Infill Drilling Project Environmental Impact Statement; Pinedale and Sublette Counties, Wyoming

Project Owner: Bureau of Land Management
SWCA Client: EnCana Corporation
Dates of Service Contract: February 2, 2005–March 31, 2006
Project Budget: $614,967
Summary of Services Provided:
The BLM Pinedale Field Office and Rock Springs Field Office received a proposal from EnCana Oil and Gas (USA), Inc., and BP America Production Company to significantly expand existing Jonah Field natural gas drilling and development operations in south-central Sublette County, Wyoming.

The total Jonah Infill Drilling project area encompasses 30,500 acres, which includes approximately 28,580 acres of federal surface and mineral estate managed by the BLM, 1,280 acres of State of Wyoming surface and minerals, and 640 acres of private surface/federal minerals. The project area is widely acknowledged as one of the most highly concentrated, highly productive natural gas fields in North America and produces both natural gas and condensate (oil contained in the natural gas stream).

SWCA was retained to complete the final EIS, which included database creation and analysis of the more than 1,400 substantive public and agency comments on the draft EIS; substantial revision of the final EIS and its appendix volumes based on these and other comments; new hydrologic, biological, and cultural resource impact analyses; updated socioeconomic analyses and revision of the Socioeconomic Analysis Technical Support Document; and compilation and indexing of the complete administrative record for the project.

Middle Rio Grande Programmatic Environmental Impact Statement; Bernalillo County, New Mexico

Project Owner & SWCA Client: Bureau of Reclamation
Dates of Service Contract: September 22, 2003–December 31, 2005
Project Budget: $675,529
Summary of Services Provided:
The Middle Rio Grande Endangered Species Collaborative Program was established in 2002 when more than 20 federal, state, tribal, and non-governmental organizations and interested parties signed formal agreements to work together to address endangered species conservation issues affecting existing and future water uses in the drought-prone Middle Rio Grande in New Mexico. The goal of the program is to combine federal and non-federal funding sources to implement significant habitat restoration, scientific research, and water resource conservation measures that will protect and improve the status of two federally listed species, Rio Grande silvery minnow and Southwestern willow flycatcher, and contribute to their recovery. As the formal program documents and federal authorization progress through Congress, SWCA is conducting the NEPA process and preparing a Programmatic EIS (PEIS) that will form the primary NEPA document from which an anticipated $280 million dollars in future projects will tier over the next decade. The PEIS will incorporate formal program by-laws, federal legislation, and a detailed 10-year plan of program activities and will evaluate the potential effects of long-term collaborative management of ESA decision-making. As part of this process, SWCA is providing significant stakeholder involvement under the direction of the management team, including Reclamation, USACE, and New Mexico Interstate Stream Commission. SWCA is also assisting the signatories to develop program components, such as formal environmental commitments and best management guidance for future funded projects.

Upper Snake River Wildland Fire Management Policy Implementation Environmental Impact Statement; Pocatello and Caribou Counties, Idaho

Project Owner & SWCA Client: Bureau of Land Management
Dates of Service Contract: August 12, 2002–December 31, 2005
Project Budget: $570,823
Summary of Services Provided:
The U.S. Department of the Interior and U.S. Department of Agriculture have mandated that federal land management agencies integrate the National Wildland Fire Policy into their existing land management plans. In response, the BLM selected SWCA to help prepare a PEIS amending 12 existing Land Use Plans with specific management direction for fire, fuels, and related vegetation. The EIS will analyze potential impacts of the proposed fire management plan on critical resources, including wildlife habitat, fuels treatments, vegetation management, livestock grazing, invasive plant species, and socioeconomics. Throughout the EIS process, SWCA staff addressed the changes in the ecosystems, evaluated impacts to the vegetation, and determined a course of action to bring the ecosystems into balance with their natural potentials, resulting in less extensive and frequent wildland fires. In addition, SWCA was responsible for incorporating public safety, protection of property, and communities-at-risk issues into the EIS.

As part of the NEPA process, SWCA has developed a Public Participation Plan to encourage public involvement and coordinated with federal, state, local agencies, and private groups. The plan highlighted public input and major project milestones.

Programmatic Environmental Impact Statement, Lower Colorado River Basin Flood Damage Reduction and Ecosystem Restoration; Texas

Project Owner: U.S. Army Corps of Engineers
SWCA Client: Gulf South Research Corporation
Dates of Service Contract: June 16, 2003–December 30, 2005
Project Budget: $410,779
Summary of Services Provided:
SWCA prepared a PEIS for flood damage reduction and ecosystem restoration in the Lower Colorado River Basin in Texas. The study area extended approximately from the O.H. Ivie Reservoir to the Texas coast, an area measuring approximately 18,000 square miles. The USACE Fort Worth District was the lead agency, and the Lower Colorado River Authority (LCRA) was the local sponsor. The USACE Galveston District was also a partner.

The PEIS identified and analyzed impacts associated with various USACE and LCRA flood reduction and ecosystem restoration projects in the Lower Colorado River Basin. SWCA's contribution included the development of a GIS-based data management system for the entire study area with limited field-verification. The data management system was a first-of-its-kind tool for the LCRA and USACE districts. SWCA also participated in all of the public and agency scoping leading up to the preparation of the PEIS, as well as subsequent project status meetings with various stakeholders.

The project allowed the USACE and the LCRA to tier subsequent NEPA documents off this PEIS and greatly reduce the time needed for project compliance. Additionally, the GIS-based data management system was designed so that it could be continuously expanded with the addition of future data. This tool allowed the USACE and LCRA to go to one location for virtually all the available information within the Lower Colorado River Basin.

Tusayan Land Exchange Environmental Impact Statement; Tusayan and Coconino Counties, Arizona

Project Owner & SWCA Client: Canyon Forest Village
Dates of Service Contract: January 1, 1990–December 31, 2002
Project Budget: $387,720
Summary of Services Provided:
Originally a development proposal for Tusayan in the late 1980s, this project grew into a comprehensive land exchange and development proposal that attempted to implement portions of the GRCA General Management Plan (GMP). The land exchange involved approximately 2,000 acres of scattered in holdings on the Tusayan Ranger District of the Kaibab National Forest in exchange for a parcel of Forest Service land adjacent to the unincorporated town of Tusayan just south of the southern boundary of GRCA. The proposed development of the lands included retail, lodging, and housing. In addition, the project sought to implement portions of the GRCA GMP, including the construction of a transportation hub, parking lot, and park housing. The GRCA was a cooperating agency and was closely involved with the project and with the development of the EIS. The EIS was completed, appealed, and litigated in court; ultimately, the court rejected portions of the EIS, and the land exchange was never completed.

Clark County Wetland Park Master Plan and Environmental Impact Statement; Las Vegas and Clark Counties, Nevada

Project Owner: Clark County Parks & Recreation
SWCA Client: Montgomery Watson
Dates of Service Contract: February 1, 1998–March 1, 2000
Project Budget: $350,000
Summary of Services Provided:
SWCA was charged with developing and instituting a scope of services for Clark County during the planning stages for the Wetlands Park, which included the characterization of more than 1,000 acres of wetland, riparian, and other aquatic habitats; the documentation of baseline environmental conditions; and preparation of the Wetland Conservation Management Plan. In addition to the wetlands, the project area included significant habitat for two endangered species. Significant considerations were also given to the myriad sensitive prehistoric Native American tribe and historic early Las Vegas Valley settler sites and artifacts located within the project area.

Throughout the life of the project, SWCA regularly provided project-related planning information and technical support for a steering committee consisting of more than two dozen federal, state, and local governmental agencies and numerous national and local conservation and recreation organizations. SWCA also worked with the USACE, Reclamation, and USFWS to develop a "general permit" for the Las Vegas Wash. The general permit allows the phased development of erosion control structures in Wetlands Park over the next 20 years, wetland mitigation banking throughout the region, and ongoing development of wetland conservation management programs in the Las Vegas Wash.

Clark County Parks and Community Services intend to continue development of their Wetlands Park using bond funds and other funding sources. As such, in February 2004 SWCA was again selected by Clark County, this time to prepare an EA for facility improvements, including the development of trails and ancillary facilities, as well as habitat restoration and protection. The planned improvements include trails, auxiliary trail infrastructure, habitat restoration and protection, and interpretation and education. Auxiliary trail infrastructure improvements include trailheads, bridges, utilities (potable water, sanitary facilities, and minimum security solar lighting), and parking, seating, and trash receptacles. Habitat restoration and protection efforts will entail erosion control, off-highway-vehicle damage repair to park facilities and land, and fencing, as well as exotic species removal and replacement with native vegetation. An interpretive center and educational signage along the trails will also be designed and constructed. Completion of this EA took approximately 12 months.

Diamond Bar Road Environmental Impact Statement; Peach Springs and Mohave Counties, Arizona

Project Owner: Bureau of Land Management
SWCA Client: Hualapai Natural Resources
Dates of Service Contract: November 13, 1996–December 31, 2002
Project Budget: $227,700
Summary of Services Provided:
The Hualapai Tribe retained SWCA to help prepare an EIS in collaboration with the tribe, the BLM (lead agency), the Bureau of Indian Affairs (BIA, cooperating agency), and the NPS (cooperating agency). The NEPA was triggered when the BIA submitted an application to the BLM Kingman Field Office for a right-of-way (ROW) across public lands to reconstruct, widen, realign, and pave Diamond Bar Road from Pearce Ferry Road to the Hualapai Indian Reservation boundary. Diamond Bar Road is currently a 14-mile-long dirt road leading to Grand Canyon West, a resort on the South Rim of the Grand Canyon being developed by the Hualapai Tribe. Three alternatives, including No Action, were analyzed for

potential impacts on 14 resources of concern. Principal issues included possible impacts on two Special Management Areas in the project area: the Grapevine Mesa Joshua Tree Forest National Natural Landmark and the Joshua Tree Forest–Grand Wash Cliffs Area of Critical Environmental Concern. The proposed ROW also passes through what has been identified as an important TCP of the Hualapai people. The final EIS was completed in late May 2002.

Grand Canyon Railway Spurline and Transportation Hub / Environmental Impact Statement; Arizona

Project Owner & SWCA Client: Grand Canyon Railway
Dates of Service Contract: January 1, 1990–December 31, 1995
Project Budget: $250,000
Summary of Services Provided:
SWCA was retained by Grand Canyon Railway to conduct the environmental analysis and prepare an EIS analyzing the potential environmental impacts of the construction and operation of a railway spur line from Tusayan, Arizona, to Grand Canyon Railway's mainline tracks between Williams and Grand Canyon. The purpose of the proposed project was to enable up to 1 million visitors per year to park their cars in Tusayan and take the train to GRCA, thus reducing the vehicle congestion at the rim, eliminating the need for additional parking and other transportation improvements at the park, and allowing the private sector to provide transportation alternatives. This project involved close coordination with staff at GRCA, as it proposed implementing part of the park's solution to reducing vehicle congestion, prior to development of the GRCA GMP. The EIS was completed and all appeals were satisfied, but the project was never constructed.

Sheldon National Wildlife Refuge Comprehensive Conservation Plan and Environmental Impact Statement Support; Humboldt County, Nevada

Project Owner & SWCA Client: U.S. Fish and Wildlife Service
Dates of Service Contract: September 14, 2007–September 30, 2008
Project Budget: $151,238
Summary of Services Provided:
The USFWS Region 1 office retained SWCA through a GSA contract to assist them in developing and preparing a draft CCP and the associated NEPA EIS for the Sheldon NWR. The CCP will serve as the refuge management plan for the next 15 years and will primarily focus on the management of American pronghorn antelope and the biodiversity of the Great Basin. The CCP will also provide the overarching direction for future step-down plans for wilderness management, invasive species management, wildlife inventory monitoring, law enforcement, and visitor services. In addition, a fire management plan and horse and burro management plan will be incorporated. The CCP/EIS will be prepared simultaneously and integrated as one document, with a final stand-alone CCP being produced following the Regional Director's selection of an alternative for implementation.

The primary focus issues of the CCP/EIS include

- Mining management responsibilities;
- Horse and burro management;
- Aquatic/wetland/riparian restoration;
- Hot spring use and restoration;
- Off-highway vehicle/all-terrain vehicle use; and
- Landscape evaluation.

In addition to close coordination and partnering with the CCP Planning Lead, SWCA must coordinate with the core planning team, USFWS staff, and extended team representatives. SWCA is assisting the USFWS in several tasks:

- preparing the scoping report and summary;
- gathering and editing existing information;
- describing the physical resources of the refuge;
- preparing the biological resources, socioeconomic and other resources, and the environmental consequences sections of the CCP/EIS;
- managing the draft CCP/EIS document in stages of development (80%, 95%, etc.); and
- producing the internal final draft public review CCP/EIS.

Other Mining Projects

Cottonwood Wash Environmental Assessment; San Juan County, Utah

Project Owner & SWCA Client: Utah Abandoned Mine Reclamation Program
Dates of Service Contract: December 1, 1999–September 30, 2000
Project Budget: $179,349
Summary of Services Provided:
SWCA prepared an EA under a multi-agency initiative (BLM, Forest Service, Utah Division of Clean Water, and Utah Division of Oil, Gas, and Mining) to determine the effects of reclaiming uranium mine waste dumps and closing abandoned mine openings in order to improve the overall health of the Cottonwood Wash watershed.

SWCA's interdisciplinary team conducted field surveys, developed mitigation measures, and produced a document that addressed the site-specific and cumulative impacts of implementing the proposed action and the alternatives. In addition, SWCA assisted the coordinating agencies with public scoping and the preparation of written responses to comments on the proposed action and alternatives.

The Cottonwood Wash Abandoned Mine Reclamation Partnership Project exemplifies how several government agencies can work together to achieve a shared goal of reclaiming abandoned mine lands. The project area consists of a 143,000-acre watershed in remote southeast Utah and is managed by multiple federal, state, and tribal entities as well as private claimholders.

Prior to reclamation activities Cottonwood Creek was listed as an impaired watershed by the State of Utah for the following uses: drinking water, recreation, agriculture, and warm water game fish and other aquatic life. Sampling showed that state water quality standards for these uses were exceeded throughout Cottonwood Wash.

Socioeconomic Study for Black Mesa/Kayenta Mines, Life-of-Mine Permit Revision; Navajo Nation, Arizona

Project Owner & SWCA Client: Peabody Western Coal Company
Dates of Service Contract: January 1, 2005–July 30, 2005
Project Budget: $26,523
Summary of Services Provided:
Peabody Western Coal Company submitted a Life-of-Mine Permit Revision application to the U.S. Office of Surface Mining Reclamation and Enforcement for a significant revision of the mining and reclamation plan for Peabody Western Coal Company's Black Mesa and Kayenta Mines. The Black Mesa and Kayenta Mines are located on the Navajo and Hopi Reservations in northeastern Arizona near the northern edge of Black Mesa, about 25 miles southwest of Kayenta, Arizona.

The purpose of the socioeconomic study was to address the requirements stated in 30 Code of Federal Regulations Section 750.12 (d)(2)(i), which provides the framework for the permit revision application as it relates to socioeconomic analysis.

The study described the economic, social, and cultural impact of the mines on the Navajo and Hopi tribes, in particular, as well as the State of Arizona. Extensive research of data was conducted from Peabody Western Coal Company, Navajo Nation, Hopi Tribe, U.S. Census Bureau, and various state agencies.

Jerritt Canyon Mine; Elko County, Nevada

Project Owner: Bureau of Land Management
SWCA Client: Queenstake Resources USA, Inc.
Dates of Service Contract: June 1, 2004–June 30, 2005
Project Budget: $713,636
Summary of Services Provided:
In support of an on-going exploration program, SWCA conducted a Class III cultural resources inventory of more than 4,000 acres of land for Queenstake Resources on BLM land and private property in the Independence Mountains in Elko County, Nevada. The cultural resources inventory was completed in an expedited manner in order to meet an aggressive project schedule. SWCA used multiple rotating crews to complete the field inventory in less than six weeks. The survey report was delivered in less than three months from the time work was initiated.

SWCA biologists completed inventories within a 30-square-mile area to assess the distribution and status of 28 species listed as sensitive, threatened, endangered, and/or candidates by the Forest Service Region 4 and USFWS. This work was conducted in support of a BA/BE for a proposed amendment to an exploration plan of operations for the Jerritt Canyon Mining District. The distribution and status of seven plants on the Nevada Natural Heritage Program "watch list," and the species composition and relative abundance of birds nesting in riparian habitats were also evaluated.

SWCA prepared the BA/BE and an analysis of potential effects of the proposed exploration plan on sensitive species and Management Indicator Species in support of the NEPA analysis for this project in coordination with the Forest Service Mountain City District.

McKinley Mine Reuse Plan; McKinley County, New Mexico

Project Owner: New Mexico Department of Economic Development
SWCA Client: JJ Clacs & Company
Dates of Service Contract: February 22, 2006–May 31, 2006
Project Budget: $55,000
Summary of Services Provided:
The Pittsburg and Midway Coal Company (P&M) has operated in McKinley County, New Mexico, for over 40 years, providing jobs to more than 350 people and income in the form of taxes and/of royalties to the Navajo Nation and McKinley County. The P&M mine will likely cease operations on December 31, 2008. Five Navajo Nation Chapters have been impacted by mining activities: Fort Defiance, Twin Lakes, Rock Springs, Tseyatoh, and Saint Michaels.

The Reclamation Plan calls for the demolition and/or removal of the developed assets, which include railroad spurs, buildings, constructed ponds and roads. However, P&M can submit an alternate post-mine land use to the U.S. Office of Surface Mining and New Mexico Mines and Minerals Division once

the Navajo Nation and the State of New Mexico complete an asset re-use plan. The plan is needed to determine a re-use of the areas that were leased to P&M for mining purposes.

In collaboration with JJ Clacs and Company, SWCA is completing the following tasks:

- Site Analysis and Asset Inventory: The study will contain site information, including maps of the surrounding region, highways/roads depicting length, width, surface (gravel or otherwise paved), ponds, railroad loop, office building, utilities (gas, electricity), equipment (e.g., draglines, shop, cranes, mobile equipment, fuel tanks, wells, windmills, water tanks, ponds presently approved by the agencies, etc.), and a map that will show information about topsoil and mitigation ponds.
- Market Trade Area: SWCA defined the trade areas of the P&M McKinley Mine site, as well as historic sacred sites, current, and projected economic factors and trends (i.e., population, income, tourism activities), and provided traffic counts/patterns.
- Grazing and Wildlife Habitat: SWCA collected information on existing wildlife habitat and recommended the most feasible areas for grazing and wildlife habitat. To include the applicable provisions of Title 25 (Indians) of the USC and implementing regulations at 25 CFR §§162, 169, and additional regulatory sections pertaining to grazing on Indian Trust lands.
- Economic Conditions/Analysis: SWCA prepared a snapshot of important local economic indicators to determine the impact to the region when the P&M McKinley ceases operations in 2008 (e.g., unemployment rate, employment, earnings, population, poverty rate, etc.).
- Project/Financial Analysis: SWCA provided an independent opinion and recommendation on the re-use of assets, including a recommended course of action for the Re-Use Plan and financial feasibility of the proposed Re-Use Plan.

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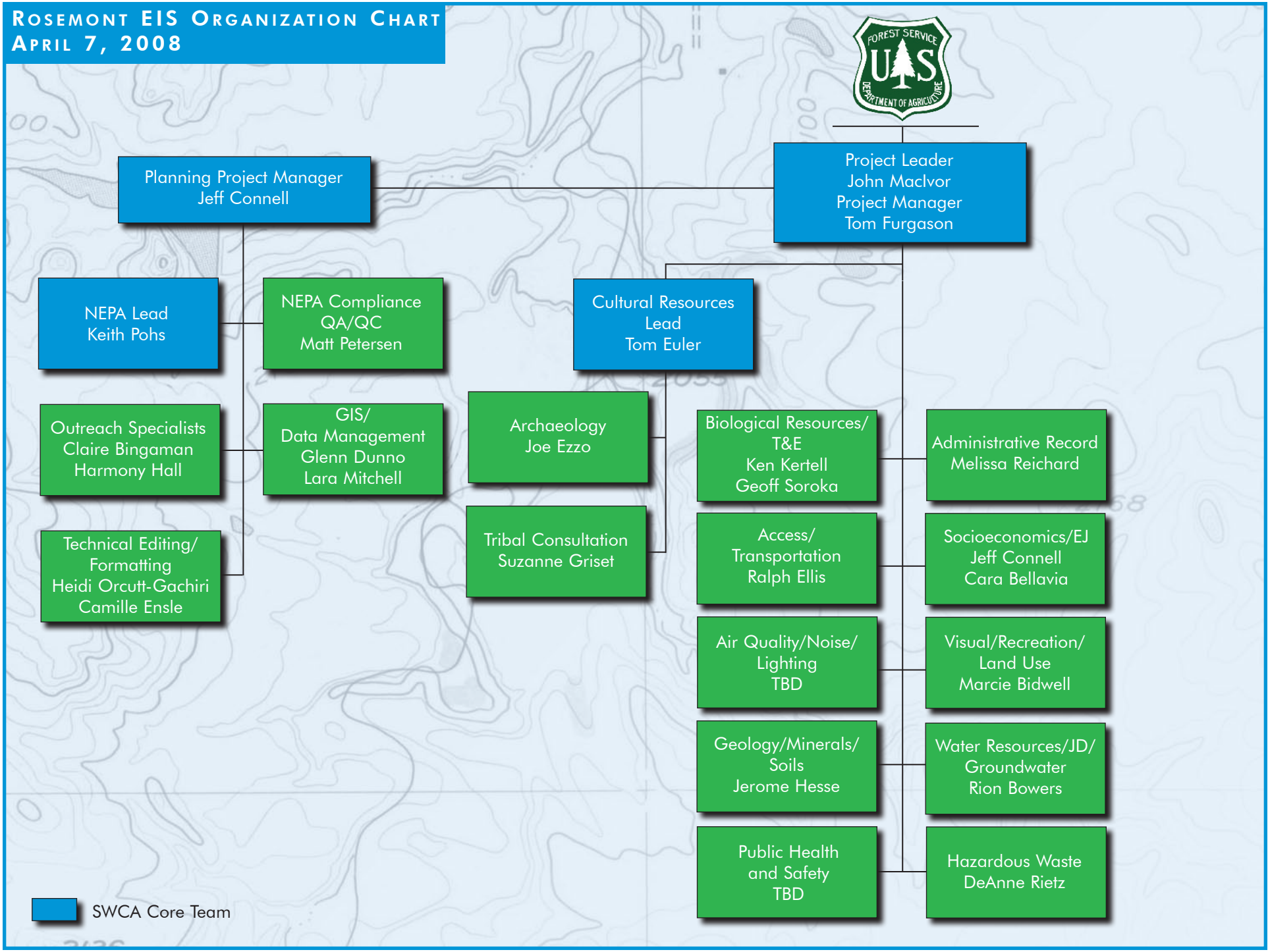
SWCA Team

SWCA Team

Rosemont EIS Organization Chart
April 7, 2008



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CLAIRE BINGAMAN, M.A.
Environmental Planner / Project Manager

Education

- M.A., Urban and Environmental Planning, Arizona State University; Tempe, 2008
- B.A., Environmental Science, Westminster College; Fulton, Missouri, 2005

Expertise

- NEPA compliance
- Socioeconomic Analysis
- Public Involvement: Completion of IAP2 course, *Planning for Effective Public Participation*

Relevant Projects

- White Tanks Regional Park Land Exchange and Lease; Buckeye, Arizona
- Sichomovi Village Hopi First Mesa Development Environmental Assessment; Polacca, Arizona
- Wild Horse Pass Retail Development; Maricopa County, Arizona
- Lone Butte Industrial Park Expansion; Maricopa County, Arizona
- Las Vegas Conservation Transfer Area SEIS; Clark County, Nevada
- Hiawatha Regional Energy Development EIS; Colorado and Wyoming

Ms. Bingaman is an environmental planner and project manager in SWCA's Phoenix office who specializes in National Environmental Policy Act (NEPA) compliance. She has completed numerous environmental assessments (EAs) and coordinated public involvement for many of them. Ms. Bingaman has conducted research and writing for complex environmental processes associated with these NEPA documents, including authoring sections of the documents, conducting project meetings, planning and participating in public meetings, and working closely with regulatory agencies and clients to create environmental documents.

Recently, Ms. Bingaman has coordinated public involvement on an EA for the Bureau of Land Management (BLM) and the Town of Buckeye, Arizona, which included 9,200 acres of land to be developed as a Regional Park. This complex project included coordination of multiple stakeholders, a public scoping process, and public comment analysis.

Ms. Bingaman has worked on several Environmental Impact Statement (EIS) projects, including socioeconomic data analysis for the Hiawatha Regional Energy Development EIS and the Las Vegas Conservation Transfer Area supplemental EIS (SEIS). She has also participated in detailed comment analysis.

In addition, Ms. Bingaman has worked with a number of federal, state, and local government agencies, including the BLM, Bureau of Indian Affairs, U.S. Army Corps of Engineers, Maricopa County Flood Control District, and National Park Service.

SWCA
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RION BOWERS, M.S.
Environmental Planner

Education

- M.S., Ecology / Natural Resource Policy, University of West Florida, 1997
- B.A., Biology, State University of New York, 1985

Registration / Certification

- Hazwoper (40 hours) 29 CFR 1910.120(E), Current

Expertise

- Permitting and regulatory compliance
- National Environmental Policy Act
- Clean Water Act
- Endangered Species Act
- Resource Conservation and Recovery Act
- Wetlands and water resources

Selected Projects

- Senior Project Manager, King Ranch Phase I ESA and Phase II Site Characterization; Maricopa County, Arizona
- Senior Project Manager, El Rio Medio Phase I ESA; Pima County, Arizona. Environmental evaluation for a 7-square-mile area near downtown Tucson.
- Senior Project Manager, King Ranch Master Planned Community; Maricopa County, Arizona. CWA permitting and natural resources management.
- Senior Project Manager, Whetstone Ranch West; Cochise County, Arizona. CWA permitting and natural resources management.

Mr. Bowers is a Senior Project Manager in SWCA's Tucson office. His 14 years of experience includes permitting and regulatory compliance, where he assists clients in developing permit applications and facilitates project compliance with the National Environmental Policy Act (NEPA), Clean Water Act (CWA), Endangered Species Act, Resource Conservation and Recovery Act, and state and local statutes. This work typically involves coordinating resource studies, developing the permit applications, coordinating with clients, and consulting with regulatory personnel.

Mr. Bowers has performed numerous Phase I Site Assessments and environmental evaluations, including environmental due diligence and Phase I and II Environmental Site Assessments (Phase I and II ESAs) in Arizona, California, Arkansas, New York, and Texas. This work supported the sale, transfer, or financing of properties varying from small undeveloped parcels to a market-segment due diligence involving five industrial properties throughout three states worth more than $100 million.

In natural resources management and planning, Mr. Bowers has completed biological evaluations and assessments, plant and wildlife surveys, and habitat assessments to support projects throughout the southwestern United States. He develops and implements habitat mitigation and monitoring plans and facilitates major components of NEPA studies, such as research, analysis, and document preparation. Mr. Bowers is currently federally permitted to survey for several threatened and endangered species in Arizona.

As an experienced researcher in wetlands and water resources, he has provided management for and facilitated Individual and Nationwide CWA Sections 404, 402, and 401 permitting and wetland mitigation and has constructed wetland projects. He has conducted numerous jurisdictional delineations and wetland delineations and has developed 404(b)(1) alternatives analysis, environmental assessments and other studies to support CWA permitting.

SWCA
ENVIRONMENTAL CONSULTANTS

JEFF CONNELL, M.A., AICP
Program Director / Project Manager

Education

- M.A., Public Administration, Minnesota State University; Mankato, 1980
- B.S., Urban and Regional Studies, Minnesota State University; Mankato, 1969

Registration / Certification

- American Institute of Certified Planners (AICP) (#3333)

Expertise

- Community and resource planning
- Socioeconomic analysis
- Environmental protection and analysis
- Land use master plans

Selected Projects

- Socioeconomic Specialist, Jonah Infill Drilling Project Environmental Impact Statement; Pinedale, Wyoming
- Senior Planner, Kelvin Bridge Replacement on the Gila River; Pinal County, Arizona
- Senior Planner, Desert National Wildlife Refuge Complex Comprehensive Conservation Plans and Environmental Impact Statement; Clark, Lincoln, and Nye Counties, Southern Nevada
- Project Manager, Devers to Palo Verde #2 Power Line Environmental Impact Statement; Central Arizona
- Project Manager, Black Mesa Mine Reuse Plan; Navajo Nation, Arizona
- Project Manager, Navajo Nation Septage Management Plan; Navajo Nation

Mr. Connell has 28 years of experience managing and implementing numerous planning projects that address a variety of environmental issues, primarily with public-sector clients. He has 16 years of experience in public-sector planning and administration of complex projects, as well as 12 years of experience in practice as a consultant to public-sector clients, preparing plans and conducting environmental analysis for local, state, federal, and multi-jurisdictional agencies.

In addition to his extensive work with local governments, he has served as project manager and provided senior oversight for a number of planning and environmental assessment efforts for the Bureau of Land Management, Bureau of Reclamation, and U.S. Forest Service. Mr. Connell has also prepared and reviewed numerous plans and environmental documents related to National Environmental Policy Act compliance.

He completed land use plans for local units of government that incorporated land use and resource management standards to ensure consistency with the National Park Service–National River and Recreation Area Program and prepared a multi-jurisdictional resource management and natural corridors policy plan for 19 communities encompassing approximately 240 square miles.

SWCA
ENVIRONMENTAL CONSULTANTS

CHARLES COYLE, M.A.
Senior Project Manager / NEPA Specialist

Education

- M.A., English, Arizona State University, 1992
- B.A., *magna cum laude*, English, Arizona State University, 1988

Registration / Certification

- State of Arizona Certified Substitute Teacher (K–12), 1995
- State of Arizona Certified Community College Instructor of English and Literature, 1992

Expertise

- National Environmental Policy Act
- Project management and coordination
- BLM planning process
- Technical writing and editing
- Research and development of baseline environmental studies and impact analyses
- Coordination and production of large, complex reports

Selected Projects

- Senior Project Manager / BLM Upper Las Vegas Wash Conservation Transfer Area Supplemental Environmental Impact Statement; Las Vegas Field Office, Las Vegas, Nevada
- Senior Project Manager / BLM Jonah Infill Drilling Project EIS; Pinedale Field Office, Pinedale, Wyoming
- Senior Project Manager / Gila River Indian Community Environmental Assessments, Arizona
- Project Manager / BLM Lake Havasu Field Office Resource Management Plan and EIS; Lake Havasu, Arizona

Mr. Coyle is a senior project manager in SWCA's Phoenix office with more than 15 years of experience in project management and project coordination, research and development of baseline environmental studies and impact analyses to meet the requirements of the National Environmental Policy Act (NEPA), and technical writing and editing.

Prior to joining SWCA, Mr. Coyle was a project manager and senior technical writer/editor with Jones & Stokes Associates, where he worked in close cooperation with principals, project managers, technical staff, other editors, and graphics specialists in eight western offices. He coordinated, edited, and wrote technical sections of environmental impact statements (EISs), environmental assessments, and other reports, and provided overall quality control. Most of his projects addressed NEPA, Endangered Species Act, Clean Water Act, and/or state environmental regulations or growth and land management requirements. Major clients included federal and state agencies (Bureau of Land Management [BLM], U.S. Army Corps of Engineers, U.S. Forest Service, Arizona Department of Transportation, Utah Department of Transportation), municipalities (Phoenix, Scottsdale, Mesa, Gilbert, Goodyear, Peoria), private developers (Del Webb, DMB Associates), and tribes (Navajo Nation, Gila River Indian Community, Cocopah Tribe).

Mr. Coyle was also a primary technical editor of engineering and environmental services documentation for Brown and Caldwell. His projects included site characterization reports, remedial action plans, resource evaluations, asbestos close-out reports, site assessments, sampling and analysis plans, well installation and/or rehabilitation reports, operations and maintenance manuals, risk assessments, and a variety of other documents.

At SWCA, he plays a key function in the Arizona-wide quality assurance/quality control (QA/QC) program to ensure the accuracy, focus, clarity, and consistency of technical documentation. He supervises the editing and formatting functions and oversees the development of QA/QC templates and the expansion of the SWCA style manual. He played an integral role in the development of the Arizona formatting style guide, now in use state-wide.

SWCA
ENVIRONMENTAL CONSULTANTS

GLENN A. DUNNO, M.A.
GIS Manager

Education

- M.A., Geography, Northern Arizona University; Flagstaff, 1998
- B.S., Applied Geography, Northern Arizona University; Flagstaff, 1992

Expertise

- Airphoto interpretation
- Satellite image processing
- Spatial analysis and GIS modeling
- GPS field mapping
- Cartography
- Geospatial information management

Selected Projects

- Colville Canopy Cover and Fuels Mapping; Washington
- Santo Domingo Fuel Management Plan; New Mexico
- Red Lake Gas Storage; Arizona
- Prescott National Forest Boundary Project; Arizona
- East Maui Streams Phase III; Hawaii
- Lower Colorado River Southwestern Willow Flycatcher Studies; Arizona, California, Nevada
- U.S. Fish and Wildlife Service Gila Chub Environmental Assessment; Arizona and New Mexico
- Socioeconomic Study for Black Mesa/Kayenta Mines; Arizona
- Fence Lake Transportation Corridor-Arizona Data Recovery Project; Arizona

Mr. Dunno is the Geographic Information Systems (GIS) manager for SWCA's Flagstaff office, where he provides expertise in advanced GIS spatial analysis as well as GIS project task management. He has nearly 12 years of professional and academic experience within the remote sensing and GIS industry. Mr. Dunno has extensive experience in natural and cultural resource mapping applications that require digital image processing, geospatial data development, modeling, and management.

Mr. Dunno's primary responsibilities include low- and high-level GIS, field mapping, and cartographic support for SWCA's staff of cultural and natural resource scientists, specifically, figure and map production, geospatial data development and management, image processing, and advanced GIS spatial modeling and analysis reporting. Mr. Dunno is currently performing GIS integration of field mapping data and the spatial and temporal analysis of geo-biophysical datasets for the multiyear Lower Colorado River Southwestern Willow Flycatcher project. Other projects include the generation of landcover information from satellite imagery for use in a wildland fire hazard model, digital terrain analysis for a hydrologic model, total station and global positioning system (GPS) mapping of archaeological resources, and cartographic production of Section 404 permitting maps.

Prior to joining SWCA, Mr. Dunno developed software solutions and provided geospatial technology services (hydrologic mapping, vegetation change detection analysis, digital photogrammetry, photo interpretation, and GIS development and analysis) for a wide range of clients, including resource management, telecommunications, education, and state and local government. In addition, he presented technology solutions through formal presentations and software-training seminars, configured computer software and hardware systems, and developed industry-specific proof-of-concepts and application benchmarks.

SWCA
ENVIRONMENTAL CONSULTANTS

R. THOMAS EULER, B.A.
Vice President / Senior Project Manager

Education

- B.A., Anthropology, University of Colorado; Boulder, 1978
- M.A. Coursework, Anthropology, Colorado State University; Fort Collins, 1982

Expertise

- Cultural resources management
- Archaeology of the American Southwest
- NHPA, Section 106 compliance
- National Environmental Policy Act
- Budgeting, administration, and personnel management
- Editing; report and proposal preparation

Selected Projects

- Project Manager, Trico Electric On-Call Environmental Services; Pinal, Pima, and Santa Cruz Counties, Arizona
- Project Manager, Phelps Dodge Safford Data Recovery Project; Graham County, Arizona
- Senior Archaeologist, AEPCO / SSWTCo On-Call Environmental Services; Pima, Cochise, Greenlee, Graham, and Santa Cruz Counties, Arizona
- Senior Project Manager, Management Plan for Archaeological Resources in the Proposed Tinajas Altas Archaeological District of the Barry M. Goldwater Range at Marine Corps Air Station–Yuma; Yuma County, Arizona

Mr. Euler has more than 35 years of extensive experience as a professional archaeologist and is knowledgeable in all aspects of cultural resource management (CRM) in both the public and private sectors. Much of his work has focused on National Historic Preservation Act (NHPA) Section 106 compliance as it relates to the National Environmental Policy Act. He also has extensive experience with linear right-of-way regulatory compliance, including highways, pipelines, electrical utilities, and fiber-optic installation.

Over the course of his career, Mr. Euler has dealt with all of the federal and state agencies responsible for managing cultural resources throughout the West. He is fully familiar with the attendant policies and procedures. His prior experience with CRM projects has included work completed under the jurisdiction of the Department of Defense, Bureau of Reclamation, Bureau of Indian Affairs, Bureau of Land Management, National Park Service, U.S. Forest Service, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, Federal Highway Administration, and Rural Electrification Administration.

Mr. Euler has participated in numerous workshops on the National Register of Historic Places (NRHP) and Section 106 compliance. As a result of this participation, he is completely current on the criteria and processes associated with NRHP and with cultural resources regulatory processes. He is intimately familiar with all aspects of the permitting process and has served on numerous state and local advisory committees.

SWCA
ENVIRONMENTAL CONSULTANTS

THOMAS E. FURGASON, B.S.
Program Director / Biologist

Education

- B.S., Ecology and Evolutionary Biology, University of Arizona; Tucson, 1997

Registration / Certification

- Certified to survey for southwestern willow flycatcher, AGFD; Tucson, Arizona

Expertise

- Ornithology
- Endangered Species Act compliance
- Biological surveys and evaluations
- National Environmental Policy Act compliance

Selected Projects

- Project Manager, VERITAS Environmental Services at Kitt Peak National Observatory; Pima County, Arizona
- Scientist / Planner, Sahuarita to Nogales Transmission Line EIS; Arizona
- Project Manager, Pima County As-Needed Biological Services; Arizona
- Project Manager, Cyprus Tohono Cactus Ferruginous Pygmy-Owl Surveys; Pinal County, Arizona
- Scientist, El Paso Cactus Ferruginous Pygmy-Owl Geographic Information System Database; Pima, Pinal, and Maricopa Counties, Arizona

Mr. Furgason is SWCA's Program Director for the Biology Program in Arizona. His responsibilities include management of eleven biologists across the state, project management, biological evaluations and assessments for Section 7 consultations under the Endangered Species Act, technical writing, and preparation of National Environmental Policy Act (NEPA) documents.

As Program Director, Mr. Furgason is responsible for understanding the needs and goals of SWCA's clients and creating the appropriate project team to successfully complete projects. Previously, he has conducted surveys for endangered species over thousands of acres of land in southern Arizona and contributes a variety of knowledge on ornithology, Sonoran Desert ecology, and aquatic entomology. His understanding of Sonoran Desert ecology has allowed him to assist many clients through complicated Endangered Species Act Section 7 consultations. Mr. Furgason has participated in preparing environmental impact statements (EISs) and has overseen the completion of several environmental assessments and categorical exclusions. In addition to NEPA documents, he has written numerous biological evaluations and assessments.

Mr. Furgason's current projects include managing an as-needed contract with Pima County for biological services, project management and Section 7 consultation for the Environmental Assessment of the Very Energetic Radiation Imaging Telescope Array System (VERITAS), preparation of an environmental assessment for the Gray Wolf Landfill Exchange, and managing numerous endangered species surveys in Pima County. Before joining SWCA more than eight years ago, Mr. Furgason participated in vegetation studies along the river corridor in Grand Canyon. This work contributed to the Glen Canyon EIS and long-term monitoring.

SWCA
ENVIRONMENTAL CONSULTANTS

HARMONY HALL, B.S.
Environmental Planner / Wildlife Biologist

Education and Training

- B.S., Natural Resources, Cornell University; Ithaca, 2000
- U.S. Peace Corps Training; St. Lucia, West Indies, 2001. Training in community development, program planning, French Creole, and cross-culture.
- Managing the NEPA Process and Writing Effective NEPA Documents, Shipley Group; Baltimore, 2006

Expertise

- Conservation planning
- NEPA compliance
- Technical writing and editing
- Public participation and meeting facilitation
- Endangered, threatened, and sensitive species surveys, research, management, and monitoring
- Flora and fauna inventories

Selected Projects

- Environmental Planner, Franconia Road Environmental Assessment, Bureau of Land Management; Mohave County, Arizona
- Environmental Planner, Rosemont Open-Pit Copper Mine Environmental Impact Statement, Coronado National Forest; Pima County, Arizona
- Environmental Planner, Habitat Conservation Plan, Delaware Department of Natural Resources and Environmental Control; Sussex County, Delaware

Ms. Hall is an Environmental Planner and Wildlife Biologist in SWCA's Flagstaff, Arizona, office. As an Environmental Planner, Ms. Hall has four years of experience in coalition building and stakeholder/public input, integrated natural resources and habitat management plans, habitat conservation plans, strategic plan development and implementation, and National Environmental Policy Act (NEPA) compliance processes and documentation. Her previous planning experience includes projects for the National Park Service, Maryland Department of Natural Resources, Connecticut Department of Environmental Protection, Rhode Island Department of Environmental Management, Delaware Department of Natural Resources and Environmental Control, District of Columbia Department of Environment, and the U.S. Fish and Wildlife Service.

Ms. Hall has more than eight years of wildlife biology experience encompassing project design, data collection and analyses, and technical report preparation. As a biologist for non-profit organizations and consulting firms in Arizona, Virginia, and the West Indies, she has surveyed for numerous endangered species. She has also assessed proposed projects for impacts to wildlife and vegetation. She recently completed fieldwork to assess Sonoran Desert tortoise habitat in Mohave County, Arizona. Ms. Hall has collaborated with many international wildlife organizations, including Fauna and Flora International, Durrell Wildlife Conservation Trust, International Fund for Animal Welfare, and the Organization of American States.

SWCA
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JOHN A. MACIVOR, M.S.
Rosemont Project Leader

Education – Civilian

- Graduate Coursework, University of Montana
- Graduate Coursework, Colorado State University
- M.S., Ruminant Biology, University of California–Davis
- B.S., Wildlife and Fisheries Biology, University of California–Davis
- B.S., Biology, Stanford University
- A.A., San Jose City College

Education – Military

- Command and General Staff College, CGSG
- Combined Arms Service and Staff School, CAS3
- Advanced Officer Course, ORD 91D
- J.F.K. Special Warfare College, Special Forces, SF
- Basic Officer Course, FA 13A
- Officer Candidate School, OCS
- Advanced INF, 11CIO
- Basic INF, 09BOO

Special Training / Qualifications (Current)

- Certified Wildlife and Fisheries Biologist
- Member of the National Disaster Assistance Response Team
- Member of the National Law Enforcement Incident Management Team
- Graduate of the Federal Law Enforcement Academy
- Qualified Logistic Section Chief Type 1– All Incident
- Special Forces Qualified
- Military and Government Instructor Qualified

SWCA has employed Mr. MacIvor to be the Rosemont Project Leader. He is currently a third-party subcontractor with SWCA. Mr. MacIvor brings to the SWCA Rosemont Team a valuable combination of talent, as exemplified in his qualification statement. He will provide the team with leadership, ensuring that the focus remains on the U.S. Forest Service (Forest Service) obligation to provide a sound Environmental Impact Statement on the Rosemont Copper Company's proposal. His background and training in NEPA while working for the Forest Service will provide the necessary coordination for a timely and quality document for the Record of Decision.

Mr. MacIvor's extensive management experience gained in both his military and civilian positions will be invaluable in maintaining the region's procedural and legal requirements of this complex project analysis. During his Forest Service career, he was a member of the Forest interdisciplinary team for the Forest Plan Environmental Impact Statement. He co-authored the Region 3 technical report, which established scientific background for all Forest Plans in Region 3. He also served on the Regional NEPA Appeals team as the Line Officer's representative.

- Master Parachutist Qualified
- Top Secret Clearance Military
- Secret Clearance All Government

Civilian Positions

Retired 2006 – GM 13 Step 10

- District Ranger, U.S. Forest Service, Springerville Ranger District
- District Ranger, U.S. Forest Service, Chevelon Ranger District
- District Ranger, U.S. Forest Service, Ashland Ranger District
- Forest Biologist, U.S. Forest Service
- District Biologist, U.S. Forest Service
- Refuge Biologist, U.S. Fish and Wildlife Service
- Lands Manager, California Land and Cattle Company
- Lands Manager, American Sportsman

Military Positions

Retired 1996 – Colonel, U.S. Army

- Officer-in-Charge (OIC) Tactical Operations Center, 6th U.S. Army
- Instructor, Command and General Staff College
- Instructor, Combined Arms Service and Staff School
- Instructor, Special Warfare College
- Battalion Commander
- Company Commander
- Team Commander, 5th Special Forces, Republic of Vietnam (Two Tours)

SWCA
ENVIRONMENTAL CONSULTANTS

ERIC SCOTT PETERSEN, II, B.A.
Archaeologist

Education

- B.A., Anthropology, Northern Arizona University; Flagstaff, 2000

Expertise

- Laboratory management, including artifact processing and preparing projects for curation
- Database creation and maintenance
- Archaeological survey, excavation, monitoring, and mapping
- GIS analysis

Selected Projects

- Field Director / Crew Chief / Lab Manager, Dos Pobres / San Juan Data Recovery; Graham County, Arizona
- Field Director, Rhodes Golden Valley 404 Determination; Mohave County, Arizona
- Archaeologist / Lab Technician/ Lab Manager, Quail Creek Site 174 Data Recovery; Pima County, Arizona
- Archaeologist, Rodeo-Chediski Fire Salvage Area Heritage and Ethnographic Resource Inventory; Navajo and Gila Counties, Arizona
- Archaeologist / Lab Manager, U.S. 191 Archaeological Data Recovery; Greenlee County, Arizona
- Archaeologist, Aranda Proposed Land Exchange; Yavapai County, Arizona
- Archaeologist, N27 Data Recovery Project; Apache County, Arizona
- Archaeologist, Rockies Expansion Pipeline Construction Monitoring; Bear Lake, Caribou, and Bannock Counties, Idaho, and Lincoln County, Wyoming

Mr. Petersen has eight years of experience as a professional archaeologist in SWCA's Cultural Resources Program. He has a wide range of archaeological experience throughout Arizona, including survey, testing, monitoring, excavation, artifact processing, curation, report generation, and geographic information systems (GIS) analysis. He also has experience monitoring in Idaho and Wyoming and surveying in Texas.

While at SWCA, Mr. Petersen has spent most of his time in the field on many projects ranging from small surveys to large-scale excavations. He has been a crew member on several large-scale surveys and excavations, including the Madera Highlands Data Recovery, Quail Creek Data Recovery, and the Aranda Land Exchange Survey. He operated as an assistant crew chief on the Wal-Mart Data Recovery Project and the Rodeo-Chediski Fire Survey. Over the past three years, he has been the crew chief and field supervisor for several large projects, including the Dos Pobres / San Juan Data Recovery Project and the Rhodes Golden Valley Cultural Resources Survey.

Mr. Petersen has also assumed the responsibilities of report generation. He has prepared reports for many small survey projects and assisted in the preparation of reports for larger projects.

Most recently, Mr. Petersen has added the role of lab manager to his wide-ranging experience. He has spent a great deal of time processing artifacts and preparing projects such as the Sleeping Snake Village Testing and Data Recovery project for curation. He has created and maintained databases for each of the projects. His other responsibilities include maintenance and allocation of equipment, lab organization, and AZSITE / site file searches.

Mr. Petersen's archaeological focus is the Hohokam and Sinagua cultures of Arizona, and he has some experience with Anasazi culture. The majority of his experience relates to the Hohokam culture within the Tucson Basin.

SWCA
ENVIRONMENTAL CONSULTANTS

KEITH POHS, M.S.
Environmental Planner / Project Manager

Education

- M.S., Earth Science, Northern Arizona University; Flagstaff, 2000
- B.A., Geology, Whitman College; Walla Walla, Washington, 1994

Expertise

- Technical writing and editing
- NEPA documentation
- Impact analysis
- Landscape ecology
- Vegetation mapping and classification
- Arizona and Southwestern biotic communities
- Geology
- Landscape photography

Selected Projects

- Environmental Planner, Las Colinas Segment of the Arizona Trail National Environmental Policy Act Compliance; Coronado National Forest, Arizona
- Environmental Planner, Mt. Lemmon Service Area Watershed Study and Wastewater Management Plan; Pima County, Arizona
- Environmental Planner, Price Road Realignment and Improvement Environmental Assessment, Bureau of Land Management; Pinal County, Arizona
- Environmental Planner, Uplake Development Concept Plan and Environmental Assessment, National Park Service; Glen Canyon National Recreation Area, Utah and Arizona

Mr. Pohs is an Environmental Planner and Project Manager in SWCA's Flagstaff office. He has more than nine years of experience in natural resource studies, environmental planning, and environmental documentation. His previous work experience includes projects for the National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Geological Survey, Bureau of Indian Affairs, Pima County, Arizona Department of Transportation, New Mexico Environment Department, New Mexico Department of Transportation, and numerous Native American tribes and private engineering firms.

In addition to his formal education in the geosciences, he has developed skills in field botany, landscape ecology, aerial photography interpretation, geographic information systems (GIS), technical writing, and project management. Mr. Pohs has considerable experience writing and editing environmental documents, including environmental assessments, environmental impact statements, and regulatory work plans. He worked for more than three years on a major vegetation-mapping project of Arizona and was instrumental in its development, accuracy, and completion.

He has traveled extensively throughout much of the state and has an intimate working knowledge of Arizona's landscape and major plant communities. Mr. Pohs is the author of and photographer for a natural history guide that is available at U.S. Forest Service interpretive centers. He has a strong multidisciplinary natural resource background; considerable knowledge of Colorado Plateau, Southwestern Desert, and Southern Rocky Mountain ecosystems; and exceptional analytic and technical writing skills.

SWCA
ENVIRONMENTAL CONSULTANTS

MELISSA REICHARD
Project Administrator

Education / Training

- B.A. Coursework, Business Management, University of Phoenix; Tucson
- B.A. Coursework, Northern Arizona University; Flagstaff
- B.A. Coursework, Pima Community College; Tucson

Special Training / Qualifications

- Excel, Word, and Adobe qualified
- Personnel management
- Work / productivity and communication design
- Organizational systems and procedures

Previous Experience

- Office Manager, Oser Communications
- Customer Service / Sales, Intuit, Inc.
- Director of Operations, Counseling & Consulting Services
- Lead Recruiter / Patient Relations, Advanced Clinical Therapeutics
- Payroll / Accounting, Arcadia Landscape
- Executive Assistant, Oser Communications
- Assistant Store Manager, Journeys

Relevant Projects

- 12 Right-of-Way Renewal EAs; Southwestern Arizona
- Davidson Canyon EA; Pima County, Arizona
- Town of Marana EA; Arizona
- Pima County Archaeological and Biological On-Call Services; Arizona
- Town of Marana Archaeological and Biological On-Call Services; Arizona

Ms. Reichard is currently the Office Manager for the Tucson office of SWCA, a large consulting organization, and is responsible for supporting 10 project managers and additional scientists. She is also currently a member of the Quality Assurance/Quality Control (QA/QC) team, responsible for professional final products and reports that support the company's skilled science. Her additional responsibilities include payroll, administration, and support of additional offices as requested. Ms. Reichard provides the organizational and design skills for the production of many scientific surveys and reports for governmental and private clients.

Ms. Reichard has 10 years' experience in the administrative field. Prior to joining SWCA, Ms. Reichard was Director of Operations at a counseling agency and managed offices of various types. As Director of Operations, she developed and instituted company policies in order to comply with licensing and contracting requirements. She liaised directly with government regulatory agencies and ensured successful auditing of required records, policies, and procedures.

SWCA
ENVIRONMENTAL CONSULTANTS

GEOFFREY S. SOROKA, B.S.
Biologist

Education

- B.S., Wildlife and Fisheries Science, University of Arizona, 1997

Registration / Certification

- Defensive Driving, U.S. Forest Service; Tucson, 2004
- All-Terrain Vehicle and Off-Road Certification, U.S. Forest Service; Tucson, 1998

Expertise

- Vegetation mapping and species identification
- Riparian monitoring and assessment
- General biological and ecological principles
- Wildlife biology technical writing
- Basic GIS and expert GPS navigation skills
- Range condition and utilization
- Noxious weed mapping and identification

Selected Projects

- Environmental Specialist, City of Tucson Habitat Conservation Plan; Pima County, Arizona
- Environmental Specialist, Queen Creek Mitigation; Maricopa County, Arizona
- Environmental Specialist, Whetstone Ranch West Environmental Services; Cochise County, Arizona
- Environmental Specialist, Line 1104 Wenden-Franconia Junction; La Paz and Mohave Counties, Arizona
- Environmental Specialist, EPNG Line 1600 Anomaly Digs; Cochise and Pinal Counties, Arizona

Mr. Soroka is a biologist in SWCA's Tucson office with more than five years of experience in general biological and ecological principles. He has worked on various projects ranging from collecting, evaluating, and refining the field information necessary to complete a Mid-Scale Existing Vegetation Map for the entire Coronado National Forest to helping compile the Wildlife Specialist report necessary to approve the Wildland Fire Use amendment to the Coronado National Forest fire plan.

While with the U.S. Forest Service from 1998 to 2000, Mr. Soroka also completed a riparian inventory of all fifth- and sixth-code watersheds in the Santa Catalina and Rincon mountains, along with a handful in the Santa Rita, Tumacacori, Atascosa, and San Luis mountains. Among the various other tasks he completed were the writing of various biological assessments and evaluations for both the Safford Ranger District and the Supervisor's Office of the Coronado National Forest, conducting numerous range studies including forage use reports, and assisting with various aspects of prescribed burning operations. The many skill sets obtained or enhanced through these tasks included the use of global positioning system (GPS) units for navigation and waypoint storage, writing technical documents for the purpose of passing Endangered Species Act legislation, knowledge of general geographic information system (GIS) principles, vegetation species identification skills, and an understanding of general basic hydrology and range management skills.

At SWCA, Mr. Soroka is similarly working on a variety of biological projects, using his skills related to plant species identification and general vegetation community relationships, wildlife and biological technical writing skills, and various other field/office tasks necessitating the use of GPS, GIS, and biological surveying skills.

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Attachments

Attachments

Facts About National Environmental Policy Act (NEPA) Third-Party Contracting

By Al Herson, JD, FAICP
aherson@swca.com

What is NEPA third-party contracting?

Under a NEPA third-party contract, the federal lead agency, project applicant, and environmental consultant enter into an agreement about how a NEPA document such as an EIS will be prepared. The applicant pays for the consultant's services, but the federal lead agency ("third party") is responsible for independently reviewing, analyzing and judging all information in the EIS. Under NEPA regulations, the lead agency is responsible for guiding and participating in EIS preparation, independently evaluating the EIS prior to its approval, and taking responsibility for the EIS scope and contents. 40 CFR 1506.4(c).

Why do contractors often prepare EISs instead of lead agencies?

Third-party EIS contracting is commonly used, across the nation, for applicant projects requiring lead agency approvals. Many lead agencies rely on the experience and expertise of environmental consultants to assist in EIS preparation. Contractors are often used because lead agencies do not have the staff expertise, staff resources or time to conduct the technical analysis necessary to comply with NEPA. Contractors can provide valuable assistance in NEPA process management, as well as technical study preparation.

How are third-party contractors selected?

NEPA regulations provide that the lead agency, not the applicant, is ultimately responsible for selecting the environmental contractor to prepare an EIS. 40 CFR 1506.5(c). The lead agency may use applicant input to make this selection. Federal procurement requirements (such as competitive bidding) do not apply because the lead agency incurs no obligations or costs under the contact, nor does it procure anything under the contract. Council of Environmental Quality (CEQ) "40 Questions" Guidance, Question 16.

How are conflicts of interest avoided?

In addition to the lead agency being responsible for contractor selection, the NEPA regulations provide another important safeguard. EIS contractors must execute a disclosure statement, prepared by the lead agency, specifying that the contractor has no "financial or other interest in the outcome of the project." 40 CFR 1506.5(c). This term is interpreted broadly to cover any known benefits other than general enhancement of professional reputation.

When a consulting firm has been involved in developing initial data and plans for a project but does not have a financial or other interest in project decision, the firm is not

disqualified from preparing the EIS,. The EIS should clearly state the extent of the firm's prior involvement to demonstrate conflicts of interest do not exist. CEQ "40 Questions" Guidance, Question 17.

What other safeguards prevent bias in an EIS prepared by a third-party contractor?

To expedite permit processing, it is in the applicant's interest that the EIS comply with all NEPA requirements. The EIS is required to be an objective, good faith attempt at full disclosure, and could be invalidated in court if it is found to be biased. Cases of third-party NEPA contractor bias are extremely rare; the only sustainable business practice for third-party NEPA contractors is to produce objective, scientifically accurate NEPA documents.

Furthermore, the scoping and Draft EIS comment period provide an opportunity for the public to present any concerns about perceived bias in the information presented. The lead agency is then required to address these concerns prior to completion of the EIS and approval of the permit.

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DISCLOSURE STATEMENT
concerning the preparation of the Environmental Impact Statement
for the Proposed Rosemont Copper Project,
Coronado National Forest, Arizona

We, Ken Houser, Arizona Managing Principal, Tom Furgason, Arizona Natural Resources Program Director, and John MacIvor, Rosemont Project Leader of SWCA Environmental Consultants, have made inquiry and to the best of our knowledge and belief declare that executing the contracted work of preparing the Environmental Impact Statement for the Rosemont Copper Project does not represent an actual or potential conflict of interest and SWCA does not have any financial or other interest in the outcome of this project.

We understand the term "conflict of interest" to mean that because of other activities or relationships with other persons, the contractor is unable or potentially unable to render impartial assistance or advice to the Government, or the contractor's objectivity in performing the contract work is or might be otherwise impaired, or the contractor may have an unfair competitive advantage. We understand the phrase "no financial or other special interest in the outcome of the project" to include any financial benefits such as a promise of future construction or design work on the project, as well as indirect benefits the consultant is aware of other than the enhancement of the contractor's professional reputation.

Signed: Kenneth L. Houser — Ken Houser

Tom Furgason — Tom Furgason

John MacIvor

Employers name: SWCA Environmental Consultants

Address: 3033 North Central Avenue, Suite 145
Phoenix, Arizona 85012

Phone number: (602) 274-3831

Date: February 12, 2008

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SERVICES AGREEMENT

Tucson Office
343 West Franklin Street
Tucson, Arizona 85701
Tel 520.325.9194 Fax 520.325.2033
Tax I.D. Number 860483317

Date: 2/5/08
Project Title: Rosemont Copper Mine EIS
Project Number: 11204.01 **Client Contact Person:** Jamie Sturgess
Company Name: Rosemont Copper Company
State of Incorporation:
Street Address or P.O. Box: 4500 Cherry Creek South, Suite 1040
City: Denver **State:** Colorado **Zip:** 80246-1548
Telephone No: (303)300-0134 **Fax No:**

Scope of Services (check one):

☐ Services to be performed are:

☒ Scope of services is described in a separate document prepared or approved by SWCA (such document is incorporated herein and may be attached).

Fees for SWCA Services (check one):

☐ $ on a Fixed Fee basis.
☐ Time and Materials basis*
☒ Time and Materials basis* not-to-exceed (NTE) $ **XXXXXX**
*SWCA rate schedule to be attached for Time and Materials/NTE contracts

Reimbursement of Other Direct Costs (ODCs) (check one):

☒ ODCs are included in Professional Services Fees.
☐ ODCs not to exceed $ without Client approval.

Retainer: A retainer of $ **XXXXX** must be received by **May 19** , 2008 . SWCA may delay work until receipt of retainer. Retainer will be applied to fees/costs incurred. SWCA reserves right to apply retainer to final invoice.

Payment Terms: Unless otherwise agreed to in writing by SWCA, Client will be invoiced monthly for services rendered and costs incurred (based on percentage of completion/hours expended, as applicable). All billed amounts not covered by a retainer are due and payable upon presentation of the invoice and become overdue if payment is not received within thirty (30) days after the date of the invoice. In no event shall payment to SWCA be withheld pending Client's receipt of payment by a third-party. Overdue amounts bear interest at the rate of 1.5% per month until paid and are subject to a monthly late-payment service charge equal to the greater of $200 or 1% of the overdue balance. **Payment should be remitted to: P.O. Box 92170, Elk Grove, IL 60009.**

Prices and terms quoted are subject to Client's acceptance within thirty (30) days of the date set forth above.

☒ Special terms: **Subcontractor costs shall be subject to a 15% administrative fee instead of SWCA's standard 20%**

SWCA ENVIRONMENTAL CONSULTANTS — SWCA Incorporated, an Arizona corporation	Client: Rosemont Copper Company
	a(n)
By:	By:
(signature)	(signature)
Name: Tom Furgason	Name: **Jamie Sturgess**
Title: Program Director	Title: V.P. of Sustainable Development
Date:	Date:

Attached Terms (including disclaimers) are a part of this Agreement

SWCA Standard Terms of Service

1. Scope of Services. Subject to the terms set forth on the face hereof and those contained herein (collectively "this Agreement"), SWCA shall provide those services that SWCA has agreed in writing to provide under this Agreement ("the Services"). Any other services provided by SWCA in connection with this Agreement shall constitute "Additional Services". Any Additional Services are to be authorized on SWCA's standard Change Order form, which shall be incorporated herein, describing changes in the scope of work and any adjustment in pricing and terms. Unless otherwise agreed in writing by SWCA, Client shall pay for any Additional Services at SWCA's standard hourly rates, and fees for Additional Services shall be due and payable as incurred and invoiced.

2. Payment. In the event of late payment, the failure to provide a retainer or other breach of this Agreement by Client, SWCA reserves the right to (i) stop work; and/or (ii) apply any existing retainer and condition the performance of further services on obtaining payment in full of any unpaid balance and an additional retainer; and/or (iii) terminate this Agreement; and/or (iv) pursue all other rights and remedies available under this Agreement or applicable law. SWCA reserves the right to withhold its work product pending payment in full. Unless Client objects in writing to any charges set forth in an invoice within 10 days of receipt of the invoice, such invoice shall be deemed accepted. Client shall be responsible for any sales tax, transaction privilege tax, use tax, excise tax or similar taxes, if applicable, on the work performed under this Agreement.

3. Termination. In the event that this Agreement is terminated and the Services are priced on a fixed fee basis SWCA shall be entitled to payment from Client based on the percentage of work completed as reasonably estimated by SWCA, and in the event that this Agreement is terminated and the Services are priced on a Time and Materials basis, SWCA shall be entitled to payment based on the number of hours worked at the applicable rate, and in all events SWCA shall be entitled to reimbursement of costs incurred prior to termination. All provisions of this Agreement that expressly or by their nature continue in effect (such as warranty disclaimers and remedy limitations) shall survive termination.

4. Client Cooperation and Compliance. Client shall fully cooperate with SWCA as requested by SWCA and as necessary or appropriate to facilitate the completion of the Services. Client is responsible for providing SWCA with all information relevant to the Services available to Client and for complying with all applicable laws and requirements in connection with this Agreement. The Client Contact identified on the face hereof shall have complete authority on behalf of Client with respect to this Agreement and the Services, including the authority to provide or obtain any necessary information and approvals, and SWCA may rely on such authority. In the event that a Client Contact is not identified, SWCA may treat any representative of the Client that communicates with SWCA with respect to this Agreement or the Services as the Client Contact.

5. Third-Party Services and Costs. SWCA may, at its discretion, use subcontractors to complete the Services. SWCA shall not be responsible for acts or omissions of subcontractors and Client hereby releases SWCA from any claims related thereto. Client shall reimburse SWCA for costs incurred in connection with the Services as provided in this Agreement. Unless otherwise agreed by SWCA in writing, subcontractor costs shall be subject to a 20% administrative fee and other costs shall be subject to a 15% administrative fee.

6. Delays. In the event that SWCA provides an estimated completion date, SWCA will use reasonable efforts to complete the Services on or prior to that date subject to Client's compliance with this Agreement and other factors beyond SWCA's reasonable control. SWCA is not responsible for delays or other circumstances caused by the unavailability of third-party services, delays in government approvals, or other factors beyond SWCA's reasonable control.

7. Limited Warranty; Disclaimer. SWCA warrants that the Services performed by its employees will be performed substantially in conformance with the standard of care observed by similarly situated companies providing services under similar conditions. In the event of a breach of the foregoing warranty, SWCA's sole obligation shall be to use commercially reasonable efforts to re-perform the Services in compliance with such warranty, if possible, or at SWCA's option, refund the fees paid by Client for the Services. EXCEPT FOR THE FOREGOING WARRANTY, THE SERVICES AND INFORMATION PROVIDED UNDER THIS AGREEMENT ARE PROVIDED "AS-IS" AND SWCA DISCLAIMS TO THE MAXIMUM EXTENT PERMITTED BY LAW ALL WARRANTIES RELATING TO SUCH SERVICES AND INFORMATION INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Client understands that for various reasons investigations conducted by SWCA may not uncover all relevant information and that reports generated by SWCA may rely on various third-party-information which SWCA may assume to be accurate without independent verification. Any maps or similar materials provided by SWCA are for illustration only and should not be relied on as surveys. No opinions are intended to be expressed by SWCA for matters that require legal expertise or other specialized knowledge beyond that customarily possessed by similarly situated environmental consulting companies.

8. Limitation of Remedies. In the event that Client incurs any damages in connection with this Agreement or the Services, SWCA's liability shall in no event exceed the amount actually paid by Client to SWCA for the Services. TO THE MAXIMUM EXTENT PERMITTED BY LAW, SWCA SHALL HAVE NO OTHER LIABILITY TO CLIENT FOR ANY DAMAGES, WHETHER GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL, INCLUDING ANY LOST PROFITS OR LOST SAVINGS, WHETHER OR NOT FORESEEABLE. CLIENT EXPRESSLY ACKNOWLEDGES AND AGREES THAT SWCA IS ENTERING INTO THIS AGREEMENT IN RELIANCE ON THE DISCLAIMERS AND LIMITATIONS SET FORTH HEREIN.

9. Choice of Law and Forum; Attorneys' Fees. This Agreement shall be governed exclusively by its terms and by the laws of the State of Arizona as applied to contracts entered into in Arizona between Arizona residents without regard to the State's rules concerning choice of law. Client hereby consents and agrees to exclusive jurisdiction and venue in Maricopa County, Arizona, provided that SWCA may pursue collection efforts for any amounts payable under this Agreement in any forum having jurisdiction. Client shall reimburse SWCA on demand for all attorneys' fees, costs and expenses incurred by SWCA (including any commissions payable to collection agencies) in seeking to collect amounts payable under this Agreement (including fees, costs and interest) or otherwise seeking to enforce its rights under this Agreement.

10. Severability. In the event that any provision of this Agreement is held to be invalid or unenforceable, the remainder of this Agreement shall continue in full force and effect, and the provision held to be invalid or unenforceable shall be automatically amended to most closely approximate the original provision on terms that are valid and enforceable and the court or other adjudicating authority shall make such amendment accordingly.

11. Assignment; Successors; Third-Parties. Client may not assign its rights under this Agreement without SWCA's written consent and, unless otherwise expressly agreed by SWCA in writing, Client shall in all events remain responsible for the performance of its obligations hereunder notwithstanding any such assignment. This Agreement shall be binding upon assignees and other successors. Any services and information provided by SWCA are being furnished solely for Client's benefit and only with respect to the project that is the subject of this Agreement and no third-party may rely thereon and no third-party shall be construed to be a beneficiary of this Agreement.

12. Integration; Modification; Waiver. This Agreement reflects the entire agreement of the parties relating to the subject matter hereof, and any prior understandings, agreements or representations related to such subject matter are hereby superseded. This Agreement shall control over any conflicting documents and shall be the sole source of any obligations of SWCA. No provision of this Agreement shall be deemed amended or waived by SWCA unless a written amendment or a form of waiver is signed by SWCA. All attachments authorized by SWCA are hereby incorporated into this Agreement. This Agreement may be executed in counterparts and delivered by any reasonable means including facsimile.

13. Interpretation; Notices. The terms of this Agreement constitute the written expression of the mutual agreement of the parties and shall be construed neutrally and not for or against either party. When used in this Agreement the term "include" or "including" shall be construed as illustrative and not exhaustive. The headings in this Agreement are inserted for convenience; the provisions of this Agreement shall control. Periods of time established by this Agreement in days shall be calculated using calendar days and not business days unless otherwise specified. Notices and communications given and made in connection with this Agreement may be given and made by any reasonable means including facsimile or email if reasonable in the circumstances.

14. Relationship; Authority. The relationship of the parties hereunder is that of independent contractors and not principal-agent, partners, or otherwise. Except as expressly provided under this Agreement, neither party shall have any authority to act on behalf of or bind the other party. Only SWCA's project manager or an officer of SWCA shall be authorized to bind SWCA.

15. Non-Discrimination. SWCA shall not discriminate or allow parties under its control to discriminate in violation of the Rehabilitation Act, 29 U.S.C. § 793, the Vietnam Era Readjustment Assistance Act, 38 U.S.C. § 4212 or Executive Order 11246 or similar requirements to the extent applicable, and shall, to the extent required, take affirmative action to employ and advance in employment qualified individuals.

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Salt Lake City, UT 84111
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Scoping Content Analysis for Rosemont Copper Project

October 7, 2008

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Overview of Scoping

- Official period: March 13th, 2008 – July 14th, 2008
- 6 Open House Meetings

Tucson	March 18
Green Valley	March 19
Patagonia	March 20
Vail	April 5
Sahuarita	April 22
Elgin	April 23

- 3 Public Hearings

Elgin	May 12
Sahuarita	June 7
Tucson	June 30

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Types of Submittals

- Forest Service comment forms
- Unique letters (handwritten and typed)
- Emails
- Faxes
- Form letters (25)
- Hearing comments (recorded on transcript by court reporter)
- Phone Hotline (recorded on transcript)

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Methodology

1. Assigned a unique identifying number to each submittal (e.g. 1, 2, 3, etc.)
2. Identified pertinent individual comments *numerically* in order of appearance in submittal
3. Assigned individual comments to one of the *resource categories* (i.e. socioeconomics, water resources) and *sub categories*
   - Sub categories were developed based on the resource categories based on the subject matter contained in the comment.

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Comment Code Formula

Comment Number - Resource Category – Sub Category

1-SOC-05

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Resource Category

- Two or three letters
- Example:
  AQ = Air Quality
  WR = Water Resources
- Analysis Team identified 31 Resource Categories

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Resource Category

ALT	Alternatives
AQ	Air Quality
CC	Climate Change
CUL	Cultural Resources
FIR	Fire Management
FOI	FOIA Request
GRA	Livestock Grazing
HZ	Hazardous Waste
JUS	Environmental Justice
LGT	Light Pollution
LU	Land Use
MLO	Locatable Minerals
NO	Noise
OTH	Other
OUT	Out of Scope
PAL	Paleontology
PHS	Public Health and Safety
PRP	Process and Procedure
RCL	Reclamation
REC	Recreation
RIP	Riparian
SOC	Socioeconomics
SOL	Soils and Geology
SSS	Special Status Species
TEC	Technical Feasibility
TRA	Transportation and Access
VEG	Vegetation
VRM	Visual Resource Management
WL	Wildlife and Habitat
WLD	Wilderness
WR	Water Resources

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Sub Category

- 2 digit number

- Common Codes
  01 = general
  99 = cumulative impacts/effects

- 9 Resource Categories had more than the Common Codes

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Sub Category

AQ Air Quality
- 01 general
- 02 emissions
- 99 cumulative effects

OTH Other
- 01 general
- 02 in opposition
- 03 in support
- 04 Request copy of DEIS

PRP Process and Procedure
- 01 general
- 02 Scoping Meetings
- 03 NEPA process
- 04 Cooperating Agencies
- 05 Working Groups
- 06 Regulations
- 07 Monitoring and Compliance
- 08 Trustworthiness
- 09 Third Party Selection
- 10 FL Plan Revision

RCL Reclamation
- 01 general
- 02 bonding
- 99 cumulative effects

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Sub Category

SOC Socioeconomics
- 01 general
- 02 economy
- 03 tourism
- 04 land value
- 05 quality of life
- 06 jobs
- 99 cumulative effects

TEC Technical Feasibility
- 01 general
- 02 financial feasibility

TRA Transportation and Access
- 01 general
- 02 increase in traffic volume
- 03 scenic highway
- 04 road deterioration
- 99 cumulative effects

WR Water Resources
- 01 general
- 02 aquifer quality
- 03 aquifer quantity
- 04 surface water
- 05 CAP recharge
- 06 contamination/pollution
- 07 stormwater runoff

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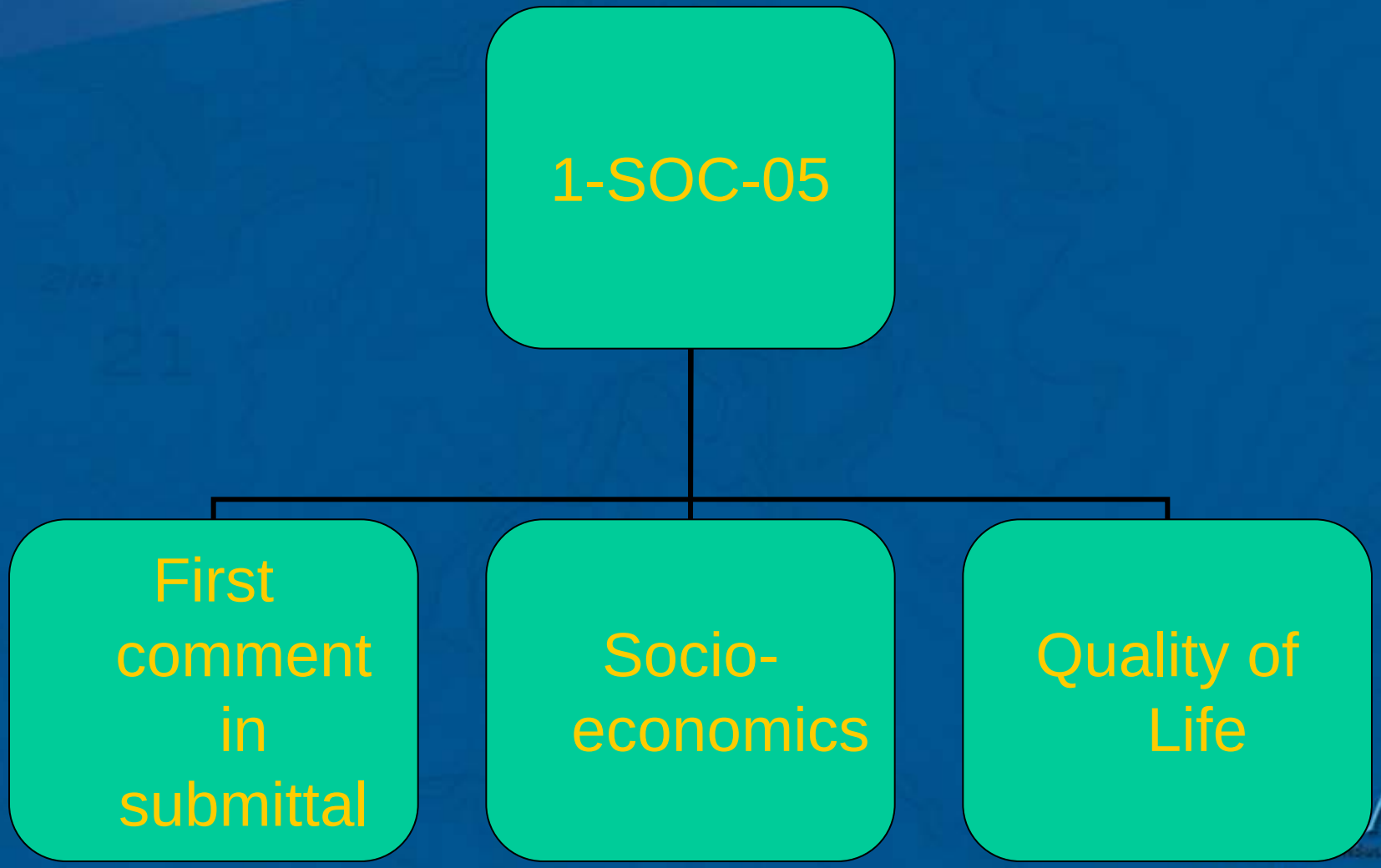
Comment Code Example



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Comment Codes

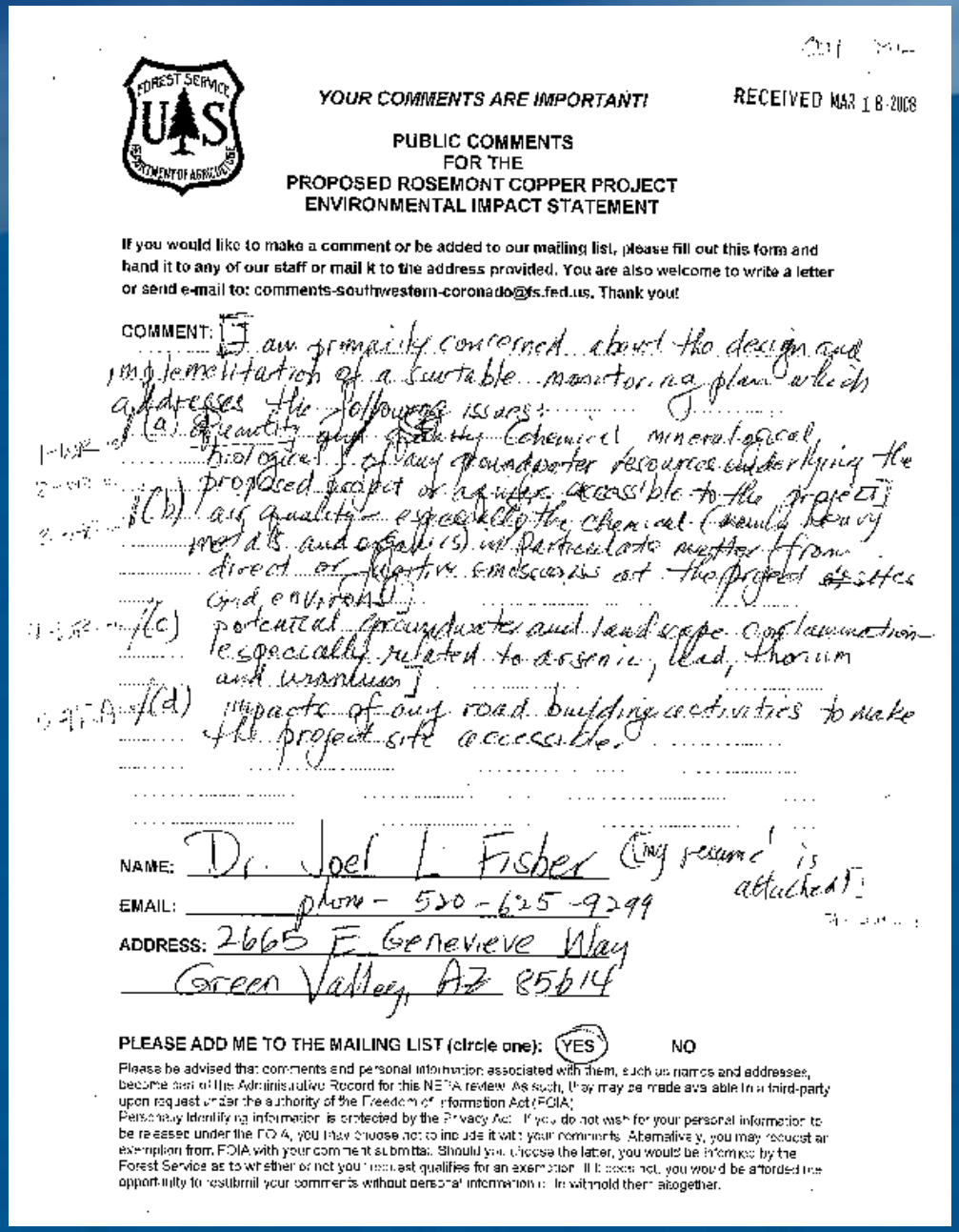
1-WR-03

2-WR-02

3-AQ-01

4-WR-06

5-TRA-01



YOUR COMMENTS ARE IMPORTANT!

RECEIVED MAR 1 8 2008

PUBLIC COMMENTS
FOR THE
PROPOSED ROSEMONT COPPER PROJECT
ENVIRONMENTAL IMPACT STATEMENT

If you would like to make a comment or be added to our mailing list, please fill out this form and hand it to any of our staff or mail it to the address provided. You are also welcome to write a letter or send e-mail to: comments-southwestern-coronado@fs.fed.us. Thank you!

COMMENT: I am primarily concerned about the design and implementation of a suitable monitoring plan which addresses the following issues:

1-WR- (a) quantity and quality (chemical, mineralogical, biological) of any groundwater resources underlying the proposed project or nearby accessible to the project

2-WR- (b) air quality, especially the chemical (and heavy metals and organics) of particulate matter from direct or indirect emissions at the project site and environs

3-AQ- (c) potential groundwater and landscape contamination especially related to arsenic, lead, thorium and uranium

4-WR- (d) impacts of any road building activities to make the project site accessible.

NAME: Dr. Joel L. Fisher (My resume' is attached)

EMAIL: phone - 520-625-9299

ADDRESS: 2665 E. Genevieve Way
Green Valley, AZ 85614

PLEASE ADD ME TO THE MAILING LIST (circle one): YES NO

Please be advised that comments and personal information associated with them, such as names and addresses, become part of the Administrative Record for this NEPA review. As such, they may be made available to a third-party upon request under the authority of the Freedom of Information Act (FOIA).
Personally identifying information is protected by the Privacy Act. If you do not wish for your personal information to be released under the FOIA, you may choose not to include it with your comments. Alternatively, you may request an exemption from FOIA with your comments submittal. Should you choose the latter, you would be informed by the Forest Service as to whether or not your request qualifies for an exemption. If it does not, you would be afforded the opportunity to resubmit your comments without personal information or to withhold them altogether.

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Red Flag Comments

- Politically sensitive comments – from any official
- Threats of harm to anyone in the FS, the proponent or 3rd party contractor, or anyone else for that matter
- Any FOIA requests
- Any proposals for new alternatives
- Any notice of appeals or litigation
- Any from a governmental agency or entity (federal, state, local)
- And finally, any “crazy or loony” ones, including religious ones.

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Attachments to Comments

- Examples include photos, resumes, reports, maps
- Attachments were NOT coded
- Scanned as pdf document
- pdf file name is based on Record ID # and unique comment code.
- Saved all pdf documents in same folder to be linked to database

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Attachments to Comments

Example:

John Doe (Submittal # 2094) makes comment about quantity of ground water resources (comment 3-WR-03) and submits a hydrology report, the pdf attachment would be titled (2094 3-WR-03.pdf).

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Commenter Contact Info

Microsoft Access - [Commenter Contact Information]

File Edit View Insert Format Records Tools Window Help

Rosemont Copper Project EIS
Scoping Comments

Commenter Contact Information

Submittal Type	FS Comment Form (Edit)	Record ID	001
Date Received	3/18/2008	Find Record Number	Search
Commenter Type	Individual (Edit)		
First Name	Dr. Joel L.	Last Name	Fisher
2nd First Name		2nd Last Name	
Organization		Phone	
Address	2265 E. Genevieve Way		
City	Green Valley	State	AZ
Zip	85614		
Email		Notes	

☐ Check here if contact information is to be kept private.
☑ Check here to add to mailing list.

Previous Next Exit

Record: 1 of 11093

start | Switchboard | Commenter Contact I... | Microsoft PowerPoint ...

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Comment Database

Microsoft Access - [Comments]

File Edit View Insert Format Records Tools Window Help

Rosemont Copper Project EIS
Scoping Comments

Comments

001

Dr. Joel L. Fisher

2265 E. Genevieve Way
Green Valley AZ 85614

Edit | Lookup list
Find | Record number

Comment	Comment Text	Category	Code
1	I am primarily concerned about the design and implementation of a suitable monitoring plan which addresses the quantity and quality (chemical mineralogical, biologcal, of any groundwater resources underlying the propose project or aquifers accessible to the project.	WR	03
2	I am primarily concerned about the design and implementation of a suitable monitoring plan which addresses the quality (chemical mineralogical, biologcal) of any groundwater resources underlying the propose project or aquifers accessible to the project.	WR	02

Attachment
Attachment File name: 1_1_WR_03

Attachment
Attachment File name:

Record: 1 of 5
Record: 1 of 11093

start | Switchboard | Comments | Analysis of Public Co... | Microsoft PowerPoint ...

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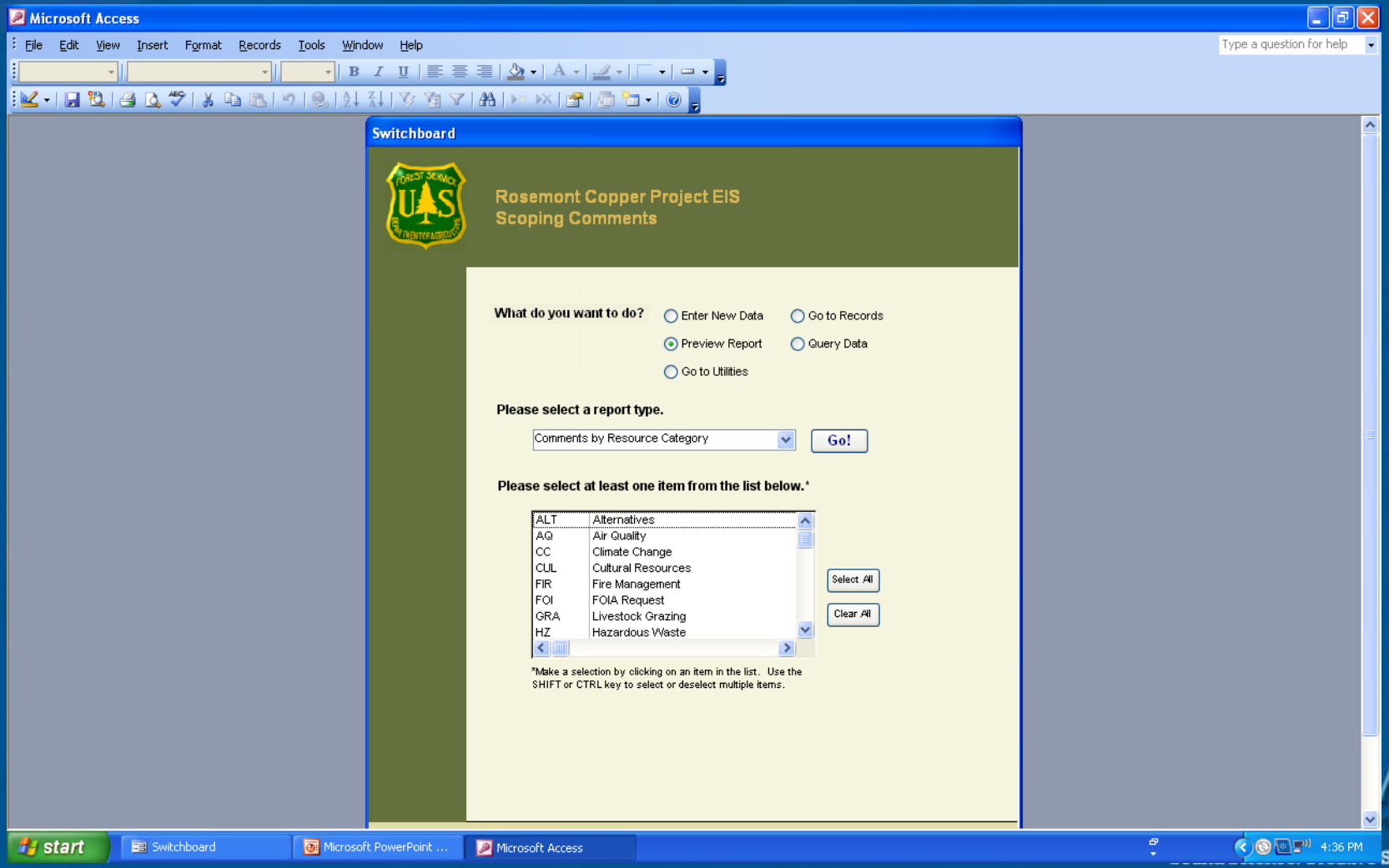
Database Reports



Comments by Resource Category

VEG Vegetation

ID 10559

Form Letter 16+

Comment	Comment Text	Category	Code
4	The impacts to the plants by mining operation is completely unacceptable.	VEG	01

☐ Attachment

Attachment file name

Mayrene Reichardt

Comment	Comment Text	Category	Code
1	We have approximately 13 acres with 100+ Oak trees of two varieties. Many of these Oaks have been here for a very long time and are very large trees. My questions are: When the water table drops, what assurances do we have that these trees will not die? If this does happen, how does one place a value on these trees?	VEG	01

☐ Attachment

Attachment file name

Elizabeth Webb

Comment	Comment Text	Category	Code
19	"Salvage and Transplant MAY be considered?" p11. Tetra Tech I think salvage and transplant of sensitive vegetation MUST be required as part of the permit.	VEG	01

☐ Attachment

Attachment file name

Comment	Comment Text	Category	Code
20	Unless it is somewhere I have not seen it yet, I have not seen anything mentioned about noxious weeds and I know Buffel grass is on the list for the Santa Ritas. Also, I thought but I am not sure there was an executive order for noxious weeds. I would like to request that an inquiry be performed on this.	VEG	01

☐ Attachment

Attachment file name

Mary Repenning

Comment	Comment Text	Category	Code
5	coating the foliage with dust, affecting their photosynthesis and absorption of moisture, such as it is,	VEG	01

☐ Attachment

Attachment file name

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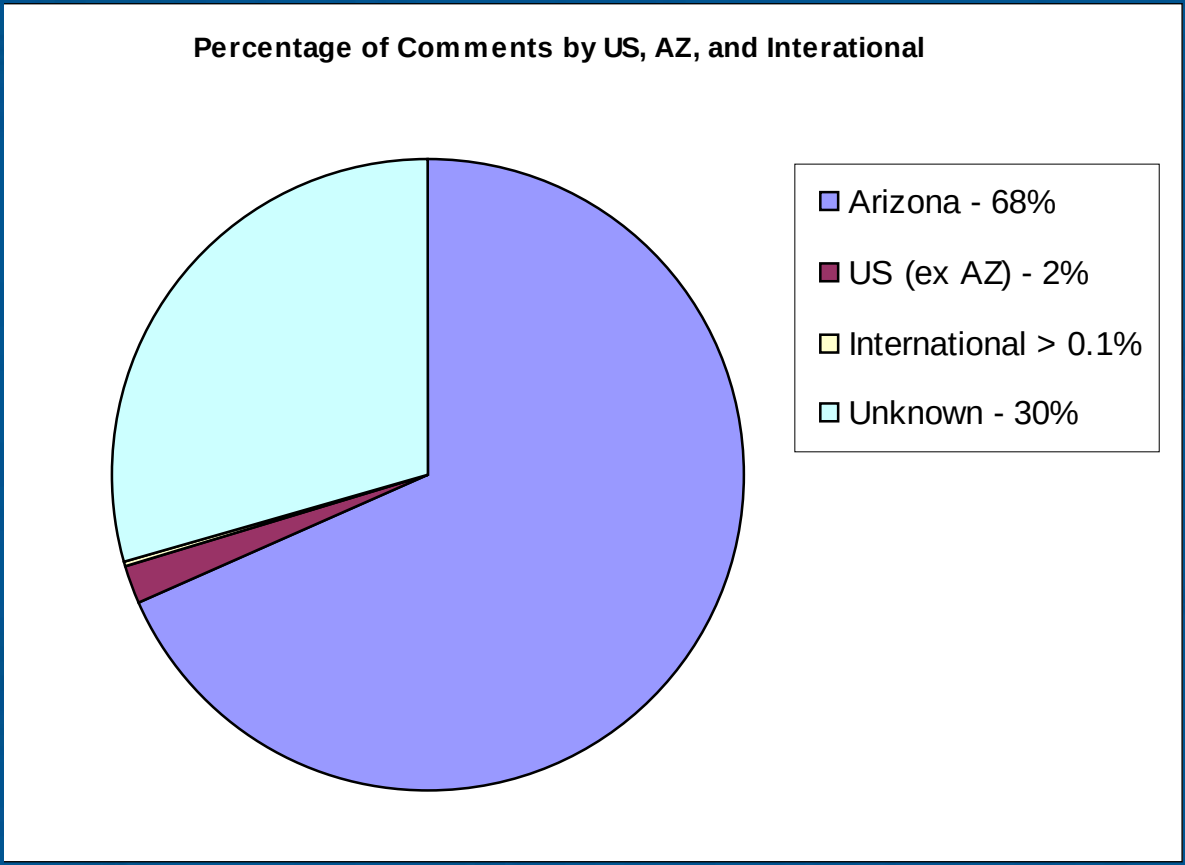
Demographic Results

- Over 11,000 Submissions
- Submissions from 47 States plus the District of Columbia
- Submissions from 11 foreign countries



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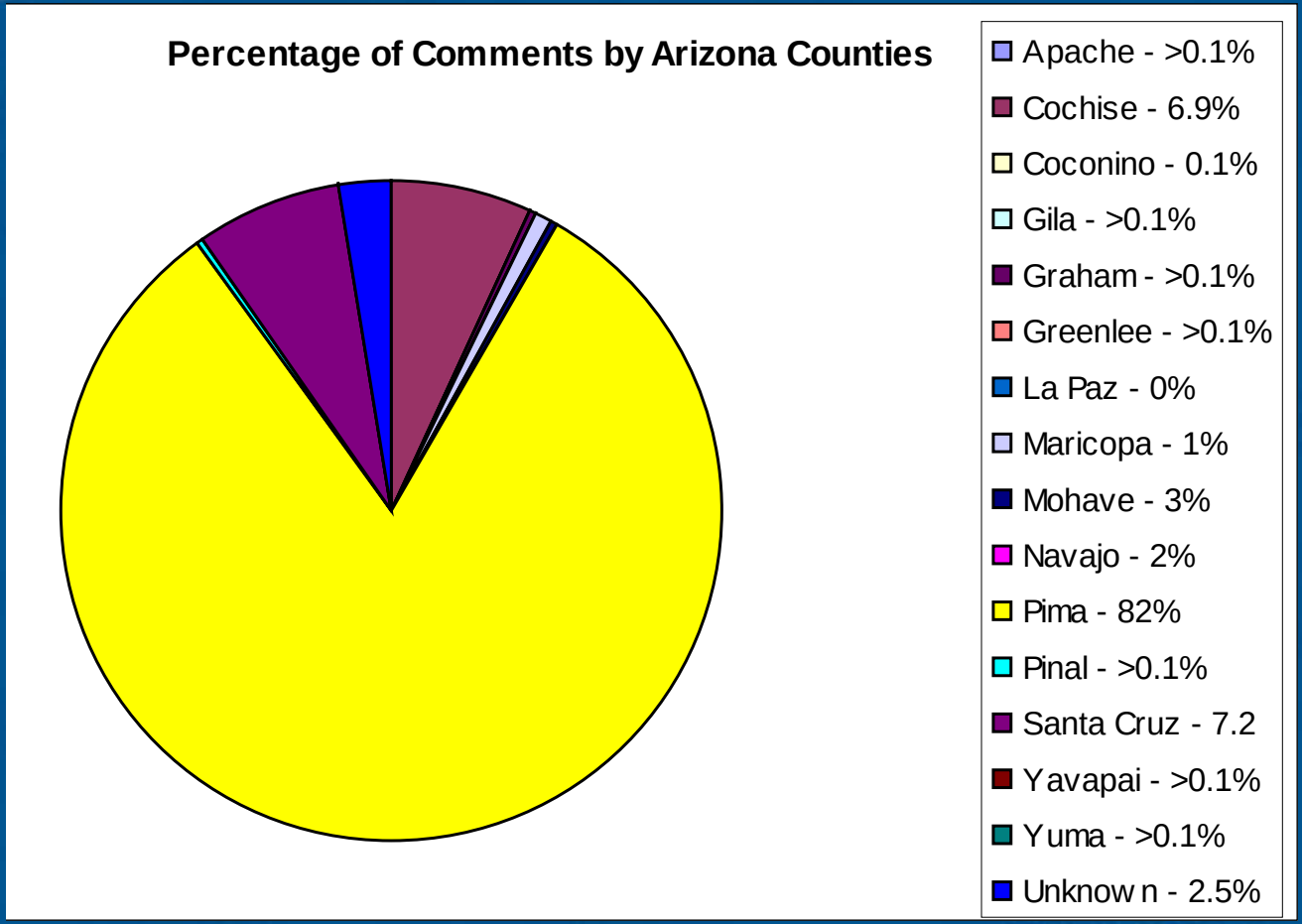
Demographic Results - Arizona

- Submissions from all counties except La Paz
- About 96% of all comments from Arizona came from Pima, Cochise, and Santa Cruz Counties



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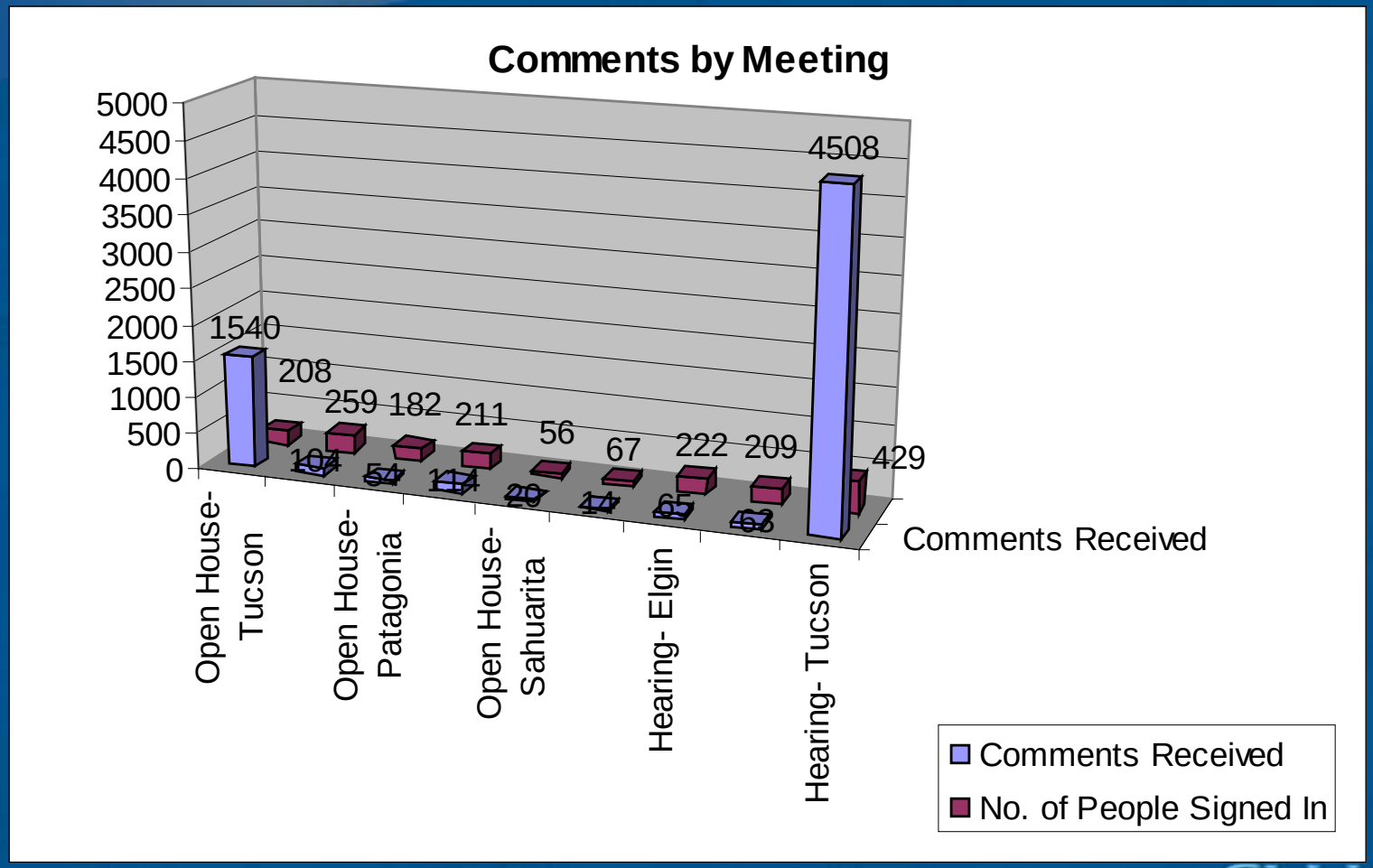
Results - Comments by Meeting



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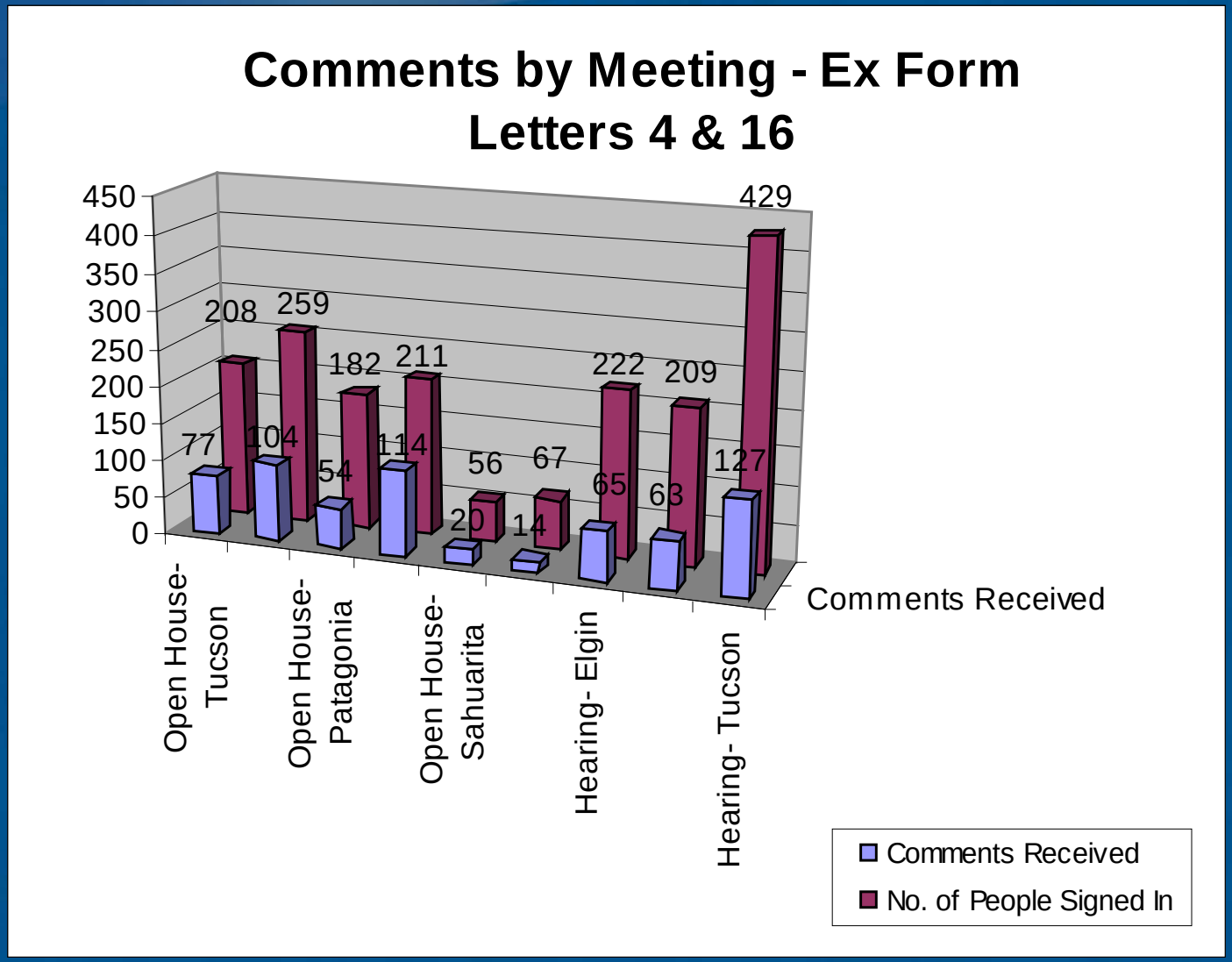
Results - Comments by Meeting



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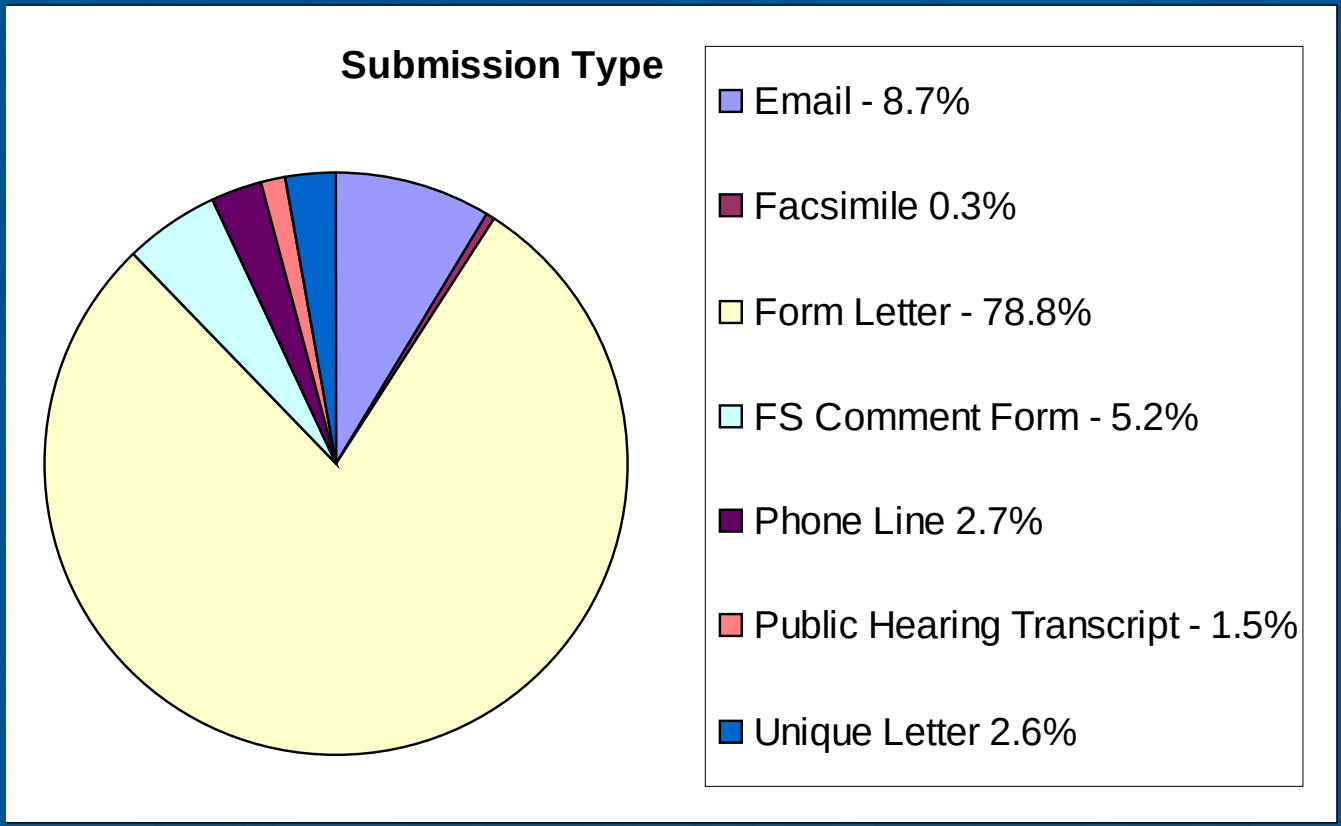
Results-Comments by Submission Type

- 25 form letters were identified
- Form letters from RCC & SSSR comprised 91% of the form letter volume



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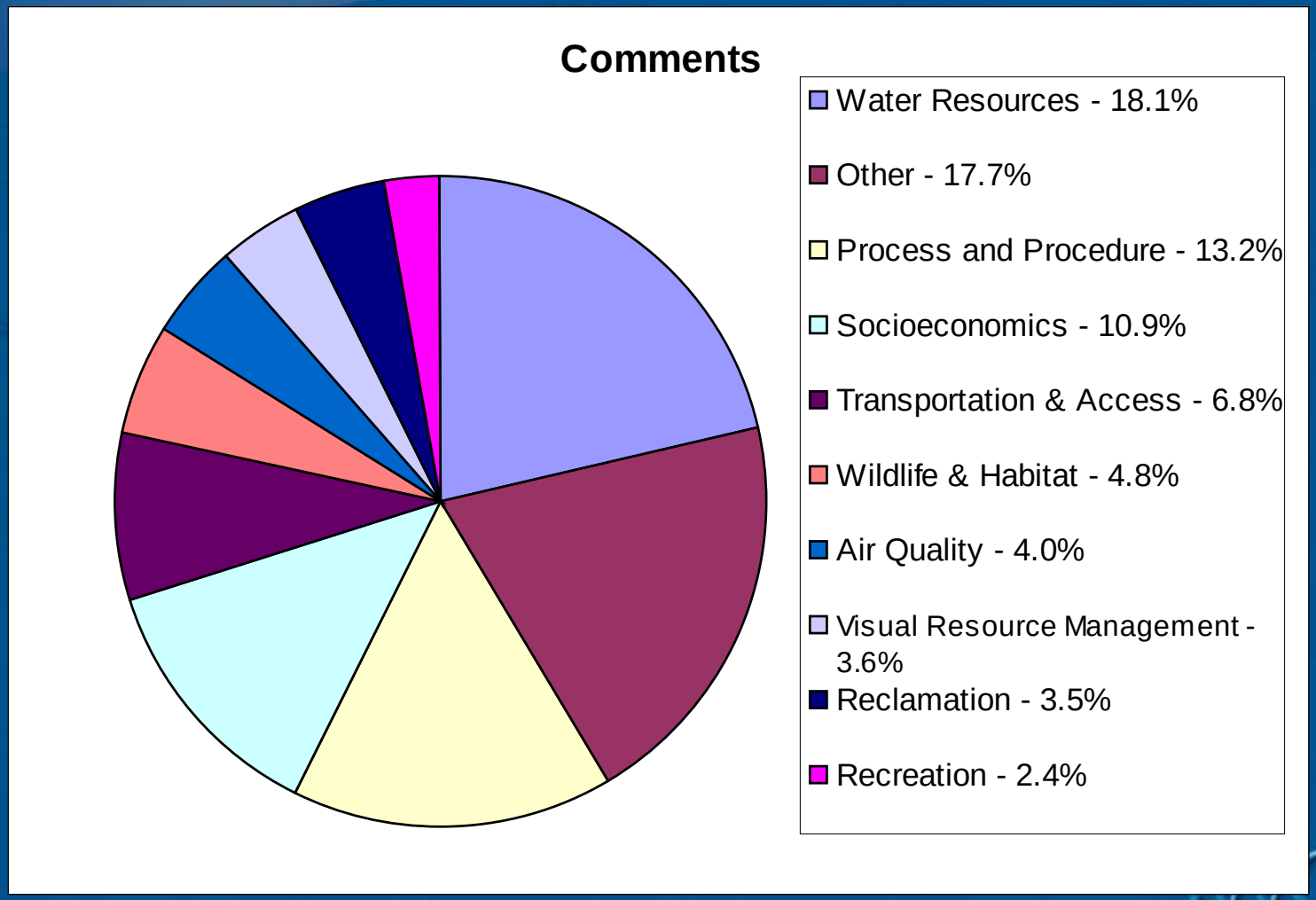
Comments by Resource Category



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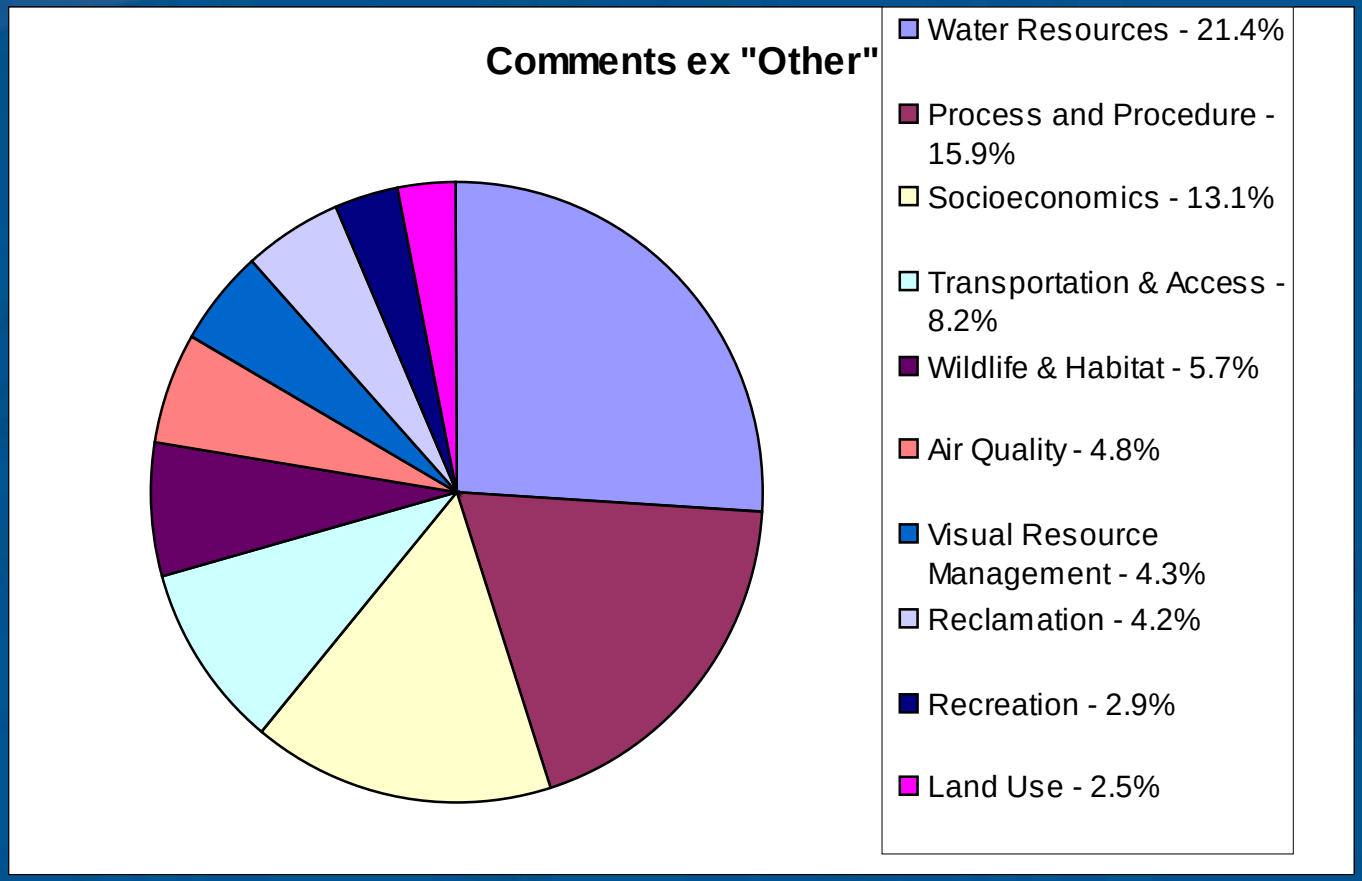
Comments by Resource Category



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Results

Insights into the nature and quality of public participation

Satisfy NEPA requirements (40 C.F.R. 1501.7)

Satisfy FS requirements (36 C.F.R. 220)

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40 C.F.R. 1501.7

NEPA requirements 40 C.F.R. 1501.7

- **An early and open process** for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.
- As soon as practicable after its decision to prepare an environmental impact statement and before the scoping process the lead agency shall publish a **notice of intent** (Sec. 1508.22) **in the Federal Register**
- (a) As part of the scoping process the lead agency shall:
  - Invite the participation of affected Federal, State, and local agencies, any affected Indian tribe, the proponent of the action, and other interested persons (including those who might not be in accord with the action on environmental grounds)
- (b) As part of the scoping process the lead agency may:
  - Hold an **early scoping meeting or meetings** which may be integrated with any other early planning meeting the agency has. Such a scoping meeting will often be appropriate when the impacts of a particular action are confined to specific sites

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Council on Environmental Quality Memorandum on Scoping

The regulations relating to scoping are very simple.

They state that "there shall be an early and open process for determining the scope of issues to be addressed" which "shall be termed scoping," but they lay down few specific requirements. (Section 1501.7).

They require

- an open process with public notice;
- identification of significant and insignificant issues;
- allocation of EIS preparation assignments;
- identification of related analysis requirements in order to avoid duplication of work; and
- the planning of a schedule for EIS preparation that meshes with the agency's decision-making schedule. (Section 1501.7(a)).

The regulations encourage but do not require, setting time limits and page limits for the EIS, and holding scoping meetings. (Section 1501.7(b)). ***Aside from these general outlines, the regulations left the agencies on their own.***

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CEQ's Memorandum on Scoping

1. Start scoping after you have enough information
2. Prepare an information packet
3. Design the scoping process for each project
4. Issuing the public notice
5. Conducting a public meeting
6. A few ideas to try :Hotline, use of moderator

Pitfalls

1. Closed meetings
2. Contacting interested groups
3. Tiering
4. Scoping for unusual programs

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Forest Service NEPA Regs

36 C.F.R. 220 supplement CEQ regulations

Forest Service Manual 1900 – Planning

Chapter 1950 – Environmental Policy and Procedures

1950.3 It is Forest Service policy to:

- a. Give early notice of upcoming proposals to interested and affected persons (40 CFR 1501.7 and 36 CFR 220.4(e)):
- b. Give timely notice to interested and affected persons, Federal agencies, State and local governments, and organizations of the availability of environmental and accompanying decision documents (36 CFR 220.5(h), 36 CFR 220.6(f), and 36 CFR 220.7(d)):
- c. Make documents available to the public free of charge to the extent practicable (40 CFR 1506.6(f))

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Forest Service NEPA Regs

1950.41 - Authority to Act as Responsible Official to Comply With NEPA

For each Forest Service proposal the responsible official shall coordinate and integrate NEPA review and relevant environmental documents with agency decision-making as follows:

Ensure that an appropriate level of scoping occurs (36 CFR 220.4(e))

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Public Participation

- Open Houses in six locations
- Public Hearings in three locations
- Website with information
- Fax
- Email
- Snail-mail
- Phone Hotline
- Both written and verbal comments recorded

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Public Meetings

- Provided information packets, CD's, maps, applicable regulations and laws, proposed action, etc.
- Provided public the opportunity to gather information and provide comments verbally and written
- Interact with lead agency, proponent, 3rd party consultant

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Results

- Over 11,000 comment submittals
- 1 to 150 comments per submittal
- # comments? …pending database output.

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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: 1950-3/2810
Date: January 6, 2009

Tom Furgason
Rosemont Project Manager
SWCA Environmental Consultants
343 West Franklin Street
Tucson, AZ 85701

Mr. Furgason:

This letter provides direction for preparing camera-ready versions of the Rosemont Copper Project draft and final environmental impact statements for publication and distribution.

Pursuant to the Memorandum of Understanding (MOU) between the Coronado National Forest and Rosemont Copper Company for the Rosemont Copper Project (MOU #08-MU-11030510-010, as modified), as the selected third-party environmental contractor, SWCA Environmental Consultants (SWCA) is to prepare the required environmental analysis and documentation consistent with applicable law, regulation, and policy (MOU Sections A, B, C1, C6, D20, E1, E3, E8, E12, F2, F6, and MOU Attachment 1 Items I4, I5, and IC – NEPA Review).

SWCA is further specifically required to prepare camera-ready versions of the draft and final environmental impact statements in accordance with Forest Service requirements (MOU Sections D11, E1, E12, E13, E14, and MOU Attachment 1 Items I5, I9, IC – NEPA Review, II, and IV). In completing this task, SWCA is under direct supervision and control of the Forest Service (MOU Sections C1, C5, C6, D3, D10, D14, D18, D19, and F1).

MOU Attachment 1 Items I9 and IC – NEPA Review need to be clarified regarding the printing and distribution of the agency's approved draft and final environmental impact statements. SWCA's responsibilities do not extend to the actual printing and distribution of these documents. Printing and distribution of the agency's approved draft and final environmental impact statements must be done by the Southwestern Regional Office, who will procure appropriate services through the Government Printing Office. However, SWCA is expected to contribute to the Regional Office efforts in providing appropriate camera-ready material and relevant distribution lists.

It is anticipated that several iterations of the environmental impact statements will be drafted as the content progresses through various internal reviews. While only the agency's approved camera-ready draft and final environmental impact statements must conform to the following requirements, it is recommended that draft components of the environmental impact statements be created with these requirements in mind to reduce editing time. It is also recommended that other project materials be created with these requirements in mind.

The following items are hereby incorporated by reference as relevant direction:

- Government Printing Office Style Manual, 29th Edition (2000) available at www.gpoaccess.gov/stylemanual/index.html
- Forest Service Handbook 1609.11 – Publications Management Handbook (attached)
- Using MS-Word to Create Documents for Publishing (attached)
- Template Setting Quick Reference (attached)
- Southwestern Region EIS Template (attached)

Follow the "Government Printing Office Style Manual" for fundamentals such as grammar, spelling, use of abbreviations, capitalization, etc. Follow "Forest Service Handbook 1609.11" for agency-specific direction such as that for citations, standard statements, etc., not found in the "Government Printing Office Style Manual." Use "Using MS-Word to Create Documents for Publishing" as a guide for managing document structure and presentation to create documents that meet print and Web standards with a minimum of reformatting. The "Template Setting Quick Reference" provides layout specifications for margins, headers, footers, columns, sections, and landscape graphics. The "Southwestern Region EIS Template," containing the required pre-set layout specifications, must be used in preparing the environmental impact statements.

The following Forest Supervisor expectations, expressed in her Interdisciplinary Team Project Initiation Letter dated July 25, 2008, are hereby incorporated as direction: "I expect the EIS to be written in plain language. Your work will not only be scrutinized for its technical accuracy, but also for its brevity and clarity. Write-ups that are encyclopedic or that contain extraneous information will not be accepted. Technical material is to be summarized in the body of the EIS with specific reference to supporting information in the appendices and/or record. Graphics are to be used to the fullest extent where they could improve reader understanding and reduce the amount of text. Of course, graphics should have appropriate complementary interpretive text."

Additionally, adhere to the following direction in preparing the environmental impact statements:

- Submit all text documentation in MS-Word 2003 format (.doc format).
- Submit materials without embedded 'Track Changes' that may be viewed.
- Label each graphic with a unique caption identifier that is referenced in the text body.
- Provide a separate file containing the original electronic graphic files of each graphic included in the camera-ready environmental impact statements. (Preferred file formats are .jpg, .tif, and .png. Do not submit graphics in a .pdf file format.)
- Include parenthetical or footnote explanations when technical terms or jargon are used.
- Use incorporation by reference and tiering techniques as appropriate to summarize voluminous information and reports.
- Provide citations for incorporated materials.
- File complete copies of incorporated materials in the Administrative Record.
- Use appendices as appropriate for supporting in-depth explanatory materials.
- Refer to appendices in the text body.

SWCA is authorized to use its professional discretion in complying with this direction. However, products developed by SWCA remain subject to review and approval by the Forest.

Questions or concerns about the direction provided herein should be directed to the Forest Service Project Manager for the Rosemont Copper Project, Teresa Ann Ciapusci, at (520) 388-8350 or tciapusci@fs.fed.us.

Sincerely,

/s/ Reta Laford
RETA LAFORD
Deputy Forest Supervisor

Attachments:
Forest Service Handbook 1609.11 – Publications Management Handbook (2/2/2007)
Using MS-Word to Create Documents for Publishing (9/2005)
Template Setting Quick Reference (9/22/2005)
Southwestern Region EIS Template (9/2005)

ec:
Southwestern Region Printing Specialist, Sandy Roberts
Forest Rosemont Copper Project Interdisciplinary Team Agency Management Oversight
Forest Rosemont Copper Project Interdisciplinary Team Core and Extended Members

cc:
Jamie Sturgess
Vice-President, Projects and Environment
Rosemont Copper Company
4500 Cherry Creek South Drive, Suite 1040
Denver, Colorado 80246

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: 1950-3/2810
Date: January 30, 2009

Tom Furgason
Rosemont Project Manager
SWCA Environmental Consultants
343 West Franklin Street
Tucson, AZ 85701

Dear Mr. Furgason:

This letter provides direction for drafting the proposed action for presentation in the Rosemont Copper Project draft and final environmental impact statements.

Pursuant to the Memorandum of Understanding (MOU) between the Coronado National Forest and Rosemont Copper Company for the Rosemont Copper Project (MOU #08-MU-11030510-010, as modified), as the selected third-party environmental contractor, SWCA Environmental Consultants (SWCA) is to prepare the required environmental analysis and documentation consistent with applicable law, regulation, and policy (MOU Sections A, B, C1, C6, D20, E1, E3, E8, E12, F2, F6, and MOU Attachment 1 Items I4, I5, and IC – NEPA Review).

SWCA is further specifically required to prepare a description of the proposed action in consultation with the Forest (MOU Attachment 1 Item IA3). In completing this task, SWCA is under direct supervision and control of the Forest Service (MOU Sections C1, C5, C6, D10, D14, D18, D19, and F1).

It is anticipated that several distinct presentations of the proposed action will be made in the environmental impact statement. The proposed action will be presented in the document's Abstract, Executive Summary, Chapter 1, Chapter 2, and Appendices as deemed appropriate. Direction on content of the Abstract and Executive Summary will be provided, if needed, after the draft environmental impact statement has been completed for internal review. Presentation of the proposed action in Chapter 1 is to briefly provide the general context of the proposal. Presentation of the proposed action in Chapter 2 is the focus of the remainder of this letter. Additional or supporting information about the proposed action may be provided in an Appendix to the environmental impact statement.

Agency guidance on presenting a proposed action can be found in Forest Service Handbook 1909.15(11.2). In summary, the proposed action must identify: (1) *who* is proposing the actions, (2) *what* actions are proposed, (3) *how* the actions would be accomplished, (4) *where* the actions would occur, and (5) *when* the actions would occur.

"*Who*" refers to sponsorship. Even though the proposal was externally generated, the Forest Service's acceptance of it makes it an Agency proposal to authorize the action. Identify the Agency sponsor as a person (Forest Supervisor) or an administrative unit (Coronado National Forest). Also identify the sponsorship of cooperating agencies that have a land use decision within the proposal.

"*What*" refers to the proposal's included activities as well their specific components. Because the proposal was externally generated, do not include actions or amendments to the Coronado Forest Plan that were not specifically identified in the composite Mine Plan of Operations (MPO), on which the proposed action is based. Connected actions identified in the composite MPO should be integrated into the presentation.

"*How*" is a further explanation of the "*what*" statements. Describe in common terms how each activity and its components would be accomplished.

"*Where*" refers to the geographic location of included activity. Describe the location of each activity and its components. Consider using a combination of legal descriptions (county, township, range, section, etc.), relationship to physical features, and maps.

"*When*" refers to the timeframe in which the activities and their components would be implemented and/or completed. Document the timing of each activity and/or phase in terms of initiation, completion, and duration.

Because the proposal was externally generated, the Forest Service must articulate its proposed action in a way that the responsible official and public can grasp the magnitude and scope of the environmental study to be conducted within the context of the proponent's intent. This means, that while the composite MPO is the basis for articulating the proposed action to be studied, the Forest reserves its prerogative to restate contents of the composite MPO in a form that meets Agency NEPA guidance while using plain writing principles and graphical presentation techniques that improve clarity, readability, and understanding. However, any work undertaken to improve presentation must not change the proposal that was scoped in the Notice of Intent published in the March 2008 ***Federal Register***.

The above direction is consistent with the following Forest Supervisor expectations, expressed in her Interdisciplinary Team Project Initiation Letter dated July 25, 2008: "The proposed action to be carried through the project analysis constitutes the material contained in the composite MPO, which I deemed sufficient to initiate the NEPA process. I realize that this material may need to be presented differently to better convey in plain language the nature of the action and to fit within the four corners of the EIS, as well as to focus the effects analysis. However, clarifying actions outside the scope of those defined in the composite MPO are to be handled as alternative design features or mitigation because they were not identified for comment during the public scoping period."

Additional to the direction in my January 6th letter on preparing camera-ready versions of the Rosemont Copper Project draft and final environmental impact statements, use the following guidance for presenting the proposed action in Chapter 2 of the environmental impact statement:

- Refer to the proposal as the Proposed Action or Alternative 2.
- Include a general reference to the composite MPO materials.
- Focus the description on clearly identified actions from the composite MPO.
- Summarize key aspects of the proposal in the narrative description.
- Place non-summary details that are likely to be of interest to the decisionmaker or public in an alternative comparison table to be located at the end of Chapter 2.
- Present actions logically, considering sequencing and/or similarities.
- Use a consistent parallel presentation of information.
- Do not duplicate text.
- Avoid statements that identify effects or rationale for the proposal.
- Minimize the length of sentences and paragraphs.
- Present information so as to allow comparison to other alternative descriptions.
- Include graphics to improve the reader's understanding of the proposal.

Non-summary details that potentially merit disclosure but are not likely to be of a high interest to the decisionmaker or public should be included in an appendix to the environmental impact statement. This appendix is to be provided concurrent with the Chapter 2 proposed action text.

An appropriate glossary of terms is to be provided for the Chapter 2 proposed action text.

For the supporting record, a document is required that cross-walks each item of the proposed action presented in Chapter 2 of the environmental impact statement or an appendix to the appropriate composite MPO materials.

SWCA is authorized to use its professional discretion in complying with this direction. However, products developed by SWCA remain subject to review and approval by the Forest.

Questions or concerns about the direction provided herein should be directed to the Forest Service Project Manager for the Rosemont Copper Project, Teresa Ann Ciapusci, at (520) 388-8350 or tciapusci@fs.fed.us.

Sincerely,

Reta Laford

RETA LAFORD
Deputy Forest Supervisor

cc:
Southwestern Region Director for Lands and Minerals (Cordts)
Southwestern Region Director for Ecosystem Analysis and Planning (Davis)
Forest Rosemont Copper Project Interdisciplinary Team Agency Management Oversight
Forest Rosemont Copper Project Interdisciplinary Team Core and Extended Members
Nogales District Ranger (Ellett)

cc:
Jamie Sturgess
Vice-President, Projects and Environment
Rosemont Copper Company
4500 Cherry Creek South Drive, Suite 1040
Denver, Colorado 80246

United States Department of Agriculture | **Forest Service** | **Coronado National Forest Supervisor's Office**

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Tucson, Arizona 85701
Phone (520) 388-8300
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Deaf & Hearing Impaired 711

File Code: 1950-3/2810
Date: April 15, 2009April 15, 2009

Jamie Sturgess
Rosemont Copper Company
4500 Cherry Creek South Drive
Suite 1040
Denver, CO 80246

Dear Mr. Sturgess:

Pursuant to Item E11 of our Memorandum of Understanding (MOU #03-MU-11030510-010, as modified), I am requesting Rosemont Copper Company's further assistance in development of mitigation to the Proposed Action.

Please review the previously provided draft issue material and the attached items to identify and assess potential alternative mitigation opportunities. In assessing such opportunities, please provide either rational as to why an idea is not feasible or specifics as to how the idea could be included in one or more action alternatives.

I am additionally interested in the identification of other mitigation opportunities you have become aware of through review of the scoping comments or additional resource studies.

To facilitate timely development of the DEIS, I am requesting your input for presentation to the interdisciplinary team on April 22, 2009.

Please feel free to contact project leader Bev Everson with any questions about this request. Bev can be reached by phone at 520-388-8428 or via e-mail at beverson@fs.fed.us.

Sincerely,

/s/ Jeanine A. Derby
JEANINE A. DERBY
Forest Supervisor

Attachments:
3/30/2009 Excerpt of Scoping Comments about Alternatives (16 pages)
3/31/2009 IDT Meeting Alternative Notes (5 pages)
4/8/2009 IDT Meeting Alternative Notes (1 page)

ec: Kathy Arnold, Rosemont Copper Company

Alternatives

01 General

Record ID	Comment Number	Commenter Type	Comment Text
160	106		Scoping Alternatives This section of the scoping document identifies twelve (12) alternatives in addition to the proposed project. These alternatives reflect a range of strategies to significantly reduce adverse environmental impacts: no action, alternative uses of public lands reduction of project scale, alternative types of mining, alternative locations for selected elements to the proposed project; transportation types and routes, timetable; and alternative processing technologies. This list is not intended to be exhaustive, and during the preparation of the Draft EIR other alternatives will surely be generated and evaluated accordingly. The following alternatives are generally listed in order of preference as regards reducing or eliminating adverse environmental impacts. Those alternatives with the least impact are listed first, with the successive alternatives listed in terms of likely increases in the type, magnitude, extent, and significance of adverse impacts. Note also that some alternatives could be used in combination, particularly with respect to placement of spoils, transportation types and routes, and processing technologies, particularly with respect to water use and recycling. This discussion does not address these possible combinations, however during the preparation of the Draft EIS such combinations should be fully explored in order to identify alternatives (and sub-alternative combinations) which result in significant reductions in adverse environmental impacts. Alternative 1: No Action. NEPA requires the consideration of the "No Action" alternative. Assessment of this "no action" alternative should not simply state that there will be no impacts, but should list the impacts avoided as a result of the alternative as well as the public benefits of "no action." In the case of a large, open-pit copper mine and processing facility, the "No Action" alternative will obviously eliminate the many adverse and potentially significant environmental impacts associated with the project as proposed, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. In all likelihood, the "No Action" alternative will be determined to be the "environmentally superior" alternative as well.
160	107		Alternative 1A: Alternative Uses of Public Lands. This alternative is a variation of the NEPA requirement to assess the "No Action" alternative (see above), and, in fact, could be incorporated into that alternative. Under this alternative, alternative uses of public lands would be considered in contrast to those set forth in the description of the "Proposed Action" in the Notice of Intent (NOI). According to the NOI, "Project-related activities to be addressed in the EIS include, but are not limited to, the following: …… Construction, operation and reclamation of an ore-processing plant, tailings, waste rock and leach facilities on NFS land adjacent to the mine. …." Inasmuch as these uses are not appropriate uses of public lands, this alternative explores the public benefits of alternative uses of NFS lands to those listed above rather than simply the passive alternative of "no action". Such uses could include, but not be lmited to the following (individually, and, as applicable, in combination): Public acquisition of privately held property within the northern range of the Santa Rita Mountains to provide in-perpetuity conservation of important open space lands within the greater Tucson region. Such public acquisition could also involve a land exchange with Augusta. Incorporation of the northern range of the Santa Rita Mountains, particularly that portion of the range within the Cienega creek watershed, into Las Cienegas National Conservation Area (LCNCA). The LCNCA provides an ideal model for utilizing land exchange and intergovernmental cooperation as a means of achieving long-term conservation of open space lands. Coronado National Forest lands are contiguous to LCNCA and BLM and the State of Arizona are already partners in LCNCA. Enhanced grazing lands in conjunction with the Ranch Conservation element of the Pima County Sonoran Desert Conservation Plan. These and similar alternatives would eliminate or significantly reduce the many adverse and environmental impacts associated with the uses proposed for NFS lands in the MPO. Conceivably, one of these alternatives could be determined to be the "environmentally superior" alternative as well.

DRAFT-PRELIMINARY CONTENT ONLY

Alternatives

01 General

Record ID	Comment Number	Commenter Type	Comment Text
160	108		Alternative 2: Limited Project. Under this alternative, mining excavation and placement of all spoils would be limited wholly to fee simple lands and patented mining claims, and thus provide maximum protection of all public trust lands - National Forest, Bureau of Land Management, and State of Arizona. This alternative would prohibit placement of all spoils and overburden on public lands thus protecting the five square miles of public land designated for permanent mine tailings, facilities, waste rock storage, and open pit excavation proposed in the current Mine Plan of Operation. Due to the reduced area of disturbance as well as the reduced scale and level of mining and processing activity, as well as eliminating the deposition of overburden and spoils on public land, this alternative would likely result in substantial reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).
160	109		Alternative 3: In-Situ Mine. In-situ means "in the natural or original position." This alternative involves obtaining the desired material with only minimum physical disturbance of the mine site, as the ore is leached in its existing underground location. The alternative cosnsists of a series of injection wells and recovery wells. These wells, constructed with acid-resistant casings, penetrate the copper-bearing ore, and are sealed from the surface through the ore zones. A weak, acid leach solution is pumped through the cracks in the ore, dissolving the copper into a concentrated solution, which in turn is pumped up through the injection well for processing. A continuous ring of recovery wells surround the injection wells to prevent leach solution from escaping. This alternative thus avoids the excavation of ore reock and the disposal of overburden and tailings. Processing can take place off-site thus minimizing adverse impacts at the mine site. When the copper ore body is depleted any hazardous materials remaining in the ore zone are flushed out through pumping and rinsing with fresh water. Once the wells are cleaned, they are filled with cement and the land returned to its former use. Due to the reduced area of disturbance as well as the absence of overburden and spoils on public land, this alternative would likely result in substantial reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).
160	110		Alternative 4: Underground Mine. This alternative would involve sinking mine shafts to subterranean levels containing ore and then constructing horizontal tunnels, called adits, to reach the underground ore deposits. Through the use of this alternative, the large, highly visible open-pit excavation would be avoided, along with the surface deposition of a large volume of overburden waste rock. Modern underground mining technologies utilize blasting with explosives and typically utilize heavy-duty mechanical cutting equipment. Use of robotic technologies may be feasible. Ore is extracted vis mechanical rail conveyances, thus the ore can be removed from the immediate mine site to off-site locations for processing. Reclamation of this underground mining alternative would involve closure of the shafts and tunnels, as well as reclamation of mine tailings. Due to the reduced area of disturbance as well as the reduced magnitude and extent of overburden and spoils on public land, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).

DRAFT-DELIBERATIVE-PRE-DECISIONAL

Alternatives

01 General

Record ID	Comment Number	Commenter Type	Comment Text
160	111		Alternative 5: Continuous Pit Backfill. Under this alternative the project would utilize a continuous backfill technology, whereby the open pit would be progressively filled with the waste rock, spoils, and overburden generated as the excavation proceeds. This alternative would thus eliminate the waste material placed on public lands, although at the project outset might warrant temporary and very limited storage of such materials on adjoining public lands. This alternative would also eliminate the open pit at the completioin of extraction. Due to the reduced area of disturbance as well as eliminating the long-term effects of overburden and spoils on public land, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).
160	112		Alternatives 6 through 10 are concerned with alternatives modes and routes for transporting materials - including ore, waste rock and tailings - equipment, and personnel to and from the mine site. These alternatives include the use of rail transportation, mechanical conveyances, and hydraulic conveyances as well as alternative vehicular routing in order to reduce the potential adverse impacts of the proposed project. Alternative 6: Rail Transport of Ore, Spoils and Tailings from the Mine Site. Under this alternative, all material - ore, spoils, tailings, and waste rock would be transported from the site via a new rail line constructed to the mine site. Overburden would be stockpiled on site for use during the reclamation phase. The ore would be transported to a processing site, and the so-called waste material could then be utilized off-site in other industrial processes, including but not limited to crushed rock for construction use, construction land fill, road be construction, and similar industrial uses. Due to the long-term effects of eliminating overburden and spoils on public land, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic and public safety; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).
160	113		Alternative 7: Rail Transport of All Ore from the Mine Site. Under this alternative, all ore would be transported to an off-site processing location, preferably adjacent or near an existing smelter. Transport from the mine site would be via a new rail line constructed between the mine site and a main rail line. Two routing options exist - one connecting to the north, the other to the west. Due to the relocation of the processing facility to a more appropriate off-site location, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic and public safety; night lighting/ visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).
160	114		Alternative 8: Mechanical Conveyance of Ore to Rail Head. This alternative is similar to Alternative 7 but would utilize some form of mechanical conveyance, such as a mine cart conveyor system, down the west side of the Santa Rita Mountains to a rail head for shipment on the existing rail line connecting Nogales and Tucson. This alternative could be undertaken in conjunction with all other alternatives (see above), and could be used for shipment of both the ore product and the so-called waste materials. Due to the conveyance of ore to a rail head for shipping to an off-site processing facility, and the removal of processing from the on-site operations, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic and public safety; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyles; energy uses; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).

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Record ID	Comment Number	Commenter Type	Comment Text
160	115		Alternative 9: Hydrological Conveyance of Wet Ore Concentrate to Processing Site West of the Santa Rita Mountains. This alternative is similar to Alternative 8, but would utilize some form of hydrologic/pipeline conveyance down the west side of the Santa Rita Mountains to a processing/drying site near Santa Rita Road. According to the Applicant, 89% of the water could be returned to the mine area for reuse. The ore product could then be trucked to the Port of Tucson railhead at Kolb & I-10 or to a railhead on the existing rail line connecting Nogales and Tucson. This alternative could be undertaken in conjunction with other mine-type and processing alternatives (see above). Due to the hydrologic conveyance of ore to a rail head for shipping to an off-site processing facility, and the removal of processing from the on-site operations, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic and public safety; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. (Relevent Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).
160	116		Alternative 10: Loop Road Circulation System. This alternative would utilize either a tunnel through or a summit road over the Santa Rita Mountains so that full ore trucks would road through a tunnel or over the top so that full trucks would go west to I-19, north to I-10, and then to the Port of Tucson railhead at Kolb and I-10; empty trucks would return on the East side of the Santa Rita Mountains via SR83. This alternative would likely result in reductions in a variety of impact categories, including, but not limited to emissions; noise; vehicular traffice and public safety; recreation; and effects on local emergency services. (Relevant Comment numbers: 2B, 2D, 3B, and 10).
160	117		Alternative 11: Modified Time-Table. The following alternatives address extensions or other changes in the timetable for mine operations which could result in reduced impacts: a. Extend Mine lifetime to 40 or 50 years b. Suspend mining operations during high winds c. Suspend mining operations during extreme drought conditions d. Suspend mining operations during periods of excellent "seeing conditions" at the surrounding dark-sky observatories.
160	118		Alternative 12: Alternative Processing Technologies. In addition to the alternatives listed above, the Draft EIS should expand the range of technical alternatives within the various processes and techniques proposed in the MPO and alternatives to the MPO as augmented in this scoping document and in subsequent alternatives generated through scoping and the formal environmental assessment phase. Such technical alternatives must be generated by an independent set of consultants with demonstrable expertise in mining technology and a proven record for successfully utilizing alternative mining methods and technologies which significantly reduce adverse environmental impacts.
1544	1	Individual	Why does the mine need to use clean/fresh/virgin water? Why can't they use gray water? Wouldn't everyone win if they piped gray water from the cities, used it, recharged it, and added to the fresh water supply.
1545	1	Individual	The tailings from the mine are going to be mixed with polyers to keep them from blowing around. Polymers are plastics that are made from oil and they do not degrade. So 30-50- years from now we will have this huge pile of dust and plastic? How about mixing the tailings with something else? Something that will bio-degrade and still perform the dust retention function.
1610	2	Individual	This TEP proposal provides another option to provide power to Rosemont Copper. This project provides for double-circuit 138 kV transmission lines to go southwest from the Vail substation to a new Cienega substaion in Phase 1 and a new Mountain View substation in Phase 2 to the south of Interstae 10, next to State Route 83 that goes directly to the Rosemont Copper mine (see enclosure 4). Q-51. Will the proposed Mountain View substation be considered as a power source for Rosemont Copper? Q-52. How much power will be available at the Mountian View substation, if Phase 2 is ever build, after servicing its distribution demands? Q-53. When is the Mountain View substation to be operational?

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1649	4	Individual	Also, if Rosemont is not processing any ore at the site (per the Rosemont Copper web-site) and other mining companies discuss removing the tailings (Freeport-McMoRan Copper & Gold Inc from the area to use for other purposes … http://www.fcx.com/envir/environmental.htm "Freeport's environmental experts have demonstrated for years that the tailings material can be readily revegetated or reclaimed with native forestry and agricultural plants. When mining is complete, the deposition area will be valuable high ground suitable for many applications. One emerging project, however, can put the material to positive economic use in the short term. During the past several years, Freeport Indonesia has been collaborating with scientists from Indonesia's leading technological research university, Institute Teknologi Bandung (ITB) - the Bandung Institute of Technology's Research and Industrial Affiliation Institute - on tailings' use as raw material for the construction and manufacturing of concrete, bricks, pipes and other infrastructure products. The results so far have been promising. According to the researchers, the properties of the material are conductive to construction applications and the crushed rock offers cost advantages over other basic material." Has Rosemont Mine - looked for alternatives / other options to completely remove the tailings that would be dumped on Public lands - not leaving any "dangerous" refuse on the property at all ---- removing the need to use any Forest Service Lands - and limiting the mine to private property.
1649	5	Individual	Is Rosemont Mining Corp going to use the ISO 14001 Standards for Environment Management? International Standards to make sure that employees, customers, and nearby communities feel that the company is following the fulfilling their commitment. http://www.iso.org/iso/iso_catalogue/management_standards/iso_9000_iso_14000/iso_14000_essentials.htm "ISO 14001:2004 gives the generic requirements for an environmental management system. The underlying philosophy is that whatever the organization's activity, the requirements of an effective EMS are the same. This has the effect of establishing a common reference for communicating about environmental management issues between organizations and their customers, regulators, the public and other stakeholders. … ISO 14001:2004 can also be used to meet external objectives: provide assurance on environmental issues to external stakeholders - such as customers, the community and regulatory agencies comply with environmental regulations support the organization's claims and communication about its own environmental policies, plans and actions provides a framework for demonstrating conformity via suppliers' declarations of conformity, assessment of conformity by an external stakeholder - such as a business client - and for certification of conformity by an independent certification body."
1700	5	Individual	Can the tailings be shipped to Rosemont or the Augusta Resources country?
1713	1	Individual	Why is CAP water not good enough for the "mine"
1715	2	Individual	Why doesn't Rosemont use CAP water?
1773	2	Individual	Given the mine is as lonf term as projected, can't there be a requirement of them to create/pave their own road?
1837	1	Individual	Rosemont will not put a lining under the tailings. Comment from Georgette Valle A non porous lining should be placed under the Rosemont Mine tailings.

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1840	2	Individual	I have heard that the mining company will not be putting a lining under the tailings pile. What impact will that have on the environment?
1842	2	Individual	I would hope that the Forest Service will require that any mines on their land, including the Rosemont Copper Project, will be required to return the material that is left after processing to the pit.
1957	21	Individual	it seems much more reasonable, safe, and certainly less intrusive on valuable Forest land, for the Forest Service to require Rosemont to simply switch the primary and secondary access routes in its Plan. The new access road coming from Route 83 would not need to be nearly as wide if it were only a secondary access route, thus saving Forest land, and the very heavy and hazardous mine traffic flows could be routed south and northbound along I-19, instead of Route 83. The existing road from the west wold need improvement, but, again, I emphasize, Rosemont already recovers all its investment in less than three years, and a little additional road-grading expense is nothing compared to the terrible suffering engendered by a school bus-acid truck collisison along Route 83 (and please don't make the mistake of thinking that's not going to happen.).
1960	8	Individual	IF YOU APPROVE FOR THE ROSEMONT MINE TO GO INTO PRODUCTION, THEY SHOULD ONLY BE ALLOWED TO USE CAP WATER (NO GROUNDWATER). REMEMBER, THIS IS A FOREIGN COMPANY THAT WILL BE REMOVING OUR PRECIOUS METAL TO BE SHIPPED OVERSEAS. WHY IN THE WORLD WOULD WE ALLOW THEM (FOREIGN ENTITY) TO DESTROY OUR GROUNDWATER BASIN.
2106	7	Individual	Mines of this proposed magnitude have historically required rail service to transport the resulting ore to the smelter. I cannot conceive of the amounts of ore all being transported via truck. Where would such a rail line originate from and what additional environmental damage would result from its construction and use?
2126	8	Individual	IF YOU APPROVE FOR THE ROSEMONT MINE TO GO INTO PRODUCTION, THEY SHOULD ONLY BE ALLOWED TO USE CAP WATER (NO GROUNDWATER). REMEMBER, THIS IS A FOREIGN COMPANY THAT WILL BE REMOVING OUR PRECIOUS METAL TO BE SHIPPED OVERSEAS. WHY IN THE WORLD WOULD WE ALLOW THEM (FOREIGN ENTITY) TO DESTROY OUR GROUNDWATER BASIN.
2216	7	Individual	I would also like to know why the Rosemont Mine is not going to build a railroad to move the ore? I believe there were several in the area that could be redeveloped.
2244	4	Individual	Does the mine use solar? What is their energy conservation plan?
2255	7	Individual	All mines have a rail spur to deliver and transport its goods and products, in order to substain the mining operation. The only reason why they haven't included it, is because its their first mining ventrue. This spur would add to the motoring public SAFETY. by removing the ore trucks from the highway! The state govt.would then main obstacle and the state(gov.) is notoriously easier to deal than the federal govt. Paving the orad and adding a Spur running parallel to the Helvatia road after leaving the turcks in Sahuarita. This spur would remove ore shipments from SR83, not to mention ACID and REAGENTS which are Extremely HAZARDOUS.
2263	1	Individual	Water is precious in the Tucson area. Currently many golf courses are required to use effluent for their water source. I would like to propose that Rosemont mine use effluent (refined sewer water) as an alternative to groundwter, or in combination with groundwater. Pima County is already studying the use of effluent by the public to meet future water needs, it would make more sense to use it for mining operations than our limited groundwater supplies.
2265	11	Individual	As the proposal includes the construction of a CAP water line from Avra Valley to Sahuarita as well pipe lines from the new wells to the Rosemont property why would Augusta not propose to connect these two projects and use the CAP water for their operation?
2284	17	Individual	Wouldn't it be better and less intrusive on the current SR83 travelers to improve it before opening the mine so it can handle the additional volume of heavy trucks, perhaps make it a concrete highway in the section supporting heavy trucks?

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2289	2	Individual	The mine should put in a railroad spur from the line along I-19 traveling over to as close to the mine as possible and then truck the supplies over the mountain via the secondary road. This way all the traffic will be off the roads and only a few trains a day will handle all the traffic at a much lower fuel cost. Every 4 trucks will fill one hopper and so a train of 60 cars will take 240 trucks to fill. This is 12 hours of peration for the mine. So there would be two trains a day or so. This would not add the traffic load to Highway 83 nor to I10 or I19. The mine could get either the UP to run the line or have the Port of Tucson run it. Trains are 10 times more efficient for moving this high volume of material, saving a large amount of diesel fuel, and they would not clog up the Highway with the trucks. This would also eliminater the noise impact of the mine traffic on the highway.
2305	18	Individual	In their report Rosemont notes that open pit mining is being investigated to determine if passive contamination will be achieved. If the land must be raped of its resources why not use situ mining instead of open pit? The Copper Development Association wrote about In Situ Leaching: "In situ" literally means "in place." With in situ mining, a diluted sulfuric acid and ferric sulfate solution is injected down holes drilled into the ore body. The solution flows through cracks in the rock under pressure, leaching the copper from the rock into the solution. The solution is then pumped to the surface to recover the copper, using solvent extraction techniques. Tests show that recovery rates normally achieved with heap and dump leaching could also be approached with in situ mining. There are significant cost advantages of this operation which include: the surface need not be disturbed with anything other than pump and piping installations, no waste piles are created, start-up is relatively fast, equipment needs are reduced significantly, fluid control is more easily automated than solid batch processes, and we can mine deep, relatively low grade and complex ore bodies.
2366	4	Individual	Unless they bring in water from the ocean, and desalinate it if necessary for mining operations. The oceans are supposed to rise with global warming, not fall. So that supply wouldn't be exhausted, and after the mine closes after 20 years, the desalination plant and or transport pipe or canal could be used for homeowners, who surely will not be able to afford such a thing on their own. Not Pima county, not Tucson, not Green Valley, not Sahuarita, not even Arizona could afford such an expense now. Whether the mine could, they would have to decide.
2371	8	Individual	IF YOU APPROVE FOR THE ROSEMONT MINE TO GO INTO PRODUCTION, THEY SHOULD ONLY BE ALLOWED TO USE CAP WATER (NO GROUNDWATER). REMEMBER, THIS IS A FOREIGN COMPANY THAT WILL BE REMOVING OUR PRECIOUS METAL TO BE SHIPPED OVERSEAS. WHY IN THE WORLD WOULD WE ALLOW THEM (FOREIGN ENTITY) TO DESTROY OUR GROUNDWATER BASIN.
2381	17	Individual	I would suggest that Augusta's planners have not thoroughly researched the project. I propose that they examine Sycamore Canyon to the North of their project. This large canyon could accept all or nearly all of the waste, including tailings that would come out of the proposed pit. It would also not be visible from either Highway 83 to the East or from the Santa Cruz Valley to the West. The canyon for the most part is rather barren of plant growth, has no water, and is poor terrain for both wild life and cattle. A perfect dump space.
2381	19	Individual	The Rosemont ore body is ideally suited to an underground method of mining called sublevel caving. The technique is called VCR or Vertical Crater Retreat. This method is being used by Vale/Inco at the Stobic Mine in Canada. An underground approach to the Rosemont project eliminates the need for thousands of acres of public land for dump space, as the method produces very little waste rock. The caved area at the surface would be relatively small compared to an open pit and would be confined to Augusta's private land, not the publics. The caved area would not be as offensive to the line of sight from Highway 83, as a large open pit would be. Tailings could be deposited in Sycamore Canyon as discussed above.
2396	5	Individual	To alleviate traffic on public roads, a system of private roads on forestry land, maintained by Augusta may be a better alternative than allowing the mine's equipment to damage the public roads.
2400	11	Individual	Use existing Helvetia Mine road from the west side of the Santa Ritas for egress for mine employees and mine haul trucks.

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2400	12	Individual	Establish railspur for transportation of ore. This would eliminate mine traffic from our public roads, going thru housing, school sites and Adding to the congestion of an already severely congested area.
2400	13	Individual	A conveyor belt or slurry pipe could be use to transport to the trucks over the mountain or Directly to railspur.
2405	5	Individual	I propose that Highway 83 should not be used for the Rosemont Mines primary access. The better and safer alternative is to use Santa Rita Road as the primary access to the mine.
2423	5	Individual	I recommend that no current road/highway systems in existance be usable for that enterprise.
2453	19	Individual	I note the great interest in alternative energy - solar, wind, geothermal, etc. Perhaps some of these could be used at the mine? At any rate the copper and other minerals will be a boost to the construction of alternative energy generators.
2470	29	Individual	Where is the railrod spur?
2480	4	Individual	Solar panels on tailings/crater: As a gusture of good will, why don't the planners install solar collectors on the mine crater and tailings to contribute to non-polluting energy production?
2591	20	Individual	Has any consideration been given to the possibility of using processed waste water as a major source of water for mine use? If it is good enough for the people of Orange County in California to drink, perhaps it could be a reasonable alternative for the mine.
2617	51	Individual	We understand that there are numerous copper mines that were closed down when the value of copper dropped. Further we are dismayed that a new mine is even being considered before the possibility of re-opening up an existing mine. 1. Why don't you choose to be a proud reflection your motto to "respect the land" and persuade the mining companies to re-open the closed mines, operate where their environmental impact would be less and where the residents would welcome them? 2. Also, don't we have mine sites that could be re-opened that have a smelter on site? That way the ore would not have to be shipped to China. What's wrong with this picture? What am I missing here? It seems too obvious. Please clarify this. 3. Why do we choose to tear open the earth so quickly? Why don't we take advantage and "recycle" our mines as we are being taught to recycle our bottles and cans? Wouldn't the people in those communites be more grateful?
2634	23	Business	The proposed Rosemont ore body is in an environmentally sensitive area and would be better left in the ground.
2644	20	Individual	If the mining operation does come to fruition it would seem to us that the company should build and pay for their own paved road from the mine site to the Box Canyon Road, and pay to improve the Box Canyon road with a paved surface, and straightened curves, to Continental and the railroad to Mexico at that point. This would seem to have the least amount of impact and be the most direct route to ship the concentrated ore out of the country completely avoiding using Route 83, and avoiding possible hazardous materials loads on Route 82. The same Box Canyon route would be available to receive those hazardous materials required by the mining operation. Water from the extended C.A.P. canal could parallel the new Box Canyon/Continental road and be piped along the bottom of the Box Canyon Wash, then up and along the new road leading to the mine site. This entire route is in remote, mostly undeveloped country, until reaching Continental.
2666	12	Organization	The simplest solution suggested so far is to limit the mine to daytime operation only.
2673	1	Individual	The bulk of the concerns are summarized as water, environmental, misrepresentaions of the Rosemont Project information and the failure of Rosemont to utilize an alternative mining approach that would have a smaller footprint and be less invasive on all concerned.

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2673	21	Individual	An underground mine could be used as an alternative to extract the copper bearing ore. To reduce the impact of the tailings the underground mine could start with the primary shaft at the maximum surveyed depth of the ore deposit. The initial extraction (mining) would begin at the maximum depth and then work upwards to the top of the copper bearing ore. The project would be continuously refilling after the extraction of the ore from the bottom up with excess material and waste. Rosemont Project representatives have indicated that a new mechanical process was going to be used to reduce the tailings debris to a moisture content of 15%. The reuse of the damp tailings should stop or reduce any in-hole dust and conceivabley provide a good material for compaction to be used for the rising floor for the ever elevating mining process. The need for pumping invasive ground water out of the underground mine would lessen as the mine developed and work progress onto higher portions of the ore which would be the reverse of an open pit mine. An underground mine that utilized the tailings as part of the ongoing process would alleviate some of the concerns for major unsightliness, excessive overburden striping, a pit catching storm and ground water with the associated pumping and subsequent discharge. The on going concern with all large projects is the set aside for final cleanup and remediation as required. The underground mining alternative suggested above would greatly remove some of the concerns since most of the remediation is concurrent with the conintuing extraction.
2673	33	Individual	We request a no action decision on the proposed Rosemont Copper Mining Projects.
2721	12	Individual	Mine closure – An effective use of the plus 3,000 acres of mine tailings and waste rock would be to level tem and use them for solar arrays. The Forest Service could lease these areas for a fee to private companies for power generation.
2736	26	Government	Could Rosemont use CAP water directly instead groundwater? What would be the effect?
2736	32	Government	If Rosemont directly used CAP water, where would the pipeline be located? What if Rosemont used CAP water directly and pumped groundwater when CAP water is not available.
2745	1	Individual	Alternative One is to require commercially-available Central Arizona Project (CAP) water and no groundwater to be used by Rosemont Copper for this action.
2745	2	Individual	Alternative Two is an alternative electricity plan to supersede those in the Mining Plan of Operations (MPO) in section 2.7 that does fails to meet the operational needs for Rosemont Copper
2745	15	Individual	Alternative One is a solution that avoids almost all these impacts will still permitting the Rosemont Copper Mine. The only way to avoid impacting the groundwater is for Rosemont Copper NOT to used ground water as required by Alternative One.
2745	16	Individual	Alternative Two provides a new way to provide adequate and continuous electrical power to the Rosemont Copper mine without impacting the local electricity "sink" in Tucson due to inadequate electricity available for this mine and other large consumers in southern Arizona. Alternative two is to build an electrical generation plant on site, using natural gas from large El Paso natural Gasline that runs parallel to Insterstate Highway 10 (I-10) with less air pollution, less water demands, and removable ease project reclamation upon completion of the mining operations.
2745	17	Individual	Overview of Alternative One: Rosemont Copper can commercially purchase adequate amounts of CAP water to meet all its needs. CAP water can be used by this mine in the same manner as ground water. Rosemont will need to purchase CAP water to meet its expected requirements and provide the necessary infrastructure to deliver CAP water to the mine. This will result in an underground pipe that will, after burial, have little resultant cumulative environmental impact. This pipeline will need environmental surveys; will probably impact a large number of Native American cultural resources, some animal and plant habitats, and usual construction mitigations including dust and noise control actions. In general, pipeline mitigations are significantly less onerous than water depletion impacts on the future of these communites. If Rosemont Copper demand is lees than the quantity of CAP water purchased, then it can "sell" that CAP water to local water utility companies for recharge or to satisfy other needs, thus recooping some capital pipleine expenses.

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2745	18	Individual	Please see attachment 1 for a detailed discussion of this alternative and elements that are required to be included in the draft EIS. Alternative One is recommended.
2745	20	Individual	Overview of Alternative Two. Rosemont Copper did not have a viable electricity plan in the MPO, section 2.7 This alternative provides a new electricity plan that results in less air pollution, less water resources consumed for electricity generation and results in almost no footprint after reclamation. This alternative is a local, air-cooled, natural gas turbine generation plant on site of the mining operation. An underground natural gas line to connect with the El Paso Natural Gas line to the north, parallel to Interstate 10, has a smaller footprint than any of the options proposed in the MPO.
2745	21	Individual	Please see Attachment (2) for discussion of this alternative and elements that are required to be included in the Draft EIS. Alternative Two is recommended.
2760	7	Government	Reasonable alternatives could include, but are not necessarily limited to, alternative sites or alternative designs for major mining facilities (e.g. waste rock piles or tailings impoundments), smaller project, other viable ore bodies, different pit geometries, and pit backfilling; as well as any alternatives evaluated for purposes of obtaining a Clean Water Act Section 404 permit, pusuant to 40 CFR Part 230.
5286	22	Individual	In view of the already poor condition of Route 83, and the very high potential for disastrous conflict between school buses, sulfuric acid trucks, and wide loads on a narrow, twisting, mountain road, it seems far more reasonable and safe for the Forest Service to require Rosemont to simply switch its proposed primary and secondary access routes. An access road coming west from Route 83 would need neither to be as wide, nor as improved, it it were only to be a secondary access route, thus saving some of our CNF land, and much of the very heavy and hazardous mine traffic flows could be routed north- and southbound along I-19, instead of along Route 83. The existing road from the west would need improvement, but, again, I emphasize, Rosemont already recovers its investment in less than three years, and a little additional road-improvement expense is nothing compared to the terrible suffering which would be engendered by a school bus-acid truck collision along Route 83. This alternative would also save Rosemont the expense of constructing a very complex intersection at Route 83, which will be hazardous no matter how carefully planned, because it would be on a Route 83 downgrade. If this were only a secondary access road, a much less complex intersection would be required.
5286	23	Individual	An even better alternative would be to oblige Rosemont to use the existing Rosemont Junction road for this access road, instead of constructing an entirely new road through our pristine Forest land, as their MPO proposes. If there's already an existing road which goes almost directly to the mine, why ruin even more of our Forest to build a new one?
6720	2	Individual	Alternative one, limit mining excavation and placement of all spoils to fee simple lands under the ownership of Rosemont. Under this alternative the applicant could demonstrate their commitment to land stewardship through providing maximum protection of all public land surrounding their path in a few simple area. In effect, this alternative would prohibit placement of all spoils and overburden on public lands, thus protecting five square miles of public land designated for permanent mine tailings, facilities, waste rock storage, and open-pit excavation proposed in the current Mining Plan of Operation.
6720	3	Individual	Alternative 2, utilize a continuous backfill technology, whereby the open-pit is progressively filled with waste rock and spoils, and overburden generated as the excavation proceeds. This alternative might warrant some interim and very limited storage of waste material on adjoining public land, but would essentially protect all public lands. This alternative would not result in an open-pit completion of extration, surely a preferable outcome with the current proposal.
6720	4	Individual	Alternative 3, this is my favorite. Remove all spoils, tailing, and waste rock, from the site via a new rail line constructed to the mine sites. This so called waste material could then be reutilized as a resource, a positive resource offiste in other industrial processes, including but not limited to crushed rock for construction use, construction landfill, road met construction, similar industrial uses, some may be even requiring radioactivity material. This alternative can clearly promote conservation through minimizaing waste materials, while the rail transportation would avoid the significant public safety impacts resulting from the proposed truck traffic on highway 82.

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Record ID	Comment Number	Commenter Type	Comment Text
6842	1	Individual	Water is the most important issue in this entire process. Our water is our life. Without water -- it's more important than copper. And we need to protect the groundwater that is now being depleted at one inch a week. 48 -- four feet a year, approximately one inch a week the water table is lowering in the Tucson Active Management Area. That is required for sustaining life. Copper is not required for sustaining life. Therefore, a business should be able to set up a plan to buy -- plan to put in the pipes to import CAP water because mines, it doesn't matter whether it's CAP water or groundwater to operate the mine. So the water could be procured by the company to operate the mine, and, therefore, that alternative should be one considered by the Forest Service that I'm now recommending to be looked at seriously because it does seem to be extremely reasonable.
6842	2	Individual	The second alternative involved Section 2.7 of their plan which discusses the electrical supply for the mine. It states that adequate electricity is not available. The preferred TEP approach calls for turbines to be running in Nogales so that Rosemont Copper can operate its mine. I don't want to go through the electrical problems to get power in Santa Cruz County, because I've been working on that for the last nine years, but that is another alternative. And my alternative would be to put in a natual gas line to the mine from I-10 and then put in trailers which could hold the power plant. They have their own power plan operating the mine, and when it's over in 19 years, the trucks drive away and the power plant disappears. 95 percent of the power they buy from TEP comes from coal-fired power and, therefore, the CO2 and other options need to be considered, and it's clearer if you use natural gas.
6863	2	Individual	A pricing model that would be considered probably beneficial to them would be something that did underground mining with reusing the tailings back in the mine to keep it from collapsing like the West Viriginia mine did. Something different would go along with the fact that, in their study, they only used $1.50 copper, which I gather now copper's worth three, four dollars. That would benefit us all by they would get their minerals when they wanted them and they would protect our visual impact on the Sonoita Highway. They would probably reduce everything else that's going on it. Without that kind of consideration, I would have to say no-action would be my favorite.
6885	1	Individual	Instead of storing cap water and using groundwater, I think a better alternative would be to pump the CAP water directly to the east side of the Santa Rita's into a man made lake. Rosemont can then pump directly from the lake for their processes. The lake can also be used for public recreation and wildlife water source. As as added benefit it may help prevent the groundwater levels from lovering north of the mine. It would also eliminate concerns from over pumpimg in Sahuarita and the planned use of community water storage areas. I propose a study be completed with this option as the primary source for the Rosemont Mine water source. It seems like a good alternative to pumping groundwater directly from a few close wells in Sahuarita, and would benefit the mine and the public.
6975	11	Individual	PROPOSAL : SATELLITE OPERATION The shut down Twin Buttes Mine could make an EXCELLENT choice of a satellite milling / processing facilities with the ore and over burden transported to the Twin Buttes site . Via covered conveyor belt. THIS PLAN WAS UNDER SERIOUS CONSIDERATION BY ANACONDA FOR THIS VERY PROPERTY, USING THE TWIN BUTTES FACILITIES AND THEN PRICE OF COPPER FELL! SOUND FAMILIAR?? This would mitigate damage done to US FOREST SERVICE PROPERTY THAT AUGUSTA WANTS TO TURN INTO TAILINGS AND WASTE DISPOSAL SITE. I WOULD REQUEST THAT YOU CONSIDER EACH PROPOSAL AND ANSWER THE SPECIFIC PROPOSALS. Please contact me if I could be of any assistance and I would make my well availble to assist in monitoring.

DRAFT-DELIBERATIVE CONTENT ONLY

Alternatives

01 General

Record ID	Comment Number	Commenter Type	Comment Text
7134	15	Business	3. The "alternatives" analysis, specifically the "no action" alternative, which is one of the keystones of the NEPA process, must be thoroughly explored Alternatives are "the heart of the environmental impact statement." 40 C.F.R. ss1502.14. We want to reiterate that nothing in and no interpretation of the Mining Law of 1872 excuses the Forest Service from robustly evaluating a range of reasonable alternatives. Indeed, as the Court of Appeals for the Ninth Circuit has stated: NEPA requires that the federal agencies include a detailed statement of "alternatives to the proposed action" in any recommendation or report on actions significantly affecting the quality of human environment. 42 U.S.C. ss 4332(2)(C)(iii). Additionally, the statute mandates that the agencies "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." Id. Ss 4332(2)(E). The "alternatives" section is "the heart of the environmental impact statement." 40 C.F.R. ss 1502.14. "The consideration of alternatives requirement… guarantee[s] that agency decisionmakers have before them and take into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost benefit balance." Bob Marshall Alliance, 852 F.2d at 1228 (internal quotation marks, punctuation, and citation omitted) (emphasis in original). Pit River Tribe v. United States Forest Service, 469 F.3d 768 (9th Cir. 2006). Such alternatives should include both site alternatives and technological alternatives. For example, Rosemont Copper Company had proposed using a dry tailings method that has never been used in the United States. Particularly given that this would be a first time use in the United States and in this climate, the DEIS should analyze other alternatives to that technology, along with their probable environmental effects, including the additional water alternative technologies would require. We ask the Forest Service to ensure a comprehensive analysis of the "no action" alternative; the one automatically required alternative in all environmental impact statements. 40 C.F.R. ss1502.14(d). Agencies, at times, tend to give short shrift to the actual analysis on the "no action" alternative, to the detriment of both their own decisionmaking and the public's understanding of the potential impacts of the proposed action. See, for example, inadequate treatment of the "no action" alternative in NEPA documents prepared by the Forest Service in Pit River Tribe v. United States Forest Service, Id., and City of Tenakee Springs v. Clough, 915 F.2d 1223 (9th Cir. 1990) The analysis in the DEIS should comprehensively evaluate the future of the affected geographic area in light of such plans as the detailed and comprehensive Sonoran Desert Conservation Plan adopted by Pima County, Pima and Santa Cruz County economic projections and other local, state, tribal and federal planning processes that affect the area. This evaluation must be compared to equally detailed analyses of the same areas should the proposed mine be approved and commence operations. We also remind the Forest Service that it has an obligation to analyze reasonable alternatives that might, in whole or in part, lay outside of the agency's own authority. "An agency's refusal to consider an alternative that would require some action beyond that of its Congressional authorization is counter to NEPA's intent to provide options for both agencies and Congress." National Wildlife Federation v. National Marine Fisheries Service, 325 F. Supp. 2d, 1143 (W.D. Wa. 2002). Finally, the Forest Service must explain in the DEIS how each of the alternatives considered in it and decisions based on it will or will not achieve the requirements of Sections 101 and 102(1) NEPA and other environmental laws and policies. 40 C.F.R. ss. 1502.2(d).
7151	27	Organization	Lining all mine facilities, including waste rock piles and berms, should be included as an alternative in the EIS.

DRAFT-DELIBERATIVE CONTENT ONLY

Alternatives

01 General

Record ID	Comment Number	Commenter Type	Comment Text
7151	31	Organization	The alternatives in the EIS must include complete or partial back-filling of the open pit. The EIS should determine how much additional expense it would be to backfill the pit: How much additional time would be required in the overall life of the mine to include complete or partial backfilling? How would backfilling of the pit help protect or harm water quality in the watershed? How deep would this reduce the likelihood of aquifer contamination post-mining?
7184	11	Individual	Alternative: Insulate the bottom of the tailings heap and dam in Barrel Canyon with an impermeable liner. Run perforated piping above the liner and below the tailings at each layer of limestone so that any and all run-off from the heap can be captured and disposed of properly. This would be a responsible and innovative approach to mitigating the majority of pollution problems associated with hard-rock mining. It would also be an exact method for measuring of and recording time tables for the speed of leaching and ypes of pollutants generated over the next 100 years or more. Rosemont would have to be responsible for monitoring the site and disposing of contaminants for that period of time.
7200	2	Organization	The EIS must identify and evaluate all reasonable alternatives to the Rosemont Project. Development of alternatives for the proposed action is the heart of the EIS. 40 C.F.R. SS 1502.14. Council on Environmental Quality (CEQ) regulations call on the Forest Service to "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons fore their having been eliminated," "[d[evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits," "[i]nclude the alternative of no action," and "[i]nclude appropriate mitigation measures not already included in the proposed action or alternatives." Id. SS 1502.14 (emphasis added). For the Rosemont Copper Project EIS, the Forest Service must include the no-action alternative in their discussion and evaluation of reasonable alternatives. Considering the vast environmental impacts that are likely to occur should it move forward, the Sierra Club firmly believes this is the only appropriate alternative for this project. However, should the Forest Service reject this alternative, they must include a justification for the rejection as well as a discussion of mitigation measures that will adequately offset the impacts of the proposed action.
7277	2	Government	The Department believes that presentation of alternatives analyzed in the Environmental Impact Statement should include a description of water use by all elements of each alternative, including ancillary facilities, and should include best water conservation strategies for the technology used, by alternative. Analysis of alternatives should include direct, indirect, and cumulative effects to water supplies and rights to water.
7429	6	Individual	Extrapolating from the information in the Mine Plan of Operations, a truck would be entering or leaving the highway at the access road about every three minutes around the clock. Many of these would be very heavy trucks. Furthermore, this does not include employees entering or leaving the plant during shift change. (Note that “trip” as counted in the Plan is a round trip, in other words a truck entering and a truck leaving.) The plan also states that traffic would be staggered to reduce the numbers in the early morning and when school buses are operating, meaning that it would be even heavier at other times. The highway would become virtually unusable for regular traffic at certain times. Over half of these trucks (65%) will be tractor trailers taking copper concentrates to the railhead at Benson for shipment to a smelter. Because of the quantity of weight of concentrates, the usual means of transportation from Arizona mines is by rail. Most copper mines in Arizona have constructed rail spurs for this purpose. Arizona smelters are designed to accept concentrates delivered by rail. The plan to transport concentrates by truck is both unusual and unnecessary, as well as being expensive.
7429	9	Individual	Augusta must be required to review other possibilities, such construction of a rail spur, as other mines have done, or an alternative roadway to I-10, or both. A rail spur would be an economical and safe way or bringing many other bulk materials (fuel, acid and explosives) to the site as well as transporting both copper and moly concentrates to smelters.

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Alternatives

01 General

Record ID	Comment Number	Commenter Type	Comment Text
7429	12	Individual	Given the problems arising from transportation of concentrates, Augusta must be required to evaluate new methods of processing concentrates from sulfide ores. Specifically, Augusta must be required to consider use of on site high pressure/high temperature leaching of copper concentrates. This process is a new method of extracting copper from sulfide ores. It offers a low cost alternative to conventional smelting and refining. It is currently being used on a commercial scale at several locations around the world and in Arizona at the Morenci Mine and at the Bagdad Mine, both owned by Freeport-McMoRan. The process in use at Freeport's mines was refined and tested over a four year period at the Bagdad Mine before construction of the commercial scale plant at Morenci. Traditionally, copper concentrates from copper sulfide ores have been processed at smelters and refineries. The concentrate pressure leach process bypasses both of these steps and parallels the oxide process, producing cathode copper on site. In pressure leaching of sulfide ores, the ore is milled and processed on site to produce concentrates in the same way it would if it were to be sent to the smelter. Instead of being sent to a smelter and refinery, the concentrate is mixed into a slurry and processed at high pressure and temperature in a leach vessel. This produces copper bearing solution that can be combined with the solution from the oxide circuit and sent to the SX/EW facility. The pressure leaching step also produces sulfuric acid, which can be used in the oxide heap leach circuit, reducing or eliminating the need to purchase and transport acid to the site. The entire process takes place on site. This new process appears well suited to a greenfield operation, particularly one with no convenient access to a smelter and refinery. An internet search reveals additional information on this new technology. The advantages of this system for the operator are: Cost savings by eliminating the fees paid to a smelter and then to a refinery for processing and for the purchase of sulfuric acid for oxide ore processing, also purchased from a smelter. This seems particularly relevant for a company that does not own a smelter or refinery. Cost savings from transportation of concentrates to smelter and transportation of acid from smelter to mine site. Acid production can be managed to match consumption in the heap leach by control of temperature in the leach vessel. Full use of SX and EW capacity through management of parallel systems. And increased ability to manage production levels. Environmental Impacts: A primary impact would be reduction of traffic. Trucking the concentrates accounts for about 65% of all traffic. Importing acid account for an additional 10%. A reduction of 75% of the traffic, including some of the heaviest vehicles, could be significant. This would be balanced by an increase in trucks leaving the mine carrying cathodes, but this would be considerably less that than the concentrates. The overall impact on air quality and water quality would likely be positive, as the concentrates would not be processed in a smelter. Sulfur emissions would presumably all be captured as acid. A review of the environmental permitting for the Bagdad and Morenci pressure leach operations would be instructive. The negative would be the addition of the pressure leach tank and possibly an increase in the size of the SX/EW, increasing the overall land use, all of which would, of necessity, be on public land.

DRAFT-DELIBERATIVE CONTENT ONLY

Alternatives

01 General

Record ID	Comment Number	Commenter Type	Comment Text
7430	2	Organization	Some suggested steps to mitigate the potential harm from light pollution from the mine's all night operation include: 1. Use fully shielded or full cutoff lighting fixtures, aimed directly downward. 2. For all road, dirt road, and parking lot lighting, both inside and outside the pit, use 55 watt induction lamps with motion sensor controls to reduce energy consumption and light pollution at the same time. 3. Exterior lighting on any buildings or trailers should be fully shielded and limited to egress lighting, using the lowest level of light sufficient for the purpose.
7562	8	Individual	An underground mine could be used as an alternative to extract the copper bearing ore. To reduce the impact of the tailings the underground mine could start with the primary shaft at the maximum surveyed depth of the ore deposit. The initial extraction (mining) would begin at the maximum depth and then work upwards to the top of the copper bearing ore. The project would be continuously refilling after the extraction of the ore from the bottom up with excess material and waste. Rosemont Project representatives have indicated that a new mechanical process was going to be used to reduce the tailings debris to a moisture content of 15%. The reuse of the damp tailings should stop or reduce any in-hole dust and conceivably provide a good material for compaction to be used for the rising floor for the ever elevating mining process. The need for pumping invasive ground water out of the underground mine would lessen as the mine developed and work progress onto higher portions of the ore which would be the reverse of an open pit mine. An underground mine that utilized the tailings as part of the ongoing process would alleviate some of the concerns for major unsightliness, excessive overburden striping, a pit catching storm and ground water with the associated pumping and subsequent discharge. The on going concern with all large projects is the set aside for final cleanup and remediation as required. The underground mining alternative suggested above would greatly remove some of the concerns since most of the remediation is concurrent with the continuing extraction.
7649	1	Individual	What are the options, Alternative to this site? Why not: Ajo, Kingman, Ruby, San Manual, Bisbee
7650	1	Individual	ALTERNATIVE 1 - Only Use CAP Water Resources.
7650	3	Individual	Alternative 1 uses water resources only from the Central Arizona Project (CAP). Ground water is neither required for mining nor for Rosemont Copper.
7650	6	Individual	The Forest Service analysis must show which Alternative, the only CAP-water or the proposed and deficient water resource plan; best mitigates all direct and cumulative indirect and cumulative indirect water withdrawal impacts on ground water. This "CAP water only" Alternative needs to by fully evaluated so all decision makers have real options to consider before making their Record of Decision in this matter.
7650	7	Individual	.ALTERNATIVE 2 - A New Electrical Plan.
7650	10	Individual	This ALTERNATIVE uses natural gas from an El Paso Gasline parallel to I-10 to fuel air-cooled gas turbines at the mine to also eliminate transmission losses from distant power plants. This is a reasonable ALTERNATIVE to provide power for Rosemont Copper with less air and water pollution by an underground gasline instead of transmission along Scenic Highway SR 83 or across Green Valley.

DRAFT-DELIBERATIVE-CONTENT ONLY

Alternatives

01 General

Record ID	Comment Number	Commenter Type	Comment Text
7650	23	Individual	Under ALTERNATIVE 1, Rosemont would be required to obtain allocations and permits, develop and build pipeline, and pump CAP water directly to the mine so that TAMA ground water will NOT be significantly impacted. Under ALTERNATIVE 1, less direct and cumulative indirect electricity will used as ground water is not be pumped out of the ground and CAP water is pumped into the ground for recharge. Many MW-hrs of 24/7 electrical power will be saved. Under ALTERNATIVE 1, subsidence and ground water impacts due to Rosemont Copper operations are avoided. There will be no impacts on local wells in the vicinity of Sahuarita, other than local wells closer to the mine where the mine pit will lower the water table byits large and half-mile deep cone of depression. Under ALTERNATIVE 2, the resultant electrical load will be decreased based on using ALTERNATIVE 1 for direct delivery of CAP water, thus reducing the overall cumulative negative impacts by using CAP water only. There are presently inadequate electrical resources in Pima and Cochise Counties to meet the continuous electrical demands of Rosemont Copper. To meet Rosemont Copper's electrical demand, ALTERNATIVE 2, uses local generated power dedicated to this mine to relieve other in Pima County demand. Constructing a natural gasline from the I-10 El Paso Natural Gasline corridor directly to Rosemont, under ALTERNATIVE 2, avoids new transmission lines, has a smaller carbon imprint, and pollutes less air to generate the mine's electricity. Less visual impacts result with no impacts on Scenic Highway SR 83. Natural gas turbines are small, fairly inexpensive, and can be mobile, so Rosemont Copper can remove its power plant after it closes. When assessing ALTERNATIVES 1and 2, the synergistic effect needs to be considered as both are better together; however, each can be standalone.
7650	24	Individual	Rosemont Copper proposes a "system" of an infrastructure, buildings, earth transportation, processing buildings, and other component elements. The most important interfaces to this system are water and electricity; otherwise, most operations are within the Rosemont Copper system. Every interface requires careful analysis, as each impacts all other elements withing. These two Alternatives provide a way for isolation fo each (water and electricity) so that a sensitivity analysis for each ALTERNATIVE (and other impacts) can be performed. The Operations Research process provides ways with linear algebra, models and validated operations research tools to make accurate assessments of interacting elements, including transportation elements within and external to the system boundaries. Such analysis requires OR specialists, usually mathematicans experienced in this field of analysis. Allocation of measurable objective resources for each element determined by such analysis is commonly performed in the mining industry using standard Operations Research processes and computer models. This usual Systems Engineering task makes a series of objective trade and sensitivity studies, also called cost/benefit, trade-off, optimization or objective assessments.
8607	2	Individual	There is a passable road from Rosemont through the Santa Ritas to a railroad spur at Sahuarita.
8884	1	Individual	I would like the review committee to consider instead of doing an open pit mine at the proposed Rosemont project, to do a deep underground copper mine, similar, a, to what the Resolution Copper Mining Company is doing in Superior, Arizona, so that we could eliminate tailings and, um, then we could maybe fill -- use some of the other materials to fill other open pits, as they propose to do. Anyway, if you would please consider that as an alternative, um and give us pros and cons of that, I would really appreciate it.
11047	23	Individual	I propose a dome which can be opened and closed and used in conjunction with solar still desalination distilling to produce more fresh water. This should prevent more flying animal deaths as well as as saving on ground water pumping. It will also save on electricity for water production as the water would be produced on site for the employees to drink and shower in and gravity feed could be used from the tanks.
11082	13	Individual	I think a fish habitat would be nice for reclamation. How about a nice lake that is safe in the pit for boating, fishing and so forth? I have no idea what the reclamation would be to make that happen safely though, but it would be nice to have a lake and recreation such as the Catalinas have. If the safe thing doesn't work out, I like the idea of a Solar Farm because no one would see it and the land would have already been raped so why not use it for some good?

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Alternatives Brainstorming Summary

Proposed Alternative/Mitigation	Issue Addressed	Resource affected	Considerations	Things to research
Land Exchange		Arch Tribal All	• Expand analysis area • No land management needs • Exchange resources	Look into nearby land & Rosemont holdings
Relocate tails & waste - Sycamore Cyn - Fig Tree Cyn		Arch Tribal Visual	• Can avoid Arch sites & springs (Rosemont Ranch) • Rosemont looked at Sycamore and it could be seen in Phx • Fewer Arch sites in Syc. Cyn • Fig Tree Cyn-too small? • More Riparian on W side • Discharge into State Outstanding H2O • W side already visually impacted • Sycamore is the only desert on District • No better place to save Riparian	
Mining through the ridge		Arch Tribal	• Relocate tails to E side	
Compensatory land designation		Arch Tribal	• No land management needs	
Remove the ridge		Visual	• Visibility improved from SR 83 • Could see from GV, Tucson? • AZ Trail use is 80/yr	
Different slopes based on what Reclamation is for (livestock, veg, erosion)		Visual Wildlife	• Better wildlife • Better visual	

More variable heights on piles		Visual	•	
Smaller top, less slope of tails & waste		Visual	• Increase visual • Less volume=larger footprint	
Conveyor belt transport of tails & waste		Transportation	•	
Increase/shift access vs. moving tails & waste		Transportation	•	
Electric/trolley system or rail out of area		Transportation Public Health & Safety	• Technology? • Feasability	
One way access route		Transportation	•	
Use Old Sonoita Hwy		Transportation	• Upgrade • expense	
Slurry line for concentrate		Transportation	•	
1 Right of Way for utilities & roads		Transportation All	•	
Relocate SR 83		Transportation Visual	• Reduce visual	
Alter trucking schedule around school buses		Transportation Public Health & Safety	• Some already in MPO	School bus schedules
Expand & use Secondary access		Transportation	• Less traffic on SR 83, more in GV? • Over 50 ft wide and need to change grades	

			• Speed down due to increased grade • Affect Experimental range	
Wet tailings		WR-ground	• Add groundwater after seepage	
Pit Lake alternatives		WR-ground	• Are these invalid?	
Store storm water to contribute to ground water		WR-ground	•	
Use CAP water		WR	• Not reliable supply • Would require large storage area	
Use reclaimed water		WR	• Can't gain legal access • Sahuarita uses theirs • GV leased it to private party for foreseeable future	
Use Cienega		WR	• Riparian areas lost	
Dam Barrel Canyon		WR	• Reservoir could hold up to 10-12 k acre feet of water • Could house CAP • Turns plan into 0 discharge • ADWR will not give FS permit for surface water	Water laws Water rights
Backfill Pit		WR Arch Tribal	• Still has disturbance • No concurrent reclamation • Dirt left after filled • What would otherwise be mitigations would be alternatives • Extend life of facility • Increased resource use/ effects	
Reclamation with trees		Wildlife	•	

Convert ranch stock ponds and wells to wildlife water areas		Wildlife Riparian	•	
Create water features		Wildlife	• Help Chiricahua Leopard Frog	
Reconfigure/design toe of pile		Wildlife	• Increase water accumulation in strategic areas	
Coach water accumulation		Wildlife	• Better animal use • Encourage Riparian type areas • Flood control	
Move electric underground		Wildlife	• More ground disturbance	
Change east access to avoid Riparian		Riparian Wildlife	•	
Relocate popular trails		Recreation	• Could move OHV to East side of SR 83 (sec. 27 and 34) • AZ trail already moved • OHV get dedicated area	
Co-locate communication tower for more coverage		Fire	•	
Use LPS (low pressure sodium) lighting		Night Skies	• Reduse glare and glow for observatories	
Identify key protection area and adjust scheduling of operations		Night Skies	• Areas that most affect observatories • Schedule work to reduce light in those areas	Observatory schedules
More efficient equipment		Climate Change	•	

Alternatives Brainstorming Summary

Renewable energy use		Climate Change	• Explore in 60 days	Rosemont will be releasing a report soon
Identify water sources for fire		Fire	•	
Use waste rock for industrial uses		Land Use	• Possibly reduce footprint • Less waste • Not enough demand • Affect reclamation	Look at Sacaton
Pave roads		Air Quality	• Affect erosion and run off • Affect visual • Decrease dust and haze • Reduced OHV enjoyment	Pervious concrete option
Shorten operation			• Increase equipment • Increase footprint • Shorter job security • More trucks/ transport issue • Not financially feasible (increase cost by $500+ million)	

4/8/2009 IDT Meeting Alternative Notes

Alternative / Mitigation	Concept
Alternative	Relocate tailings and waste rock to west side of ridge
Alternative	Relocate tailings and waste rock to Sycamore Canyon
Alternative	Remove ridgeline west of pit
Alternative	Mine underground
Alternative	Backfill Pit
Alternative	Partially backfill pit
Alternative	Land exchange
Alternative	Federal government purchase of mine for US future consumption
Mitigation	Relocate the tailings around some archeological sites
Mitigation	Relocate OHV recreation to east side of SR 83
Mitigation	Slurry line pump the tails
Mitigation	Conveyor belt transfer of ore and waste rock
Mitigation	Water retention dam in Barrel Canyon (or in alternate drainages that tailings and waste are placed in)
Mitigation	Surfacing of roads
Mitigation	Line tailings and waste disposal areas
Mitigation	Create wetland with water from operation
Mitigation	Include trees with revegetation of disturbances
Mitigation	Build roads and trails on top of tailings
Mitigation	Have a spill plan for trucks transporting acid
Mitigation	Relocate legal public access roads
Mitigation	Preserve access to Gunsight Pass, Arizona Trail, Sycamore Canyon
Mitigation	Ensure public easement through private lands impacted by operation
Mitigation	Add public road section along primary and secondary access
Mitigation	Re-establish land ownership boundaries after operation, at operator's cost
Mitigation	Use Small Tracts Act authority to sell small FS lands amidst private parcels
Mitigation	Operator provides compensatory land designations
Mitigation	Vary slope with reclamation based on intended management of land and resources (ie., grazing, vegetation, erosion prevention)
Mitigation	Lessen slope of tailings and waste rock areas while maintaining footprint
Mitigation	Combine utility corridors and roads
Mitigation	Adjust trucking schedules to avoid school bus traffic
Mitigation	Convert stock ponds to wildlife water areas
Mitigation	Create water features
Mitigation	Reconfigure (redesign toe of tailings and waste rock piles
Mitigation	Relocate popular trails
Mitigation	Co-locate a communication tower to improve coverage
Mitigation	Identify water sources for fire

ROSEMONT COPPER

Resourceful.

May 29, 2009

RECEIVED MAY 29 2009

Ms. Jeanine Derby
U.S Forest Service, Coronado National Forest
300 West Congress Street
Tucson, Arizona 85701

Dear Ms. Derby:

This letter is in response to your letter (Derby to Sturgess) dated April 15, 2009, requesting response to draft issues and alternative and mitigation measures that would be responsive to those issues. Pursuant to Item E11 of our Memorandum of Understanding (MOU #03-MU-11030510-010, as modified), Rosemont Copper Company provides these comments as assistance in development of mitigation to the Proposed Action.

Our team member Kathy Arnold participated in the April 22, 2009 ID Team meeting as requested, and followed that with a presentation to the ID Team at a May 22, 2009 meeting that included members of the cooperating agencies as well as the NEPA contractor to the U.S. Forest Service, SWCA.

The attachments and materials referenced below are offered to formalize the Rosemont response to your request for Rosemont to identify alternative approaches and mitigation measures that are responsive to the issues and concerns raised by members of the public and agencies during the public scoping process.

Rosemont has provided a preliminary review of the alternatives that were provided on April 22nd and based on those discussions provided the Forest Service with information on each item identified. A transmittal of this information was made on May 7, 2009 and included all issues that could reasonably be addressed by Rosemont with the exception of 6 items. Because the items took slightly more time to assemble the information or perform the analysis, Rosemont is still working to provide the information to some of these items. Those items still outstanding are itemized in the table below. In addition, there was a question raised in the May 22nd meeting regarding using only fee simple lands for the Rosemont project, that analysis is attached.

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Issue Number	Issue	Information Provided?
2	Slurry tails to Sycamore Canyon	Information attached
9	Surfacing roads	Information attached
19	Change east access road to avoid riparian	Map attached
20	Use LPS Lighting	
21	More efficient equipment	Information attached
27	Solar technology	

In a summary and draft manner, Rosemont offers the following example of alternative operating methods, sites, technologies, and approaches to the Mine Pan of Operations, and a list of mitigation measures that are considered to be feasible additions or substitutions to the Mine Plan of Operations submitted in July 2007. A full compilation of the alternatives and mitigation measures organized according to the issues we have been asked to be responsive to and will be submitted in mid-June 2009.

Best Regards,

Original Signed by

Jamie Sturgess
V.P. Sustainable Development
Rosemont Copper Company
Augusta Resource Corporation

cc: Kathy Arnold, Rosemont Copper
Brian Lindenlaub, WestLand
Tom Furgason, SWCA

Doc. No. 8.6.9.1-032/09

Issue Number – 2

Slurry Tails to Sycamore Canyon

Alternative Presented

One or more members of the public or agency representatives have suggested that the EIS should consider an alternative that would use Sycamore Canyon for waste rock and tailings storage, instead of Barrel Canyon.

Feasibility of pumping tails slurry to Sycamore Canyon

Pumping of tails slurry is routinely performed within sulphide ore processing plants. What is unique about this alternative is the remote locate and distance. The tails filter plant for the proposed action is located adjacent to the tails thickeners. Under this option the filter plant would be located near Sycamore Canyon. Tails slurry would be pumped from the thickener underflow pumps and conveyed by pipeline to the remote filter plant. For this consideration, a site was determined at N11564524, E1719162 within a saddle, along the ridge line, between two peaks at elevation 5295'. The building is about 65' tall and would be placed at a pad elevation of 5230' so that the roof would be no taller than the adjacent peaks.

The pipeline would follow the haul road alignment determined under Issue Number 1. Since the slurry is a process solution, the pipe would have to be placed within a lined trench for double containment. Access for maintenance would be necessary but must be separated from haul truck traffic for safety reasons. Two 24" pipes for slurry and one 24" pipe for filtrate (process water to be returned to the plant) would be placed in the trench) A one-lane road and 10-foot wide trench would require an additional 30-foot wide cleared area beyond the haul road safety berm which equates to about 8 acres of disturbed area.

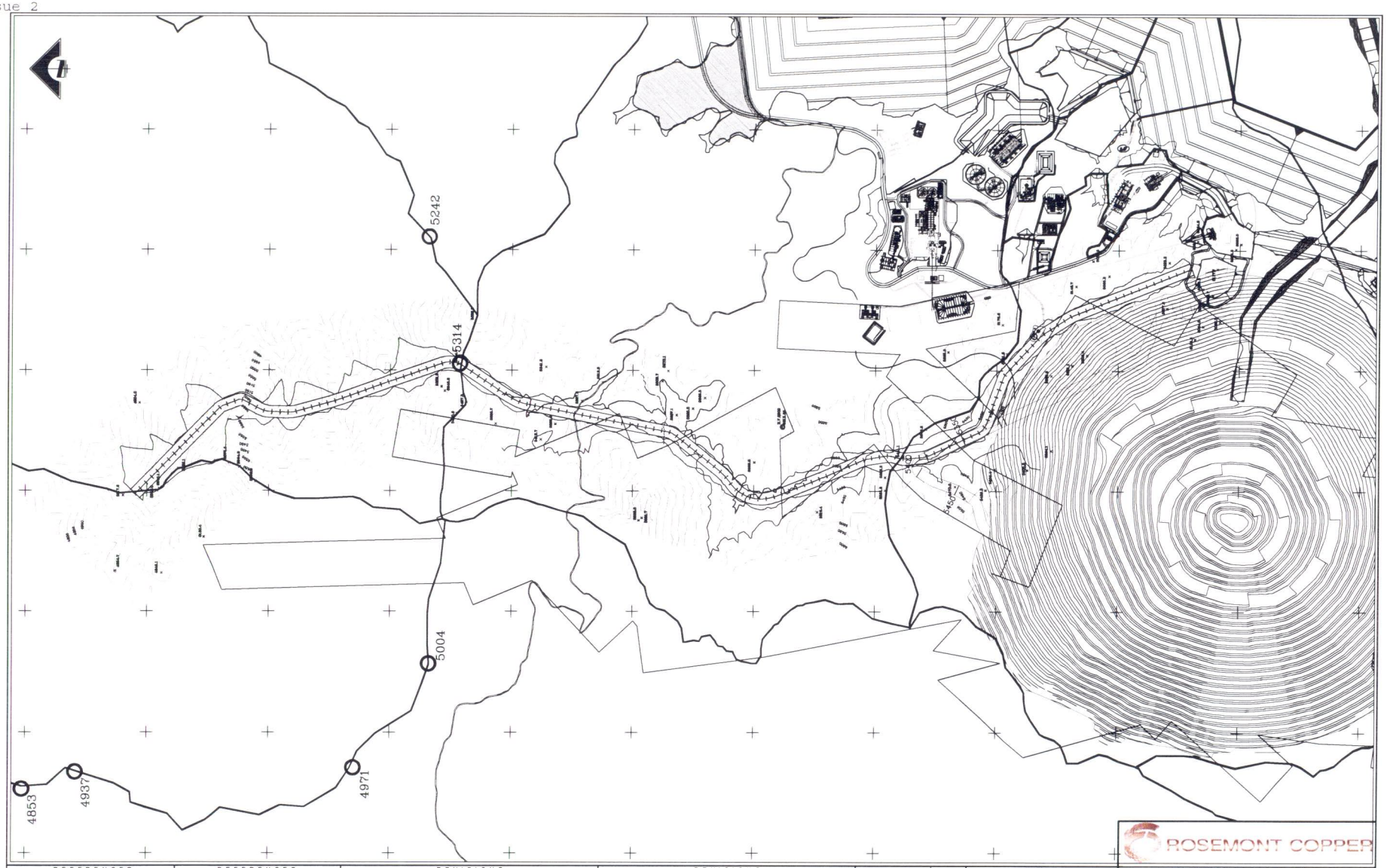
The pipeline alignment is 12,500 feet long. Slurry must be lifted vertically about 450 feet. Two 1900 horsepower (hp) pumps would be required as compared to 250 hp under the proposed action. This additional 3300 hp equates to about 17 million kW-hr per year. Additional power costs over the life of the mine would be at least $20 million.

Costs for the additional volume of earthwork required have not been determined. Other additional costs for this option would include 37,000 feet of 24" carbon steel pipe and 200,000 square feet of 60mil HDPE liner at a cost of about $8 million. Additional costs to provide power, data and voice communications, and accommodations for staff in a remote location have not been determined.

Also, during upsets, slurry cannot remain motionless within the pipe or it would settle and potentially plug. Therefore the pipes would have to be dumped (to the Settling Basin) on occasion. The volume of slurry within the pipes would exceed 580,000 gallons. Provisions would be necessary to purge trapped slurry in low points along the pipeline alignment.

Though technically feasible at significant additional capital and operational cost, when combined with the negative impacts of Issue Number 1, this alternative seems undesirable.

Issue 2



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DWG. NO.	TITLE	DWG. NO.	TITLE	NO.	DESCRIPTION	BY	APP'D	DATE	CLIENT	NO.	DESCRIPTION	BY	APP'D	DATE	CLIENT

SCALE: N.T.S.		DATE
DESIGNED BY	CAH	APR 09
DRAWN BY	DEJ	APR 09
CHECKED BY		
PROJECT MGR		
CLIENT APPR.		

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ROSEMONT PROJECT

USFS ALTERNATIVES
CIVIL
HAUL ROAD
TO SYCAMORE CANYON

JOB NO. MJ PN-08036

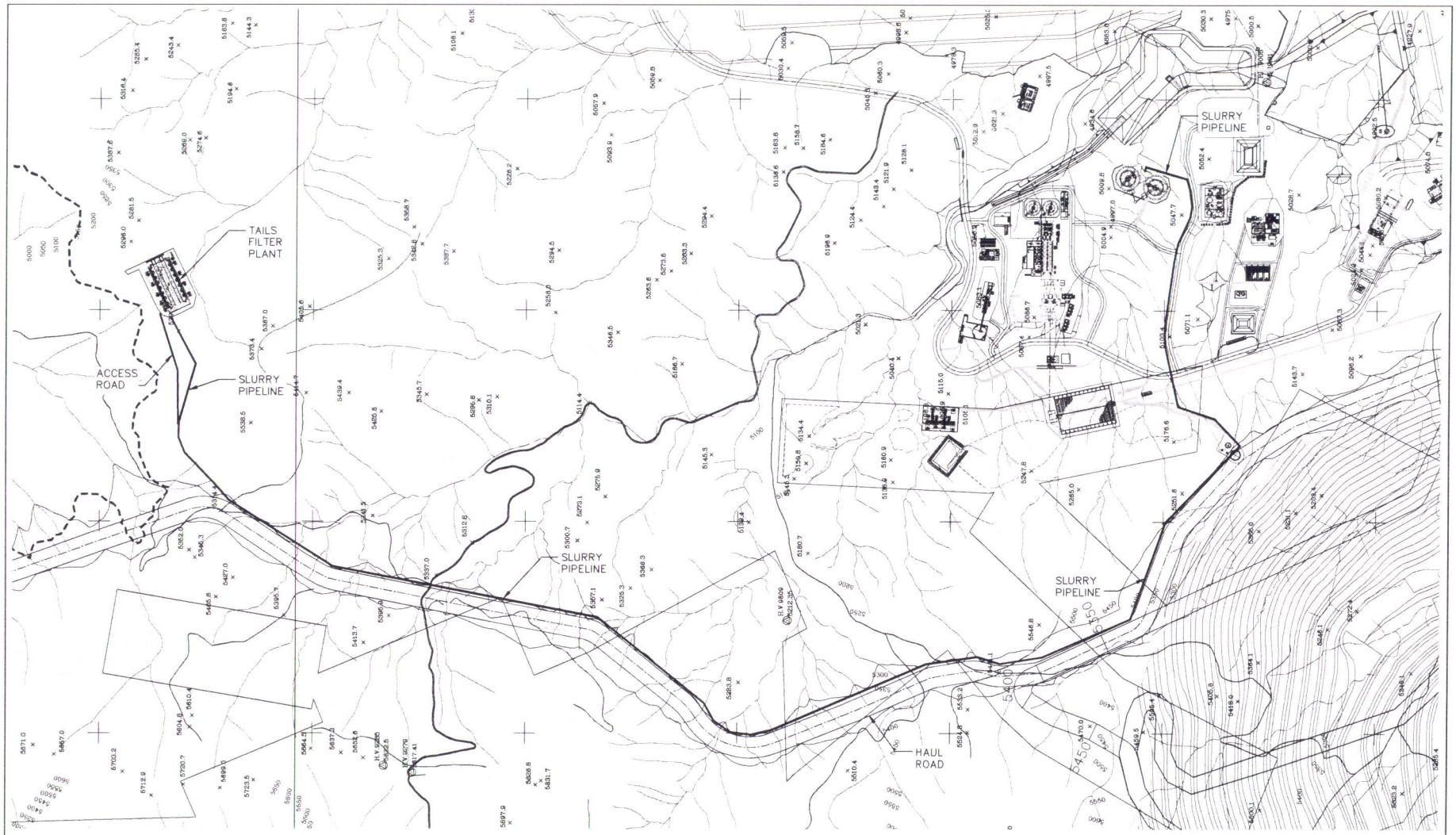
DWG NO. 060-CI-XXX

REV NO. XX

DATE 01 MAY 09

File: P:\3008P\08036\Civil\Surface modeling\Sycamore Haul Topo.dwg LAST UPDATE: MAY 01, 2009 @ 1:02 PM BY: JA245 LAST REV: PLOT SCALE: 1:1.00

Issue 2



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ROSEMONT PROJECT

USFS ALTERNATIVES
CIVIL
SLURRY TAILS
TO SYCAMORE CANYON

JOB NO. M3 PN-08036
DWG. NO. 600-CI-XXX
REV NO. XX
DATE 12 MAY 09

File: P:\2008\08036\Civil\Sketches\Sycamore Slurry Pumping.dwg LAST UPDATE: MAY 12, 2009 @ 5:21 PM BY: LKJAS LAST REV: PLOT SCALE: 1:1.00

Issue Number – 9

Road Surfacing

Alternative Presented

One or more members of the public or agency representatives have suggested that the EIS should consider an alternative that would consider road surfacing as a means of reducing possible dust and air pollution.

Proposed Action – Summary of Pertinent Info

The East Access Road was proposed with 8" thick compacted gravel (ADOT Class 2). All other roads would be earthen and may receive gravel surfacing depending on purpose, frequency of use, location relative to facilities, and anticipated loading. All site traffic would utilize the East Access Road which will be signed at 35 mph. All in-plant roads will be 25 mph or less. The vast majority of traffic to/from the mine consists of commuting plant personnel. Personnel would park outside the main gate.

In-plant traffic would consist primarily of supply and product trucks and limited personnel and vendor vehicular traffic. Warehousing, reagent storage (most) and copper concentrate loading functions are located near the main gate and account for about 75% of the truck traffic within the plant. An additional 17% of truck traffic would use the Mine Access Road to go as far as the SX/EW Plant area.

The proposed action commits to apply water spray to haul roads for dust suppression.

Road Classification – Potential Benefit

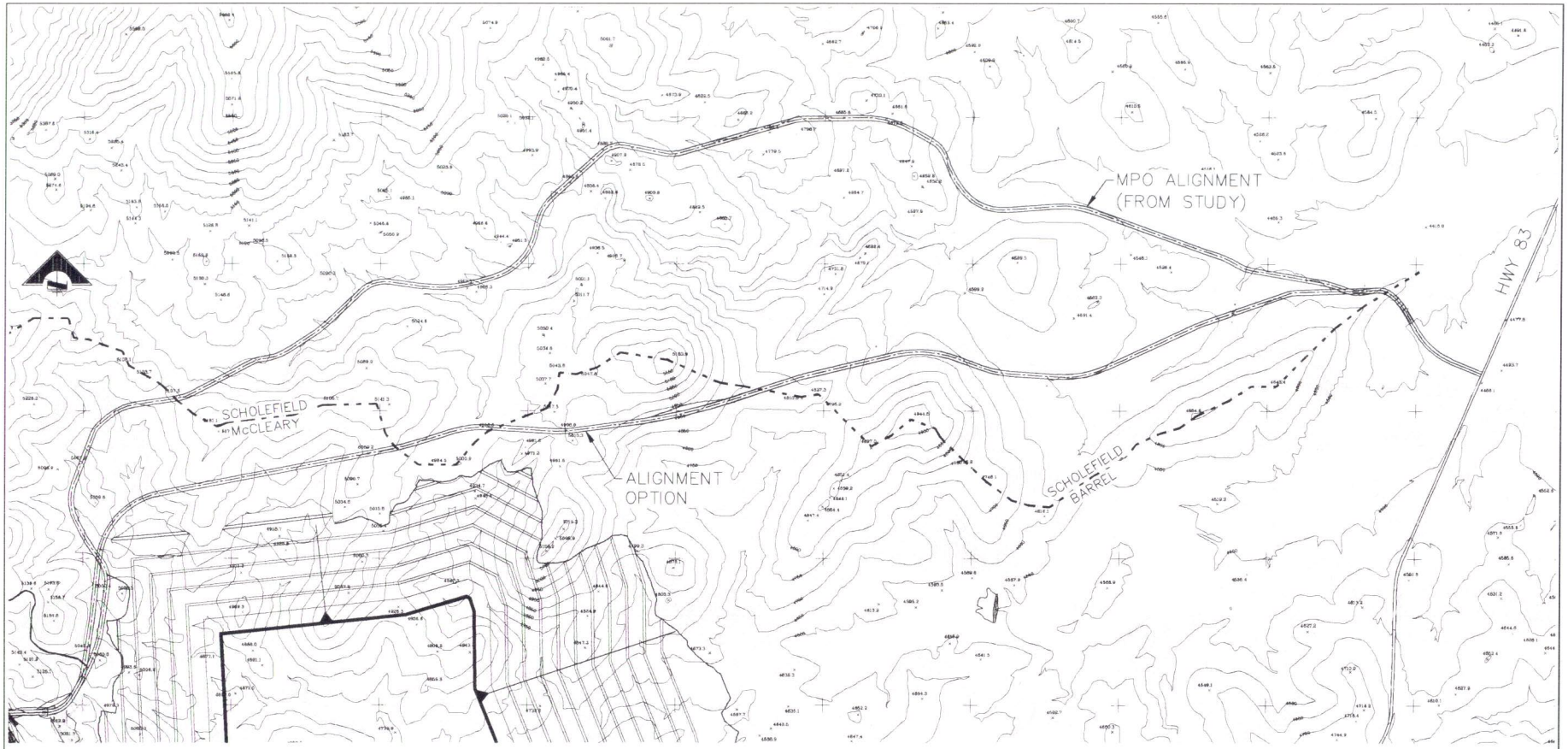
Service roads and secondary access roads within the plant (including the West Access Road) are characterized by infrequent use. These roads tend to be narrower and steeper thereby limiting travel speed. They would be similar to Forest Service Roads. Surfacing of these roads is unnecessary and would yield little benefit.

Haul Roads are best managed by water spray as proposed. Most will be constructed with run-of-mine and excavated materials and will be consistent with gravel surfacing. Most haul roads will be dynamic in location and elevation. Any hard surfacing would be substantial to support the heavy loads and be short-lived and therefore impractical.

The greatest achievable dust control benefit would involve surfacing of the east access road. This road serves the most vehicles at the highest travel speeds (35 mph) over the longest distance (3.2 miles). An engineered pavement section has not been determined. However, a pavement section consisting of 3" asphaltic concrete over 6" aggregate base course is typical of arterial roadways and was considered for this Alternative. The cost of this surfacing would be about 25% to 35% greater than the proposed 8" gravel roadway.

Water spray of in-plant roads would offer some additional benefit. Water application frequency would be less than for haul roads. Pavement of in-plant roads is unnecessary due to low travel speeds inside the main gate and the short travel distances involved.

Issue 19



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ROSEMONT PROJECT

USFS ALTERNATIVES
CIVIL
EAST ACCESS ROAD
OPTION

JOB NO. M3 PN-08036
DWG NO. 000-CI-XXX
REV NO. XX
DATE 11 MAY 09

Emission levels (g/kw-hr)				
	TIER1	TIER2	Reduction	Reduction
NOx + HC	10.5	6.4	4.1	0.39
CO	11.4	3.5	7.9	0.69
PM	0.54	0.2	0.34	0.63

Nox = Nitrogen Oxide
HC = Hydro Carbons
CO = Carbon Monoxide
PM = Particulate Matter

Assumption of 20 hours per day operation @ 35% time spent at 90% or greater load against engine

	7 hr/day		210 hr/mo		2520 hr/yr 1		5040 hr/yr 2		7560 hr/yr 3		10080 hr/yr 4		12600 hr/yr 5	
	TIER1	TIER2	TIER1	TIER2	TIER1	TIER2	TIER1	TIER2	TIER1	TIER2	TIER1	TIER2	TIER1	TIER2
NOx + HC	73.5	44.8	2,205	1,344	26,460	16,128	52,920	32,256	79,380	48,384	105,840	64,512	132,300	80,640
CO	79.8	24.5	2,394	735	28,728	8,820	57,456	17,640	86,184	26,460	114,912	35,280	143,640	44,100
PM	3.8	1.4	113	42	1,361	504	2,722	1,008	4,082	1,512	5,443	2,016	6,804	2,520

5 year reduction

	12600 hr/yr 5			
	TIER1	TIER2	Reduction	2610kw/3500hp
NOx + HC	132,300	80,640	51,660	134,832,600
CO	143,640	44,100	99,540	259,799,400
PM	6,804	2,520	4,284	11,181,240

Qty. of trucks - 5 year reduction in total kg/hr						
1	5	10	15	20	25	30
134,833	674,163	1,348,326	2,022,489	2,696,652	3,370,815	4,044,978
259,799	1,298,997	2,597,994	3,896,991	5,195,988	6,494,985	7,793,982
11,181	55,906	111,812	167,719	223,625	279,531	335,437
Qty. of trucks - 5 year reduction in total kilotonnes						
0.13	0.67	1.35	2.02	2.70	3.37	4.04
0.26	1.30	2.60	3.90	5.20	6.49	7.79
0.01	0.06	0.11	0.17	0.22	0.28	0.34

Issue 21

EMPIRE Since 1950 CAT

Fermin Samorano
Rosemont Copper
P.O. Box 35130
Tucson, Arizona 85740

April 29, 2009

Re/Tier emissions

Dear Mr. Samorano

Please accept this letter regarding information on Tier information as it applies to Federal and state compliance. Here the current and future off highway emissions requirements from the EPA.

Engine Power	Tier	Year	CO	HC	NMHC+NOx	NOx	PM
kW ≥ 560 (hp ≥ 750)	Tier 1	2000	11.4 (8.5)	1.3 (1.0)	-	9.2 (6.9)	0.54 (0.4)
	Tier 2	2006	3.5 (2.6)	-	6.4 (4.8)	-	0.2 (0.15)

Tier 4 Emission Standards—Engines Up To 560 kW, g/kWh (g/bhp-hr)

Engine Power	Year	CO	NMHC	NMHC+NOx	NOx	PM
130 ≤ kW ≤ 560 (175 ≤ hp ≤ 750)	2011-2014[d]	3.5 (2.6)	0.19 (0.14)	-	0.40 (0.30)	0.02 (0.015)

a - hand-startable, air-cooled, DI engines may be certified to Tier 2 standards through 2009 and to an optional PM standard of 0.6 g/kWh starting in 2010
b - 0.4 g/kWh (Tier 2) if manufacturer complies with the 0.03 g/kWh standard from 2012
c - PM/CO: full compliance from 2012; NOx/HC: Option 1 (if banked Tier 2 credits used)—50% engines must comply in 2012-2013; Option 2 (if no Tier 2 credits claimed)—25% engines must comply in 2012-2014, with full compliance from 2014.12.31
d - PM/CO: full compliance from 2011; NOx/HC: 50% engines must comply in 2011-2013

Tier 4 Emission Standards—Engines Above 560 kW, g/kWh (g/bhp-hr)

2015	All engines except gensets	3.5 (2.6)	0.19 (0.14)	3.5 (2.6)	0.04 (0.03)

The entire fleet you are evaluating for purchase (see below) meets or exceeds the current EPA requirements.
793F (greater than 750 HP
D11T (850 HP)
D10T (580 HP)
D9T (410 HP)
16M (259 HP)
24M (533 HP)
844H (627 HP)

988H (501 HP)
385C (523 HP)

It is important to note that this is accomplished based on the actual emissions profile of all of the Caterpillar equipment you are evaluating for purchase. None of these machines are utilizing flex credits* which are available to some equipment manufacturers.

*Certain manufacturers can manufacture and sell equipment that does not meet the EPA requirements if they are ahead of the requirements in other horsepower ranges within their equipment offerings. This is referred to a "flex credit" scenario. All of the Caterpillar equipment RCC projects to use for this property is free of any flex credits.

Please do not hesitate to call if you should have any questions or need additional information

Sincerely,

Steve Maracigan
Mining Account Manager
Empire Southwest

Limit Mining Footprint to Fee Simple Lands or Patented Mining Claims

Alternative Presented

One or more members of the public or agency representatives have suggested that the EIS should consider an alternative to the MPO Dry Stack Tailings Facility and the Waste Rock Storage Area locations. Specifically, this alternative would limit the mining footprint to fee simple lands or patented mining claims to protect the current USFS lands.

Alternative Evaluation

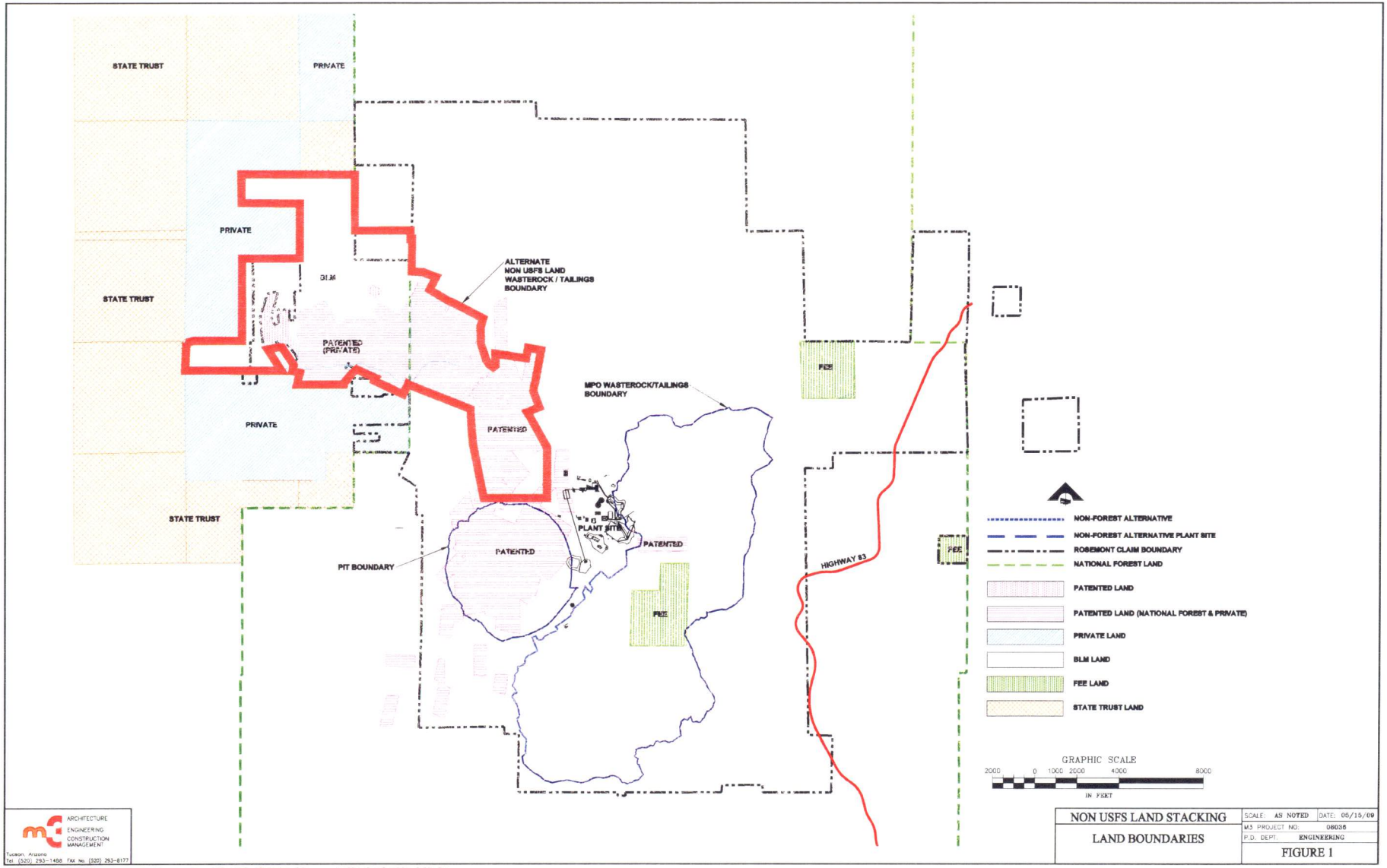
The largest contiguous parcel of land that could be assembled as an alternative location for the waste rock and tailings facilities consists of a combination of both Patented Land and BLM land. This area is located to the north and west of the Pit area and crosses a large natural ridge that runs roughly north south. The boundary of this area is shown on Figure 1.

In order to evaluate the potential storage volume of this area, a geometric model was developed by projecting the boundary lines up and back at a 3H:1V slope until they converged at a peak. The total available volume for this alternative landform is 852 million cubic yards, as shown on Figure 2. As the total combined volume for both tailings and waste rock materials is estimated to be approximately 1.1 billion cubic yards, this site would not provide the required storage volume.

This volume calculation does not take into consideration other factors that would further reduce the storage volume. The geometric shape of the model would have to be modified to be constructible in the real world, with benches for haulage and water management channels. The toe of the facility would have to be set back to allow for drainage and access at the property lines. These factors would produce further reductions in the available volume that is already insufficient by 248 million cubic yards.

Figures 3 & 4 provide oblique 3D views of the existing topography and the topography of the 3:1 alternative landform, respectively.

In conclusion, the alternative of locating the waste rock and tailings facilities on non USFS lands is not feasible.



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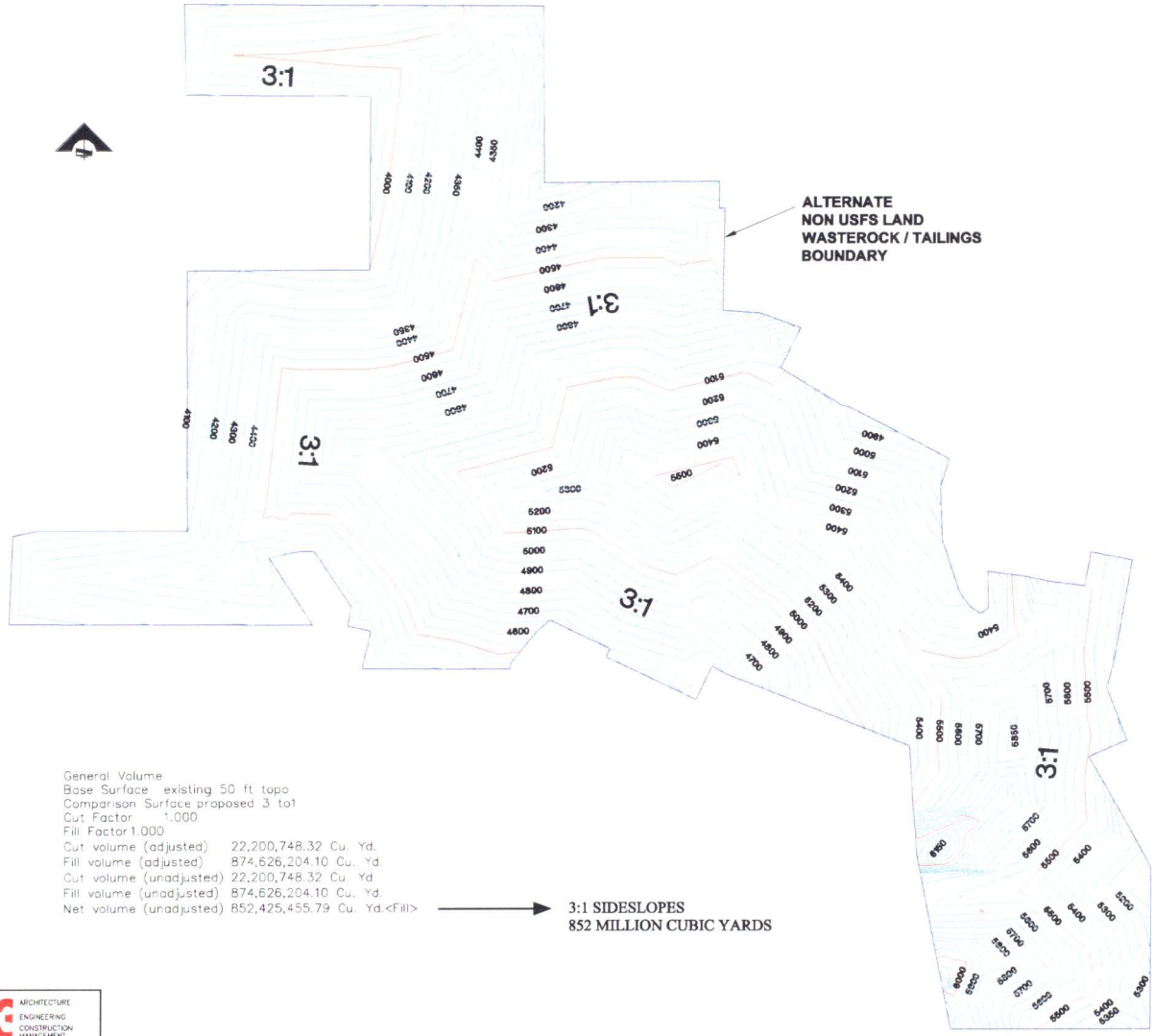
NON USFS LAND STACKING	SCALE: AS NOTED	DATE: 05/15/09
	M3 PROJECT NO: 08036	
LAND BOUNDARIES	P.D. DEPT: ENGINEERING	
	FIGURE 1	



General Volume
Base Surface existing 50 ft topo
Comparison Surface proposed 3 to1
Cut Factor 1.000
Fill Factor 1.000

Cut volume (adjusted)	22,200,748.32 Cu. Yd.
Fill volume (adjusted)	874,626,204.10 Cu. Yd.
Cut volume (unadjusted)	22,200,748.32 Cu. Yd.
Fill volume (unadjusted)	874,626,204.10 Cu. Yd.
Net volume (unadjusted)	852,425,455.79 Cu. Yd.<Fill>

3:1 SIDESLOPES
852 MILLION CUBIC YARDS

GRAPHIC SCALE
800 0 400 800 1600 3200
IN FEET
CONTOURS = 50'

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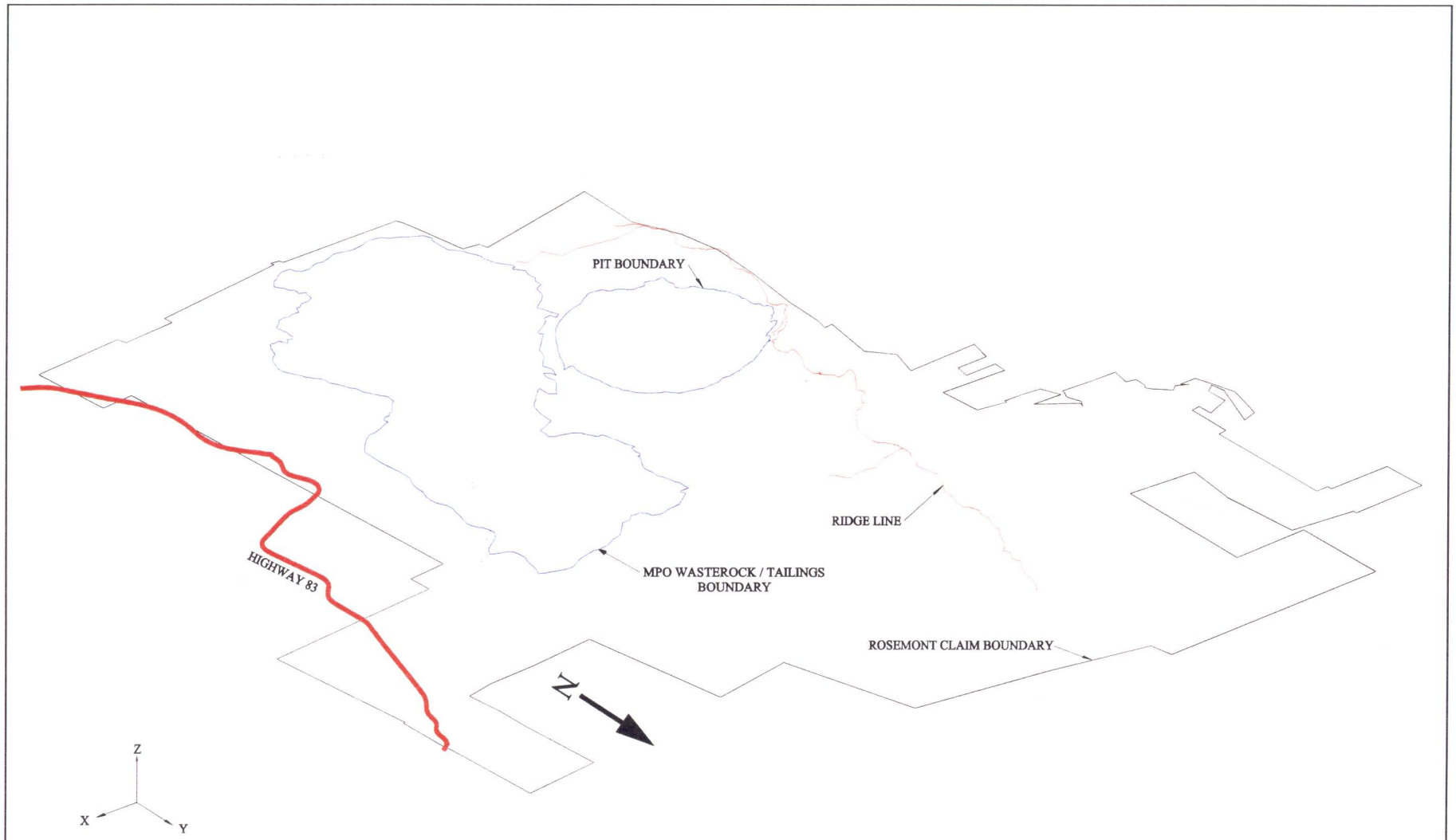
NON USFS LAND STACKING	SCALE: AS NOTED	DATE: 06/15/09
	M3 PROJECT NO: 08038	
VOLUME PROPOSED VS. EXISTING	P.D. DEPT: ENGINEERING	
	FIGURE 2	



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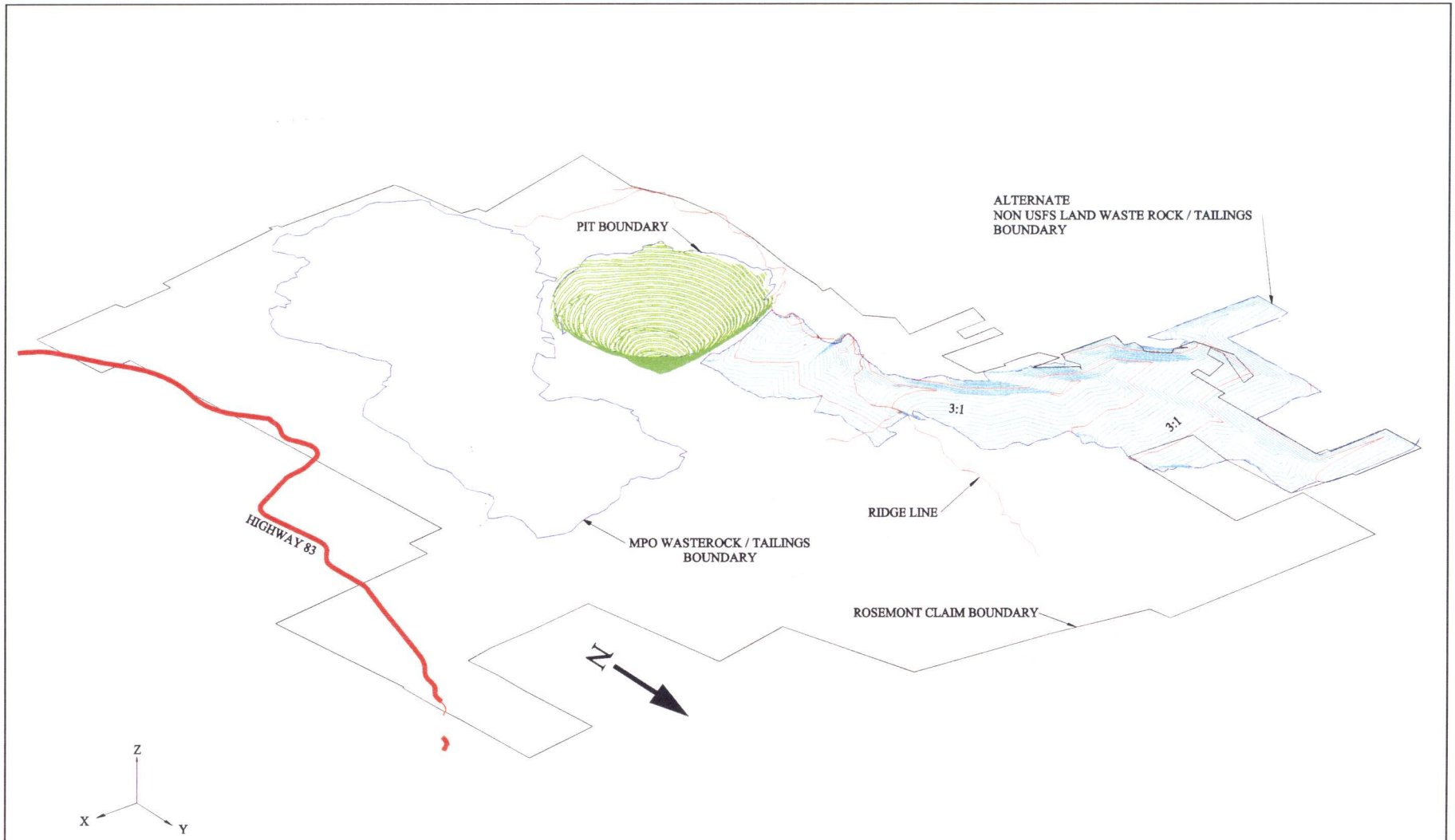
NON USFS LAND STACKING	SCALE: AS NOTED	DATE: 05/15/09
	M3 PROJECT NO.: 08036	
PRE DEPOSITION LOOKING SOUTH WEST	P.D. DEPT: ENGINEERING	
	FIGURE 3	



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NON USFS LAND STACKING	SCALE: AS NOTED	DATE: 05/15/09
	M3 PROJECT NO: 08036	
POST DEPOSITION LOOKING SOUTH WEST	P.D. DEPT: ENGINEERING	
	FIGURE 4	

Rosemont Copper Project

Alternative Mine Plan Elements
In Response to Issues Raised During Public Scoping
and for
Development of a Mitigated Alternative
for the
Rosemont Mine Plan of Operations

Contents

Visual 1
Alternative DMRA 1
Mitigation Viewpoint program 1
Transportation 2
Alternative OARI and PARP 2
Mitigation "Off-site Safety Upgrade" 2
Plants and Animals 3
Alternative SWWS and DMRA 3
Mitigation SWWS 3
Recreation 4
Alternative ATIS and CLOP 4
Mitigation "Offsite Trailhead Access" 4
Water 5
Alternative OFS and IWMS 6
Mitigation "Off-site Residential Well-Owner Protection Program" (RWOPP) 6
Air 7
Alternative 7
Mitigation 7
Heritage Resources 8
Alternative ADR 8
Mitigation 8
Night Skies 9
Alternative NSPP 9
Mitigation NSPP 9
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Alternative Comprehensive Sound Management Program (CSMP) 10
Mitigation 10
Riparian Habitat 11
Alternative 11
Mitigation 11
Reclamation 12
Alternative 12
Mitigation 12

DRAFT

Soils 13
Alternative 13
Mitigation 13
Socioeconomics 14
Alternative 14
Mitigation 14

DRAFT

Visual

As expressed in public comments and at meetings, the concerns about the visual resource appear to relate more to conditions at closure rather than throughout the operating life of the facility. It was proposed in the Mine Plan of Operations, and continues to be proposed by Rosemont, that reclamation activities will take place throughout the life of operations beginning in the first year of operations. In the mine plan, a prescriptive ridge and valley method of water management and surface treatment as well as fairly monotonous surfaces was proposed. The proposed vegetation treatment for these surfaces was a grassland, forbs, and shrub mixture that was uniformly applied throughout the landform.

The "Diverse Mosaic Reclamation Approach" (DMRA) that Rosemont now proposes would include addition surface treatments, varying slope lengths, slope aspects, and slope angles with less prescriptive water management techniques. Some of the additional considerations include re-establishing drainage areas that integrate talus slopes, rocky outcrops, trees, and riparian characteristics. While grasslands with forbs and shrubs would be the predominant plant community, examples of the existing plant communities would also be re-established at selected locations on site. These communities will include agaves, trees, ocotillo, and shrubs, and will provide diversity to the visual landscape.

Variations of the drainage vs. uplands areas will also be worked into the design such that the prescriptive ridge/valley considerations will be augmented by other treatments to provide a more variable landform.

As a separate action, the east access roadway has been relocated to keep it more hidden by the surrounding hillsides. (See Appendix A)

Alternative DMRA

1. Increase slope diversity on the perimeter of the waste rock and tailings stockpile area
    a. Vary the slope angles, aspects, and contours on the most visible slopes
    b. Align offslope drainage management to approximate surrounding terrain
    c. Increase the diversity of landscape surface soil and vegetation texture
        i. Vegetation types
        ii. Tree and shrub mosaics
        iii. Scree/talus slopes
        iv. Rocky outcrop
2. Modify tails sequencing to build out Phase One Tailings prior to depositing tailings in the Phase Two Tailings area
3. Realign the East Access Road to reduce overall footprint of mine facilities
4. Increase priority to establish vegetation on upper benches of pit highwall as soon as practicable

Mitigation Viewpoint program

1. Tree planting at selected locations near key observation points to enhance the viewshed
2. Provide alternative viewpoint(s) access on Rosemont Private Lands on the east side of Highway 83.

DRAFT

Transportation

The access road intersection of SR83 will be reviewed and updated in cooperation with Arizona Department of Transportation (ADOT). Alternatives that will be provided for consideration will include a divided pass-through lane that will allow traffic to by-pass the access road entrance and a dedicated turn lane with an acceleration lane. This will provide an "Optimized Access Road Intersection" (OARI) alternative for consideration.

Carpooling plans and opportunities will also be examined and encouraged to eliminate to the extent practicable the number of vehicles on the roadway. These activities will take the form of a "Park and Ride Program," (PARP) the details of which will be worked out as employees are hired. (See Tetra Tech, *Traffic Analysis Report,* April 2009, delivered to the Forest Service on April 11, 2009.)

Alternative OARI and PARP

1. Optimized Access Road Intersection: Upgrade design of State Highway 83 and Rosemont Access Road Intersection to optimize safety factors possible designs include
    a. Divided highway pass-through lane
    b. Dedicated turn lanes with an acceleration lane
2. Park and Ride Program: Establish program for employee and construction labor carpooling with off-site park and ride areas located in cooperating communities such as:
    a. Sahuarita
    b. Corona de Tucson
    c. Patagonia
    d. Vail
    e. Sonoita

Mitigation "Off-site Safety Upgrade"

1. Provide design for two (2) truck turnouts along Highway 83
2. Provide design for up to five school bus turnouts along Highway 83
3. Participate in establishing Park and Ride areas
4. Provide design for Acceleration/Deceleration lane for ADOT consideration

DRAFT

Plants and Animals

Diverse habitat is key to a diverse and stable plant and animal community. The creation or improvement of a system of Sustainable Wildlife Water Sources (SWWS) at locations throughout the Rosemont Ranch is improvements to a critical aspect in the Rosemont area.

The DMRA for vegetation will include a variety of landscape features that will encourage diverse plant and animal habitats to develop. The overall use of the area will vary depending upon location, aspect, elevation, etc. Agave will be salvaged and replanted to ensure their availability for nectivorous bats, talus slopes will be created so moisture and debris will encourage the development of snail habitats in selected areas, water management will target areas that will provide opportunities for leopard frog habitat to develop, and ranching will continue in areas appropriate for livestock grazing.

Alternative SWWS and DMRA

1. Sustainable Wildlife Water Sources: Provide sustainable wildlife water sources at selected locations during reclamation and closure of the Rosemont Mine Facilities.
2. Diverse Mosaic Reclamation Approach Upgrade the Reclamation Plan with emphasis on wildlife, native plants, and other priority species by identifying a habitat mosaic with areas targeted to:
    a. Wildlife – vegetated travel corridors
    b. Bats – agave
    c. Snails – talus slopes and seeps
    d. Leopard frogs – perennial water sources
    e. Livestock ranching

Mitigation SWWS

1. Sustainable Wildlife Water Source: Upgrade the Rosemont Ranch livestock water system with goal of one sustainable wildlife water source in each of the individual pastures under lease to Rosemont.
2. Provide fenced livestock exclosures for highest value riparian habitat on Rosemont Ranch private lands
3. Implement specified areas of off-site mitigation to meet permit conditions or stipulations of US ACOE, US DOI FWS, BLM, and other cooperating agencies such as the AGFD
    a. Identify and protect with fencing, that portion of the stock ponds in leopard frog habitat that would provide protection for frog habitat within the pond area
    b. Upgrade protection of selected bat habitat on Rosemont Ranch private lands

DRAFT

Recreation

The July 2007 Mine Plan of Operations included a description of forest road realignment, trail upgrade and access road maintenance program. In response to public input, Rosemont proposes additional recreation considerations as follows.

The Arizona Trail was aligned through the Rosemont Camp private ranching lands and has been re-aligned to avoid this area. During operations, a portion of the Arizona Trail may need to be realigned to avoid the toe of the dump area. This would provide an "Arizona Trail Interpretive Segment" (ATIS). (See Appendix B)

The East Access Road has been re-aligned where the roadway comes out of the Hidden Valley area. The realignment provides opportunity for an ideal viewing location for the operational areas. (See Appendix A)

Rosemont has also committed to continue to work within the Arizona Game and Fish Cooperative Land Owner Program (CLOP) which will help ensure public access to private lands not affected by operations.

Alternative ATIS and CLOP

1. Arizona Trail Interpretive Segment: Arizona Trail realignment (completed with Rosemont contribution)
2. Realign east access route to facilitate viewing of project site – provide an overlook
3. Realign west service road and utility corridor route to maintain recreational access
4. Adjust facility to further increase distance from the Arizona Trail
    a. Southeast corner of waste rock storage
    b. Additional slope-toe adjustments for buffer zone along the southwestern edge
5. Provide water station for horses at the Los Colinas segment of the Arizona trail
6. Cooperative Land Owner Program: Commit to place west side private lands in the Game and Fish cooperative land owner program where safety considerations permit

Mitigation "Offsite Trailhead Access"

1. Provide interpretive segment along the Arizona Trail (through a grant)
2. Public access or development covenants on private lands within forest boundaries where safety permits
3. Develop new recreational trailhead on the east side of SR 83
4. Complete additional Arizona Trail segment up to Sentinel Peak with an observation point

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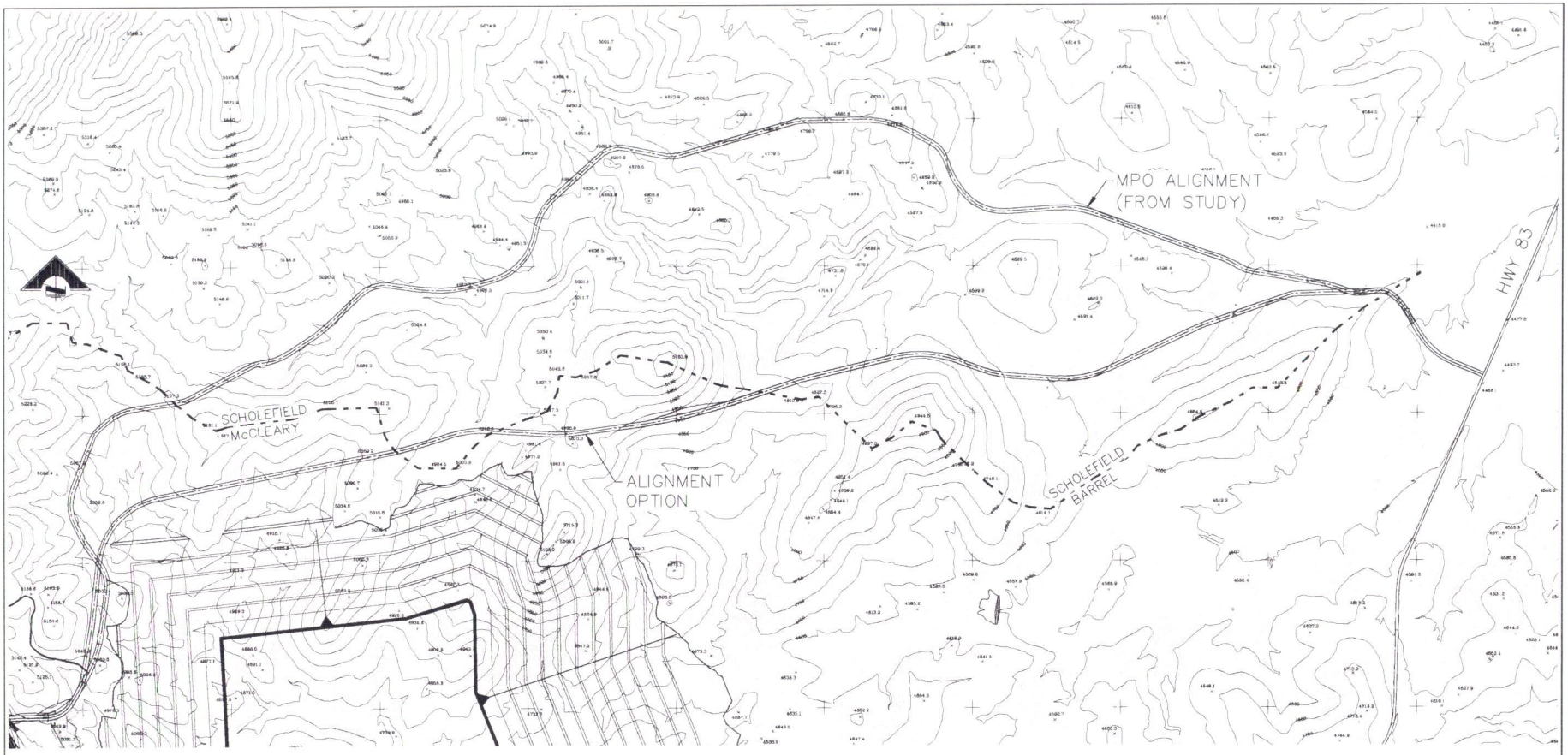
APPENDIX A
Access Road Relocation



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REFERENCES		REFERENCES	
DWG. NO.	TITLE	DWG. NO.	TITLE

REVISIONS					
NO.	DESCRIPTION	BY	APP'D	DATE	CLIENT

REVISIONS					
NO.	DESCRIPTION	BY	APP'D	DATE	CLIENT

SCALE: N.T.S.		DATE
DESIGNED BY	CAH	APR 09
DRAWN BY	DEJ	APR 09
CHECKED BY		
PROJECT MGR		
CLIENT APPR.		

ARCHITECTURE
ENGINEERING
CONSTRUCTION MANAGEMENT
Tucson, Arizona
Tel. (520) 293-1488
FAX No. (520) 293-8177

ROSEMONT PROJECT

USFS ALTERNATIVES
CIVIL
EAST ACCESS ROAD
OPTION

JOB NO. M3 PN-080.58
DWG NO. 000-CI-XXX
REV NO. XX
DATE 11 MAY 09

File: P:\2008\080.58\Civil\Sketches\East Access E-Mail 11-20-08.dwg LAST UPDATE: MAY 11, 2009 @ 5:49 PM BY: cn243 LAST REV. PLOT SCALE: 1:1

DRAFT

APPENDIX B
Arizona Trail Alignment

DRAFT

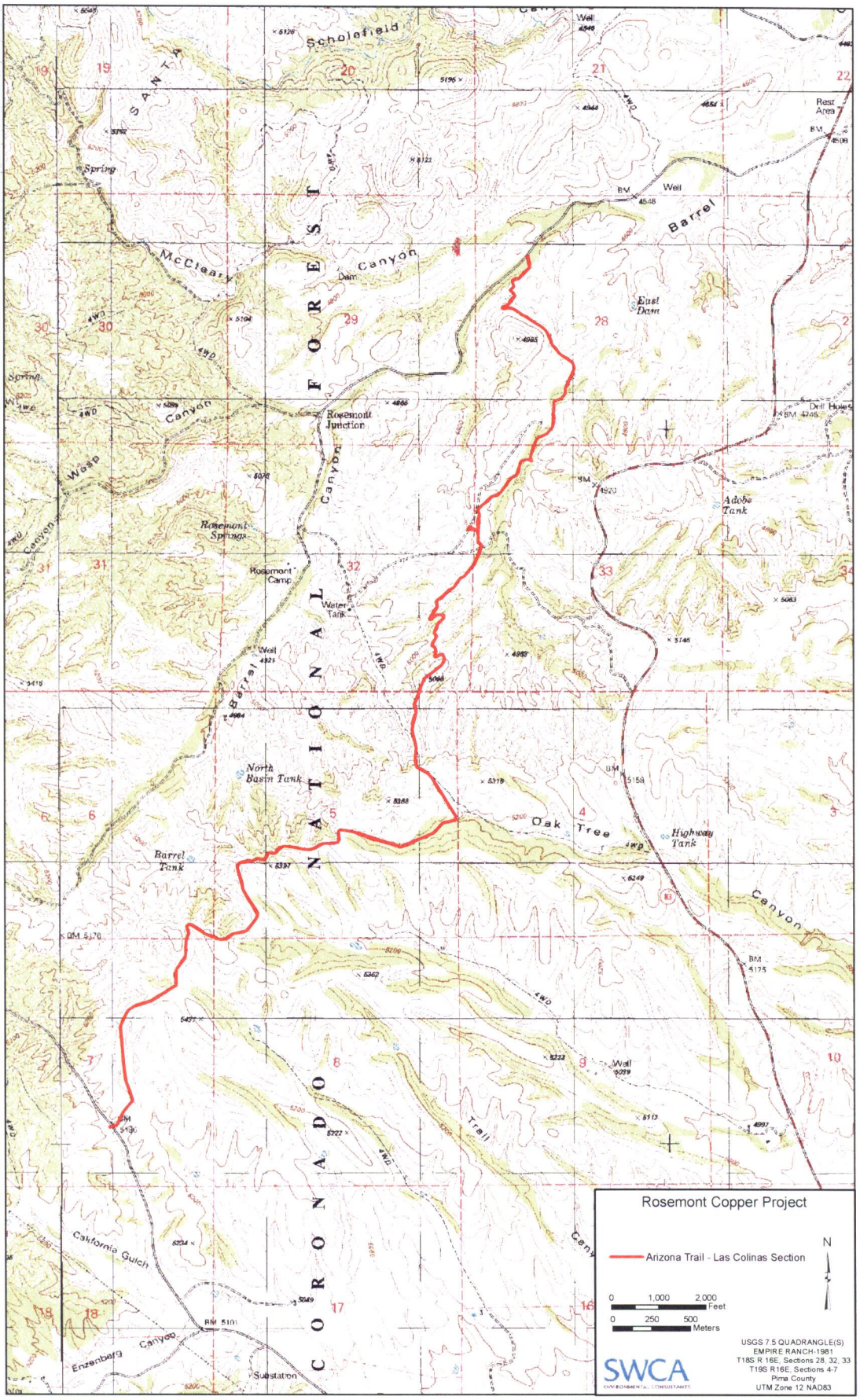


Figure x. Las Colinas portion of the Arizona Trail.

29 July 2009

Ms. Reta LaFord
Assistant Forest Supervisor
Coronado National Forest
Tucson, Az

Dear Ms. LaFord:

The comments below represent Rosemont Copper Company's preliminary response to the six alternatives presented to Rosemont for input. As we understand the process to date, the six alternatives were screened from a much longer list considered by the CNF ID team from the suggestions and proposals developed, reviewed, presented, or otherwise received by the public during scoping, by cooperating agencies, and from within the ID team. Rosemont understands that the CNF ID team is tasked with developing recommendations to the Forest Supervisor, regarding alternatives to be considered further, and to be subjected to comparative analysis in the EIS process.

To that end, we offer the following comments. Please note that our comments refer to only those 6 alternatives presented as follows:

- July 2007 Mine Plan of Operations as submitted by Rosemont Copper Company. Mine overburden into south Barrel, Phase I mill tailings into McCleary canyon, phase II mill tailings into middle Barrel.
- No Action Alternative as required by NEPA
- July 2009 Updated Mine Plan of Operations as developed by Rosemont Copper Company and others, in response to issues raised during public scoping. Mine overburden into south Barrel, Phase I mill tailings into middle Barrel. Phase II mill tailings into McCleary canyon.
- Mine overburden into McCleary canyon, and mill tailings into Sycamore Canyon
- Mine overburden into McCleary Canyon, and mill tailings into Scholefield Canyon
- Barrel-Only alternative, (Actually now considered 6c). Mine and mill tailings into Barrel drainage, no mine overburden into McCleary, Sycamore, or Scholefield.

From a screening standpoint, and to focus on allowing alternatives to progress into and through the NEPA process, Rosemont is concerned with the presentation of the Sycamore and Scholefield Canyon alternatives. We do not believe that these alternatives are practical or feasible from a reasonable technical or economic standpoint.

Our technical review indicates these alternatives present unacceptable locations for placement of mine overburden to visual, geotechnical, and spatial limitations. Each of these alternatives place overburden and tailings directly over valuable mineral resources that are located at or very near the surface, which (unlike other deep deposits located within the claim area) cannot be mined with current technology later through future underground or lateral mining techniques. While Rosemont has no immediate plan to develop these known mineral resources, the Mining and Minerals Policy Act of 1970 would discourage actions that would knowingly cover minerals located at or near the surface when preferable alternatives may be available. The Sycamore and Scholefield

Canyon areas are within the identified Helvetia/Rosemont Mining District, which has been subjected to a substantial financial investment in drilling, assay, and geological interpretation. Therefore, Rosemont objects to further consideration of the Scholefield or Sycamore Canyon alternatives from a mineral resource conservation basis.

The Scholefield or Sycamore Canyon alternatives present unreasonable adverse economic burden to Rosemont. Where the Rosemont claim group provides suitable economically efficient alternatives such as the Barrel drainage alternatives, the placement of mine waste substantially uphill, or further from the production site than other feasible alternatives, is an unnecessary and undue economic burden to Rosemont and will result in more haul truck emissions due to longer steeper hauls and increased fuel burn.

The Scholefield and Sycamore Canyon alternatives do not appear to present improvement relative to the four priority criteria that the ID team developed from the issues analysis: the visual resource, heritage resource, recreation resource, and biological resource criteria. Upon evaluation of these four criteria, Rosemont does not believe adding another major drainage to the project footprint is responsive to these criteria. Specifically, the Scholefield and Sycamore Canyon alternatives substantially increase the visual exposure of the mine wastes at the crest of the Santa Rita ridgeline, increasing the visibility of the project many times over. Beyond increasing the project visibility, the Scholefield and Sycamore Canyon alternatives make it more difficult to reclaim the steeper and longer slopes, to manage site process water, stormwater runoff and continued recreation access, or to minimize impacts to wildlife as defined by the SDCP Biological Core Areas.

For the foregoing reasons, Rosemont suggest that the Sycamore and Scholefield Canyon alternatives as configured, are not practical or feasible from a reasonable technical or economic standpoint and should be deleted from the analysis going forward.

Another potential alternative that has been mentioned as a modified alternative to the Rosemont 2009 Update would be to place Phase I Mill tailings as proposed in the 2009 Update, then place the remaining Phase II Mill tailings into lower Scholefield Canyon. This mix of alternatives could be reviewed further if the ID team were to sense any potential for further consideration.

Rosemont has conducted considerable work to arrive at these conclusions, and will continue to do so as appropriate to the NEPA process. Please advise how Rosemont can best support the process as it continues moving forward on those alternatives recommended for detailed comparative analysis.

Best regards,

Jamie Sturgess
VP Sustainable Development
Rosemont Copper Company
Augusta Resource Corporation
2221262

Memo

From: Marc Schulte, MMTS

To: Fermin Samorano, Augusta Resources

cc: Bob Fong, MMTS

Date: July 27, 2009

Re: Waste Alternative 6, more details

Augusta Resources has requested MMTS to look at adding details to the waste placement alternative 6 (tailings placed in upper barrel, and waste placed south and southeast of tailings). This memo describes the initial details designed in for this alternative. The designs will be used by AMEC to design a new tailings stack plan, which will provide further details for the waste placement designs. This will be an iterative process of designing waste stacking and tailings stacking plans for this alternative.

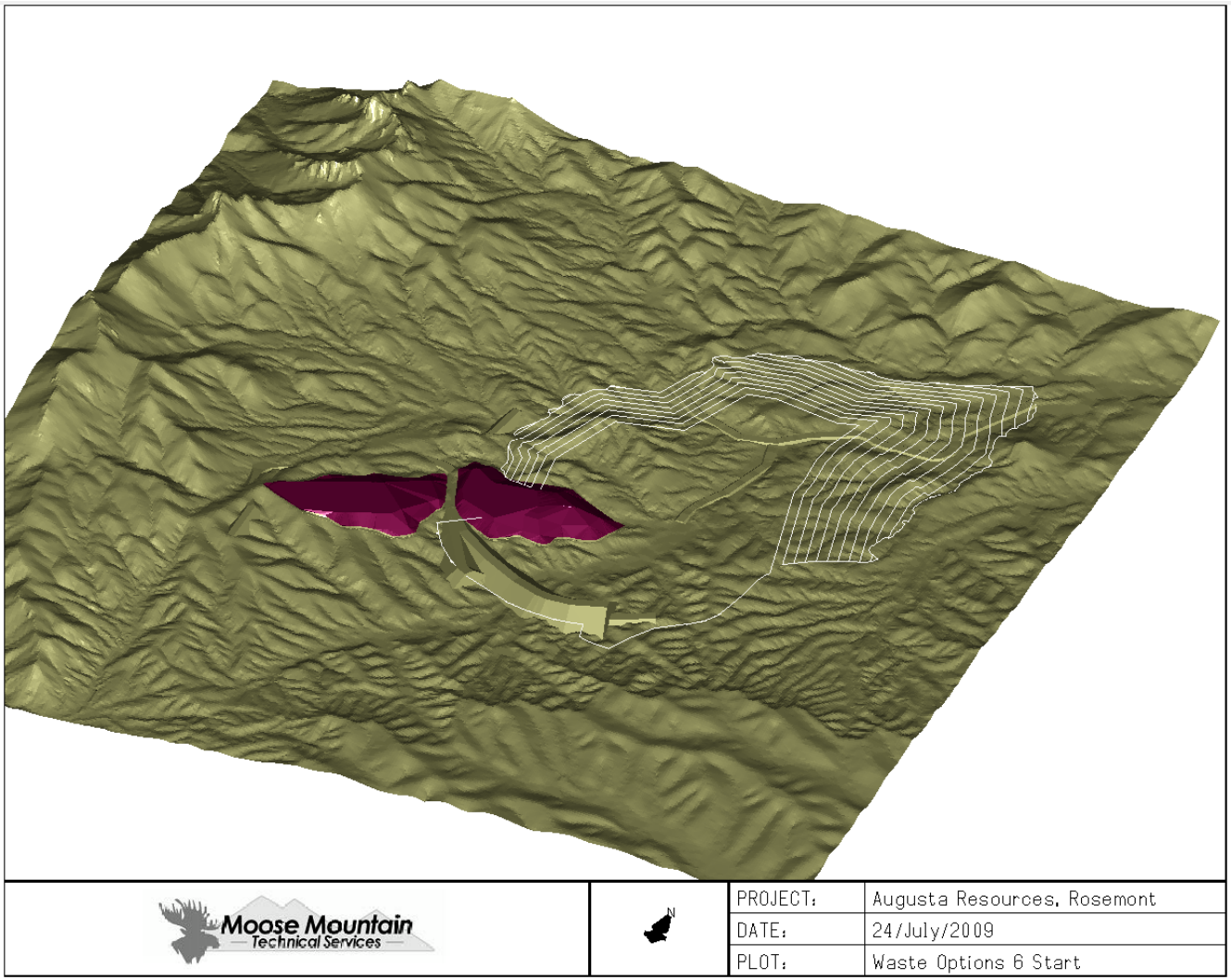
From the pit there is a total of 1,266 Mtons of waste extracted over the entire mine life. The following list describes the quantities of this waste required for ex-pit mine infrastructure:

- 812 ktons for the crusher road
- 1,138 ktons for the south buttress road
- 9,116 ktons for the leach/east buttress road
- 4,050 ktons for channel fills under the tailings placement area
- 3,500 ktons for the leach pad
- 24,000 ktons for the leach pad cover
- An estimated 100,000 ktons for the tailings buttresses (this value will be defined by AMEC)

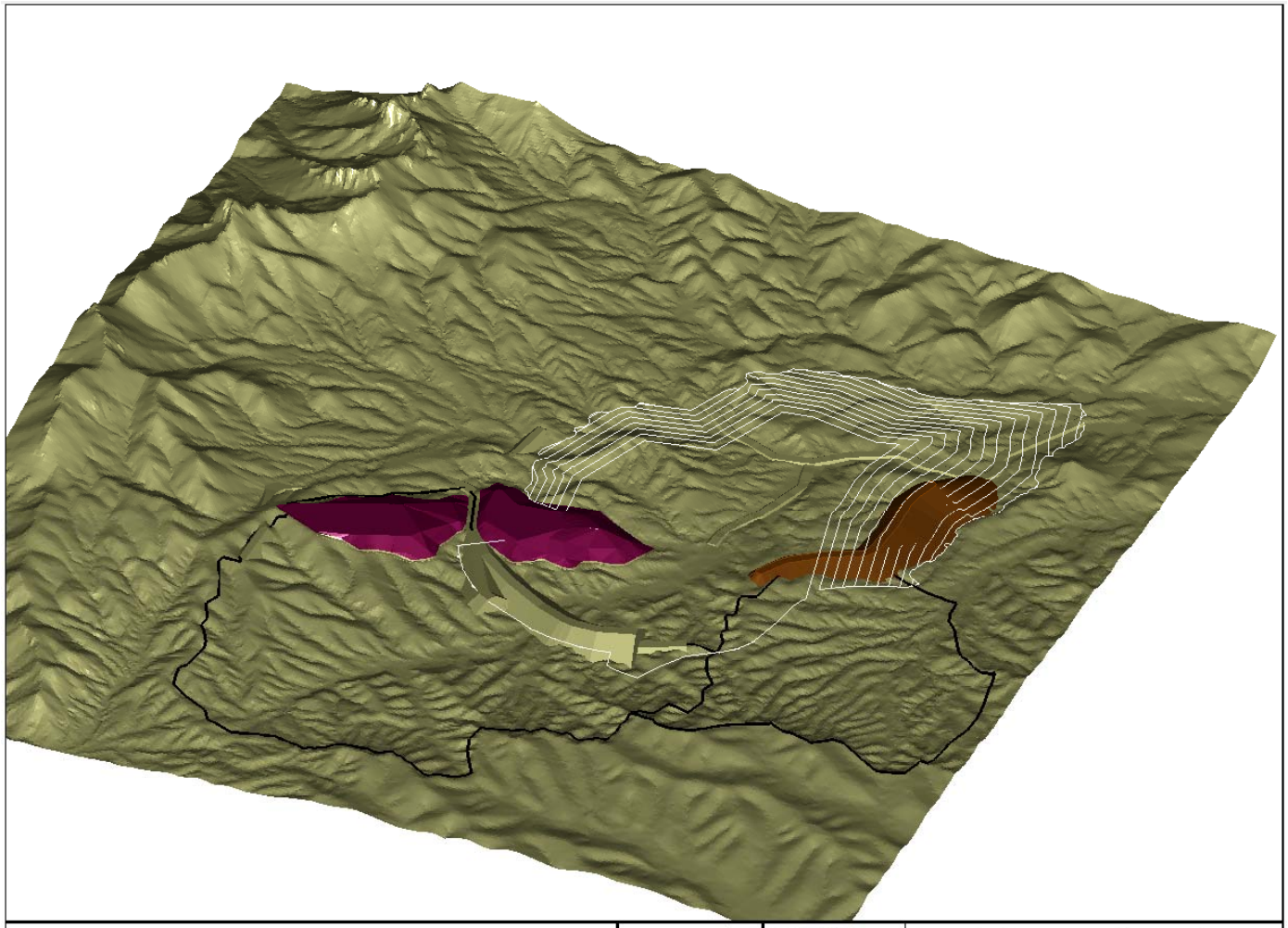
This leaves 1,124 Mtons to be placed in the waste areas.

The waste would be deposited into an initial north screen berm at the 5050 foot elevation, then an centre screen berm at the 5400 foot elevation, an eastern screening berm at the 5200 foot elevation, a southern screening berm at the 5500 foot elevation, and finally the screening berms would be filled in.

The following figure shows the topography with these above ex-pit waste infrastructure items shown incorporated onto it (magenta is the leach cover waste, the white lines represent the latest AMEC tailings buttress designs to the 5250 foot elevation).

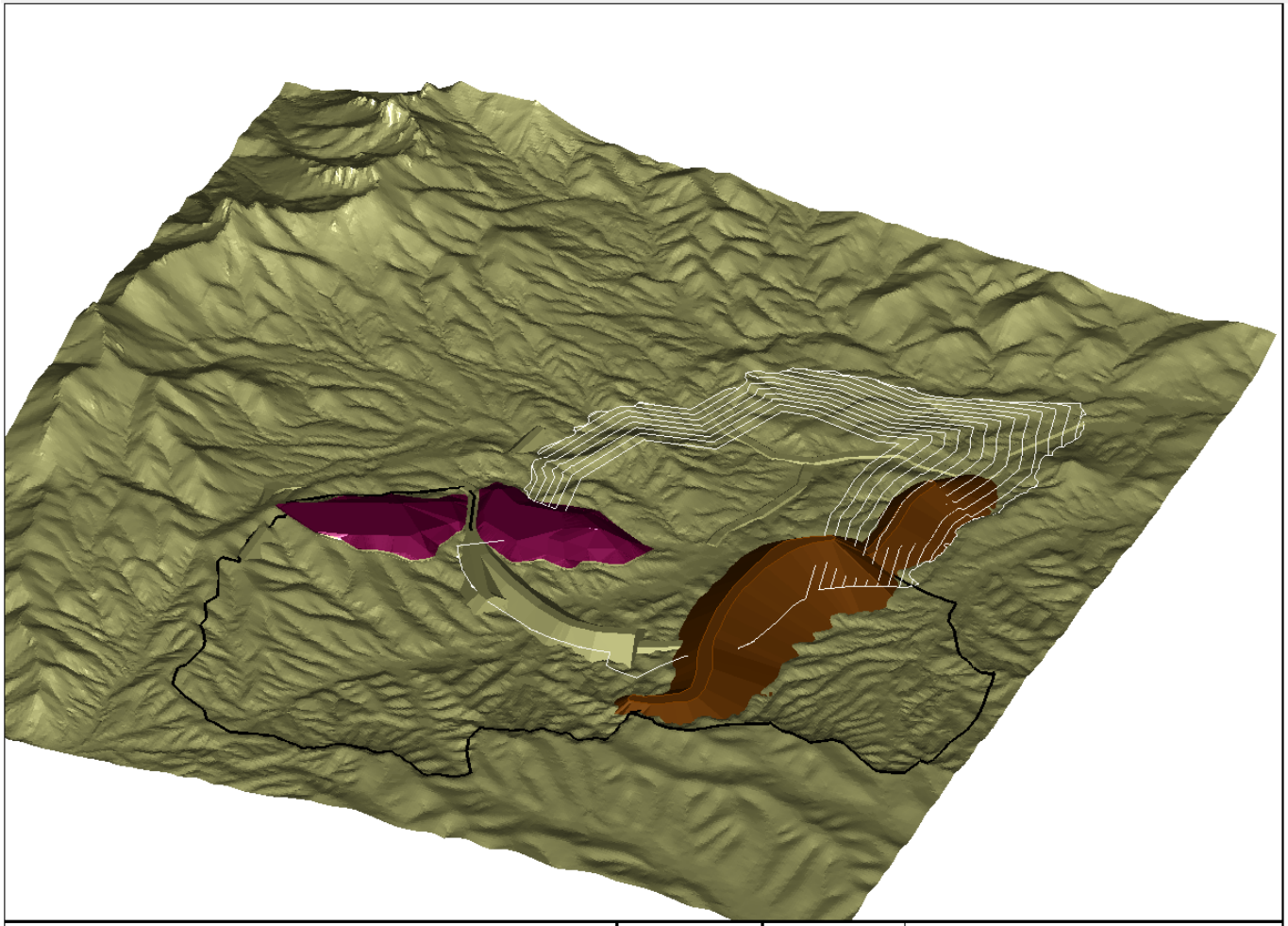


The north screening berm, which will make up the toe of the tailings buttress in that area to the 5050 foot elevation, would be 37Mtons:



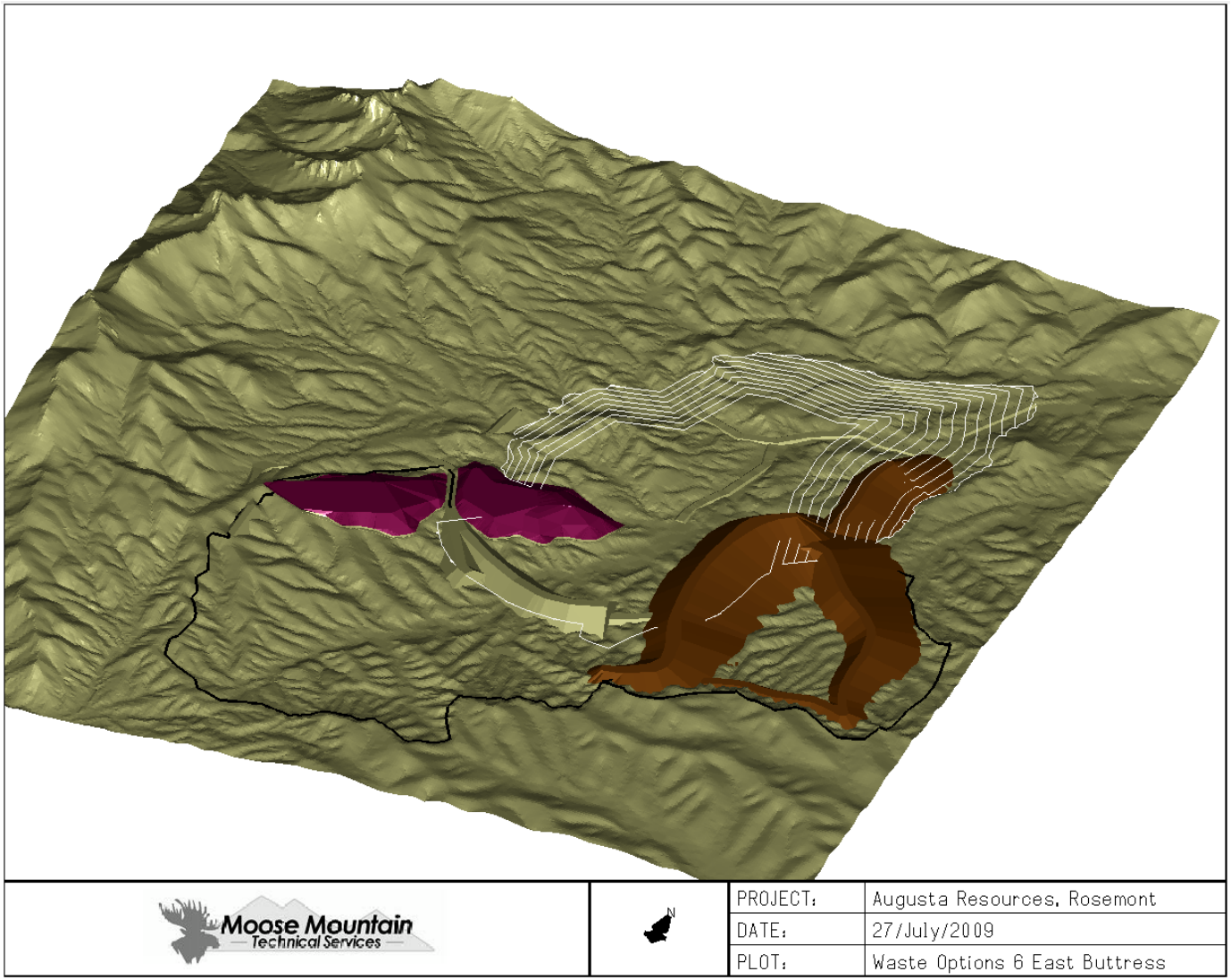
Moose Mountain Technical Services	N	PROJECT:	Augusta Resources, Rosemont
		DATE:	27/July/2009
		PLOT:	Waste Options 6 North Buttress

The centre screening berm to the 5400 foot elevation would be 150Mtons:

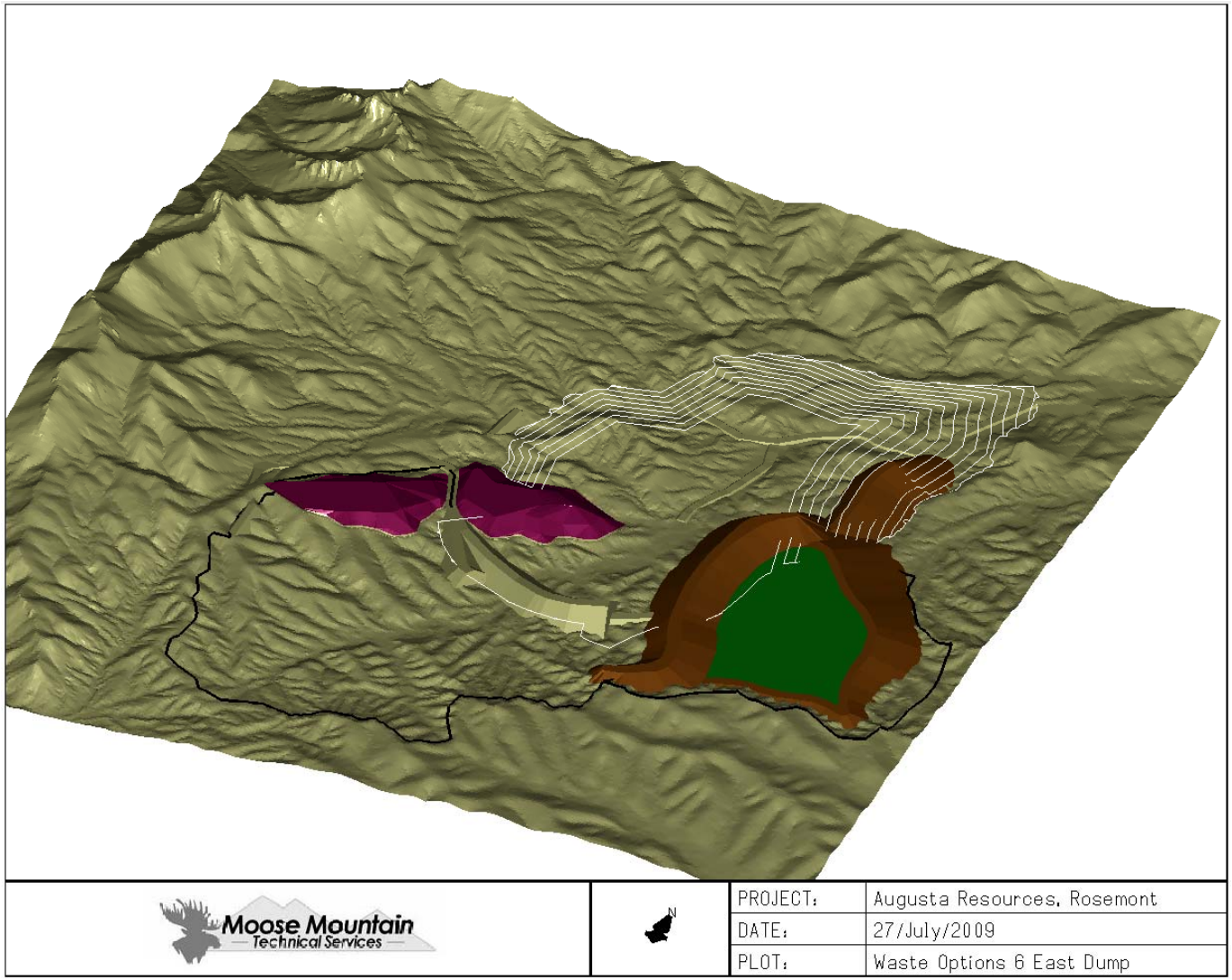


Moose Mountain Technical Services	N	PROJECT:	Augusta Resources, Rosemont
		DATE:	27/July/2009
		PLOT:	Waste Options 6 Centre Buttress

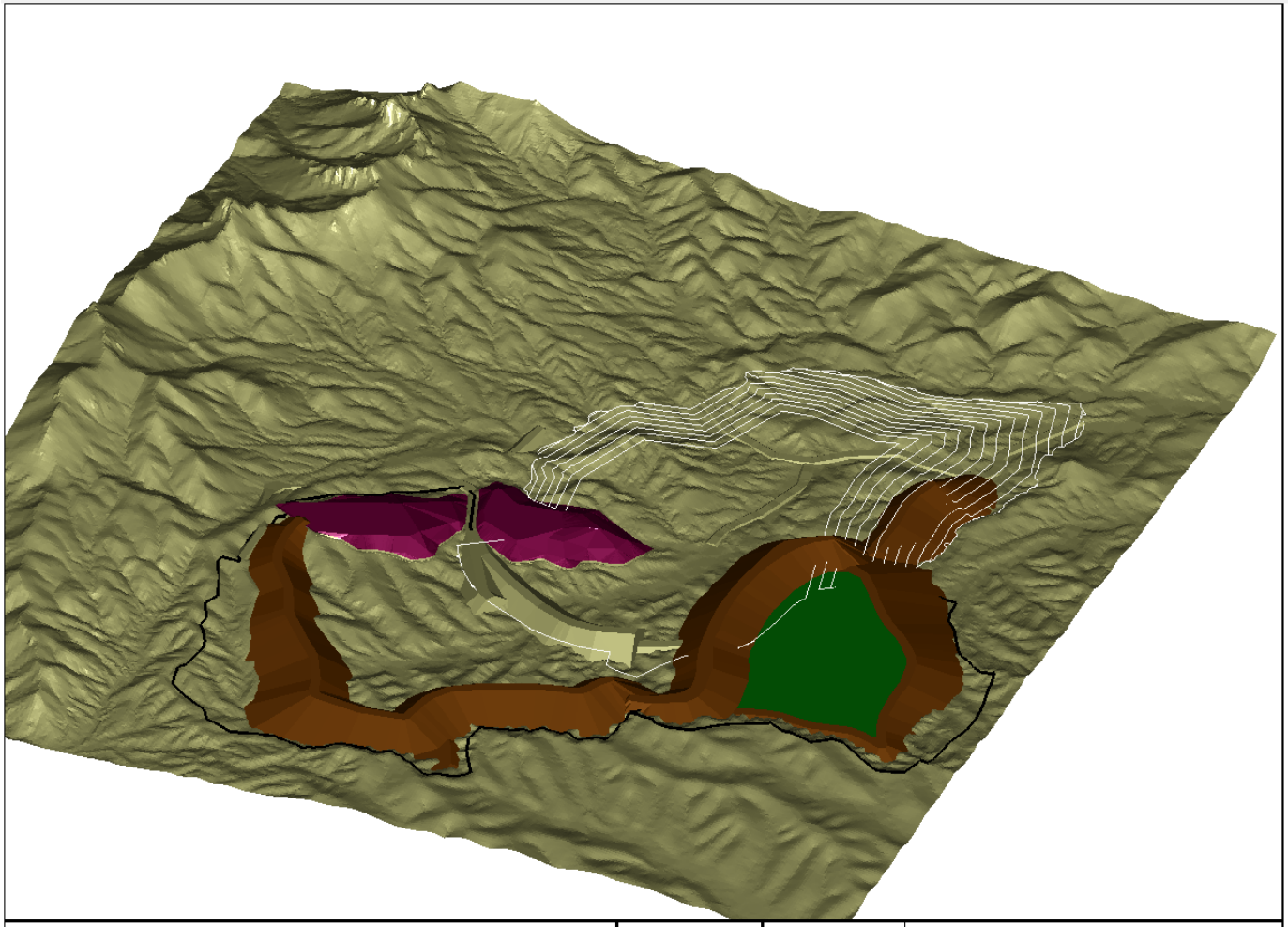
The east screening berm to the 5200 foot elevation would be 63Mtons:



The east dump itself, filled in at the 5200 foot elevation, would be 78Mtons:

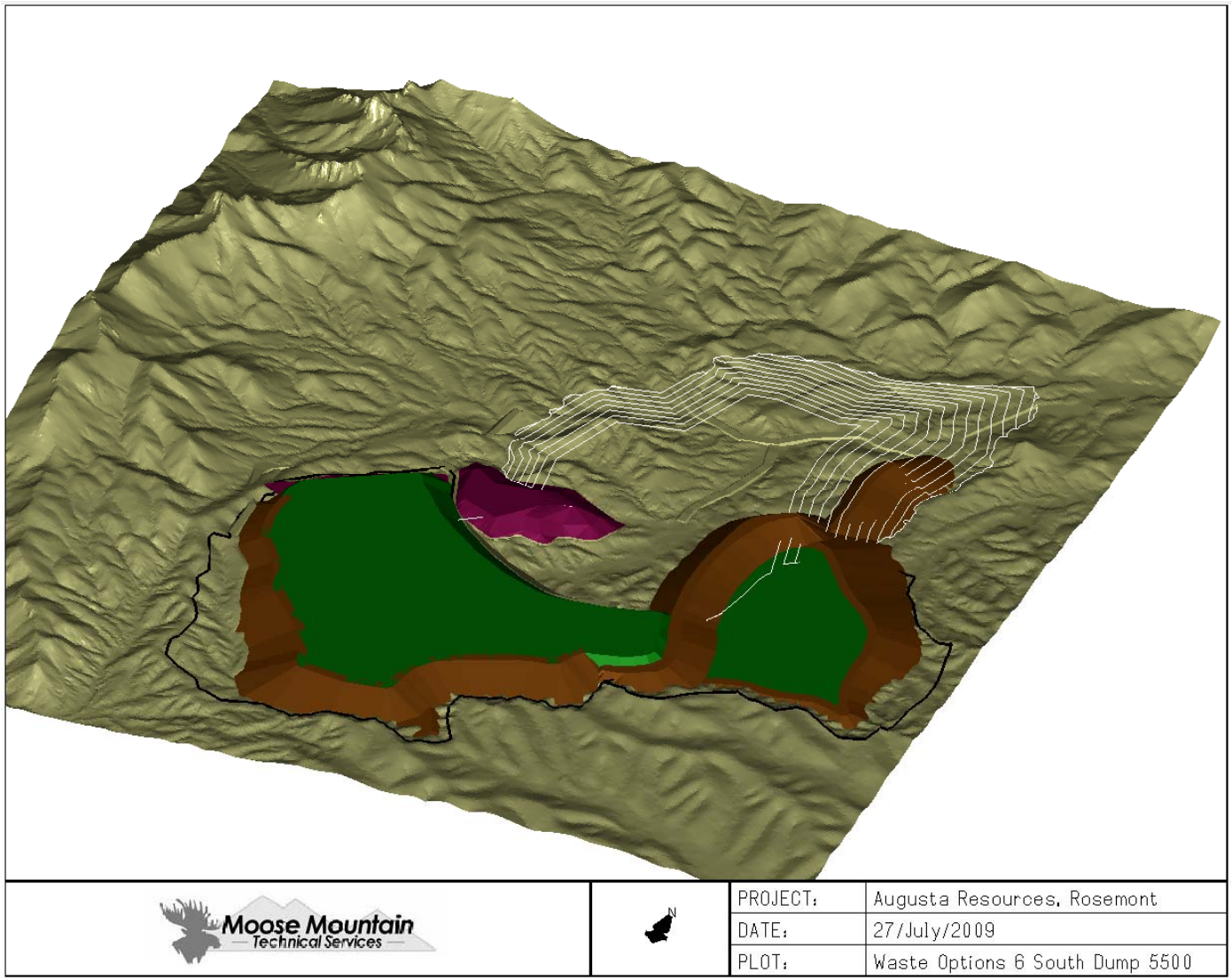


The south screening berm to the 5500 foot elevation would be 165Mtons:

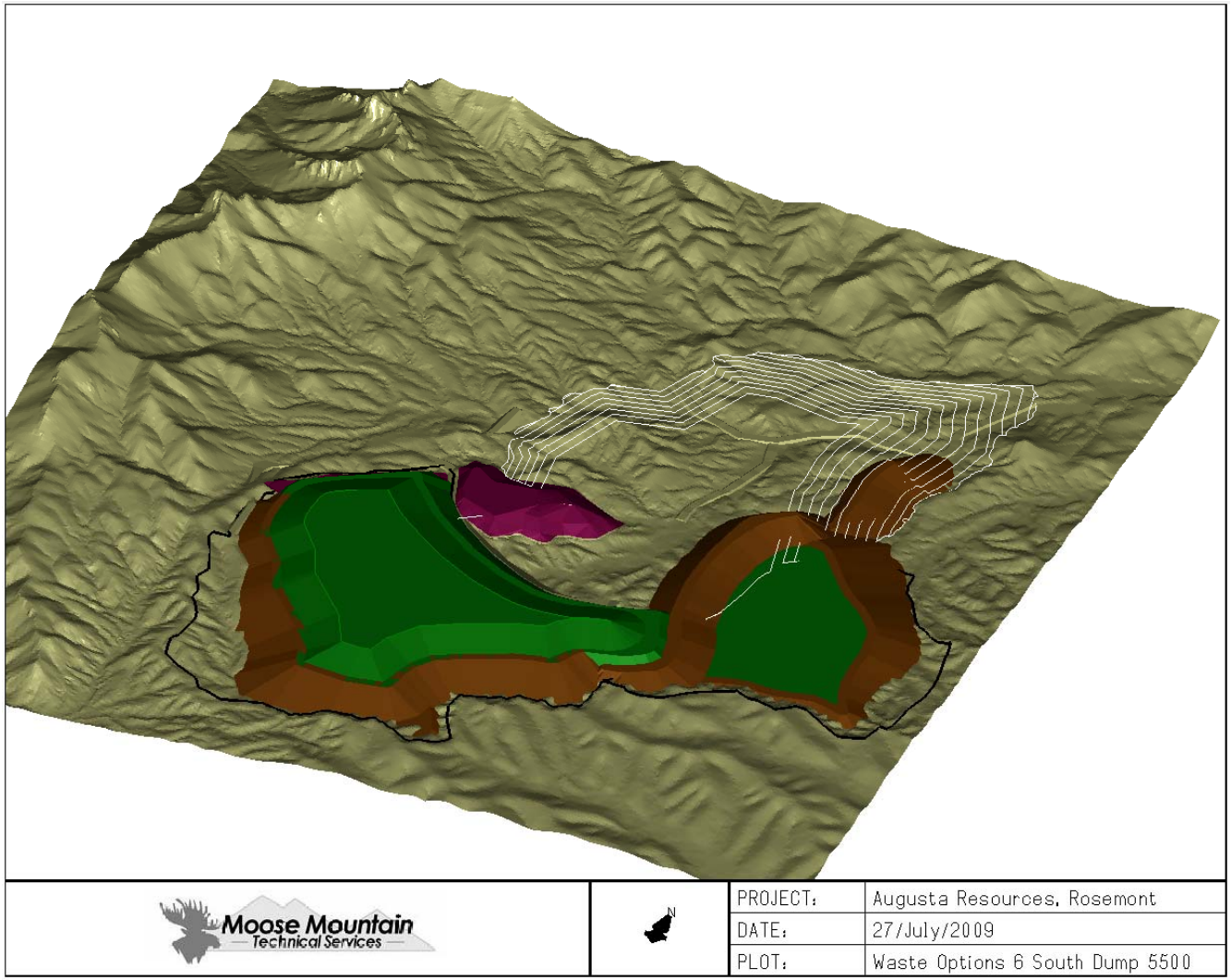


Moose Mountain Technical Services	N	PROJECT:	Augusta Resources, Rosemont
		DATE:	27/July/2009
		PLOT:	Waste Options 6 South Buttress

The south dump, filled to the 5500 foot elevation would be 448Mtons :



The remaining 183Mtons of waste would be placed on the south dump, building it up to the 5700 foot elevation:



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: 1950-3/2810
Date: August 26, 2009

Jamie Sturgess
Rosemont Copper Company
4500 Cherry Creek South Drive
Suite 1040
Denver, CO 80246

CERTIFIED MAIL – RETURN NUMBER: 70081830000002524994

Dear Mr. Sturgess:

Rosemont Copper Company's ongoing coordination with the Forest Service interdisciplinary team's work to develop alternative mitigation opportunities for the waste rock and tailings locations described in the proposed Mine Plan of Operations is appreciated. Your representative was briefed on the Forest Service's preliminary issues and considerations for alternatives and mitigation at the July Cooperating Agency Coordination Meeting. Materials from the monthly coordination meetings are currently being posted to the project website at www.RosemontEIS.us.

Concurrent with my review request to cooperating agencies, I am now asking for Rosemont's input on the alternative and mitigation considerations presented at the July Coordination Meeting (copies of the relevant meeting materials are enclosed). Specifically, input should focus on technical feasibility of these alternative locations. Input at this time should not deliberate on potential effects. Potential effects will be addressed later for those alternatives and mitigation elements selected for detailed consideration in the environmental impact statement.

Comments should be provided as soon as possible to Cooperating Agency Liaison Teresa Ann Ciapusci at 300 West Congress Street, Tucson, AZ 85701. If you have questions related to this request, please contact Ms. Ciapusci at (520) 388-8350.

Sincerely,

/s/ Jeanine A. Derby
JEANINE A. DERBY
Forest Supervisor

ec: Kathy Arnold, Rosemont Copper Company

Proposed Rosemont Copper Project

Land Mitigation Working Group Meeting Notes
January 12, 2010

Approved by:
___ Bev Everson
_X_ Mindee Roth
___ Tom Furgason

File in:
___ Administrative

Attendees:

Forest Service	Other
Debby Kriegel	Julia Fonseca – Pima County
Larry Jones	Nicole Fife – Pima County
Salek Shafiqullah	John Windes – AGFD
Mindee Roth	Matt Walton – AGFD
	David Jacobs – AG, State Lands
	Gordon Cheniae – Cheniae & Assoc.

Handouts:
- Agenda
- Rosemont Mitigation Lands – Draft (1/8/10)
- Coronado Land and Resource Management Plan excerpt – Table 11

Topics Discussed:
- Project process and timeline considerations, including what the Forest Service can and cannot require Rosemont to do regarding mitigation lands.
- Rosemont's early dialog with Pima County and AGFD regarding mitigation lands.
- Sonoran Desert Conservation Plan, AGFD, Forest Service, BLM, ACOE/EPA mitigation lands policies/criteria/direction.
- What is the possibility of developing a set of mitigation lands criteria agreed upon by this group?

Decisions Made:
- Rather than develop a set of evaluation criteria, each agency would carry their specific mitigation lands policies/criteria/direction forward as details of this mitigation concept continue to be formalized.

Action Items/Assignments:
- Debby – Revise Rosemont Mitigation Lands – Draft (1/8/10) document.

WestLand Resources, Inc.
Engineering and Environmental Consultants
Tucson • Phoenix

4001 E. Paradise Falls Drive
Tucson, Arizona 85712
Ph: (520) 206-9585 Fx: (520) 206-9518

Date: January 28, 2010
WestLand File No.: 1049.14

Pickup [ ] **Deliver** [ ] **Mail** [X]

By: USPS Regular
(Client to Pickup, Name of Courier or In-house Delivery; FedEx with Type, USPS Regular, USPS Priority, or USPS Certified Mail; etc.)

TRANSMITTAL

TO: Ms. Teresa Ann Ciapusci
Ecosystem Management & Planning
Coronado National Forest
300 West Congress, FB 42
Tucson, Arizona 85701

FROM: Brian Lindenlaub

RE: Rosemont Project

ATTACHMENTS:

Copies	Originals	
	1	CD w/ Draft Preliminary List of Onsite Alternatives Memorandum/w figures

FOR YOUR:

Information	
Use	X
Signature	
Stamp	
Approval	
File	
Other	

Comments:

cc:

If Delivered or Picked Up:

Received by (Signature/Print Name) ***Date***

ROSEMONT COPPER PROJECT
CORPS' PRELIMINARY LIST OF ONSITE ALTERNATIVES

Prepared for: U.S. Army Corps of Engineers

Prepared by: WestLand Resources, Inc., on behalf of Rosemont Copper Company

Date: January 22, 2010

Project No.: 1049.14 800 800

This memorandum provides a brief description of the seven (7) onsite alternatives tentatively identified by the U.S. Army Corps of Engineers (Corps) for the Rosemont Copper Project. The first two alternatives are based on the Mining Plan of Operation and are alternatives currently under consideration by the Forest Service. Alternatives 3 and 4 are also alternatives under consideration by the Forest Service. Alternatives 5, 6 and 7 are those you requested, have not been presented to the Forest Service, and as such we have included some preliminary observations on practicability here. We have not attempted to analyze the environmental effects of these additional alternatives in any detail. Rosemont also has expressed deep concerns that these last three alternatives do not fulfill the project purpose because they do not allow for full development of the Rosemont ore reserves. Based on conversations with the Corps on January 14, 2010, additional practicability evaluations are being completed by Rosemont's project team on the onsite alternatives, particularly Alternatives 5 through 7.

Given the level of detail, none of the exhibits include ancillary facilities such as haul roads, conveyors and other infrastructure. This detail is available for Alternatives 1 and 2 (which were developed as part of the Mining Plan of Operation) but it has not been developed for the other alternatives.

Alternative 1 – Configuration per 2007 Mine Plan of Operations (McCleary Canyon Tailings Storage and Barrel Canyon Waste Rock Storage)
This alternative is identical to the MPO alternative currently being considered by the Forest Service (Figure 1).

Alternative 2 – Alternative Tailings Sequence (McCleary Canyon Tailings Storage and Barrel Canyon Waste Rock Storage)
This alternative is identical to the alternative tailings sequence alternative currently being considered by the Forest Service (Figure 2).

Alternative 3 – Barrel Only, McCleary Open
This alternative is identical to the "Barrel Canyon only" alternative currently being considered by the Forest Service (Figure 3).

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Alternative 4 – Scholefield Tails, McCleary Waste, and Barrel Heap Leach
This alternative is identical to the "Scholefield Tailings" alternative currently being considered by the Forest Service (Figure 4).

Alternative 5 – Modified Pit Configuration with Wasp Canyon Open, McCleary Tails and Barrel Waste
Alternative 5 consists of a modification to the proposed Alternative 2 (McCleary Tails and Barrel Waste, Alternative Tailing Sequence), in which a portion of the proposed pit would remain undeveloped to avoid mining through Wasp Canyon (Figure 5). Under this alternative, a portion of the Rosemont ore body would not be recovered, eliminating the final mining phase and shortening the life of the mine. The result of the revised pit design is a substantial reduction in the amount of sulfide ore that would be mined. The facilities for this alternative incorporate Barrel, Sycamore, and McCleary canyons, but leave Wasp Canyon largely open. Stormwater flows within Wasp Canyon would impound or flow through the waste rock facility. All other items relative to the configuration of the facilities and the tailing sequence will be identical to those described in Alternative 2. The leach stockpiles and waste rock facilities would be constructed similarly to Alternative 2 in terms of slopes and methods, but waste rock facilities would contain a reduced amount of waste rock. This reduction in waste would be presumed to come from the facility height and that the facility footprint would remain the same.

Practicability Observations: Rosemont believes that this alternative is not practicable for a number of reasons. First, the loss of sulfide ore is likely to result in a loss of revenue from mining operations in excess of a billion dollars. Also, although this alternative would not result in the mining of Wasp Canyon, this drainage would be isolated from downstream receiving waters by construction of the waste rock facility and would be bounded by a waste rock dump and the pit. The functions of this canyon would be significantly affected by this alternative. In addition, the proximity of Wasp Canyon to the pit raises substantial geotechnical concerns about the stability of pit wall.

Alternative 6 – Scholefield Tails, McCleary Waste and Barrel Heap Leach, Drainages Open
Alternative 6 (Scholefield Tails, McCleary Waste and Barrel Heap Leach, Drainages Open) consists of a modification to the proposed Alternative 4 (Scholefield Tails, McCleary Waste and Barrel Heap Leach), in which the toe of the waste rock in McCleary Canyon is pulled back to keep the McCleary Canyon drainage open, and the excess waste is stacked higher and/or moved to the area near the heap leach between Wasp and Barrel Canyons and the area between Barrel and McCleary Canyons, keeping the drainages open (Figure 6). The waste rock facilities would be constructed similarly to Alternative 4 in terms of slopes and methods, but would have a footprint approximately 300 acres smaller on average, and would be located in three discrete locations. As with Alternative 4, dry stack tailings would be located entirely within Scholefield Canyon. As with Alternative 5, this alternative includes a modified pit configuration such that the Wasp Canyon drainage is avoided. The facilities for this alternative incorporate Scholefield and Wasp Canyons, but leave the drainages in McCleary and Barrel Canyons open.

Practicability Observations: This alternative has the same practicability concerns associated with loss of revenue and stability of the pit wall as discussed above with regard to Alternative 5. Also, although the major

DRAFT

drainages within the Project area would remain largely open under this alternative, their functions and values would be expected to be largely impacted due to the significant effects to the adjacent uplands.

Alternative 7 – Broadtop Butte Pit, Sycamore Tails and Upper McCleary/Upper Scholefield Waste

Alternative 7 (Broadtop Butte Pit, Sycamore Tails and Upper McCleary/Upper Scholefield Waste) consists of an alternative that uses Sycamore Canyon for dry stack tailings (similar to an alternative proposed by the Forest Service) but proposes mining Broadtop Butte instead of the Rosemont ore body because of the former's nearer proximity to Sycamore Canyon. Dry stack tailings will be located entirely within Sycamore Canyon on the western side of the Santa Rita Mountains. This option would leave Wasp and Barrel Canyons undisturbed, and would utilize Upper McCleary and Upper Scholefield Canyons for waste rock, keeping the material out of the drainages to the extent possible. The plant site might need to be relocated to a site closer to the pit; however, the precise location cannot be determined until a detailed mine plan has been developed. At the present time, the feasibility of mining Broadtop Butte has not been studied in sufficient detail necessary to determine the potential size, configuration, or location of a pit. Without such detailed mine plan and feasibility study, it is not possible to project the size of the plant site, its location, or the size and location of the related waste rock and tailings facilities. On a broad scale level, however, the facilities for this alternative are assumed to incorporate Sycamore, McCleary and Scholefield Canyons, but leave Wasp and Barrel Canyons open. Because of the lack of information available regarding the mining of Broadtop Butte, this alternative has not been fully analyzed.

Practicability Observations: Development of this alternative is not practicable at this time due to the limited information available upon which to prepare a mine plan and determine project feasibility. Although it is possible that, at some point in the future, Rosemont might conduct detailed feasibility and economic analysis of this potential resource, this activity is not presently scheduled. As such, this alternative is not practicable.

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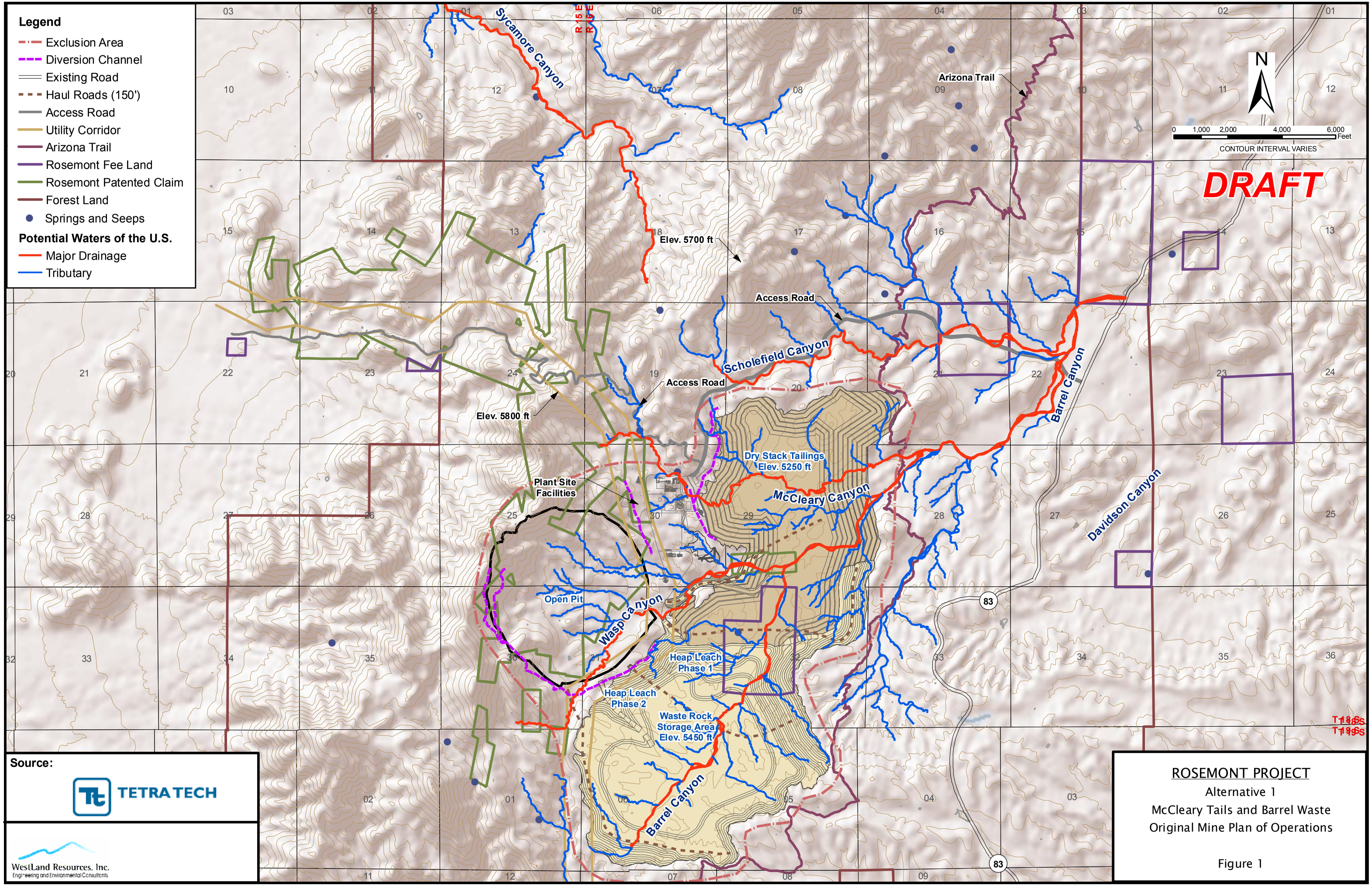
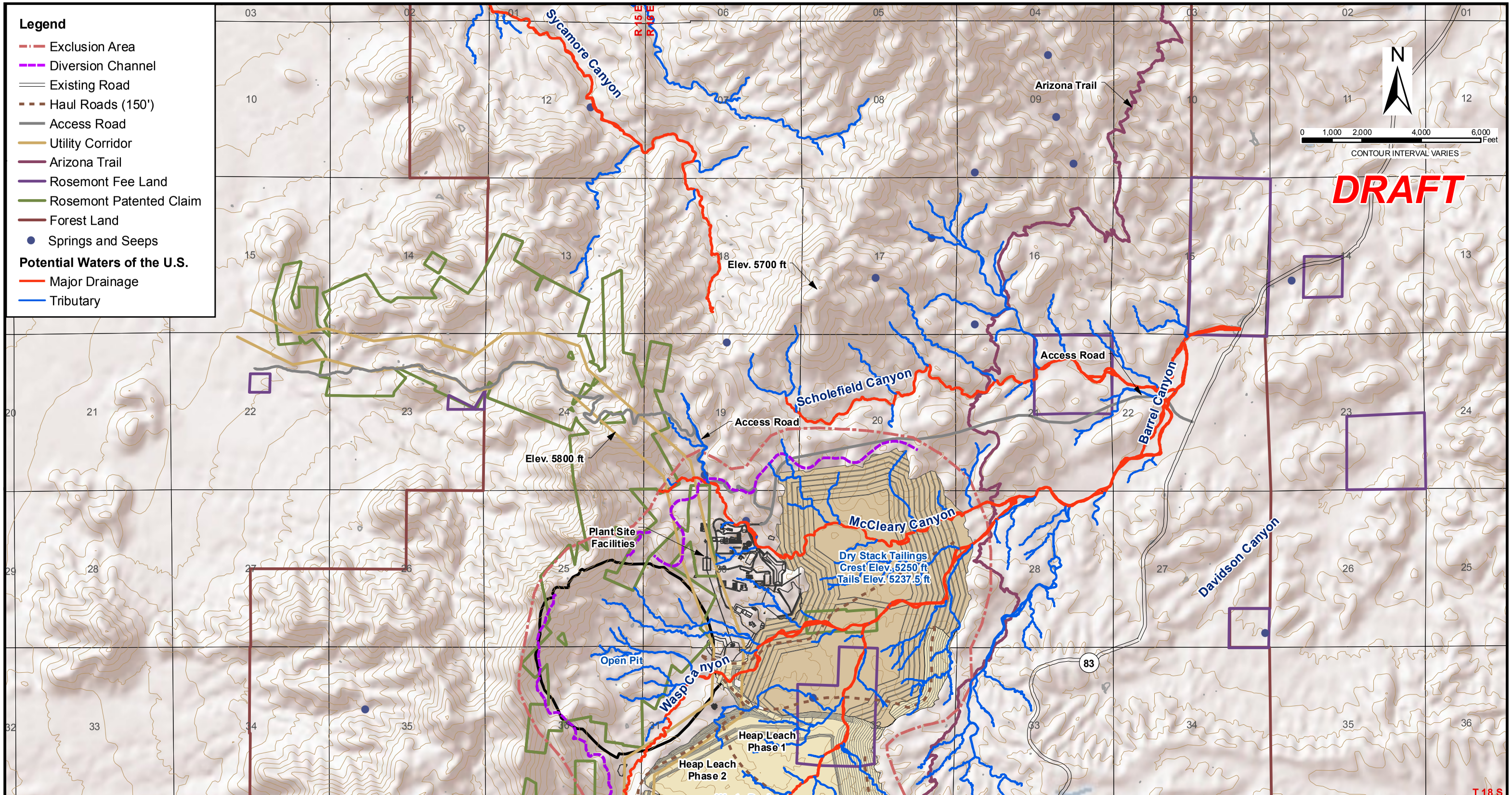

Legend
Exclusion Area
Diversion Channel
Existing Road
Haul Roads (150')
Access Road
Utility Corridor
Arizona Trail
Rosemont Fee Land
Rosemont Patented Claim
Forest Land
Springs and Seeps
Potential Waters of the U.S.
Major Drainage
Tributary
N
0 1,000 2,000 4,000 6,000 Feet
CONTOUR INTERVAL VARIES
DRAFT
Sycamore Canyon
R 15 E
R 16 E
Arizona Trail
Elev. 5700 ft
Access Road
Scholefield Canyon
Access Road
Elev. 5800 ft
Barrel Canyon
Dry Stack Tailings
Elev. 5250 ft
McCleary Canyon
Davidson Canyon
Plant Site
Facilities
Open Pit
Wasp Canyon
Heap Leach
Phase 1
Heap Leach
Phase 2
Waste Rock
Storage Area
Elev. 5450 ft
Barrel Canyon
83
T18S
T19S
Source:
TETRA TECH
WestLand Resources, Inc.
Engineering and Environmental Consultants
ROSEMONT PROJECT
Alternative 1
McCleary Tails and Barrel Waste
Original Mine Plan of Operations
Figure 1



Source:

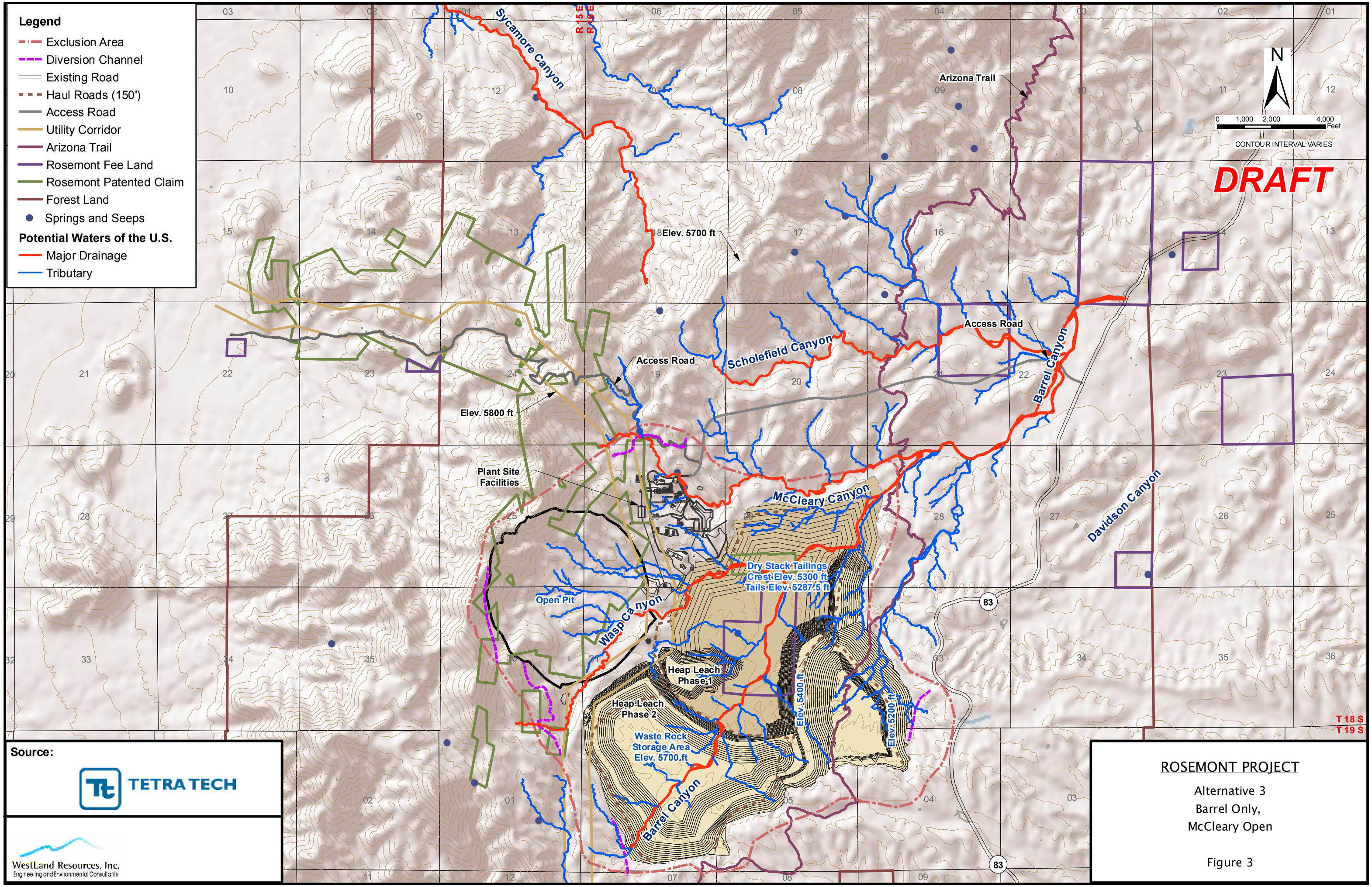
TETRA TECH

WestLand Resources, Inc.
Engineering and Environmental Consultants

ROSEMONT PROJECT

Alternative 2
McCleary Tails and Barrel Waste,
Alternative Tailings Sequence

Figure 2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Exclusion Area
Diversion Channel
Existing Road
Haul Roads (150')
Access Road
Utility Corridor
Arizona Trail
Rosemont Fee Land
Rosemont Patented Claim
Forest Land
Springs and Seeps
Potential Waters of the U.S.
Major Drainage
Tributary
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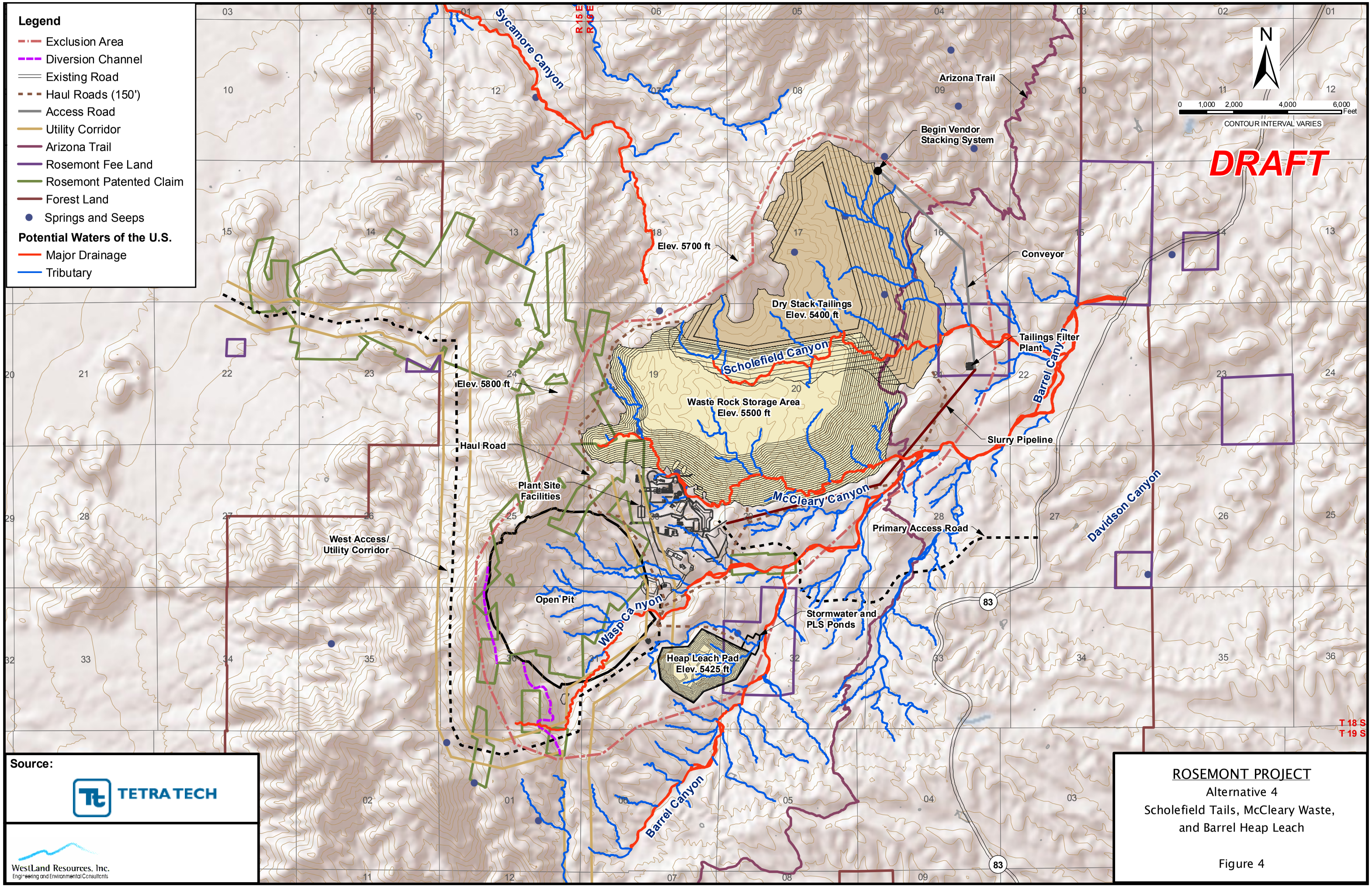
0 1,000 2,000 4,000 Feet
CONTOUR INTERVAL VARIES
DRAFT
Sycamore Canyon
R 15 E
R 16 E
Arizona Trail
Elev. 5700 ft
Access Road
Scholefield Canyon
Access Road
Barrel Canyon
Elev. 5800 ft
Plant Site Facilities
McCleary Canyon
Davidson Canyon
Dry Stack Tailings
Crest Elev. 5300 ft
Tails Elev. 5287.5 ft
Open Pit
Waspcanyon
83
Heap Leach Phase 1
Heap Leach Phase 2
Elev. 5400 ft
Elev. 5200 ft
Waste Rock Storage Area Elev. 5700 ft
Barrel Canyon
T 18 S
T 19 S
Source:
TETRA TECH
WestLand Resources, Inc.
Engineering and Environmental Consultants
ROSEMONT PROJECT
Alternative 3
Barrel Only,
McCleary Open
Figure 3

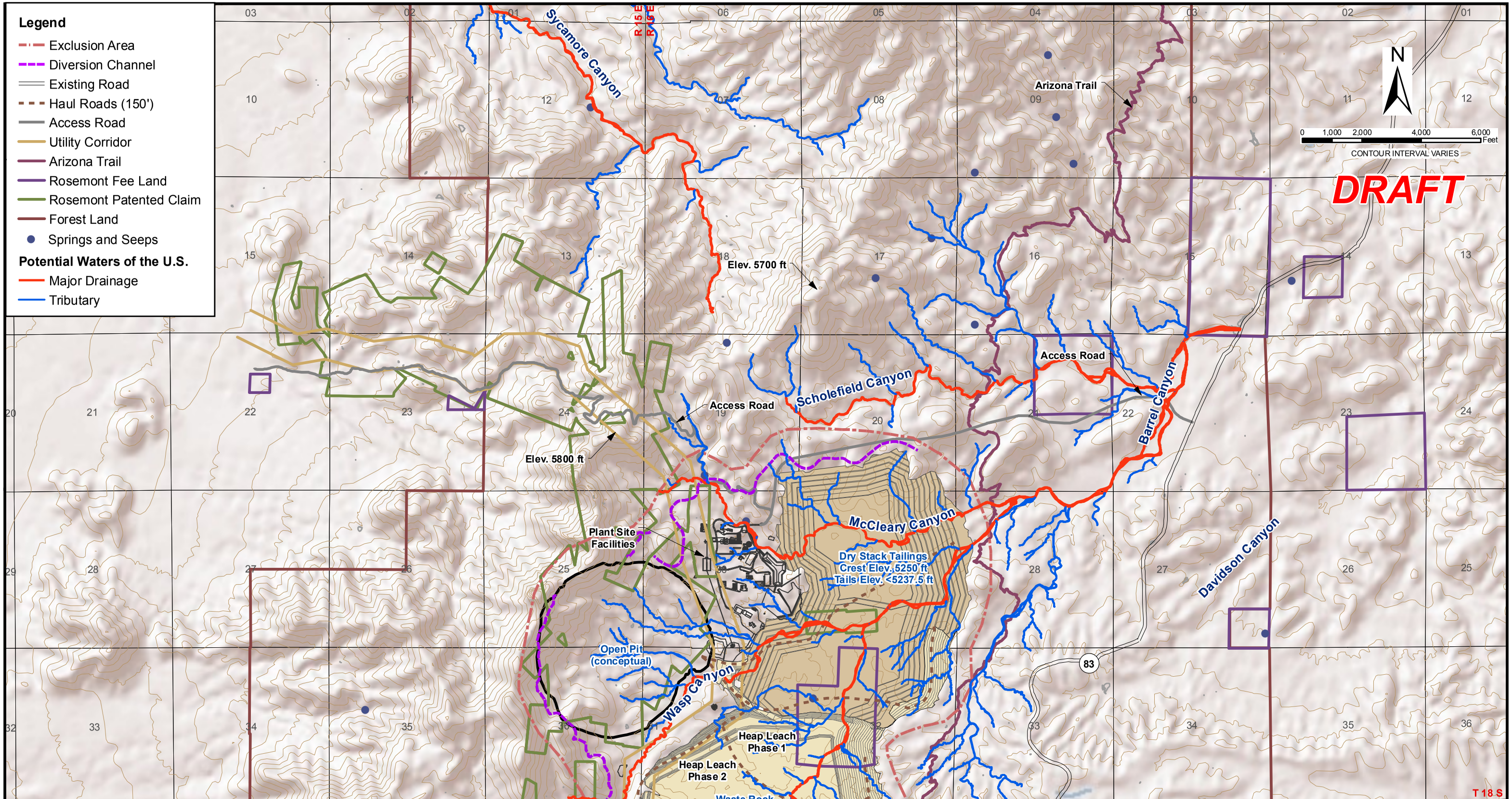


ROSEMONT PROJECT

Alternative 4

Scholefield Tails, McCleary Waste, and Barrel Heap Leach

Figure 4



Source:

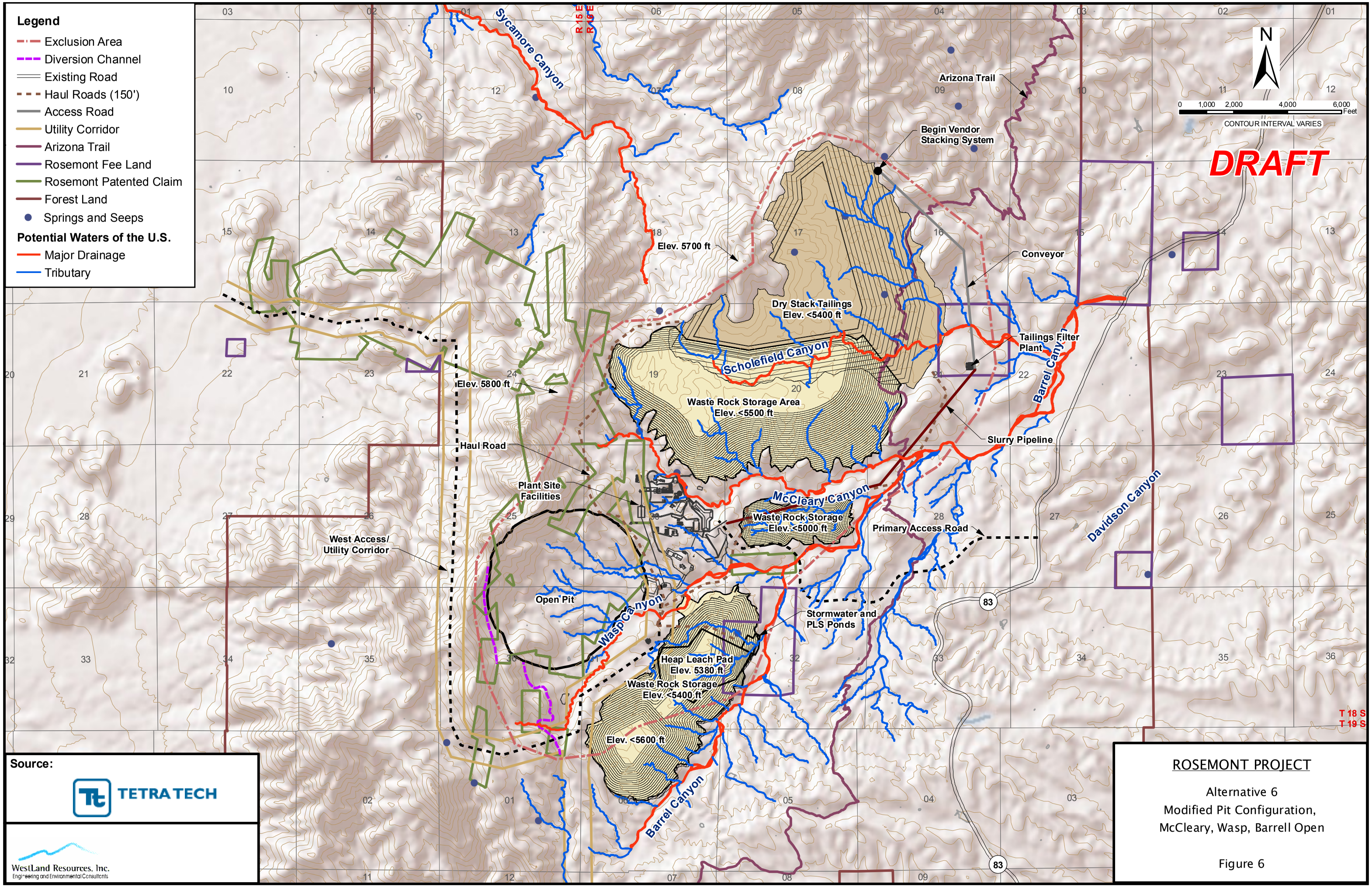
TETRA TECH

WestLand Resources, Inc.
Engineering and Environmental Consultants

ROSEMONT PROJECT

Alternative 5
Modified Pit Configuration with Wasp Open, McCleary Tails and Barrel Waste,

Figure 5


Legend
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Forest Land
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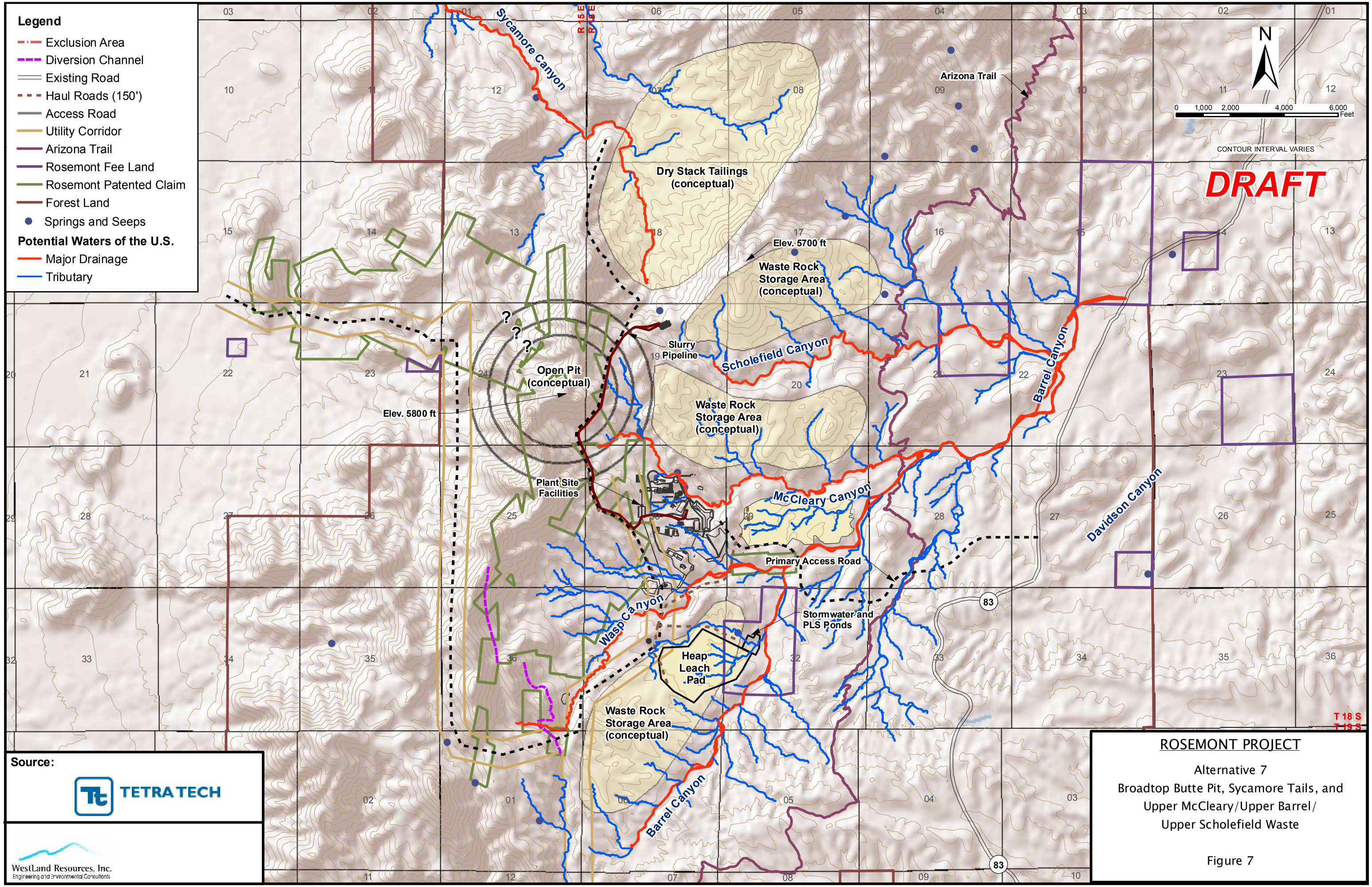
Potential Waters of the U.S.
Major Drainage
Tributary
N
0 1,000 2,000 4,000 6,000 Feet
CONTOUR INTERVAL VARIES
DRAFT
Sycamore Canyon
R15E
R16E
Arizona Trail
Begin Vendor Stacking System
Elev. 5700 ft
Conveyor
Dry Stack Tailings Elev. <5400 ft
Scholefield Canyon
Tailings Filter Plant
Barrel Canyon
Elev. 5800 ft
Waste Rock Storage Area Elev. <5500 ft
Slurry Pipeline
Haul Road
Plant Site Facilities
McCleary Canyon
Waste Rock Storage Elev. <5000 ft
Primary Access Road
Davidson Canyon
West Access/ Utility Corridor
Open Pit
Wasp Canyon
Stormwater and PLS Ponds
83
Heap Leach Pad Elev. 5380 ft
Waste Rock Storage Elev. <5400 ft
Elev. <5600 ft
Barrel Canyon
T 18 S
T 19 S
Source:
TETRA TECH
WestLand Resources, Inc.
Engineering and Environmental Consultants
ROSEMONT PROJECT
Alternative 6
Modified Pit Configuration,
McCleary, Wasp, Barrell Open
Figure 6



ROSEMONT PROJECT

Alternative 7
Broadtop Butte Pit, Sycamore Tails, and
Upper McCleary/Upper Barrel/
Upper Scholefield Waste

Figure 7

"Blaine, Marjorie E SPL" <Marjorie.E.Blaine@usace.army.mil>

04/29/2010 05:02 PM

To "Teresa Ann Ciapusci" <tciapusci@fs.fed.us>, "Beverley A Everson" <beverson@fs.fed.us>
cc "Reta Laford" <rlaford@fs.fed.us>
bcc
Subject FW: Alternatives

Teresa Ann

I have been working with WL to have them provide a technical memo which will identify the alternatives the
Corps would like to see carried forward into the DEIS Chapter 2 with the understanding that we will also need an Appendix
for our 404(b)(1) alternatives analysis as we must also look at offsite alternatives AND our analysis of alternatives will
be in much more depth than this technical memo.

To that end, WL just provided to me today the technical memo I was requesting from them. Unfortunately,
I do not have the time to do a formal letter because I am going on AL starting tomorrow and will be gone most
of the month of May. It was very important for the Corps that we get this to you so Ms. Derby will have it as
the USFS finalizes its array of alternatives to be considered. Therefore, I hope you will accept this as an email
transmittal. I have asked Brian Lindenlaub to forward a hard copy directly to you so you have the printed maps.
While the applicant makes the comments that some of the alternatives are not practicable, the Corps does not
yet have proof of this and so we do not want these eliminated at this point in time.

The other thing that we need to address is purpose and need. For our requirements, we set a basic project purpose
and an overall project purpose which are typically stated in Chapter 1. The basic project purpose is not problematic.
However, Rosemont's attorneys disagree with what the Corps has determined the overall project purpose and they
want to discuss this with us. We have a meeting on May 20th to discuss with our attorneys. I don't believe that is
critical to you right now as we can provide that language to you when we review Chapters 1 and 2 before the DEIS
is published.

Please let me know if you have any problems or questions. I hope this assists the USFS in moving forward on the identification
of alternatives.

Respectfully submitted,

Marjorie Blaine
Senior Project Manager/Biologist
U.S. Army Corps of Engineers
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Assist us in better serving you!
You are invited to complete our customer survey, located at the following link: http://per2.nwp.usace.army.mil/survey.html
Note: If the link is not active, copy and paste it into your internet browser.

Rosemont Corps Onsite Alternatives 042910.pdf

ROSEMONT COPPER PROJECT
CORPS ONSITE ALTERNATIVES

Prepared for: U.S. Army Corps of Engineers

Prepared by: WestLand Resources, Inc., on behalf of Rosemont Copper Company

Date: April 29, 2010

Project No.: 1049.14 800 800

At the request of the U.S. Army Corps of Engineers (Corps), this memorandum has been prepared to describe the six (6) onsite alternatives that are being evaluated as part of the Corps' Section 404(b)(1) alternatives analysis for the Rosemont Project (Figure 1: all figures follow text). The Section 404(b)(1) alternatives analysis is still under review by the Corps. The first two alternatives are based on the Mine Plan of Operations and are alternatives currently under consideration by the Forest Service. Alternative 3 is also an alternative under consideration by the Forest Service. Alternative 4 is a modification of an alternative under consideration by the Corps. Alternatives 5 and 6 are those that have been developed by the Corps. Rosemont believes that these last two alternatives do not fulfill the project purpose because they do not allow for full development of the Rosemont ore reserves, that they cost significantly more than the other alternatives, and/or they are not practicable because they are not currently available.

Various configurations of the largest project structural elements (i.e., heap leach pads, dry stack tailings, and waste rock storage) have been considered in the development of onsite alternatives. In addition, one alternative is considered that changes the configuration of the pit, and another alternative contemplates placing a pit at an alternate mineral source rather than the Rosemont ore body. Six alternatives affecting the configuration of mine plan elements and other items are contemplated in this document, and are summarized as follows:

- Alternative 1: McCleary Tailings and Barrel Waste, Original Mine Plan of Operations
- Alternative 2: McCleary Tailings and Barrel Waste, Alternative Tailings Sequence
- Alternative 3: Barrel Canyon Only
- Alternative 4: Scholefield Tailings, Wash Avoidance
- Alternative 5: Modified Pit Configuration with Wasp Open
- Alternative 6: Alternative Mineral Source

Each of the onsite alternatives considered are briefly described below. Following each description is a discussion of each alternative's practicability and environmental effects, including impacts to potential waters of the U.S. (Figure 2). Table 3 summarizes a number of key differences between each of these alternatives, including the environmental impacts and practicability analysis.

ONSITE CONFIGURATION ALTERNATIVES

Alternative 1 – McCleary Tailings and Barrel Waste, Original Mine Plan of Operations

Alternative 1 is the configuration presented in the July 2007 Mine Plan of Operations (WestLand, 2007). The facilities for this alternative incorporate McCleary, Barrel, and Wasp canyons (Figure 3). For this alternative, waste rock will be placed in the Barrel Canyon drainage. The dry stack tailings will be stored in two separate phases, the North (McCleary Canyon) and the South (Barrel Canyon) Dry Stacks. Tailings will be dewatered at the plant site facilities and then conveyed overland to the tailings facilities. Dry stack tailings will be placed in the North Dry Stack area (McCleary Canyon) first, for a period of approximately 14 years. During year 12, preparation work will begin in the South Dry Stack to prepare the facility for tailings placement. Tailings will be placed in the South Dry Stack facility (Barrel Canyon) by year 14. The heap leach facility will be located in the Barrel Canyon drainage.

The perimeter berms will be located in the Barrel Canyon drainage, while the buttresses will be located in both Barrel and McCleary canyons. A large underdrain feature, called the "central drain", will be located along the major McCleary Canyon drainage between the two tailings phases. The pit will impact a portion of the Wasp Canyon drainage. The primary off-site roadway alignment presented in the original MPO is shown in Figure 3. The primary access will follow a roadway alignment that crosses both Scholefield and McCleary Canyons and the confluence of Barrel Canyon near the intersection with SR 83 at approximately milepost 46.9. A variety of elements related to the construction and impacts of this configuration are presented in the attached Table 3.

Environmental Effects: Implementation of Alternative 1 will result in direct impacts to approximately 38.1 acres of potential waters of the U.S. resulting from the construction of the waste rock dumps, tailings piles, plant site, and pit. Approximately 213 acres of riparian habitat will be directly impacted as well (WestLand, 2010). An evaluation completed by Tetra Tech (2010a) shows that the average annual stormwater flows within Barrel Canyon, at the SR 83 bridge immediately upgradient of the confluence with Davidson Canyon, will be reduced by approximately 45.8% as a result of this alternative, and that peak 100-year flows will be reduced by 53.1%.

Practicability Determination: This alternative is likely practicable. That is, Alternative 1 is available, logistically and technologically feasible, economically practicable, and consistent with the Applicant's project purpose. However, additional engineering and hydrologic evaluation of the central drain design indicated that long-term maintenance of the drain could be a concern. The development of Alternative 2 (below) was accomplished, in part, to address this concern.

Alternative 2 – McCleary Tailings and Barrel Waste, Alternative Tailings Sequence

Alternative 2 consists of a modification to the 2007 Mine Plan of Operations (Alternative 1) as a response to issues raised during public scoping. This alternative is similar to Alternative 1, in that the waste rock and tailings facilities will be confined to McCleary and Barrel canyons (Figure 4). However, in addition to a number of minor design element changes and mitigation concepts, this alternative includes an alternative tailings sequence in which the McCleary Canyon drainage will be impacted later in the development of the

Project. As with Alternative 1, the facilities for this alternative incorporate Wasp, Barrel and McCleary canyons.

The phasing for this alternative starts in Barrel Canyon and leaves McCleary Canyon open for a period of approximately 10 years prior to any activity occurring in this area. This keeps the footprint for the first 10 years isolated to an area of Barrel Canyon. As with Alternative 1, the tailings will be stored in two separate phases, the North (McCleary Canyon) and the South (Barrel Canyon) Dry Stacks. Tailings will be dewatered at the plant site facilities and then conveyed overland to either of the tailings facilities. In Alternative 2, dry stack tailings will be placed in the South Dry Stack first for a period of approximately 12 years, leaving McCleary Canyon open. During year 10, preparation work will begin in the North Dry Stack area (McCleary Canyon) to prepare the facility for tailings placement. Tailings will be placed in the facility by year 12.

As under Alternative 1, the waste rock and heap leach facility will be placed in the Barrel Canyon drainage under this alternative. The perimeter berms will be located in the Barrel Canyon drainage, while the buttresses will be located in both Barrel and McCleary Canyons. A revised underdrain system will be located along the major drainages underlying the facilities. The pit will impact a portion of the Wasp Canyon drainage. This alternative includes a revised alignment for the off-site roadway, as shown in Figure 4.The same elements presented in Alternative 1 relative to the construction and impacts have been analyzed for Alternative 2 and are presented in Table 3.

Environmental Effects: Environmental impacts under Alternative 2 will be similar to those under Alternative 1, with direct impacts to 37.7 acres of potential waters of the U.S. and 220.8 acres of riparian habitat. However, impacts to the higher quality (Class V) riparian habitat in McCleary Canyon (WestLand, 2010) will occur 10 years later in the Project life. Average annual stormwater flows in Barrel Canyon at the SR 83 bridge will be reduced by 44.3%, and 100-year flood peaks by 49.9% (Tetra Tech, 2010b).

Practicability Determination: This alternative is practicable.

Alternative 3 – Barrel Only

Under this alternative, both dry stack tailings and waste rock will be confined to Barrel Canyon and an unnamed tributary of Barrel Canyon between Barrel Canyon proper and State Highway 83 (Figure 5), referred to colloquially as “Trail Canyon”, presumably for its proximity to the Arizona Trail. The facilities for this alternative incorporate Wasp and Barrel canyons. Waste rock storage is provided in both Barrel Canyon and Trail Canyon. Tailings will be dewatered at the plant site facilities and then conveyed overland to the tailings facility. Dry stack tailings will be located entirely within Barrel Canyon. The perimeter berms and buttresses will be located in the Barrel Canyon drainage as well. Underdrains will be located along the major drainages underlying the facilities. The heap leach facility will be located in the Barrel Drainage and will be located within the tailings facility footprint. The roadway alignment for this alternative is the same as for Alternative 2. The same elements presented in Alternative 1 relative to the construction and impacts have been analyzed for Alternative 3 and are presented in Table 3.

Environmental Effects: This alternative will result in direct impacts to 35.3 acres of potential waters of the U.S. and approximately 207.5 acres of riparian habitat (WestLand, 2010), though it avoids impacts to some of the highest quality (Class V) habitat in McCleary Canyon. Under Alternative 3, annual average stormwater flows in Barrel Canyon at the SR 83 bridge will be reduced by 33.8%, and 100-year flood peaks will be reduced by 34.9% (Tetra Tech, 2010c). Due to the deposition of waste rock in Trail Canyon, this alternative has potentially higher impacts to visual resources along SR 83 than either Alternatives 1 or 2.

Practicability Determination: This alternative is practicable.

Alternative 4 – Scholefield Tailings, Wash Avoidance

Alternative 4 (Scholefield Tails, Wash Avoidance) was developed in an effort to avoid cultural resources, riparian habitat, and recreational opportunities within Barrel Canyon. Under this alternative, the dry stack tailings will be located entirely within Scholefield Canyon (Figure 6). Waste rock will be located in two locations, both outside of canyon bottoms: adjacent to and immediately south of the dry stack tailings, within the McCleary Canyon drainage basin but outside of the drainage bottom; and between Wasp and Barrel Canyons, overlying the heap leach pad once leaching operations have ceased and the heap leach pad has been reclaimed.

Two mechanisms for transporting the tailings to Scholefield Canyon are being considered for this alternative, conveyor and slurry pipeline. For the conveyor option, tailings will be dewatered at the plant site facilities and then conveyed overland to the tailings facility. For the slurry pipeline option, the tailings will be transported to a separate tailings filter plant, and dewatered prior to placement in Scholefield Canyon via an additional conveyor. The perimeter berms and buttresses will be located in the Scholefield Canyon drainage. The heap leach facility will be located in the Barrel Canyon drainage. This alternative includes a primary access roadway alignment that originates farther south on SR 83, as shown in Figure 6. The same elements presented in Alternative 1 relative to the construction and impacts have been analyzed for Alternative 4 and are presented in Table 3.

Environmental Effects: Alternative 4 results in fewer direct impacts to both potential waters of the U.S. and riparian habitat (22.8 and 83.4 acres, respectively) than do Alternatives 1 through 3. Impacts to Class IV and V riparian habitat total 39.9 acres under this alternative. Average annual flood flows in Barrel Canyon at the SR 83 bridge will be reduced by 18.4% as a result of this alternative, and 100-year flood peaks will be reduced by 29.0% (Tetra Tech, 2010d).

However, this alternative would result in the loss of Scholefield Spring, one of the only special aquatic sites (wetlands) identified within the Project site, and a feature which supports the giant sedge, designated by the Forest Service as “sensitive”. In addition, construction of the tailings within Scholefield Canyon would bring the operation to within approximately 0.5 mile of a potentially significant lesser long-nosed bat roost site. Although it has been shown that mine operations are compatible with LLNB maternity roost sites (notably with the operation of the Cyprus Tohono Corporation mine facility near the Old Mammon Mine), an alternative that was developed further away from the roost feature would be expected to have less potential to adversely affect the roost site or the individuals within it.

Although the major drainages within the Project area would remain largely open under this alternative, their functions and values would be expected to be adversely impacted due to the significant effects to the adjacent uplands. Reclamation of these upland areas would not occur concurrently with operations, as it would under Alternatives 1 and 2 (and potentially 3).

This alternative would have a substantial adverse impact to lands designated by the Pima County Sonoran Desert Conservation Plan as being a Biological Core area. The total area of Biological Core affected by Alternative 4 (over 1,240 acres) is more than five times greater than the next highest impact (Alternative 1).

Practicability Determination: This alternative suggests a waste rock disposal method (stacked on slopes outside of drainages) not commonly used in copper mines in Arizona due to cost and stability considerations. In addition, this alternative results in an increased haulage distance for waste rock and an increased conveyor distance for dry stack tailings material, as well as an increased haulage distance for deposition of tailings buttress material in Scholefield Canyon. The incremental cost estimate associated with the increased haulage distance for this alternative, over Alternative 1, is $35 million in initial capital, with a cumulative life-of-mine incremental cost increase of $237 million. The total increased cost would be expected to be even higher given the technological and logistical challenges of stacking the waste rock on the side of a hill. As such, this alternative is not practicable.

Alternative 5 – Modified Pit Configuration with Wash Canyon Open

Alternative 5 consists of a modification to Alternative 2 (McCleary Tails and Barrel Waste, Alternative Tailing Sequence), in which a portion of the proposed pit would remain undeveloped to avoid mining through Wasp Canyon (Figure 7). Under this alternative, a portion of the Rosemont ore body would not be recovered, eliminating the final mining phase and shortening the life of the mine by more than 3 years. The result of this revised pit design is 112 million tons less sulfide ore, which represents a 21 percent reduction in recoverable sulfide ore. The facilities for this alternative incorporate Barrel, Sycamore, and McCleary canyons, but leave Wasp Canyon largely open. Stormwater flows within Wasp Canyon would impound or flow through the waste rock facility. All other items relative to the configuration of the facilities and the tailing sequence will be identical to those described in Alternative 2. The leach stockpiles and waste rock facilities would be constructed similarly to Alternative 2 in terms of slopes and methods, but waste rock facilities would contain an estimated 25 percent less waste rock. This reduction in waste would be presumed to come from the facility height and that the facility footprint would remain the same.

Environmental Effects: Impacts to potential waters of the U.S. and riparian habitat under this alternative are similar to those under Alternatives 1 and 2, with the exception of a portion of Wasp Canyon. Avoidance of impacts to Wasp Canyon would result in approximately 1.7 fewer acres of direct impacts to potential waters of the U.S. than under Alternative 2, for a total impact to potential waters of the U.S. of 40.2 acres. This alternative would result in direct impacts to approximately 219.1 acres of riparian habitat (compared to 220.8 acres under Alternative 2). The 1.7 acres of riparian habitat that will be avoided under this alternative is Class II and III habitat, and is generally of lower vegetation quality (or density) than other riparian habitats (Class IV and V) in McCleary, Barrel, and Scholefield canyons. Impacts to stormwater flows under this alternative

would be similar to those under Alternatives 1 and 2, with reductions in average annual flows into Davidson Canyon of 44.3%, and reduction of 100-year peak flows of 49.9%.

Although this alternative would not result in the mining of a portion of Wasp Canyon, this reach would be isolated from downstream receiving waters by construction of the waste rock facility, and would be bounded on either side by a waste rock dump and the pit. In addition, the haul road from the pit to the waste rock dump would be required to cross the wash in two places. As such, the functions of this surface water feature would be significantly affected by other aspects of this alternative.

Practicability Determination: This alternative is not practicable. The loss of 112 million tons of sulfide ore would result in an unacceptable increase in the cost of the project. The initial capital investment for a mining project is substantial, and Rosemont is no exception with an initial capital cost of an estimated $897.2 million. The only way that such a large project becomes economically viable is to be able to amortize these significant capital costs, which are largely fixed (i.e. roadways, utilities, equipment, SX/EW, mill, etc.), over a commensurately substantial ore tonnage. With a fully-sized pit, the capital costs will be spread over the recovery of approximately 546 million tons of sulfide ore and 70 million tons of oxide ore (proven and probable), for an estimated cost of approximately $1.46 per ton of ore. By reducing the volume of recovered sulfide ore by 112 million tons, the per ton cost increases to approximately $1.78 per ton of ore, a 22% increase in the cost of production. Assuming long-term copper prices of $1.85/lb (which is well below the current value), the smaller pit alternative represents a loss of approximately $1.2 billion of revenue. Based on current copper prices (approximately $3.5/lb), the loss of revenue would be an estimated $2.3 billion.

Alternative 6 – Alternative Mineral Source (Broad Top Butte, Copper World, Peach-Elgin)

Recent and historic exploration has identified three mineral resource areas in the vicinity of the Rosemont ore body, within the contiguous Rosemont patented claims. These areas are referred to, from east to west, as Broad Top Butte, Copper World, and Peach-Elgin (Figure 8). Exploration drilling and related feasibility analysis at these mineral resources has not yet been sufficient to define proven or probable reserves at any of these locations, so they are referred to only as mineral resources at this point. Table 4, below, provides a comparison of the amount of exploration completed for each of the three mineral resources compared to the level of effort that has been required to define the Rosemont ore body.

Table 4. Exploration Intensity of Rosemont Ore Body Compared to Other Identified Mineral Resources within the Rosemont Patented Claim Boundary

Ore Body/Mineral Resource	Total Number of Drill Holes	Total Footage of Core
Rosemont Ore Body	254	323,875
Broad Top Butte Mineral Resource	18	10,170
Copper World Mineral Resource	28	11,449
Peach-Elgin Mineral Resource[1]	21	8,600

[1] A more extensive drilling program was completed for the Peach-Elgin resource by Anaconda in the 1960's. However, the data acquired during that program was lost prior to purchase of the Rosemont property by Augusta.

As shown in Table 4, the level of effort completed to date to define the Rosemont ore body is substantial. There had already been approximately 195,000 feet of drilling within the Rosemont ore body when Augusta purchased the property, and Augusta (now Rosemont) has completed additional drilling since then. In addition to the drilling program itself, considerable feasibility engineering (including extensive metallurgical testing, geologic modeling, and mineral reserve estimates) has been completed on the Rosemont ore body based on the results of the drilling program.

Table 5 provides a summary of the estimated additional level of effort (in cost and time) that would be required to define the alternate mineral resources to an extent comparable to that of the Rosemont ore body.

Table 5. Estimated Additional Level of Effort Required to Define Alternate Mineral Resources as Proven/Probable Reserves

Mineral Resource	Drilling	Feasibility Analysis	Total
Broad Top Butte	$7 million	$5 million	$12 million
	3 years	2 years	5 years
Copper World	$4 million	$3 million	$7 million
	2 years	1.5 years	3.5 years
Peach-Elgin	$6 million	$4 million	$10 million
	3 years	2 years	5 years

Given the lack of information relating to any of these mineral resources, it is not possible to estimate the size or location of any potential mine infrastructure associated with the development of these resources, assuming the mineral resources could be defined as proven or probable reserves.

Environmental Effects: Given the degree of unknowns associated with this alternative, an assessment of environmental effects would be impossible to complete at this time.

Practicability Determination: As demonstrated above, none of the alternative mineral resources within the Rosemont claim block are available for development at this time and are therefore not practicable. Although it is possible that, at some point in the future, Rosemont might conduct detailed, exploration, feasibility and economic analysis of these potential mineral resources, these activities are not presently scheduled.

UTILITY LINE ALTERNATIVES

Electrical power and water will be brought to the Project site from the west for all onsite alternatives. This section describes alternative alignments and, in the case of the waterline, alternative technologies to the proposed action.

Power

Electrical power will be provided by Tucson Electric Power (TEP), which is currently evaluating alignment alternatives as part of the Arizona Corporation Commission's (ACC) Certificate of Environmental Compatibility (CEC) process. Although the proposed alignments have not yet been finalized, the links upon which the alignments will be based have been determined. This analysis has been developed based on a reasonable assumption of the alignment alternatives that will be developed from the links.

Power for all alternatives will be provided from a link attached to powerlines on the South Substation loop. All of the powerline alternatives include above ground powerlines and an associated unpaved maintenance road, with only minor temporary impacts to potential waters of the U.S. In general, no powerline poles, substations, or other structures will be constructed in potential waters of the U.S. Impacts to potential waters of the U.S. will occur only from the construction of a 12-ft wide unpaved access road, and all of these impacts are anticipated to be temporary. That is, the potential waters of the U.S. will be restored to preconstruction contours following construction of the powerlines and the access road.

Alignment 1 – Northern Route

This alignment generally parallels the northern and eastern boundary of the Santa Rita Experimental Range, and includes a relatively small portion of BLM lands before entering the Rosemont claim block and crossing over the ridgeline near Lopez Pass (Figure 9). Temporary impacts to potential waters of the U.S. under this alignment total approximately 0.27 acres.

Alignment 2 – Santa Rita Road Route

West of the Santa Rita Mountains ridgeline, this alignment generally parallels the existing South Santa Rita Road before entering private property held by Rosemont. The alignment then enters the Rosemont claim block and crosses the ridgeline at Lopez Pass, along the same alignment as under Alignment 1. Development of this alignment would result in temporary impacts to approximately 0.13 acres of potential waters of the U.S.

An alternative to this alignment includes a divergence from the private property alignment across BLM lands similar to Alignment 1. Also included in this route is a power routing to the south of the Rosemont operations area through the Coronado National Forest to the Greaterville substation. A portion of this route follows an existing powerline and impacts to waters would be temporary and coincident with upgrades to existing roads and specific pole access.

Alignment 3 – Adjacent 46 kV Line

This alignment would parallel an existing 46 kV powerline, south of Santa Rita Road, through the Santa Rita Experimental Range, crossing into the Coronado National Forest near Box Canyon Road. Although an access road for the 46 kV line currently exists, it would need to be improved in order to construct the new powerline. This alignment would then require that a new powerline alignment be developed from the existing 46 kV line north to the Rosemont Project.

As with the other alignments, improvement of the existing access road and construction of the new road would result in temporary impacts to potential waters of the U.S., in this case totaling approximately 0.34 acres.

Discussion

Impacts to potential waters of the U.S. resulting from the construction of any of the three alignment alternatives described above would result from the construction of the access road, and those impacts would, in general, be temporary. Following construction of the powerline, the potential waters of the U.S. along each of the alignments would be restored to preconstruction contours to the greatest extent practicable. As such, impacts to potential waters of the U.S. would generally be comparable for each of the alignment alternatives, and each alignment is assumed to be practicable from a cost, logistics, and technology standpoint. It should be noted, however, that the Santa Rita Experimental Range and the State Land Department have weighed in on a specific line preference for the Santa Rita Road alignment.

Selection of the appropriate alignment alternative will be based, therefore, on other environmental factors (e.g. visual impacts) which are currently being evaluated as part of the CEC process. It is reasonable to conclude, therefore, that the alignment that is ultimately selected during the CEC process will constitute the least environmentally damaging practicable alternative (LEDPA) for the Project.

It should be noted, again, that TEP and the ACC are still in the process of finalizing the alignments to be considered in the CEC process. The alignments presented here were derived by WestLand from the suite of links currently being considered for the CEC process. Although the final alignments may change somewhat from those presented here, the conclusion that the alignment which is ultimately selected as part of the CEC process will constitute the LEDPA remains.

Water

Two waterline alignments have been proposed: the one that was provided in the 2007 MPO (WestLand, 2007) and a second that largely parallels Santa Rita Road through the Santa Rita Experimental Range. These alignments generally correspond to Alignments 1 and 2, respectively for the powerline, described above. In discussions with the Arizona State Land Department and the University of Arizona (which are responsible for the Santa Rita Experimental Range), Rosemont determined that the preferred alignment for all parties is that which parallels Santa Rita Road.

With either alignment, the pipeline will be constructed with a minimum soil cover of 36 inches within State Land or BLM easements, and 24 inches on the mine property. The pipe bedding requirements will follow the manufacturer's recommendations. Isolation valves will be installed in the pipeline at intervals of approximately 3,000 feet and at elevation changes of 250 feet. The pipeline at the wash crossings will be constructed below the calculated scour depth of the wash, and grade control structures will be provided at the largest washes to provide additional protection. Construction of the pipeline will include an unpaved permanent maintenance road and up to five forebay reservoirs and pump stations. The reservoirs and pump stations will be built outside of potential waters of the U.S.

Because the impacts to potential waters of the U.S. from either alignment will be minimal and almost exclusively temporary (and therefore comparable), this analysis considers only the preferred alignment along Santa Rita Road (Figure 10). The two alternatives to be considered for the construction of the waterline relate to the technology to be used: a) standard trenching, and b) jack-and-bore beneath the potential waters of the U.S.

Under the standard trenching alternative, impacts to potential waters of the U.S. would total approximately 0.44 acres of temporary impacts and 0.01 acres of permanent impacts resulting from the construction of road crossings and grade control structures. This construction method will cost between $210 and $360 per linear foot, depending on the size of pipe that is used.

Under the second waterline alternative, the waterline will be installed beneath potential waters of the U.S. using jack-and-bore technology, such that there would be no discharge of fill material to potential waters of the U.S. The estimated cost for the jack-and-bore alternative is between $1,100 and $1,800 per linear foot, and even more depending how large the wash crossing is. For the largest washes within the analysis area, additional costs will be incurred by the contractor for excavation and shoring of the jack and bore pits. Utilizing jack-and-bore technology for the largest wash crossings within the analysis area will cost an estimated $1.5 million, compared to $180,000 to $250,000 for the standard trenching technology.

As demonstrated here, the use of jack-and-bore technology costs between five and eight times that of standard trenching technology, and results in an impracticable cost increase over the standard trenching methodology. As such, standard trenching represents the LEDPA for the Project waterline.

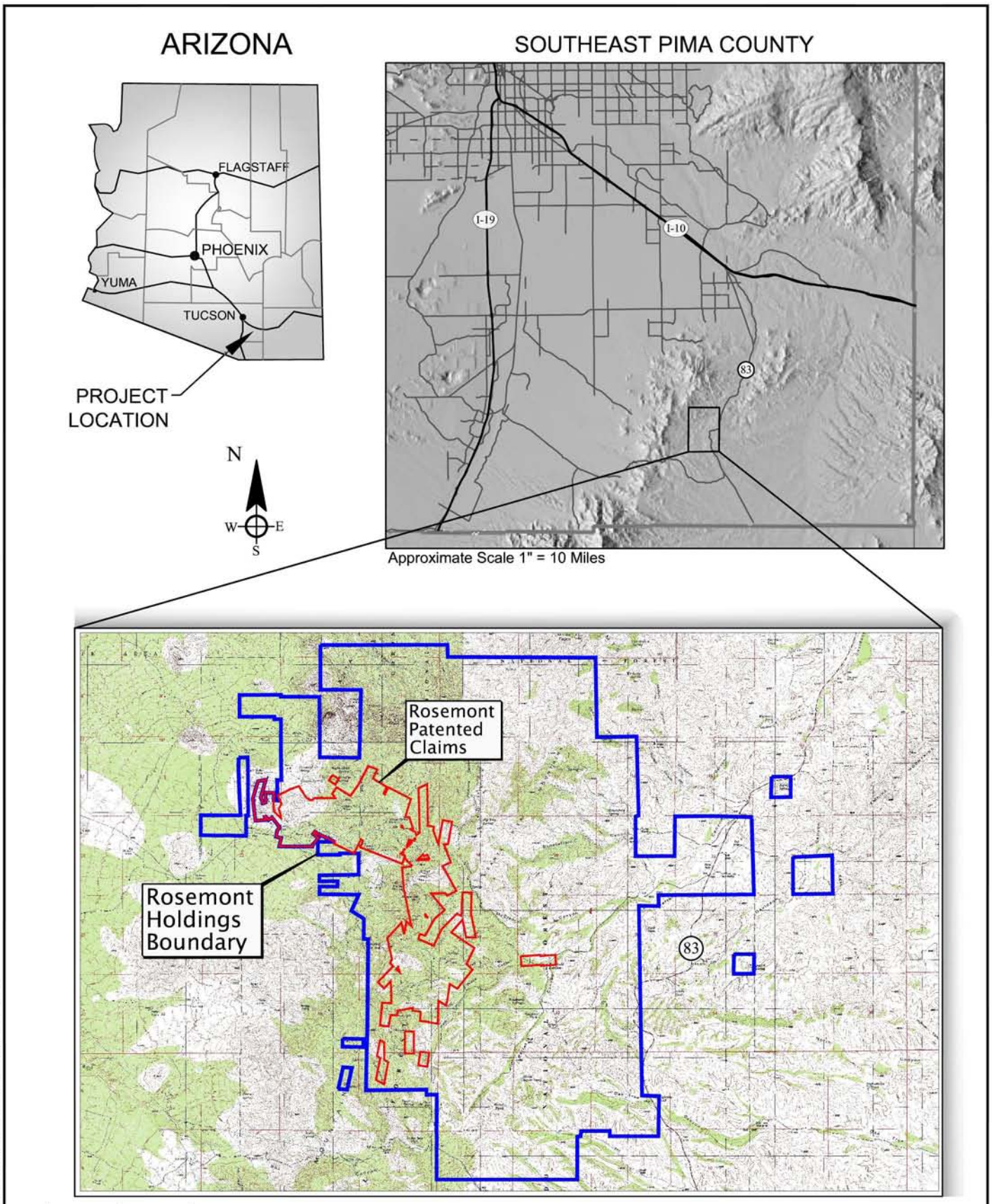
Table 3. Summary of Key Elements of Onsite Alternatives

	Alternative 1 **Mine Plan of Operations**	***Alternative 2*** **Alternative Tailings Sequence**	***Alternative 3*** **Barrel Canyon Only**	***Alternative 4*** **Scholefield Tailings / Wash Avoidance**	***Alternative 5*** **Modified Pit Configuration / Wasp Open**	***Alternative 6*** **Alternative Mineral Source**
Total area direct impacts (acres)	4,415	4,390	4,162	3,423	3,096	Unknown
Total exclusion (fenced) area (acres)	4,635	4,740	4,501	5,618	4,740	Unknown
Pit size (acres)	950	950	950	950	600	Unknown
Waste rock area (acres)	2,000	1,370	1,460	1,510	1,370	Unknown
Waste rock ultimate elevation (ft amsl)	5,450	5,470	5,200 / 5,700	5,600	< 5,470	Unknown
Tailings area (acres)	870	1,135	987	1,727	1,135	Unknown
Tailings storage ultimate elevation (ft amsl)	5,250	5,250	5,300	5,400	< 5,250	Unknown
Leach pad area (acres)	230	126	126	126	126	Unknown
Leach pad ultimate elevation – before cover (ft amsl)	5,340	5,380	5,380	5,380	5,380	Unknown
Estimated average haulage distance – Waste rock (ft)	14,475	14,475	17,515	27,645	14,475	Unknown
Estimated average conveyor distance – Tailings (ft)	12,000	11,105	14,385	9,450	11,105	Unknown
Practicability Criteria						
Capable of being done in a reasonable timeframe	Yes	Yes	Yes	Yes	Yes	No
Economically viable	Yes	Yes	Yes	No	No	No
Spatially compatible with other mineral resources in vicinity	Yes	Yes	Yes	Yes	Yes	Yes
Impacts to potential waters of the U.S. (acres)						
Direct	38.1	37.7	35.3	21.8	36.0	Unknown
Indirect	5.2	4.2	2.1	5.8	4.2	Unknown
Total	43.3	41.9	37.4	27.6	40.2	Unknown
Special aquatic sites	No	No	No	Yes	No	Unknown

Table 3. Summary of Key Elements of Onsite Alternatives

	Alternative 1 **Mine Plan of Operations**	***Alternative 2*** **Alternative Tailings Sequence**	***Alternative 3*** **Barrel Canyon Only**	***Alternative 4*** **Scholefield Tailings / Wash Avoidance**	***Alternative 5*** **Modified Pit Configuration / Wasp Open**	***Alternative 6*** **Alternative Mineral Source**
Direct impacts to total riparian habitat (per WestLand [2010]) (acres)	213.8	220.8	207.5	83.4	219.1	Unknown
Direct impacts to Class IV and Class V riparian habitat (per WestLand [2010]) (acres)	119.8	125.3	121.3	39.9	125.3	Unknown
Direct impacts to Important Riparian Areas (as designated by Pima County) (acres)	494.4	470.4	438.3	317.5	458.5	Unknown
Area in SDCP Biological Core (acres)	250.7	155.4	63.4	1,242.6	155.4	Unknown
Reduction in average annual stormwater flows reporting to Davidson Canyon (%)	45.8	44.3	33.8	18.4	44.3	Unknown
Reduction in 100-year flood peaks reporting to Davidson Canyon (%)	53.1	49.9	34.9	29.0	49.9	Unknown
Other sensitive resources			Visual resources along SR 83	Scholefield Spring; giant sedge; LLNB roost		
Initial capital cost per ton of ore	$1.46	$1.46	$1.46	$1.51+	$1.78	Unknown
Practicability	YES – However, may be technological concern regarding long term maintenance of stormwater underdrains.	YES – Improved stormwater management design	YES – longer haulage profile but economically viable	NO – increased cost over proposed action. Impacts to sensitive resources not affected in other alternatives.	NO – significantly increased cost over proposed action.	Not at this time – data collection and prefeasibility studies necessary to determine project viability will take several years to complete

FIGURES



T.18S.,R.15E., Portion of Sections 1,2, 10-15, 22-25, 35 & 36,
T.19S.,R.15E., Portions of Sections 1 & 2,
T.18S.,R.16E., Portion of Sections 6-8, 14-23, & 27-33,
T.19S.,R.16E., Portions of Sections 4, 5, & 6.
Pima County, Arizona
Mt. Fagan, Empire Ranch, Corona de Tucson & Helvetia
USGS 7.5 Minute Quadrangles

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

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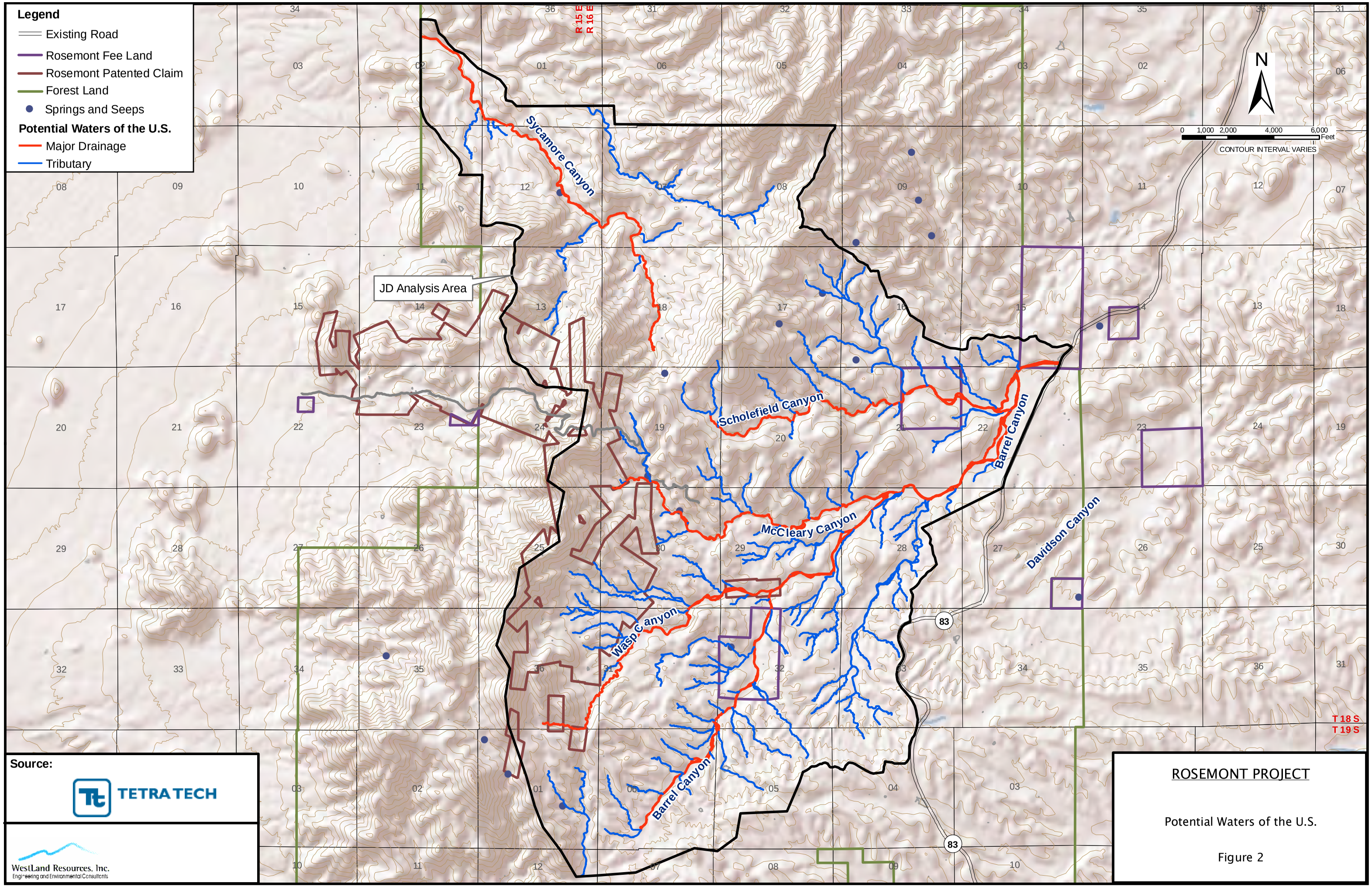
ROSEMONT PROJECT

Vicinity Map

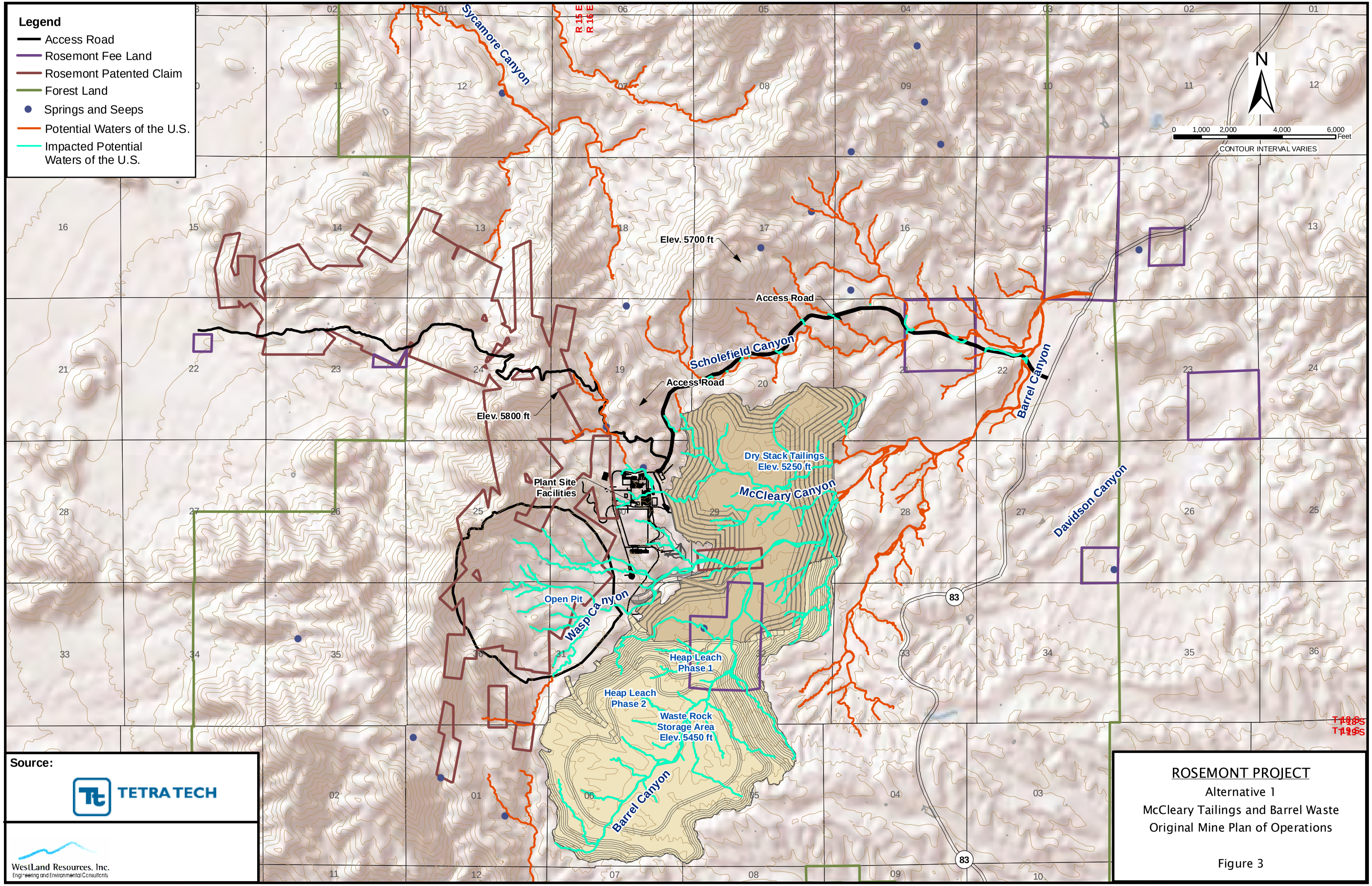
Figure 1



ROSEMONT PROJECT

Potential Waters of the U.S.

Figure 2



Source:

TETRA TECH

WestLand Resources, Inc.
Engineering and Environmental Consultants

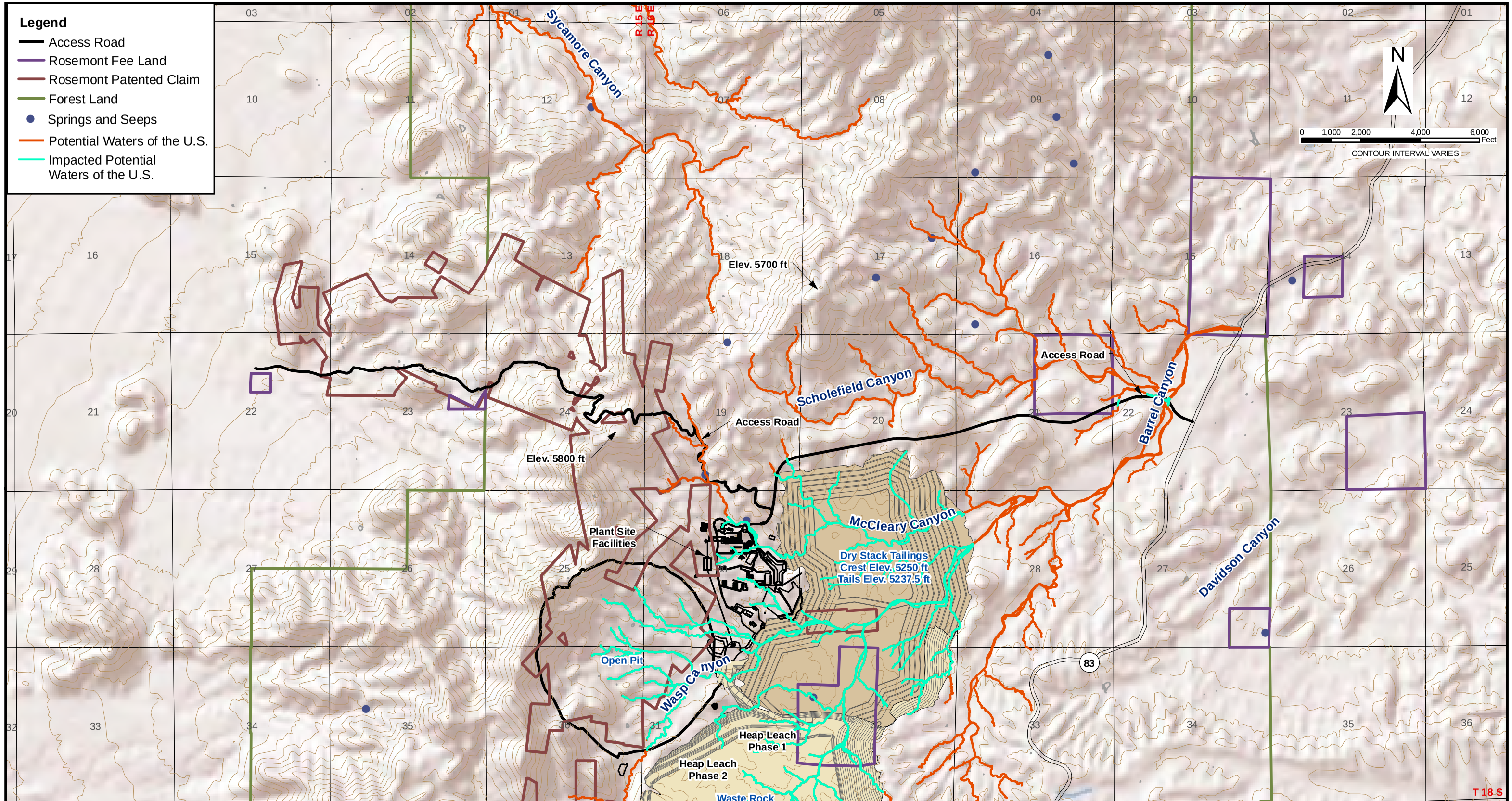
ROSEMONT PROJECT

Alternative 1

McCleary Tailings and Barrel Waste

Original Mine Plan of Operations

Figure 3



Source:

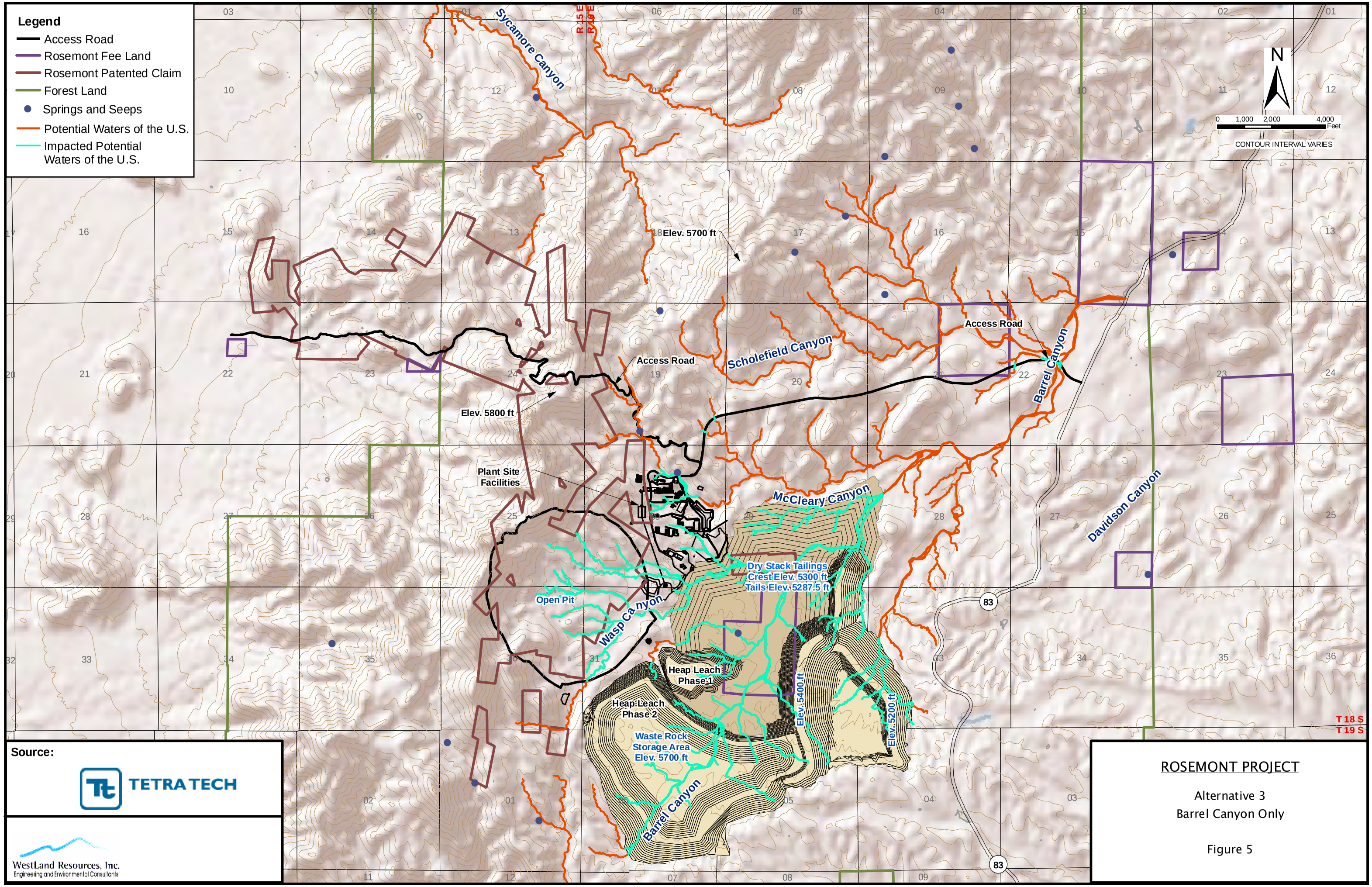
TETRA TECH

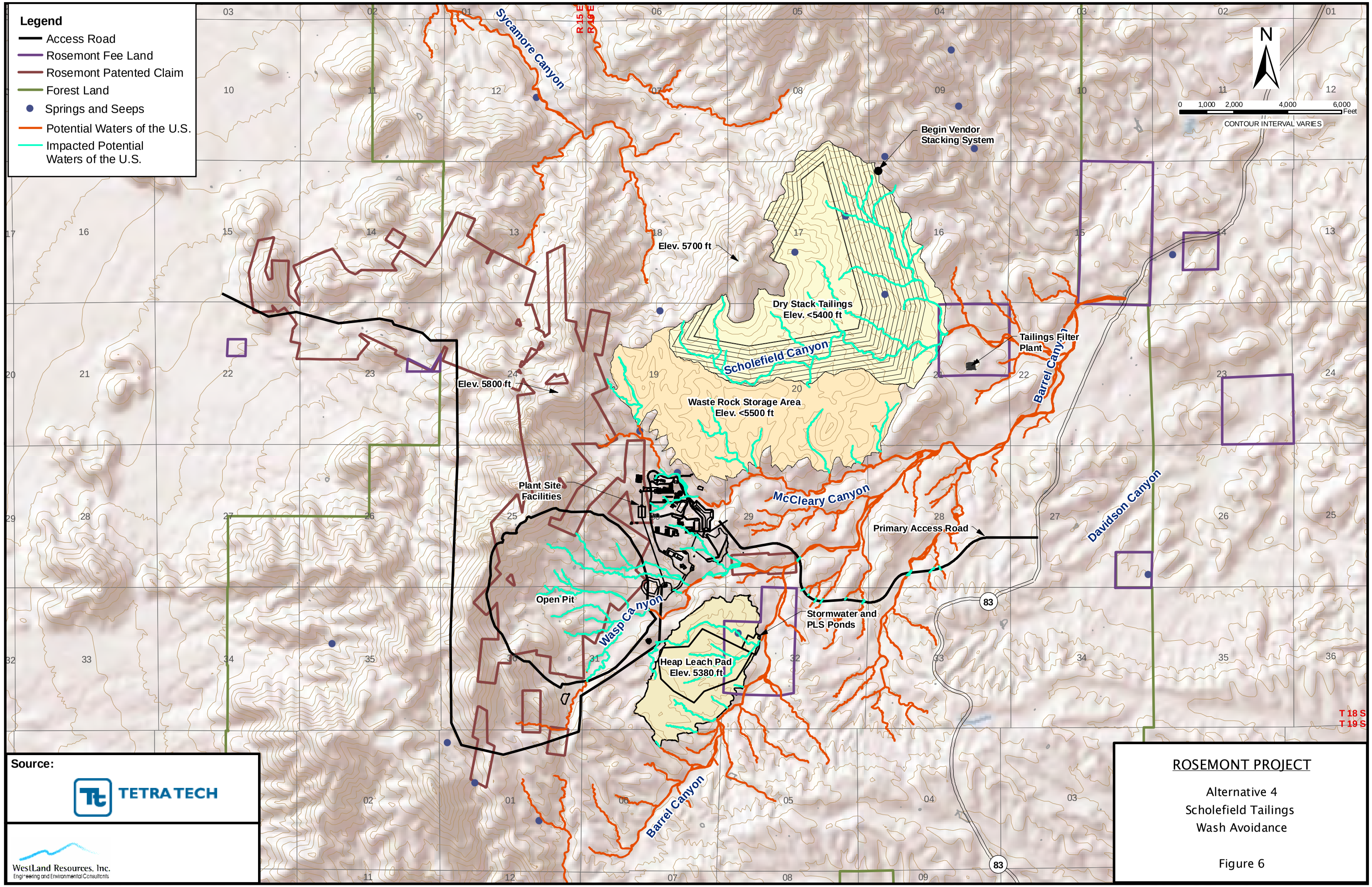
WestLand Resources, Inc.
Engineering and Environmental Consultants

ROSEMONT PROJECT

Alternative 2
McCleary Tailings and Barrel Waste,
Alternative Tailings Sequence

Figure 4

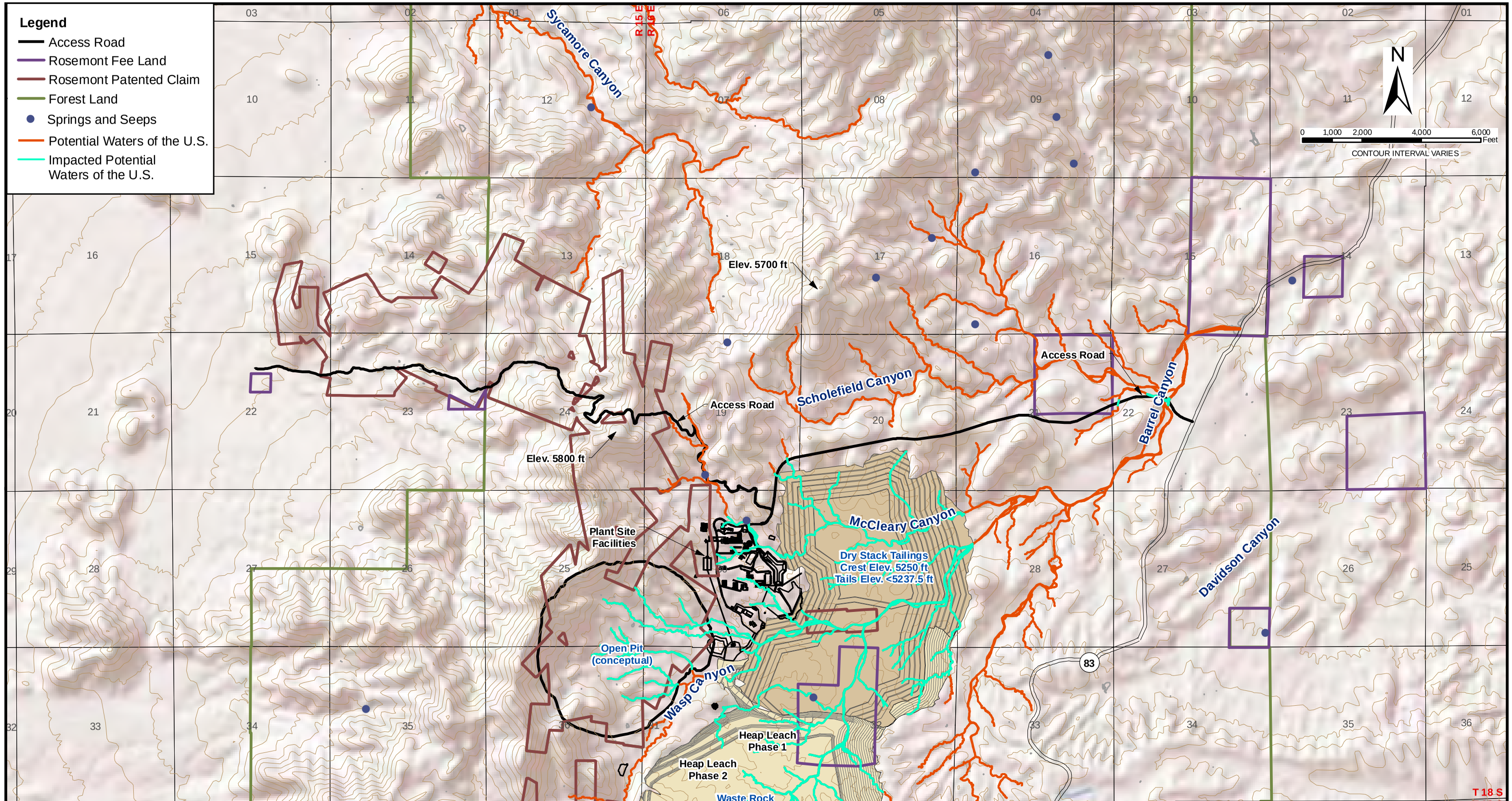

Legend
Access Road
Rosemont Fee Land
Rosemont Patented Claim
Forest Land
Springs and Seeps
Potential Waters of the U.S.
Impacted Potential Waters of the U.S.
N
0 1,000 2,000 4,000 Feet
CONTOUR INTERVAL VARIES
Sycamore Canyon
R 15 E
R 16 E
Elev. 5700 ft
Access Road
Scholefield Canyon
Barrel Canyon
Elev. 5800 ft
Plant Site Facilities
McCleary Canyon
Davidson Canyon
Dry Stack Tailings
Crest Elev. 5300 ft
Tails Elev. 5287.5 ft
Open Pit
Wasp Canyon
Heap Leach Phase 1
Heap Leach Phase 2
Elev. 5400 ft
Elev. 5200 ft
Waste Rock Storage Area Elev. 5700 ft
Barrel Canyon
83
T 18 S
T 19 S
Source:
TETRA TECH
WestLand Resources, Inc.
Engineering and Environmental Consultants
ROSEMONT PROJECT
Alternative 3
Barrel Canyon Only
Figure 5



ROSEMONT PROJECT

Alternative 4
Scholefield Tailings
Wash Avoidance

Figure 6



Source:

TETRA TECH

WestLand Resources, Inc.
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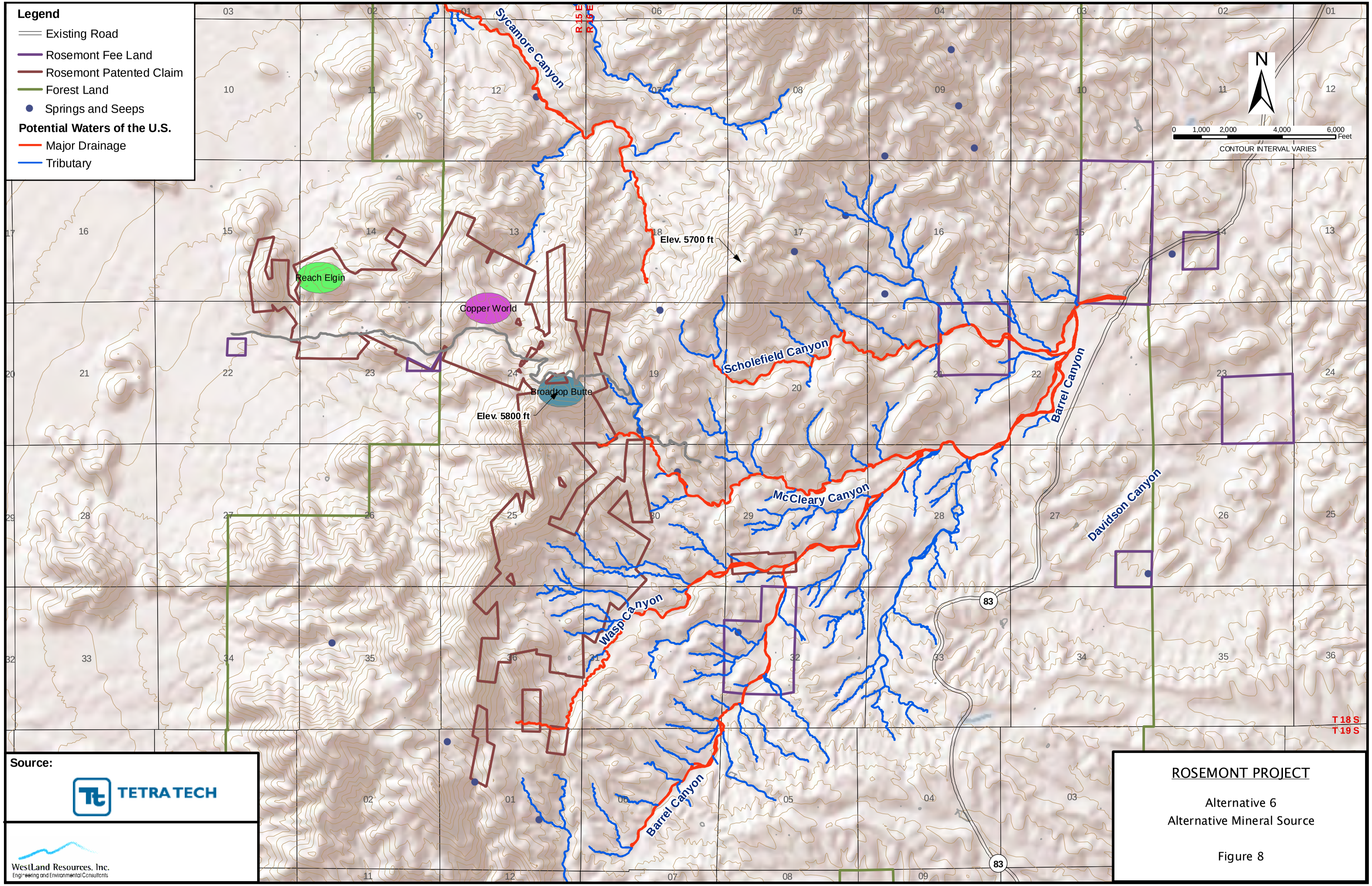
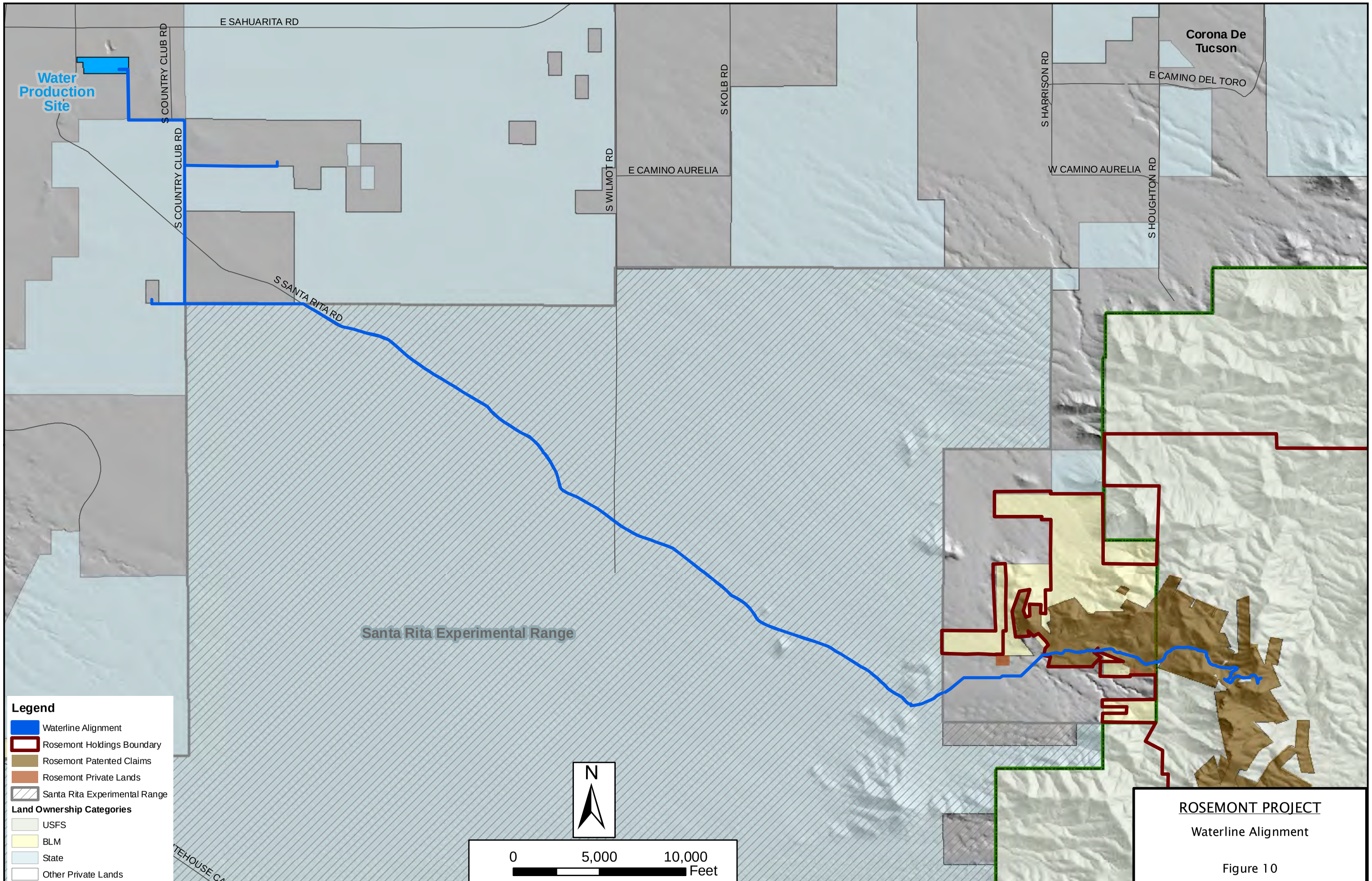
ROSEMONT PROJECT

Alternative 5
Modified Pit Configuration
with Wasp Canyon Open

Figure 7


Legend
Existing Road
Rosemont Fee Land
Rosemont Patented Claim
Forest Land
Springs and Seeps
Potential Waters of the U.S.
Major Drainage
Tributary
N
0 1,000 2,000 4,000 6,000 Feet
CONTOUR INTERVAL VARIES
Sycamore Canyon
R 15 E
R 16 E
Elev. 5700 ft
Reach Elgin
Copper World
Broadtop Butte
Elev. 5800 ft
Scholefield Canyon
Barrel Canyon
McCleary Canyon
Davidson Canyon
Wasp Canyon
Barrel Canyon
83
T 18 S
T 19 S
Source:
TETRA TECH
WestLand Resources, Inc.
Engineering and Environmental Consultants
ROSEMONT PROJECT
Alternative 6
Alternative Mineral Source
Figure 8



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ROSEMONT COPPER
Resourceful.

Memorandum

To: Mindee Roth

Cc: Reta Laford, Bev Everson, Tom Furgason, Jamie Sturgess

From: Kathy Arnold

Doc #: 023/10 – 15.3.2

Subject: **Response to Information Request Dated June 5, 2010**

Date: June 6, 2010

On June 5, 2010, Rosemont received a request from the Coronado National Forest to provide some additional information/clarification for on-going work on Chapter 2. The requests for information and the subsequent responses are below.

1) A list of proposed changes to the MPO after Feb. 2008, including a reference to supporting information and reports.

   The only adjustments that have been proposed to the MPO are the adjustment to facilities layouts within the plant site which are embodied in the Tetra Tech report *Rosemont Plant Site Geotechnical Report* dated August 2009; the updated water supply information based on a routing request from the UofA for their property, the Santa Rita Experimental Range, which is embodied in the Stantec report *Rosemont Copper Water Supply Project Design Concept Report* dated July 2009; and finally the update on the power plan of service which is embodied in the K.R. Saline and Associates report *Rosemont Mine Transmission Project 2009 Plan of Service Study Report*.

   Supporting calculations on some design concepts can be found in both the updated *Reclamation Concept Report* (Tetra Tech, 2010) and the *Site Water Management Update* (Tetra Tech, 2010) but these were supplemental only to provide detail needs that were brought up during ID Team meetings, Cooperator Meetings, and during the Scoping Process.

   a) Is on-site generation of construction power still proposed?

      On-site generation of power for dispersed construction use will be necessary however at this time, on-site generation for the shovels is not being proposed.

   b) Seconday access road through Lopez or Gunsite?

      Secondary access road is through Lopez pass

   c) One-phased heap?

      The MPO includes two construction phases for heap leach.

d) Freshwater rinsing of heap?

The details for heap closure are incorporated into the APP application and include drain-down of the heap for at least 2 years (incorporating cycles of natural precipitation infiltration) and cover.

e) Other

2) A list of all documents describing/representing the Phased Tailings alternative

The improvements and additional mitigation information for the phased tailings is embodied primarily in the following documents:

- *Dry Stack Tailings Storage Facility Final Design Report*, AMEC, April 2009
- *Reclamation Concept Update,* Tetra Tech, April 2010
- *Site Water Management Update,* Tetra Tech, April 2010

3) Scholefield alternative preliminary design, map, and rough cost analysis including:

Scholefield preliminary designs were provided to the Forest Service / SWCA for incorporation in the Alternatives meeting in May 2010. These preliminary designs can also be found in the *Rosemont 404b1 Alternatives Analysis* prepared by WestLand dated April 2010. Cost analysis for moving the tailings to Scholefield were provided in a memorandum from Rosemont to the Forest Service on September 28, 2009, that information is still applicable. Brian Lindenlaub forwarded additional physical information on all alternatives (including Scholefield) to Mindee Roth at the Forest Service on May 26, 2010. Incremental haulage costs were confirmed to be approximately $244,000,000 additional cost as compared to the MPO. The Moose Mountain memo is attached. Please not the Moose Mountain identified McCleary as the location for the waste, which is geographically correct but improperly named. The configuration presented by Moose Mountain was used to generate the figures sent in the May 26, 2010 transmittal.

Total incremental cost for the Scholefield alternative for adjustments to the conveyor and mining costs are in excess of $350,000,000. This figure does not include all necessary structures (i.e. haul truck crossings and containments for tailings, etc. as described below).

a) Heap leach to be incorporated in the waste and tailings footprint

Rosemont has consistently opposed moving the heap for financial reasons. The financial reasons are detailed in a memo submitted with the September 28, 2009 packet. The Technical Memorandum was from Tetra Tech dated September 26, 2009 with the subject *Heap Leach Pad EIS Alternatives*. Additionally, the current configuration of Scholefield requires in excess of 207 million tons of material to be placed in Barrel, which covers the heap leach facilities. The current configuration as required is shown in the figures sent to Mindee Roth at the Forest Service on May 26, 2010.

b) Changes to other facilities, roads, etc.

The Primary Access Route is shown in the figures sent by Brian Lindenlaub. Additional access roads to Scholefield have not been engineered; however the mining engineers are estimating at least two main haul road crossings (not in cost estimates provided) across McCleary Canyon. In addition, two maintenance roads (one on either side of the conveyor as depicted) will be required for maintenance. Secondary containments along the length of the conveyor will be

necessary for belt carry-back on the conveyor to ensure tailings does not come into contact with stormwater.

c) Waste/tails footprint expansion area

Waste/tailings footprints are shown on the mapping provided to the Forest Service on May 26, 2010.

4) Fencing, signs, etc. needed now per MSHA may require NEPA. What activities and structures are required now?

Roads on Rosemont property will probably either have to be upgraded to meet MSHA standards that include safety berms or they will be closed to access and marked. Rosemont is currently working with MSHA to determine what, if any, additional changes to roads or changes to signage or fencing will be required. By the end of July 2010, the Forest Service will be notified via mail what Rosemont's actions will need to be to meet MSHA requirements.

5) When can we expect an air quality model?

Rosemont submitted the modeling protocols to the Forest Service on November 9, 2009. The models will be completed by the end of June and will be submitted to the Forest Service no later than July 15, 2010.

6) Soil stockpile volume and locations by alternative

The plan for concurrent reclamation would preclude storage and necessitate direct placement of growth media. Rosemont's Mine Plan of Operations was designed so that all temporary facilities (including stockpiles) will be internal to the operating (or disturbance) footprint. All alternatives will have a volume of growth media and salvage that will be similar to the MPO and storage will be within the disturbance footprints. The stockpile locations will move dependent upon the operating phase of each alternative. If there is a need for a primary and/or secondary stockpiles outside of the footprint Rosemont will identify those to the Forest Service by the end of June.

7) Data supporting the visual quality analysis by June 15th (email sent by Reta June 4th)

The data supporting the visual analysis will be submitted to Marcie Bidwell at SWCA and Debby Kriegel at the Forest Service by June 15.

Memo

From: Marc Schulte

To: Fermin Samorano, Bob Fong

Date: May 20, 2010

Re: Rosemont May 2010 Waste Alternative Design and Estimated Additional Costs

---

Rosemont Copper had MMTS look at two alternative waste placement options for the Rosemont mine; one that utilizes the Trail Creek area for additional waste placement room, and one that uses the McCleary area for waste placement and the Scholefield area for tailings placement.

Option 1, Waste placed in the Trail Creek and Upper Barrel area, Tails in the Barrel area:

In this alternative, waste would be moved out of the Upper Barrel area near the leach pads and instead placed in the Trail Creek area. As well, instead of placing tailings in the Phase 2 area, they would be moved to the now vacant Upper Barrel area near the leach pads.

In this scenario, the leach pile and crusher/plant infrastructure would remain in the same location as the base case feasibility study; and the mining pit and schedule of material coming out of the pit would also remain the same.

In this case the waste is deposited a greater distance from the mining pit than in the feasibility study. The additional costs to overhaul the waste and build additional mining infrastructure to access these new waste areas has been estimated.

From the analysis of this option, the extra mining costs would be:

- The total extra cumulative capital and operating costs for option 1, waste to Trail Creek and Upper Barrel, is
    - $51.9 million operating + $10.5 capital = **$62.4 million**.

Option 3, Waste placed in the McCleary and Upper Barrel areas, Tails in the Scholefield area:

In this alternative, most of the waste would be placed in the McCleary area, with some waste used to cover the leach piles in the Upper Barrel area. All of the tails would be placed in the Scholefield area.

In this scenario, the leach pile and crusher/plant infrastructure would remain in the same location as the base case feasibility study; and the mining pit and schedule of material coming out of the pit would also remain the same.

In this case the waste is deposited a greater distance from the mining pit than in the feasibility study. The additional costs to overhaul the waste and build additional mining infrastructure to access these new waste areas has been estimated.

From the analysis of this option, the extra mining costs would be:

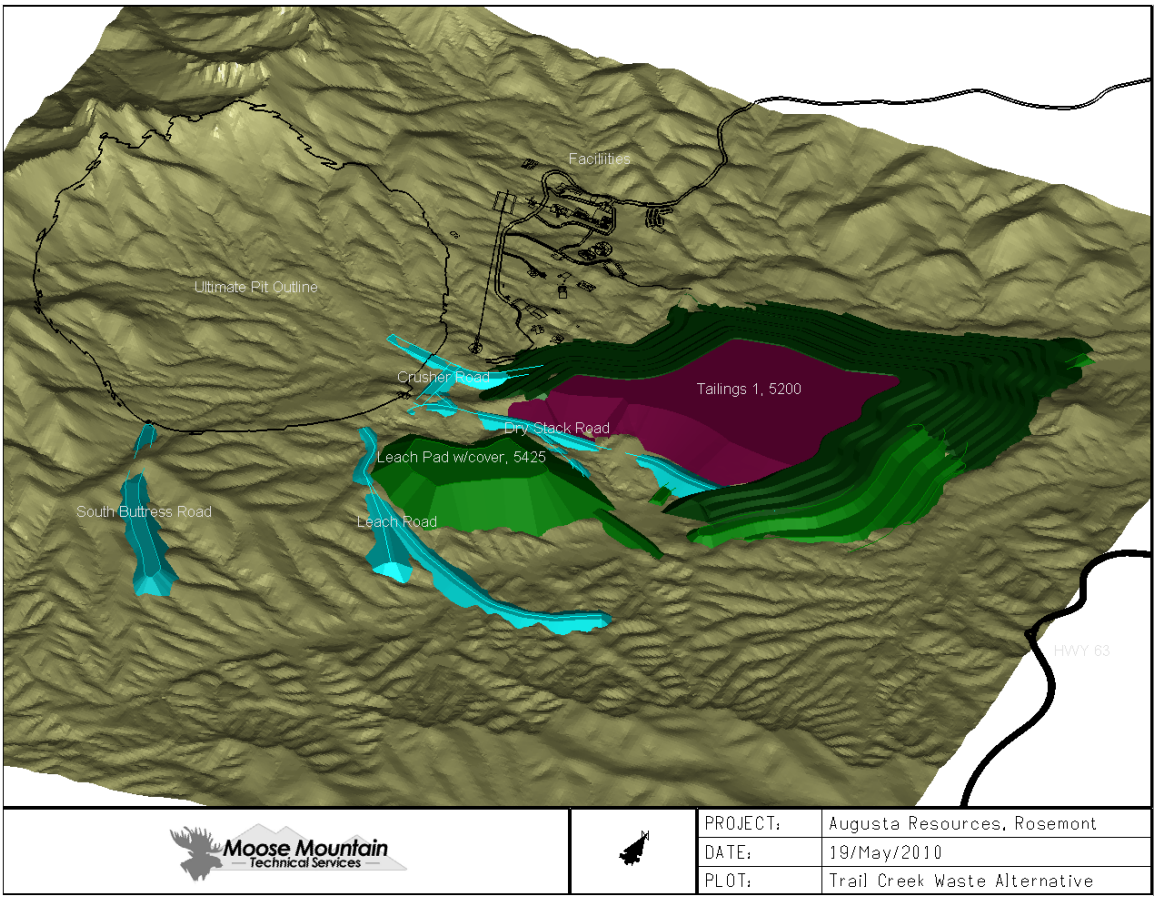
- The total extra cumulative capital and operating costs for option 2, waste to McCleary and Upper Barrel, tails to Scholefield, is
    - $209.4 million operating + $35.0 capital = **$244.4 million**.

The following screenshots show the sequential build-up of the these alternative waste plans.

Option 1 Sequence, Waste in Trail Creek and Upper Barrel area:

Common items:

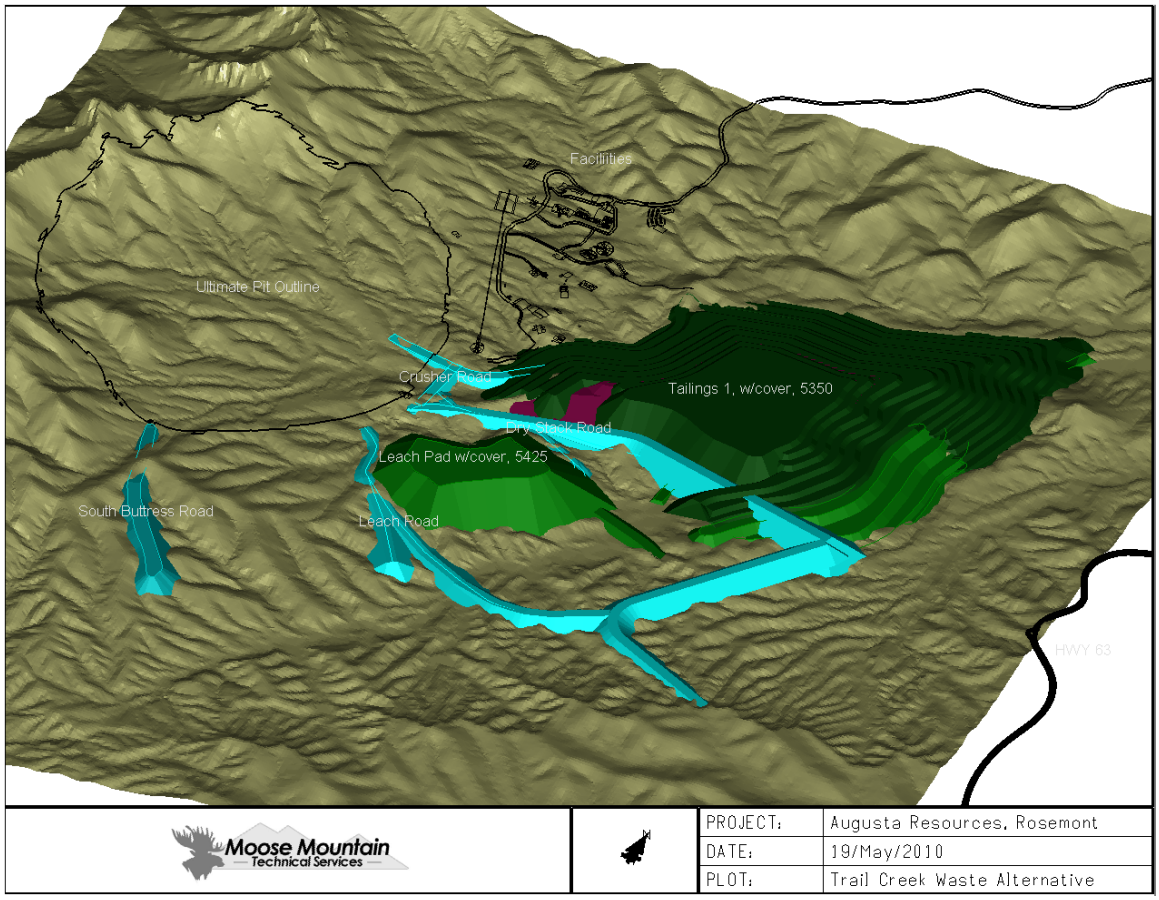
- The first screenshot shows items that are common with the feasibility study plan
    - Phase 1 tailings area common up to the 5200 lift.
    - Leach, Dry Stack and South Buttress roads
    - Channel Drain Fills under the phase 1 tailings area
    - Pit Outline, Facilities and access roads to the site
    - Leach pile and 50 ft. waste cover



Phase 1 Tailings Build-Up:

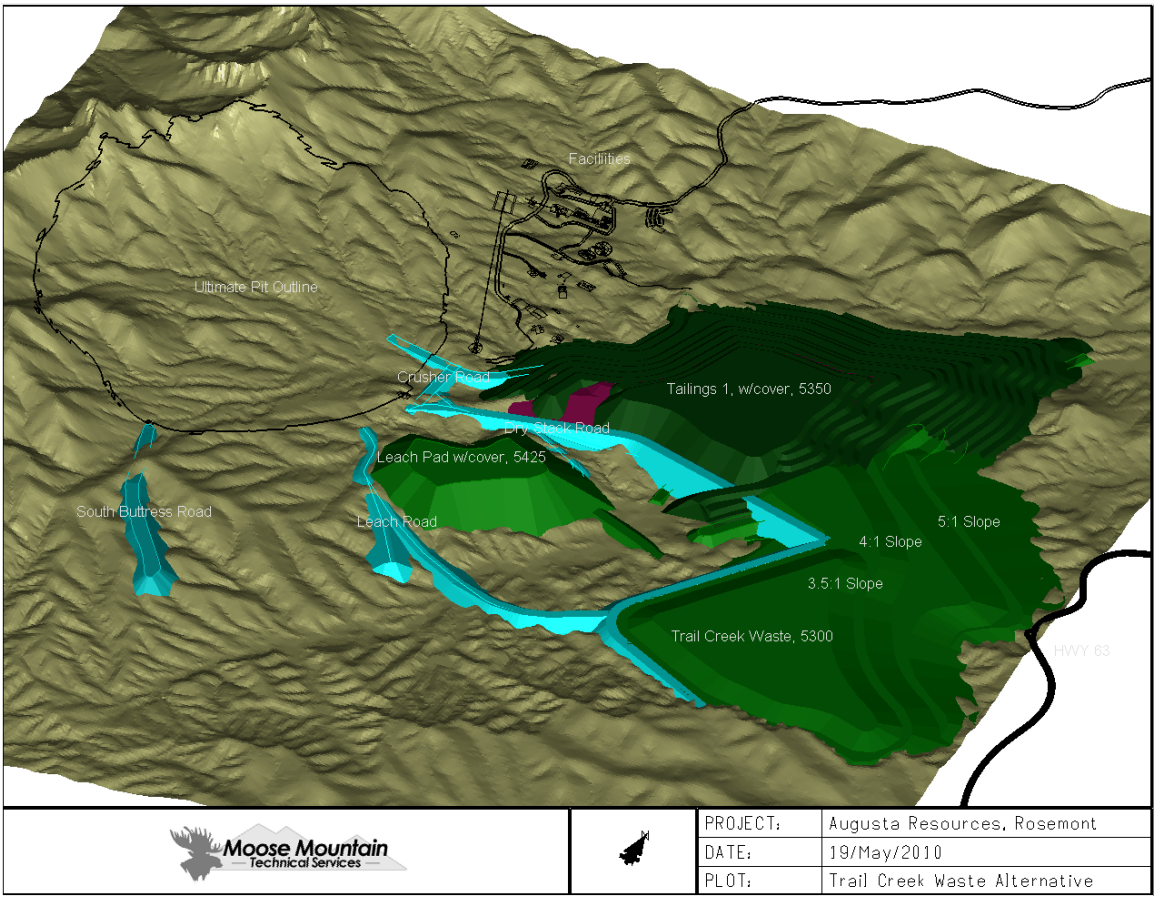
- The second screenshot shows the phase 1 tailings built up to 5300 elevation, then capped with a 50ft waste lift to bring it to 5350 elevation.

- Also shown is an extension of the dry stack and leach roads to the 5200 elevation, and a connector road between them. These roads will be used over the life of the mine to access all of the waste areas, and after closure for drainage control.



Trail Creek Waste Area to 5300 elevation:

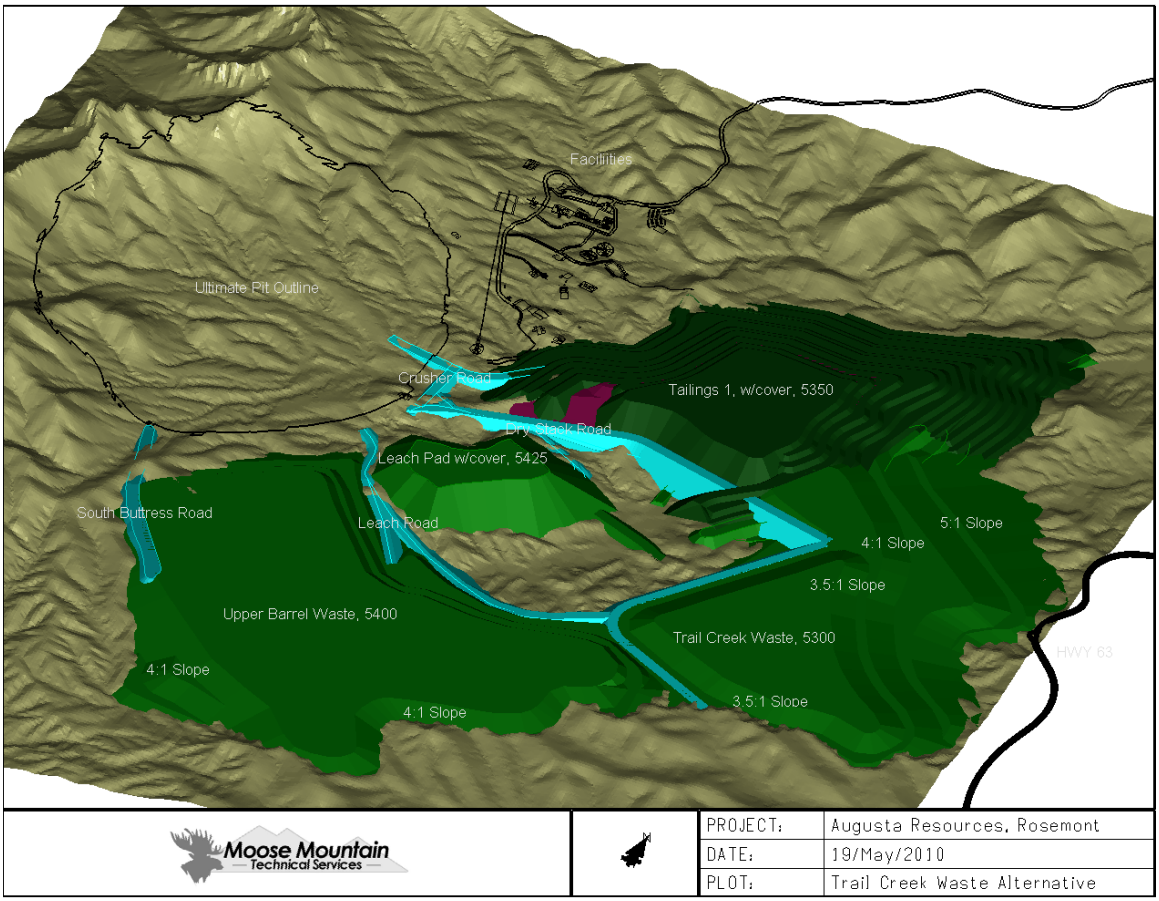
- The third screenshot shows the trail creek waste area built up to the 5300 elevation
- Lifts shown at 5000, 5100, 5200 and 5300 elevation with 150ft. flat spots left between crests and toes



Moose Mountain Technical Services	PROJECT:	Augusta Resources, Rosemont
	DATE:	19/May/2010
	PLOT:	Trail Creek Waste Alternative

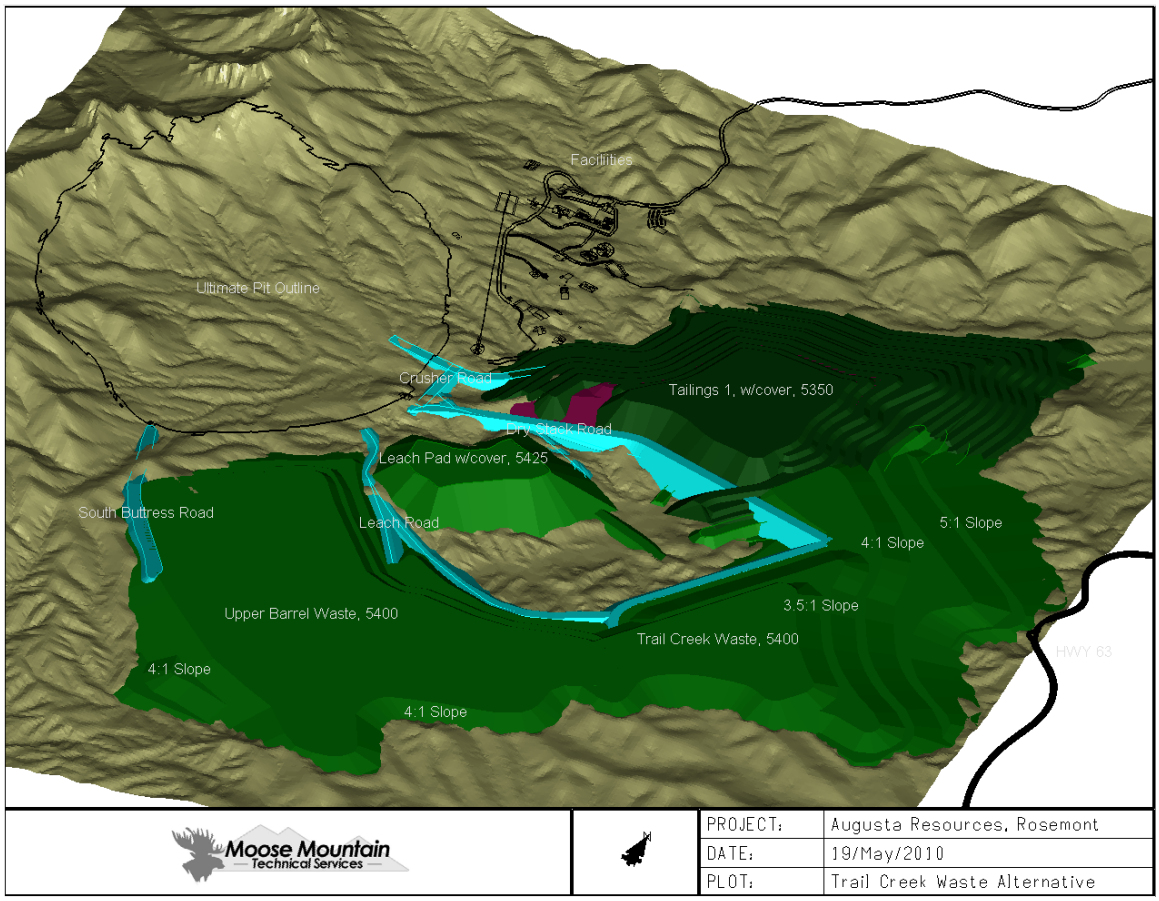
Upper Barrel Waste Area to 5400 elevation:

- The fourth screenshot shows the upper barrel waste area built up to the 5300 elevation
- Lifts shown at 5200, 5300 and 5400 elevation with 150ft. flat spots left between crests and toes.
- Outside slope is 4:1, with natural angle of repose (37 degrees) left on the inside slopes.



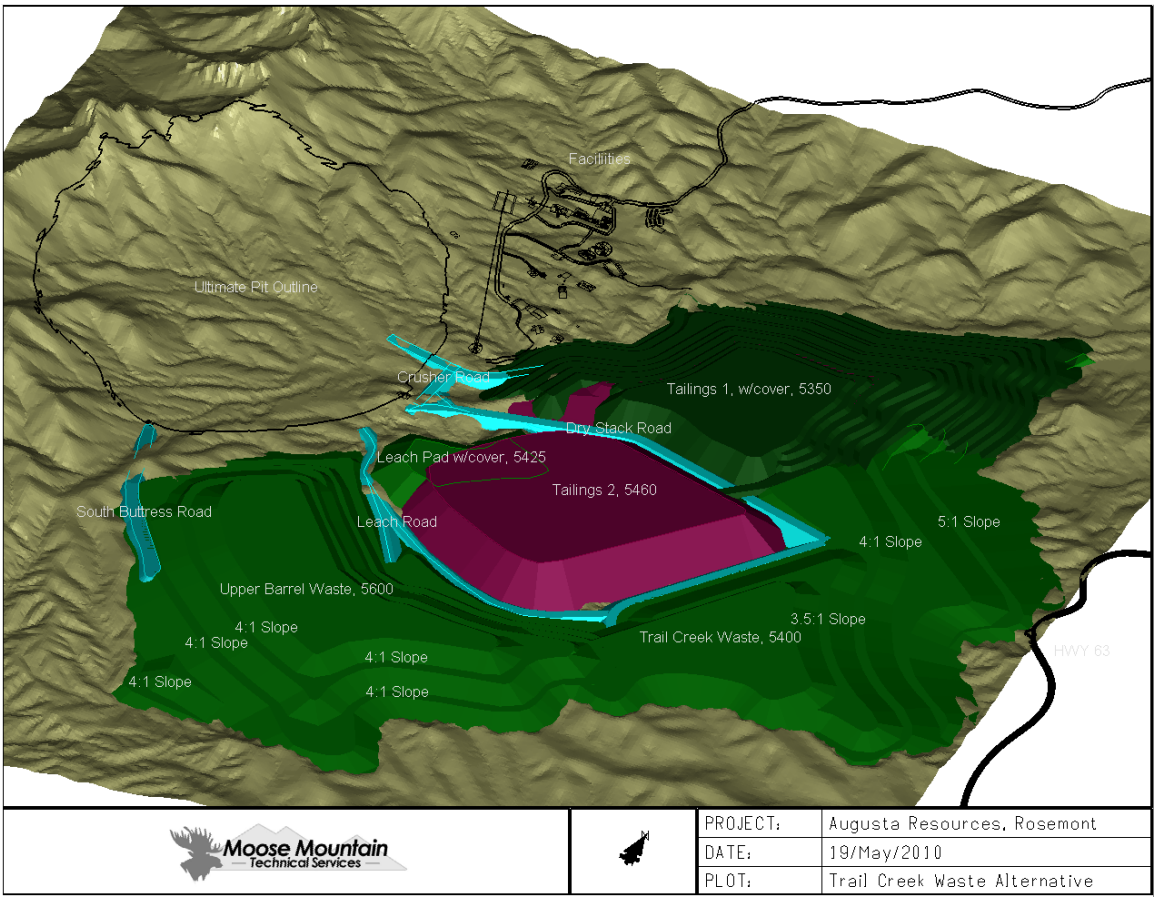
Trail Creek Waste Area to 5400 elevation:

- The fifth screenshot shows the trail creek waste area built up to the 5400 elevation.
- This would be an extension off of the upper barrel waste at the 5400 elevation.



Upper Barrel Waste Area to 5600 elevation, Tails to 5460 elevation:

- The last screenshot shows the upper barrel waste area built up to the 5600 elevation.
- There are separate lifts shown at the 5500 and 5600 elevations, with a 150 ft flat spot left between the crest and the toe.
- Outside slope is 4:1, with natural angle of repose (37 degrees) left on the inside slopes.
- The dry stack tailings, now in the upper barrel area near the leach pad is shown built up to the 5,460 elevation.
- Built up at a natural angle of repose (37 degrees).
- No cover shown on this tailings structure, it would have to be rehandle mined from either Upper Barrel or Trail Creek waste areas. This rehandle would likely build up the tailings area to the 5500 elevation and require about 38Mtons of waste.



The following table shows the quantities of material in each designed waste and tails area:

Total waste in mining schedule = 1,232,308 ktons

Total tails produced from mining schedule = 378,858 kyd^3

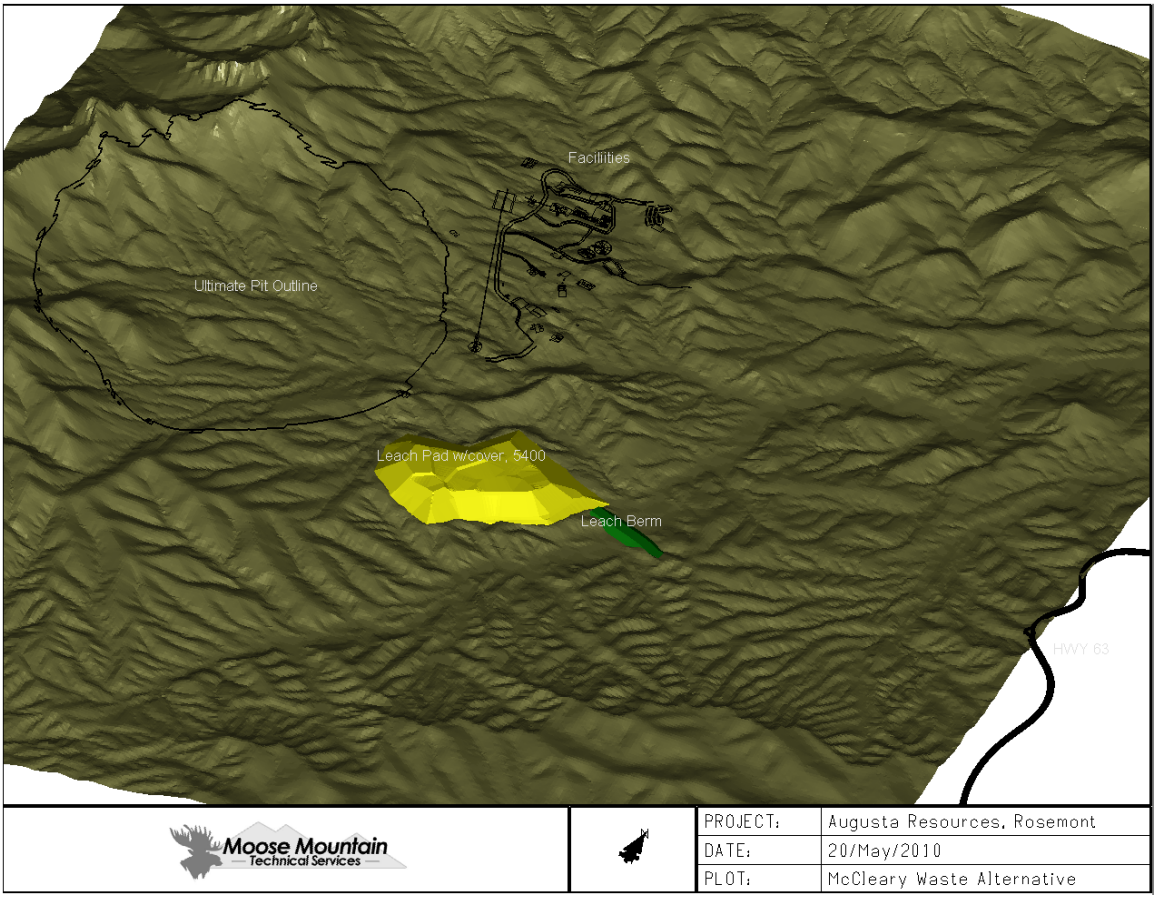
Item	Size (ktons)
South Buttress Road	6,070
Leach Road	10,002
Leach Road Extension	2,056
Dry Stack Road Roads	25,218
North South Connector Road	21,489
North Screen Berm	34,945
DST Phase 1 Buttress 5200	90,056
DST Phase 1 Buttress 5250	9,064
DST Phase 1 Buttress 5300	4,680
Phase 1 Tailings Cap	33,825
Channel Fills South	3,674
Leach Pad	2,500
Leach Cap	31,686
Trail Creek Waste Dump 4900	30,130
Trail Creek Waste Dump 5000	66,712
Trail Creek Waste Dump 5100	87,881
Trail Creek Waste Dump 5200	88,715
Trail Creek Waste Dump 5300	51,907
Trail Creek Waste Dump 5400	51,499
Upper Barrel Waste Dump 5200	120,007
Upper Barrel Waste Dump 5300	154,848
Upper Barrel Waste Dump 5400	153,578
Upper Barrel Waste Dump 5500	98,417
Upper Barrel Waste Dump 5600	52,984

Item	Size (kyd3)
Tailings in Phase 1 to 5200	180,212
Tailings in Phase 1 above 5200	16,593
Tailings Next to Leach Pad	181,285

Option 3 Sequence, Waste in McCleary and Upper Barrel area:

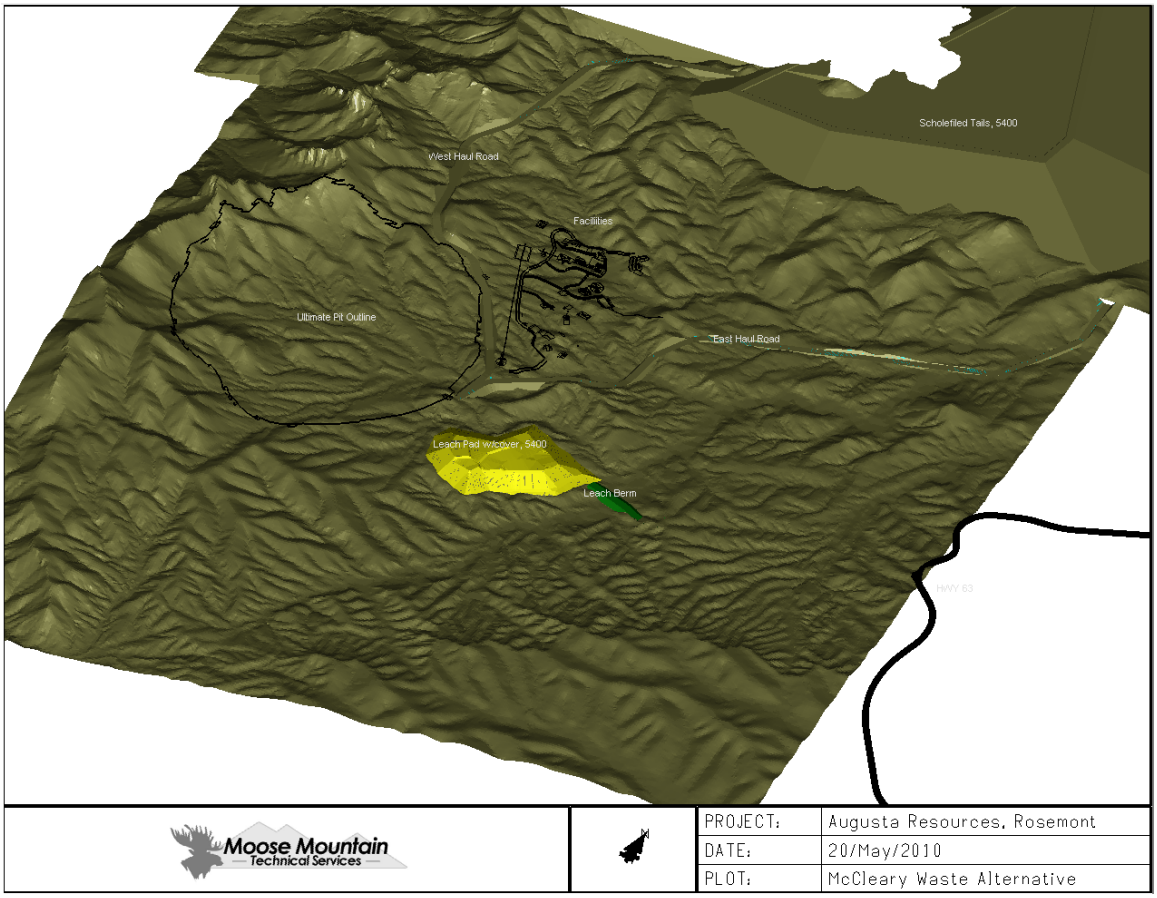
Common items:

- The first screenshot shows items that are common with the feasibility study plan
    - Pit Outline, Facilities and access roads to the site
    - Leach pile



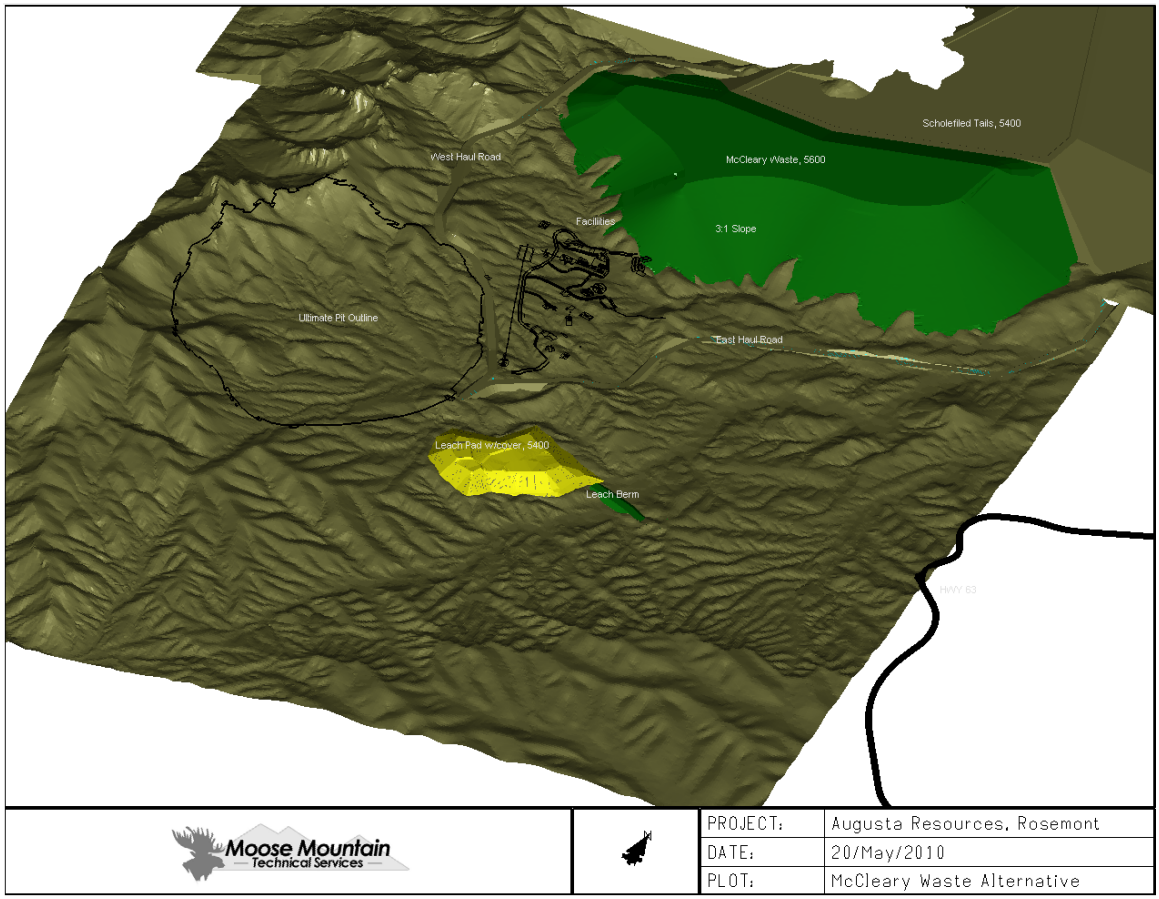
Scholefield Tails built up:

- The second screenshot shows the phase 1 tailings built up to 5400 elevation.
- Also shown is east and west haul roads to access the lower and upper lifts of both the McCleary waste dump, as well as the Scholefield tailings buttresses.



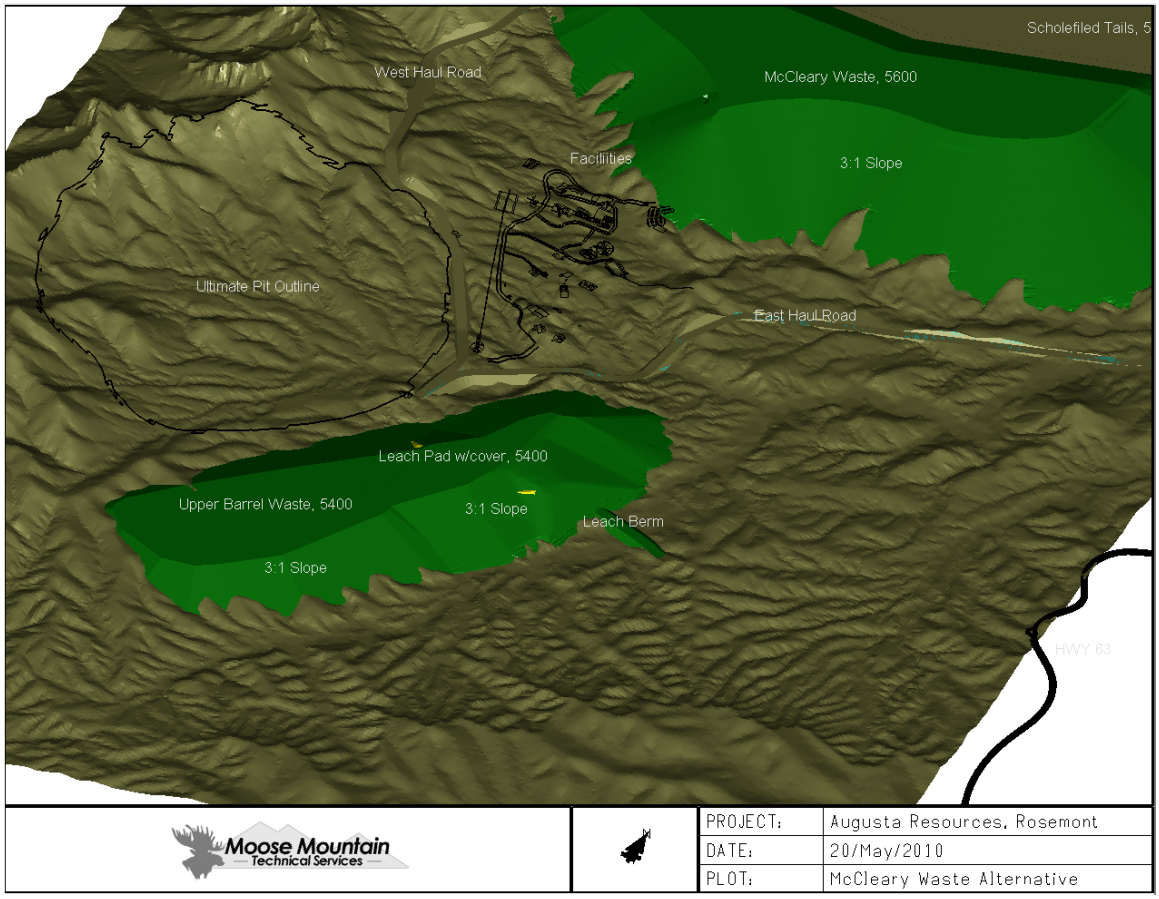
McCleary Waste Area to 5600 elevation:

- The third screenshot shows the McCleary waste area built up to the 5600 elevation.
- Slopes on this dump are designed at 3:1.
- No internal benches have been designed for this dump.
- No internal haul routes have been designed for this dump, but are assumed to fit within the structure.



Upper Barrel Waste Area to 5400 elevation:

- The fourth screenshot shows the Upper Barrel waste area built up to the 5400 elevation.
- Slopes on this dump are designed at 3:1.
- No internal benches have been designed for this dump.
- No internal haul routes have been designed for this dump, but are assumed to fit within the structure.
- This waste area caps the leach pile and contains any extra waste that will not fit within the McCleary area.



The following table shows the quantities of material in each designed waste and tails area:

Total waste in mining schedule = 1,232,308 ktons

Total tails produced from mining schedule = 378,858 kyd^3

Item	Size (ktons)
West Road	3,390
East Road	1,308
Other Roads	1,000
Dry Stack Buttress	212,913
Leach Pad	2,500
Leach Berm Surface	1,189
Leach Cap	0
Leach Area Waste 5100	35,738
Leach Area Waste 5200	37,468
Leach Area Waste 5300	32,759
Leach Area Waste 5400	22,273
Upper Barrel Waste 5400	79,611
McCleary Area Waste 4900	37,314
McCleary Area Waste 5000	56,578
McCleary Area Waste 5100	88,359
McCleary Area Waste 5200	116,838
McCleary Area Waste 5300	139,237
McCleary Area Waste 5400	147,735
McCleary Area Waste 5500	126,655
McCleary Area Waste 5600	89,443

Item	Size (kyd3)
Tailings in Scholefield	378,858

Estimating Additional Mining Capital and Operating for Each Waste option:

For each waste alternative, an estimate of the additional costs is put together. This is an estimate of all mining costs additional to the feasibility level estimate that would be incurred if either of these alternatives were to be implemented.

The additional costs would be due to overhauling waste rock from the mining pit. In the feasibility study all waste rock is placed in the Upper Barrel, and the tailings are built up in the Lower Barrel. In each of the alternatives the waste and the tailings will be placed further away. To estimate the additional waste hauling costs, a haul study is implemented.

Haul Study:

For each of these waste option, the capacities of the dumps are reported on 100 foot intervals. Rough haul profiles are generated from the mining pit exit to each dump and then each 100 foot lift on each dump. FPC (Caterpillar's Fleet Productivity and Cost software) is used to generate rough simulated haul cycle times to each dump location and the cycles are weight averaged to find the relative difference in hauling costs for each option.

The details behind following tables can be found in spreadsheet Rosemont May 2010 Waste Options, May 20, 2010'.

Average Cycle Times from Pit Rim to Destination

Waste Option	Weighted Average Cycle Time (min)
1	12.40
2	18.11
FS Base Case	10.51

The numbers in the table above are from the pit rim, and don't include the portion of the haul from the pit source to the pit rim, which would be common for all cases. Based on work done for the feasibility study, the average cycle time for the haulers from the pit source to the waste destination is 24.50 minutes. If the differences in the table above are added to this cycle time we get the following table.

Average Cycle Times from Pit Source to Destination

Waste Option	Weighted Average Cycle Time (min)
1	26.39
2	32.10
FS Base Case	24.50

Additional Hauler Hours from Feasibility Study for Waste Hauling:

Waste Option	Weighted Average Cycle Time (min)
1	7.7%
2	31.0%

In the feasibility estimate, there is a total of 2,044,744 hauler operating hours. Based on the adjusted waste dumping locations in the alternatives the following waste hauler operating hours can be estimated:

Hauler Hours for Waste Delivery:

Waste Option	Weighted Average Cycle Time (min)
FS Base Case	2,044,744
1	2,202,134
2	2,679,420

The following tables show a summation of the additional costs for each waste alternative:

For Option 1, Barrel and Trail Creek Waste:

Extra Hauler hours =	157,390
Cost per operating hour for haul truck =	$330.00
Extra cost for Hauling Waste =	$51,938,847
Estimated Extra Haulers =	3
Capital Cost per haul truck =	$3,500,000
Extra cost for extra haulers =	$10,500,000

Total Extra Mining Costs for Option 1 =	$62,438,847

For Option 3, Barrel and McCleary Waste, Scholefield Tails:

Extra Hauler hours =	634,676
Cost per operating hour for haul truck =	$330.00
Extra cost for Hauling Waste =	$209,442,951
Estimated Extra Haulers =	10
Capital Cost per haul truck =	$3,500,000
Extra cost for extra haulers =	$35,000,000

Total Extra Mining Costs for Option 2 =	$244,442,951

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A Bridge to a Sustainable Future.

P.O. Box 35130
Tucson, Arizona 85705 USA
TEL: (520) 293-3579
FAX: (520) 407-3991
CORPORATE WEB: www.augustaresource.com
ROSEMONT WEB: www.rosemontcopper.com

June 18, 2010

Tucson, AZ 85701
Received
JUN 21 2010
Coronado National Forest

Ms. Reta Laford
Acting Forest Service Supervisor
Coronado National Forest
300 West Congress, 6th Floor
Tucson, Arizona 85701

Dear Ms. Laford:

The Mine Safety and Health Administration, U.S. Department of Labor, made an inspection of the Rosemont Copper Project on May 17 and 18, 2010, for the purpose of performing an annual safety inspection of the mine property. During the course of the inspection, the MSHA Inspector Mr. Enrique Vidal, an authorized representative of the Secretary of Labor, indicated that in his opinion many of the berms on the banks of roadways on the property were not adequate to protect those individuals using the roadways, including employees of Rosemont Copper and the general public, in accordance with the provisions of Title 30 C.F.R. Part 56.9300.

Rosemont Copper Company officials explained to the Mr. Vidal at that time that the roadways themselves and the maintenance of the roadways were under Forest Service jurisdiction, both on forest service land and on Rosemont Copper Company private property under Forest Service jurisdiction. Rosemont Copper Company officials also indicated that the roadways had been posted with a 15 mile per hour speed limit to minimize any hazards to employees and the general public from excessive speed on the roadways.

In making their assessment, MSHA quoted the standards for roadways under Title 30 C.F.R. Part 56.9300 which is specified below:

30 CFR § 56.9300
Berms or guardrails.
SAFETY DEVICES, PROVISIONS, AND PROCEDURES FOR ROADWAYS, RAILROADS, AND LOADING AND DUMPING SITES
(a) Berms or guardrails shall be provided and maintained on the banks of roadways where a drop-off exists of sufficient grade or depth to cause a vehicle to overturn or endanger persons in equipment.
(b) Berms or guardrails shall be at least mid-axle height of the largest self-propelled mobile equipment which usually travels the roadway.
(c) Berms may have openings to the extent necessary for roadway drainage.
(d) Where elevated roadways are infrequently traveled and used only by service or maintenance vehicles, berms or guardrails are not required when all of the following are met:
(1) Locked gates are installed at the entrance points to the roadway.
(2) Signs are posted warning that the roadway is not bermed.
(3) Delineators are installed along the perimeter of the elevated roadway so that, for both directions of travel, the reflective surfaces of at least three delineators along each elevated shoulder are always visible to the driver and spaced at intervals sufficient to indicate the edges and attitude of the roadway.
(4) A maximum speed limit is posted and observed for the elevated unbermed portions of the roadway. Factors to consider when establishing the maximum speed limit shall include the width, slope and alignment of the road, the type of equipment using the road, the road material, and any hazardous conditions which may exist.
(5) Road surface traction is not impaired by weather conditions, such as sleet and snow, unless corrective measures are taken to improve traction.
(e) This standard is not applicable to rail beds.

It is the position of MSHA, as referenced in the standard quoted above that the berms shall be at least mid-axle height of the largest self-propelled mobile equipment which usually travels the roadway, and that the current berm height on the roadways is not adequate to meet this criteria in most locations. Typically, the largest self-propelled mobile equipment that currently travels the roadways are large pickups, SUV's, or recreational vehicles used by the general public or Rosemont Copper Company employees.

Rosemont Copper Company officials explained to the MSHA Inspector on May 17 and 18, 2010, and later to Mr. David Brown, Supervisory Mine Safety and Health Inspector for the MSHA Field Office in Mesa, Arizona, in a meeting on May 27, 2010, that Rosemont Copper Company could not modify the berms on the designated Forest Service roads on either Federal, public, or Rosemont Copper Company private lands since these roads fall under Forest Service jurisdiction.

Rosemont Copper Company told MSHA that it would notify and advise the Forest Service that MSHA was of the opinion that the berms on the roads do not meet MSHA safety standards as per 30 C.F.R. Section 56.9300.

Rosemont Copper Company requests that the Forest Service notify Rosemont Copper Company of receipt of this letter and of its decision regarding jurisdiction over the roadways within the proposed mining area until completion of the permitting process.

If you have any questions please do not hesitate to call me.

Sincerely,

Rod Pace
President and CEO
Rosemont Copper Company

520-445-7464

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Tucson, AZ 85701
Received
JUN 21 2010
Coronado National Forest

Ms. Reta Laford
Acting Forest Service Supervisor
Coronado National Forest
300 West Congress 6th Floor
Tucson AZ 85701

8570181391

Rosemont Copper Project
Mitigation Lands

July 2010

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 Rosemont patented claims
- Offsite mitigation to supplement onsite mitigation efforts
  - Placement of conservation easements 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)

Agencies or Entities with a Mitigation Obligation 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)
- U.S. Army Corps of Engineers (ACOE)
- U.S. Fish and Wildlife Service (USFWS)

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

Issue	ACOE	BLM	USFWS	AGFD	Tribes	DMMR	State Parks	Pima Co.	CNF
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			X	
Visual Resources									
Recreation		X		X			X		
Public Safety									
Dark Skies and Astronomy									
Heritage Resources	X	X			X			X	
Socioeconomics						X			

X = Agency priority

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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

Issue	ACOE	BLM	USFWS	AGFD	Tribes	DMMR	State Parks	Pima Co.	CNF
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			X	
Visual Resources									
Recreation		X		X			X		
Public Safety									
Dark Skies and Astronomy									
Heritage Resources	X	X			X			X	
Socioeconomics						X			

X = Agency priority

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Agencies' Priority Issues

Issue	ACOE	BLM	USFWS	AGFD	Tribes	DMMR	State Parks	Pima Co.	CNF
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	X
Visual Resources									
Recreation		X		X			X		X
Public Safety									
Dark Skies and Astronomy									
Heritage Resources	X	X			X			X	X
Socioeconomics						X			

X = Agency priority

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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

- Recordation of Conservation Easements on new lands

Mitigation Mechanism by Key Issue

Mitigation Mechanism		Water Resources	Springs, Seeps, and Riparian	Plants and Animals	Recreation	Heritage Resources
Conservation Easement	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

Mitigation Mechanism by Key Issue

Mitigation Mechanism		Water Resources	Springs, Seeps, and Riparian	Plants and Animals	Recreation	Heritage Resources
Conservation Easement	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

- 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	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	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	

Rosemont Copper Company
Santa Rita Mountains Community Endowment Trust
Trust Concept

July 15, 2010

Introduction.

In July 2007, Rosemont Copper Company (Rosemont) submitted a Mine Plan of Operations (MPO) to the Coronado National Forest (CNF) describing its plans to develop an open pit copper mine in Pima County, Arizona. These plans included reference to a Santa Rita Mountains Community Endowment Trust (Trust). Rosemont recognized that even though mining brings significant economic benefits to local communities and is indispensable to the current and future economic well being of any developed society, even the best-planned mining project also has significant short-and long-term impacts on local communities. Therefore, in addition to all of the mitigation and reclamation activities required by law and regulation, Rosemont identified an additional $50 million in voluntary commitments to provide benefits to regional communities.

These voluntary commitments to the Trust are not required by existing law or regulation. Rosemont has chosen to include the Trust in the MPO in such a way that it can become federally enforceable should the CNF choose to include the Trust as an approved condition of the Record of Decision following release of a Final EIS with a selected action alternative.

The Trust is a key element in the MPO proposed by Rosemont. Over the life of the mine project, the Trust will receive approximately $50 million in assets, commitments, and funding from Rosemont. The Trust will be governed by a local Board of Trustees advised by a broad-based Advisory Council populated by representatives of diverse local interests. While the Board of Trustees and Advisory Council will make most of the specific decisions about how Trust funds will be utilized, Rosemont anticipates that priority will be given to projects that address the eleven issues identified by the public and agency scoping process for detailed analysis within the EIS.

Trust Goals.

1) To establish a stable funding source for priority community projects within the region surrounding the Rosemont Copper project site.
2) To endow funds for use during and after the life of the Rosemont project.
3) To provide ongoing source of management funds for projects identified in Santa Rita region community recreation, cultural, and environmental conservation plans.
4) To provide an efficient and cost-effective governance structure that maintains future flexibility in funding priorities.
5) To provide opportunity for Trust participation by key constituencies affected by the Rosemont MPO.

Key Concepts.

1) Focus Trust funding activities in the region surrounding the Rosemont project site. This region includes but is not necessarily limited to the Santa Rita Mountains, the Upper Santa Cruz River basin, the Green Valley/Sahuarita area, the Santa Rita Experimental Range, Davidson Canyon, the Cienega Creek basin, Las Cienegas Riparian Conservation Area, Cienega Creek Preserve, Sonoita, Sonoita Creek, Empire Mountains and Canelo Hills.
2) Engage key constituencies in this region in Trust management and decision-making. Utilize the Trust to provide financial resources and expertise to help achieve key constituency goals. Some of these constituencies are Pima County, Santa Cruz County, Cochise County, City of Tucson, San Xavier District of the Tohono O'odham Nation, University of Arizona, Bureau of Land Management, US Forest Service, Arizona State Land Department, Green Valley, Town of Sahuarita, Sonoita, Pima Association of Governments, Nature Conservancy, Sonoran Institute, Friends of the Santa Cruz River, and the Arizona Open Land Trust.
3) In the first year of mine construction, Rosemont will donate to the Trust conservation easements and restrictive covenants (valued at more than $6 million) that limit future major development, but allow for continued ranching and public recreational use, covering approximately 2,000 acres of Rosemont fee lands in the Rosemont project area.
4) Rosemont will provide additional Trust funding in the first 4 years after mine construction begins. Rosemont anticipates that this initial funding will be utilized primarily for the acquisition of conservation lands by the Trust.
5) Rosemont will provide $500,000 per calendar year for 25 years from the beginning of mine construction through completion of mine closure as an annual baseline Trust operational funding commitment.
6) Rosemont will also contribute an additional capped contribution of $25 million to the Trust Endowment over the life of the mine as variable contributions based on the price of copper, beginning in the first full year of copper and molybdenum production. These funds could be utilized for any of the Trust objectives following closure of operations, as determined by the Board Trustees. The formula for variable contributions is:

   Additional Trust Endowment contribution =
   0.0% of revenue generated up to $2.25 per lb Cu equivalent production, plus
   1.0% of revenue generated between $2.25 and $2.50, plus
   1.5% of revenue generated between $2.50 and $2.75, plus
   2.0% of revenue generated between $2.75 and $3.00, plus
   2.5% of revenue generated above $3.00 per pound

   For example:

   - If Rosemont produced 300 million lbs of Cu equivalent in a particular year, and if the average price realized for that year was $2.50 (total annual revenue of $750 M), the contribution to the Trust would be 0% of first $675 M, plus 1 % of next $75 M, for a total Trust contribution of $0.75 M.
   - In a year in which the average price of copper realized was $2.20 (annual revenue of

$660 M), no Trust contribution would be made.

- If the average price reached $3.00, ($900 million total revenues), the Trust contribution under the formula would be:

0 for first 675 million	
1% for next $0.75 million	= $0.75 mm
1.5% for next 0.75 million	= $1.125
2% for next 0.75 million	= $1.5 m
Total contribution would be	$3.375 M.

The total aggregate variable contributions to be capped at $25 million..

7) When operations, and therefore Trust contributions, cease at the Rosemont Project, the Trust will continue to operate and provide funding based on the annual revenue yield from the Trust corpus, provided the Board of Trustees determines that a permanent endowment is an appropriate disposition for a portion of the Rosemont contributions to the Trust.

8) The Board of Trustees, assisted by the Advisory Council, will identify specific funding priorities for all of the funds provided by Rosemont to the Trust. As an example, a funding 'menu' like the following could be considered:

Land protection and management	Pima County SDCP priorities
Invasive species control	Santa Ritas, Experimental Range, Las Cienegas
Dark skies initiative	Smithsonian, U of A
Internships and graduate fellowships	USFS, BLM, Pima County, U of A (mines, geology, agriculture, etc.)
Public safety	Pima County, Sahuarita, Tucson, Green Valley, etc.
Historic preservation	Santa Cruz Valley, Santa Ritas, etc.
Recreation	Forest Service, Pima County, BLM, etc.

9) For administrative efficiency, the Trust will affiliate with a local entity like the Arizona Open Land Trust or Tucson Community Foundation. This independent entity would receive administrative funding support in return for providing administrative services and providing an office for the Trust operations. In addition, a local trust fund investment manager (trust company, local bank, etc) will be selected early in the process to ensure Trust independence and sound fiscal management.

Governance.

1) The Trust will be established as an independent charitable trust, with tax-exempt status.
2) The Trust will be able to accept contributions from sources other than Rosemont or any successor-in-interest at Rosemont.
3) The Trust will be governed by a Board of Trustees made up of key constituents. Terms will be three years with overlapping terms. The Board will have an odd number of members, not to exceed 9. One possible alignment might be as follows:

- 1 member appointed by Chairman of County Board of Supervisors
- 1 member appointed by the City Manager
- 1 member appointed by the U of A President
- 1 member representing the company managing the Trust corpus
- 1 member appointed by the Congressional Representative for the Rosemont site
- 1 member (appointed by the Governor) representing the general public
- 1 member selected by the Advisory Council
- 2 members appointed by Rosemont or its successor-in-interest

The Board of Trustees will elect from among themselves a President, Vice President and Secretary/Treasurer who, together with the immediate past President, will make up an Executive Committee.

4) In Advisory Council made up of other key constituents and individuals with specific expertise will be established with a membership of about 25-30. One possible configuration might be:

- 1 member representing the Green Valley Coordinating Council
- 1 member representing the Town of Sahuarita
- 1 member representing the Sonoita/Patagonia area
- 1 member representing the Vail/Corona de Tucson area
- 1 member appointed by the Arizona State Land Commissioner
- 1 member appointed by the Santa Cruz County Board of Supervisors
- 1 member from Pima County representing Sonoran Desert Conservation Plan
- 1 member from the U of A College of Mines
- 1 member from the U of A College of Agriculture
- 1 member representing the astronomy community
- 1 public safety expert
- 1 member representing the San Xavier District of the Tohono O'odham Nation
- 1 member representing the Nature Conservancy
- 1 member representing the Sonoran Institute
- 1 member representing Friends of the Santa Cruz River
- 1 member representing the Forest Service
- 1 member from BLM representing Las Cienegas
- 1 member representing hunting/off-road vehicle users
- 1 member representing hiking/camping/birding groups
- 1 accountant/investment professional
- 1 member representing local Chambers of Commerce
- 1 historian/archaeologist/cultural resource expert
- 1 representative of mineral collectors
- 1 rancher
- 1 hydrologist/water resource expert
- 1 public communications expert

All members of the Advisory Council and Board of Trustees would serve without compensation.

7.0 KEY STAGES, FEDERAL REGISTER NOTICES, AND PUBLIC MEETINGS

Publication of the Notice of Availability

Revision of NOI

List in SOPA

Press Releases, Twitter and News Conference

A news conference will be held midweek during week two. This press conference will include all possible news organizations, including television broadcasts. It will cover similar content to the Editorial but may also allow the media access to particular resource specialists for a more detailed question and answer session. It will possibly present the meetings' opening presentation of film clips.

Press Releases and Twitter broadcasts will be sent to the standard CNF media email list and posted on the website 1 week prior to each meeting. (Heidi)

Public service announcements also will be played on Tohono O'odham and Telemundo radio stations. (Heidi)

Mailings

Direct mailing to project mailing list announcing the upcoming release of the DEIS and soliciting response on DEIS copy requests (Mindee & Melissa). A mailing of requested DEIS copies will be completed during the first week of public release.

Direct mailing of postcard announcement 1 week prior to each group of meetings (Mindee & Melissa) Note: Could announce 2 or 4 meetings in each mailing- ?

Paid Advertising and Editorial

An Editorial will be placed in all possible newspapers during week one. This piece will review legal framework, the DEIS process and the public involvement opportunities. It will also include highlights on the DEIS contents, including five question and answers for each resource significantly impacted.

Paid advertising will be placed in the following newspapers 1 week in advance of each meeting (Strongpoint to contract, SWCA to design ad)

Newspaper	Tucson	Benson	Sahuarita/ Green Valley	Vail	Elgin
Arizona Daily Star *(DueThur for Sun publication)*	X		X	X	X
La Estrella- Spanish insert AZStar *(Due Fri for following Fri publication)*	X		X	X	X
Arizona Daily Star (East Zone) *(Due Mon for Sat publication)*	X			X	
Arizona Daily Wildcat *(2 business days prior to publication)*	X				

DRAFT

Tucson Weekly *(DueThur for following Thur publication)*	X				
Sahuarita Sun *(Due Mon for Wed publication)*	X		X		
Green Valley News *(Due Tues for Sun publication)*			X		
Sierra Vista Herald *(48 hours prior to publication)*		X			X
Nogales International *(Due Mon for Fri publication)*			X		X
Weekly Bulletin – Patagonia *(DueThur for Wed publication)*					X
Vail Sun *(DueThur for Wed publication)*	X	X		X	
San Pedro Valley News- Benson *(DueThur for Wed publication)*	X	X		X	

Public Meetings

Public meetings will be held according to the following (dates based on Dec. 15, 2010 publication date):

Meeting Date	Location	Venue	Meeting Format	Time
Jan.8	Tucson*	Rincon, Pima East, TCC?- TUSD, Joni Edgar 225-4605	OH/Hearing	10 am- 1 pm: OH, 1:00 presentation and 1:30 hearing
Jan. 12	Benson	School?	OH/Hearing	
Jan. 15	Sahuarita/ Green Valley	Sahuarita High- Cafeteria & Theater – Daryl Rawson 625-3502 x1125	OH/Hearing	
Jan. 22	Elgin	Elgin Elementary- MPR & Classrooms- Marj Simmons 455-5514	OH/Hearing	
Jan. 29	Vail	Cienega High- Cafeteria & Theater- Jeff Rutherford 879-2457	OH/Hearing	
Mar. 5	Tucson*	TCC?	Hearing Only	

Meeting needs:

- Venues to include sound, furniture & projector (Strongpoint)
- *- These meeting need Sign Language interpreters (Strongpoint)
- Local jurisdiction law Enforcement- 2-4 officers (Strongpoint)-
    - Sahuarita PD, Sgt. Allred 344-7041, Santa Cruz SO, Sgt. Matthews 761-7869, Pima County SO, Russell Davis 351-4629, TPD, Cpt. Tarrant 791-4855
- Refreshments- to include salty and sweet snacks (Strongpoint)

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- Nametags (Melissa)
- Clipboards (Melissa)
- Van rental (Melissa)
- Pens (Melissa)
- Comment submission box (Melissa)
- Safety Plan (Melissa)
- CNF Law Enforcement (Heidi)
- Rules signs (Melissa)
- Station signs (Melissa)
- Speaker cards (Melissa)
- 2 Court reporters- 1 for side board and 1 soapbox hearing (Melissa)
- Audio recording & Sound setup (Strongpoint)
- PowerPoint setup (Strongpoint to put together video and projection needs)
- Presentation by FS (Strongpoint)
- Stop watch (Melissa)
- Time reminder cards (Melissa)
- Moderator(s) (Strongpoint): Marty Rozelle 602-224-0847
- Tables with chairs for comment and displays (Strongpoint)
- Posters to include: (Melissa with Strongpoint assistance)
    - Resource impact areas?
    - Alternatives?
    -
- Handouts to include:
    - DEIS cds (Strongpoint)
    - Comment Forms (Melissa)
    - DEIS Executive Summary
    - Website Info
- Staffing to include: comment box guard, specialists, speaker card handout, speaker card receiver, moderator, 3 misc helpers

DRAFT

Reta Laford/R3/USDAFS
08/05/2010 01:20 PM

To jsturgess@augustaresource.com
cc Reta Laford/R3/USDAFS@FSNOTES, Robert Cordts/R3/USDAFS@FSNOTES
bcc
Subject Summary of Forest Service/Corps of Engineers Phone Conference (8/4/10)

Summary of Forest Service/Corps of Engineers Phone Conference (8/4/10)

The Forest Service and the Corps of Engineers, along with their respective attorneys, conferenced yesterday.

The Forest Service and Corps are optimistic that the Corps' "basic" and "overall" project purpose can be better presented in the DEIS.

The Forest Service and Corps are not in agreement on the range of alternatives to be considered in detail in the body of the DEIS.

Resolving the differences of opinion first hinges upon practicability for the 404(b)(1) analysis. While the Forest Service believes that mining alternative lands owned by Rosemont and a reduced pit configuration will ultimately be deemed as not practicable, the Corps asserts that more supporting data must be submitted before a practicability conclusion can be made.

Marjorie expressed further concerns that Rosemont (Westland) was to provide a more comprehensive analysis, which has not yet been demonstrated.

As previously discussed, it may be beneficial for another contractor lead finalization of the analysis, with Rosemont (Westland) assistance. EOR was noted as a potential candidate. Other contractors may also be viable.

The bottom line is that we need to get through the 404(b)(1) practicability hurdle before we can finalize the alternatives to be considered in detail. The Corps has committed to being available to help accomplish this. Marjorie is willing to meet with whomever we choose so she can help us meet her expectations for analysis. Note that we now have, at a minimum, standing meetings set with Majorie for every Monday at 2:00.

Until we have an acceptable agreement of practicability, I will not be releasing a predecisional draft of Chapter 2 for Cooperating Agency review.

I do not believe this is a matter of much discussion for most of the parties who will be attending tomorrow's status meeting. Heading back in to meetings, so I'll try calling you later today and we can discuss details for moving forward as needed or after the status meeting with Bob Cordts. Thanks.

Reta Laford
Acting Forest Supervisor
Coronado National Forest

Phone: 520-388-8307

Brian Lindenlaub <blindenlaub@westlandresources.com>

08/27/2010 05:03 PM

To '"Blaine, Marjorie E SPL"' <Marjorie.E.Blaine@usace.army.mil>, 'Reta Laford' <rlaford@fs.fed.us>, Robert Anderson

cc 'Katherine Arnold' <karnold@rosemontcopper.com>

bcc

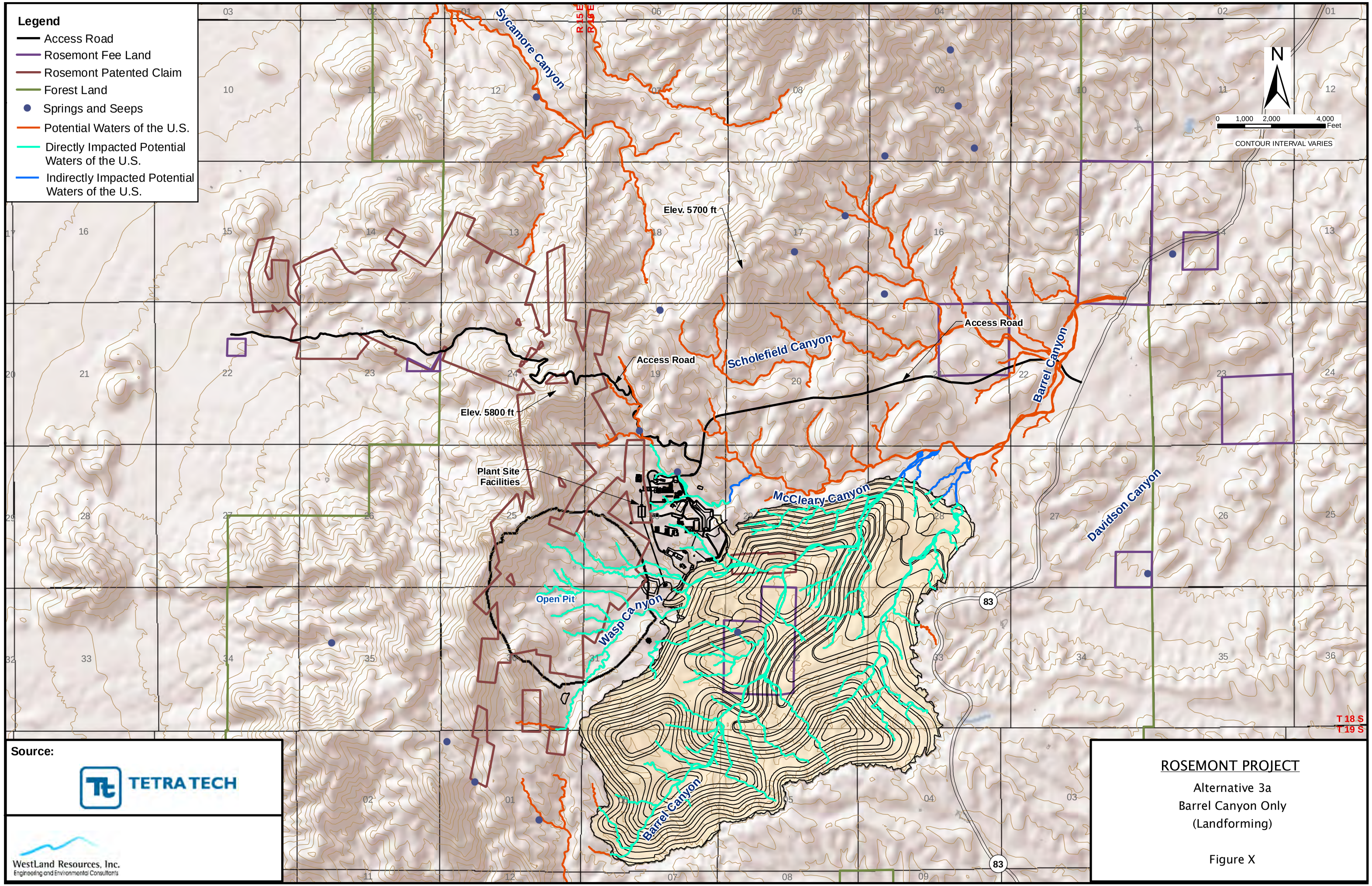
Subject Two Barrel Only Alternatives

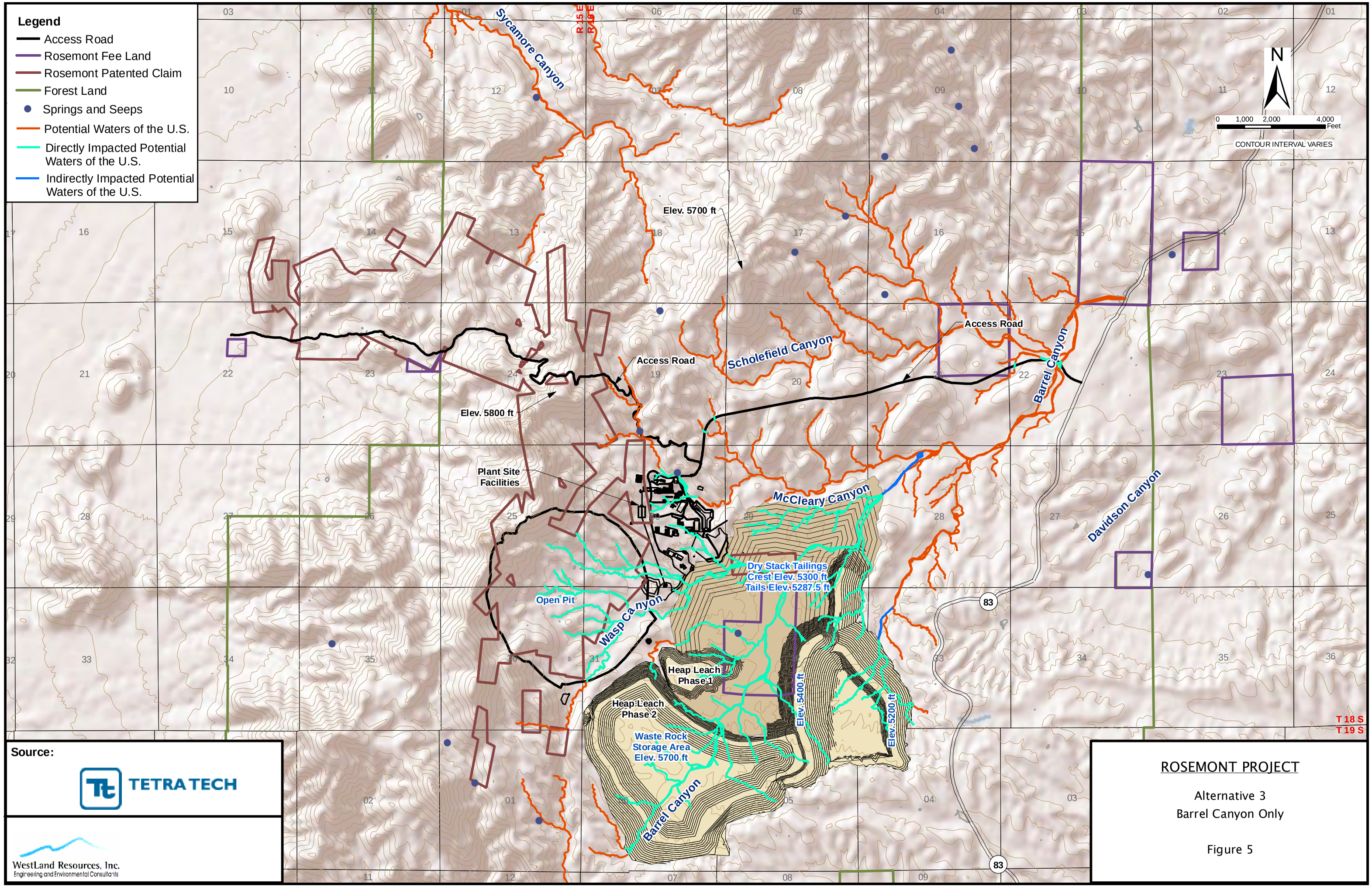
All,

Per our teleconference on Wednesday, please find attached two figures showing the difference between the initial Barrel Only alternative (Alternative 3) and the Landforming Barrel Only alternative (Alternative 3a). The Landforming alternative increased the direct impacts to potential waters of the U.S. from approximately 35 acres to 42 acres.

Brian Lindenlaub | Principal
WestLand Resources, Inc.
4001 E Paradise Falls Drive | Tucson, AZ 85712
Office: (520) 206-9585 | Fax: (520) 206-9518

Figx_alt3a_landform.pdf Rosemont Alternative 3 Barrel Only.pdf


Legend
Access Road
Rosemont Fee Land
Rosemont Patented Claim
Forest Land
Springs and Seeps
Potential Waters of the U.S.
Directly Impacted Potential Waters of the U.S.
Indirectly Impacted Potential Waters of the U.S.
N
0 1,000 2,000 4,000 Feet
CONTOUR INTERVAL VARIES
Sycamore Canyon
R 15 E
R 16 E
Elev. 5700 ft
Access Road
Scholefield Canyon
Barrel Canyon
Elev. 5800 ft
Plant Site Facilities
McCleary Canyon
Davidson Canyon
Open Pit
Wasp Canyon
Barrel Canyon
83
T 18 S
T 19 S
Source:
TETRA TECH
WestLand Resources, Inc.
Engineering and Environmental Consultants
ROSEMONT PROJECT
Alternative 3a
Barrel Canyon Only
(Landforming)
Figure X


Legend
Access Road
Rosemont Fee Land
Rosemont Patented Claim
Forest Land
Springs and Seeps
Potential Waters of the U.S.
Directly Impacted Potential Waters of the U.S.
Indirectly Impacted Potential Waters of the U.S.
N
0 1,000 2,000 4,000 Feet
CONTOUR INTERVAL VARIES
Sycamore Canyon
R 15 E
R 16 E
Elev. 5700 ft
Access Road
Scholefield Canyon
Barrel Canyon
Elev. 5800 ft
Plant Site Facilities
McCleary Canyon
Davidson Canyon
Dry Stack Tailings
Crest Elev. 5300 ft
Tails Elev. 5287.5 ft
Open Pit
Wasp Canyon
Heap Leach Phase 1
Heap Leach Phase 2
Elev. 5400 ft
Elev. 5200 ft
Waste Rock Storage Area
Elev. 5700 ft
Barrel Canyon
83
T 18 S
T 19 S
Source:
TETRA TECH
WestLand Resources, Inc.
Engineering and Environmental Consultants
ROSEMONT PROJECT
Alternative 3
Barrel Canyon Only
Figure 5

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: 1950-3/2810
Date: August 30, 2010

Jamie Sturgess
Rosemont Copper Company
4500 Cherry Creek South
Suite 1040
Denver, CO 80246

Dear Mr. Sturgess,

I am writing to clarify information sought by the Forest and to ask for an expedited company response, as these items are critical to the finalization of Chapter 3 of the Draft Environmental Impact Statement.

1. Geochemistry and Fate Transport Reports / Composite Sample Information

Forest Service Rosemont Copper Project Leader Bev Everson has been working with Kathy Arnold of your company and with your consultant David Krizek of Tetra Tech for the past few weeks to obtain clarification on the composite samples used in the 2006, 2007, and 2010 geochemistry and fate and transport reports. Requests for clarification on these reports have been ongoing through formal and informal discussions as well as technical memoranda. In a June 14th conference call of your representatives and mine, Rosemont consultant David Krizek committed to provide a response to the raised geochemical issues by June 18th. The Forest has not yet received this response.

The reports I refer to above include the following: *Preliminary Trip Report and Phase 1 Sampling and Analysis Plan* (Vector, 2006); *Baseline Geochemical Characterization* (Tetra Tech, 2007a); *Geochemical Characterization and Addendum 1* (Tetra Tech, 2007a and 2007b); *Geochemical Pit Lake Predictive Model* (Tetra Tech, 2010); and *Infiltration, Seepage, Fate and Transport Modeling Report* (Tetra Tech, 2010).

The need for clarification on the source of the samples is discussed in the following SRK reviews: *Consulting Preliminary Geochemistry Review for the Rosemont Copper Project* (SRK review of February 10, 2010); *Infiltration, Seepage, Fate and Transport Modeling Report* (SRK review of April 30, 2010), and *Pit Lake Predictive Model* (SRK review of May 3, 2010). Concerns and questions regarding the sampling include the following:

> Only brief lithologic descriptions of the tested samples are provided for the characterization of ore and waste material and no information is provided on the mineralogy of the samples tested. Complete lithology and mineralogy is necessary to understand and assess potential for acid rock drainage and metal leachability. Description of the oxidation type, grade, and minerals present in each sample is needed to provide waste classification. The location of all samples also needs to be clearly articulated. For example, is the location of a given sample on or near the pit wall or is it from the center of the pit?
>
> Representative life-of-mine or early life-of-mine tailings has not yet been completed. Documentation was not provided to assess whether the sample materials actually tested are representative of potential

sulfide ore (subsequent tailings), oxide ore, or waste rock dump material based on total copper cut-off grades and contained ore and gangue mineralogy.

In order to assess whether or not the sampling program sufficiently represents the materials expected in the waste rock and tailings storage facilities, it is necessary to understand the site-specific definition of waste rock, how the rock materials were classified in the geology model, what percentages of rocks (including mineralization, oxidation) are generally expected throughout life-of-mine, and if the proportion of samples selected for analysis match the expected proportions of rock materials.

The source of the tailings test materials and what stage of tailings deposition the samples represent is not adequately documented. No details other than basic rock type were provided on the source of the sample material used to make the simulated tailings, making it difficult to verify how representative the samples are.

2. Geochemical Analysis Data

Please provide responses to the following comments and question from SRK's review of three reports by Rosemont consultants on the geochemistry of the project area.

The reports I refer to above include the following: *Preliminary Trip Report and Phase 1 Sampling and Analysis Plan* (Vector, 2006); *Baseline Geochemical Characterization* (Tetra Tech, 2007a); and *Geochemical Characterization, Addendum 1* (Tetra Tech, 2007a and 2007b).

The need for clarification is discussed in the following SRK review: *Consulting Preliminary Geochemistry Review for the Rosemont Copper Project* (SRK review of February 10, 2010). Concerns and questions regarding the geochemical analysis include the following:

Has Net Acid Generation (NAG) metals and/or Meteroric Water Mobility Procedure (MWMP) extractions had been performed on waste rock and tailings materials subsequent to the November 2007 report?

Representative tailings tests have not been done to provide an accurate assessment of the tailings leachate.

Net Acid Generation (NAG) metals are recommended to assess the chemical character of tailings leachate to confirm potential behavior.

Alkaline or neutral rock drainage with elevated metalloids and sulfate may occur based on the results of the 35- week humidity cell tests is not adequately addressed in the reports.

We believe that this information is important to the understanding of other technical reports, including those involving pit lake geochemistry and infiltration, seepage, and fate and transport.

3. Results from Additional Tailings Testing

Please provide the results from additional tailings test work done to date, and specifically the testing results that were discussed in the Technology Transfer Meeting on November 12, 2008 (Williamson, 2008, slide 9). Test work described in the meeting as in progress included July 2008 samples for Acid Base Accounting, whole rock, Synthetic Precipitation Leaching Procedure, and kinetic tests.

4. Eastside Groundwater Modeling Input and Output Files

Please provide copies of input and output files for the project's eastside groundwater modeling. This would include any MODFLOW files necessary for running the model such as files ending in: .bcf , .bas, .bas6, .riv, .str, .rch, .pcg, .wel, .in, .nam, .lak, .ghb, .hds, .oc, .dat, .glo, .lpf, .mlt, .zon, .dis and .gwv. We believe that these are the basic MODFLOW files minimally necessary to examine and/or run the groundwater model.

Thank you for your cooperation in providing a timely response to this request.

Sincerely,

RETA LAFORD
Acting Forest Supervisor

cc. Tom Furgason
SWCA Environmental Consultants
343 W. Franklin St.
Tucson, AZ. 85701

USDA Forest Service Air Quality Review
Under the
Clean Air Act, National Environmental Policy Act and FLAG Guidance

The FLAG Guidance addresses air quality assessment under both the Clean Air Act, which establishes regulatory compliance procedures, and the National Environmental Policy Act, which requires assessment of environmental effects from alternatives under consideration. The dual role of the FLAG Guidance can create confusion about which type of review is to be applied. The table below lists the authorities and review appropriate under NEPA, the Clean Air Act and the FLAG Guidance depending upon the source's size and the type of area affected (Class I or other) and provides citation to the appropriate statute, regulation, FSM/FSM Supplement and FLAG Guidance section.

Goals of Review by US Forest Service Official:

Clean Air Act (where applicable): Ensure compliance with regulatory standards.

National Environmental Policy Act: Consider environmental effects and appropriate mitigation measures consistent with Mining Laws and other applicable rules and regulations; determine appropriate conditions to include in the Record of Decision, after considering issues and impacts, public and cooperating agency input, and regulatory requirements.

FLAG Guidance: Integrates consideration of visibility and other Air Quality Related Value effects for both Clean Air Act and National Environmental Policy Act purposes without creating any new regulatory requirements or authorities for the NPS, USFWS, or USFS.

Issue/Effect	NEPA: All Sources	Clean Air Act: Major Sources	Clean Air Act: Minor Sources
Air Quality Related Values (AQRVs) generally	Assess impact of alternatives on AQRVs following FLAG guidance; discuss mitigation opportunities; consider in choice of alternative. 42 U.S.C. § 4332; 40 C.F.R. § 1502.16; FSM 2580.1 & .2; R3 Supp. 2500-2005-1, 2580.43(2)(c) & (f); FLAG 2.3 & 2.4.	**Class I Areas:** If Class I increment exceed, do not build without FLM certification; if Class I increment not exceeded, evaluate whether to certify adverse effect; work with permitting authority and permittee to address if adverse effect. 42 U.S.C. § 7475(d); 40 C.F.R. §§ 51.165, 51.166 & 52.21; A.A.C. R18-2-406; P.C.C. 17.16.590; FSM 2580.1 & .2; R3 Supp. 2500-2005-1, 2580.43(2)(c) & (f); FLAG 2.2-2.4. **Class II/III Areas:** See Minor Source column (right).	No review. 42 U.S.C. §§ 7475(a) & 7479(a); FSM 2580.1(2)(d)(2), 2580.2(1); R3 Supp. 2500-2005-1, 2580.43(2)(a); 40 C.F.R. §§ 51.165(a)(2)(i), 51.166(a)(7)(i); 52.21(a)(2); A.A.C. R18-2-401(9), R18-2-402(A) & R18-2-406(A); and PCC 17.16.550(A) & 17.16.590(A); FLAG 2.2.1. May provide public comments in permitting authority proceeding. FSM recommends making information available to permitting authority. FSM 2580.2(2) & (3), 2580.43(5); R3 Supp. 2500-2005-1, 2580.43(2)(f).

Issue/Effect	NEPA: All Sources	Clean Air Act: Major Sources	Clean Air Act: Minor Sources
AQRV: Visibility	Follow FLAG protocol (3.3) to determine extent of impact; discuss mitigation opportunities; consider in choice of alternative. 42 U.S.C. § 4332; 40 C.F.R. Part 1502.16; FSM 2580.1 & .2; R3 Supp. 2500-2005-1, 2580.43(2)(c) & (f); FLAG 3.2 & 3.3.	**Class I Areas:** If Visibility listed as an AQRV, same as above, except that FLAG 3.2 and 3.3 establish procedures for visibility determination and adverse effect certification. If not listed as an AQRV, then ensure addressed in air quality impact analysis by source. 42 U.S.C. § 7475(d); 40 C.F.R. §§ 51.165, 51.166 & 52.21; A.A.C. R18-2-406; P.C.C. 17.16.590; FSM 2580.1 & .2; R3 Supp. 2500-2005-1, 2580.43(2)(c) & (f); FLAG 3.2 and 3.3. **Class II/III Areas:** See minor source column (right).	Same as above.
AQRV: Ozone	Follow FLAG protocol (3.2 and 3.4) to determine extent of impact; discuss mitigation opportunities; consider in choice of alternative. 42 U.S.C. § 4332; 40 C.F.R. Part 1502.16; FSM 2580.1 & .2; R3 Supp. 2500-2005-1, 2580.43(2)(c) & (f); FLAG 3.2 & 3.4.	**Class I Areas:** If Ozone is listed as AQRV for Class I area, same as above, except follow FLAG protocol in 3.2 and 3.4. If not listed as an AQRV, then ensure addressed in air quality impact analysis by source. 42 U.S.C. § 7475(d); 40 C.F.R. §§ 51.165, 51.166 & 52.21; A.A.C. R18-2-406; P.C.C. 17.16.590; FSM 2580.1 & .2; R3 Supp. 2500-2005-1, 2580.43(2)(c) & (f); FLAG 3.2 and 3.4. **Class II/III Areas:** See minor source column (right).	Same as above.
AQRV: Deposition	Follow FLAG protocol (3.2 and 3.5) to determine extent of impact; discuss mitigation opportunities; consider in choice of alternative. 42 U.S.C. § 4332; 40 C.F.R. Part 1502.16; FSM 2580.1 & .2; R3 Supp. 2500-2005-1, 2580.43(2)(c) & (f); FLAG 3.2 & 3.5.	**Class I Areas:** If Deposition is listed as AQRV for Class I area, same as above, except follow FLAG protocol in 3.2 and 3.5. If not, then ensure addressed in air quality impact analysis by source. 42 U.S.C. § 7475(d); 40 C.F.R. §§ 51.165, 51.166 & 52.21; A.A.C. R18-2-406; P.C.C. 17.16.590; FSM 2580.1 & .2; R3 Supp. 2500-2005-1, 2580.43(2)(c) & (f); FLAG 3.2 and 3.5. **Class II/III Areas:** See minor source column (right).	Same as above.

Issue/Effect	NEPA: All Sources	Clean Air Act: Major Sources	Clean Air Act: Minor Sources
Emissions Impacts	Assess impact of alternatives on each area; discuss mitigation opportunities; consider in choice of alternative. 42 U.S.C. § 4332; 40 C.F.R. Part 1502.16; FSM 2580.1, .2 & .43(5); R3 Supp. 2500-2005-1, 2580.3(3) & 2580.43(2)(c) & (f);	**All Areas:** Evaluate in air quality and additional impacts analyses. 42 U.S.C. § 7475(d); 40 C.F.R. §§ 51.165, 51.166 & 52.21; A.A.C. R18-2-406; P.C.C. 17.16.590; FSM 2580.1 & .2; R3 Supp. 2500-2005-1, 2580.43(2)(c) & (f).	Same as above.
National Ambient Air Quality Standards (NAAQS)	Assess impact of alternatives on NAAQS; discuss mitigation opportunities; consider in choice of alternative. Could defer to air permitting authority. 42 U.S.C. § 4332; 40 C.F.R. § 1502.16; FSM 2580.1, .2 & .43(2)(f)	**All Areas:** No Clean Air Act or implementing regulations role except as public commenter in permitting authority proceeding. FSM recommends making information available to permitting authority. FSM 2580.2(2) & (3), 2580.43(5); R3 Supp. 2500-2005-1, 2580.43(2)(f).	Same as above.
Increments	Same as above.	Same as above.	Same as above.
Case-by-case controls	Mitigation measures may be considered as part of NEPA analysis and included in mine plan of operation consistent with applicable Forest Service rules. 42 U.S.C. § 4332; 40 C.F.R. §§ 1502.14(f), 1502.16(h), 1505.2(c), 1505.3(a).	Same as above.	Same as above.
Regulatory controls	Forest Service land use requirements. In addition, alternatives analysis should consider impact of NSPS, NESHAP, SIP and PCC controls on possible emissions. Appropriate mitigating measures should be included in record of decision and included in final action. 42 U.S.C. § 4332; 40 C.F.R. §§ 1502.14(f), 1502.16(h), 1505.2(c), 1505.3(a).	Same as above.	Same as above.