

011196

Proposed Rosemont Copper Project

Approved by:

Bev Everson

Mindee Roth

DRAFT- NOT FINAL UNTIL INITIALED BY BEV EVERSON OR MINDEE ROTH

ID Team Meeting

April 22, 2009

File in:

Administrative Record

Attendees:

Forest Service

SWCA

Other

See sign-in sheet

Topics Discussed:

- Rosemont responses to Alternative ideas
- Technical feasibility of some ideas

Decisions Made:

- IDT wants to see all the bounds of analysis maps

Action Items/Assignments:

- SWCA/FS: get information to Rosemont regarding Arch sites and levels of importance, meaning of "partial backfill", Small Tracts Act regulations and legalities of earth removed and ownership for sale of waste
- RCC: submit to FS their own alternatives ideas and information on feasibility and documentation, information on viable deposit locations

Proposed Rosemont Copper Project ID Team Meeting Sign-In

Date 4/22/09

First Name	Last Name	Role	Initials
Alan	Belauskas	Noise	_____
Andrea	Campbell	NEPA Compliance/FOIA Officer	_____
Bev	Everson	ID Team Leader	<u>BEV</u>
Bob	Lefevre	Air Resources, Clean Water Act	_____
Camille	Enslie	Presentation	_____
Cara	Bellavia	Social & Economic Environments	_____
Chris	LeBlanc	Heritage	_____
Dave	Morrow	Air Resources	_____
Deanne	Rietz	Hazardous Waste	_____
Debby	Kriegel	Light (Night Skies)	<u>DK</u>
Deborah	Sebesta	Vegetation, Reclamation, Wildlife	<u>DS</u>
Eli	Curial	Hazardous Waste, Mining	_____
Geoff	Soroka	Vegetation, Reclamation, Wildlife	_____
George	McKay	Access/Lands/Realty	_____
Glenn	Dunno	Data Management	_____
Harmony	Hall	External Communications	_____
Heidi	Orcutt-Gachiri	Tech Editing	_____
Heidi	Schewel	Media	_____
Janet	Jones	Admin Support	_____
Jeanine	Derby	Forest Supervisor	_____
Jeff	Connell	Social & Economic Environments	_____
Jennifer	Ruyle	Forest Planner	_____
Jerome	Hesse	Geology	_____
Joe	Ezzo	Heritage	_____
John	Able	Communications Team	_____
John	MacIvor	SWCA Project Leader	_____
Keith	Graves	Recreation, Social & Economic Env.	_____
Ken	Kertell	Wildlife Resources	_____
Kendall	Brown	Range	_____
Kendra	Bourgart	Team Admin Asst	_____
Kristen	Cox	Light (Night Skies)	_____
Lara	Mitchell	Data Management	_____
Larry	Jones	Wildlife Resources	_____
Marcie	Bidwell	Recreation	_____
Mary	Farrell	Heritage	_____
Melissa	Reichard	Team Admin Asst	<u>MR</u>
Ralph	Ellis	Transportation/Engineering	_____
Reta	Laford	Deputy Forest Supervisor	_____
Rion	Bowers	Clean Water Act Compliance	_____

Roxane	Raley	Mailing Database	_____
Salek	Shafiqullah	Hydrologist, Hydrogeologist	_____
Shane	Lyman	Fire/Fuels	_____
Suzanne	Griset	Heritage	_____
Tami	Emmett	Access/Lands/Realty	_____
Teresa Ann	Ciapusci	Ecosystem Management & Planning	_____
Tom	Furgason	SWCA Project Manager	97
Tom	Skinner	Water Resources/Riparian	_____
Walt	Keyes	Transportation/Engineering	_____
William	Gillespie	Heritage	_____
Kathy	Arnold	Rosemont Copper	ICAA
Brian	Lindenberg	WestLad Resources, Inc.	BSC
Seal	Prins	CAT	AD
DACE	ORMAN	SWCA	PO

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Forest Service Preliminary Alternatives / Mitigation	Workable?	Feasible?	Comment	How to address? Changes?
Alternatives				
<i>Relocate the tails/waste rock to Sycamore canyon</i>	Yes	Possibly	Sycamore Canyon does not appear to be large enough to hold 1.2 billion tons of tails/waste rock at the slopes that are proposed for reclamation. Sycamore Canyon is within an area designated in the SDCP as "biological core".	Rosemont requests that the Forest Service determine if this is a feasible mitigation strategy and would have to do some additional review/analysis.
<i>Remove the ridge on the west side of the pit</i>	Yes	No	<p>This is not economically feasible in the orientation suggested as the mineralization does not extend through the ridge to the west of the pit. It is also part of the SDCP biological core.</p> <p>We believe this may be mitigation as it could apply to all alternatives.</p> <p>We understand that this mitigation measure was proposed to improve the view shed along State Route 83, but it has the potential to negatively impact the view shed from the Santa Cruz River valley (Sahuarita, Green Valley, I-19, etc.) which has far more viewers.</p>	Rosemont does not plan to address this alternative.

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<i>Underground rather than open pit</i>	No	No	Ore grades are not high enough to sustain an economically viable underground operation. This alternative would not have a significant impact on the volume of waste rock and tailings material generated by the project.	Rosemont does not plan to address this alternative.
<i>Backfill the pit</i>	No	No	The pit configuration does not allow concurrent backfilling. This may also require the addition of an additive (cement) to bind the tailings if used as backfill. Dry stack probably would not be an alternative, requiring paste tailings instead which would affect water conservation goals. We believe this may be mitigation as it could apply to all alternatives.	An investigation of the cost and emissions (green house gas as well as other air emissions) would need to be undertaken. This will drive the costs up to the point that the project may not be economical.

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<i>Partially backfill the pit</i>	Yes	Potentially	Partial backfill at closure may be appropriate to consider dependent upon the water quality considerations. Backfill of the pit (partially or fully) will significantly extend the length of operations at the project, with a commensurate increase in the duration of air emissions, fuel consumption, etc. as well as postponing the date when final reclamation will be achieved. We believe this may be mitigation as it could apply to all alternatives.	An investigation of the cost and emissions (green house gas as well as other air emissions) would need to be undertaken. An actual backfill goal and amount of material must be determined So that costs can be applied. Depending upon the amount, it may make the project uneconomical.
<i>Land exchange</i>	No	No	This does not appear to address any of the 20 identified issues.	Rosemont cannot address this alternative.
<i>Purchase of the mine site by the feds</i>	Unk	Unk	This appears to be outside the scope of the proposal under the 1872 mining laws and other public land use laws.	Rosemont cannot address this alternative.
Mitigation				
<i>Relocate the tails around the archaeological sites</i>	No	No	The archaeological sites identified are not isolated; because no other areas were given a Class III review, it is impossible to determine an orientation that could go around the sites.	In the current location, this does not appear to be a workable solution.

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<i>Relocate the OHV use to the east side of HW 83</i>	Yes	Yes	Rosemont would be interested to hear more about the location, the way the forest service will determine how to manage and if such use would be appropriate, and how Rosemont would fit into the strategy (i.e., what role will Rosemont play?)	
<i>Slurry line pump the tails</i>	Yes	Possibly	Pumping the tailings to the other side for filtering will require location of thickeners and filter plant as well as emergency ponds. This will reduce the available space for tailings. Rosemont is concerned that little study has been completed in Sycamore Canyon so the potentially affected resources are not well known. In addition, this alternative moves the material to an area where there are many more visual receptors and into a Biological Core Area for the SDCP.	Rosemont did preliminary studies to review the size of Sycamore Canyon and it appears it will hold the tailings material. This mitigation alternative will need to be reviewed more fully and include an analysis of the natural resources in the area.

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<i>Conveyor belt transfer of ore and waste rock</i>	Possibly	Possibly	<p>Conveyor belts can be used to transport ore and waste in many situations however, grades, production rates, material sizing, etc. are all factors that must be considered when using conveyors. In addition, power consumption requirements for conveying will change the power requirements of the facility.</p> <p>In the first 8 -10 years of mining the pit configuration does not lend itself to in-pit conveyors.</p>	<p>Based on material sizing, production rate, and the planned pit configuration, Rosemont does not currently plan to use conveyors to move ore and waste out of the pit. The ore is transported via conveyor from a point determined to be central; however the waste must be moved and placed in too many locations to make conveyors practical.</p>
<i>Water retention dam in Barrel Canyon (or in alternate drainages that tailings and waste are placed in)</i>	No	No	<p>A water retention dam will eliminate the possibility of water being released to the Barrel drainage and subsequently to Davidson Canyon. This will provide no operational value and probably be more environmentally damaging.</p>	<p>Rosemont does not plan to address this mitigation proposal.</p>
<i>Surfacing of Roads</i>	Possibly	Possibly	<p>There is not enough detail here to determine what the mitigation strategy would be. Rosemont has proposed dust suppression products for the primary road.</p>	<p>Rosemont cannot address this without additional information.</p>

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<i>Line Tailings and waste disposal areas</i>	Possible	No	Rosemont assumes that the Forest Service means that the tailings and the waste disposal area would be lined with a geosynthetic liner such as HDPE. Because the tailings are not saturated when they are placed and the waste rock is dry, there is little to no seepage out of either facility. In addition, geochemical test work has determined that water quality from either facility will be equal to or better than groundwater in the area. Lining the facility would not provide protection and would in fact place a barrier between the facility and the environment that would restrict water movement and not allow natural processes to occur at closure.	Rosemont has no plans to address this mitigation strategy.
<i>Create wetland with water from operation</i>	Possibly	Possibly	Presuming the Forest Service means diversion water rather than operational water, this mitigation strategy provides some opportunity.	Rosemont will incorporate ponding, trickle drains, and other water management strategies into the design concepts being developed.
<i>Include trees with revegetation of disturbances</i>	Possibly	Possibly	Plants were selected for the reclamation test work by the University of Arizona based on a number of criteria.	Rosemont will discuss the possibility of including trees in the revegetation efforts and the appropriate techniques for incorporating those species with the University of Arizona scientists.

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<i>Build roads and trails on top of tailings</i>	Yes	Possibly	Rosemont has been working on designs that would create a more natural appearance to the landscape as well as protect the reclaimed surfaces so that water does not erode the surface in a way that could compromise the reclamation designs.	Rosemont will direct the project team engineers to look at the possibility of including trails and/or roads into the reclamation designs.
<i>Have spill plan for trucks transporting acid</i>	NA	NA	Trucks transporting acid have specific federal DOT requirements for hazard response that will not involve Rosemont. Once delivery is accepted, Rosemont Emergency Response Plans would cover incidents.	Rosemont will not become involved in transportation issues that are regulated through homeland security and DOT.
<i>Relocate legal public access roads</i>	Yes	Yes	Rosemont has proposed relocating several access points in the MPO.	This was described in the MPO.
<i>Preserve access to Gunsight Pass, Arizona Trail, Sycamore, Canyon</i>	Possibly	Possibly	The Arizona Trail passes by our facilities and our operations will not affect access. Gunsight pass and Sycamore canyon are subject to other alternatives or mitigation strategies and access will be dependent upon the outcome of that analysis. The currently proposed project does not impede access to either of these areas.	Rosemont does not plan to do anything with respect to access at this time.

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<i>Ensure public easement through private lands impacted by operation</i>	No	No	Rosemont cannot ensure public easement through private lands as those easements would be dependent upon the private land owner and other restrictions on access (i.e., safety, easement use, property use, etc.)	Rosemont does not plan to work on easements at this time.
<i>Add public road section along primary and secondary access</i>	Possibly	Possibly	Dependent upon the location, public road access may be feasible; however it may not be necessary as at this time a final determination has not been made as to what sections of the roadways would be closed or open.	Rosemont is interested in what the concerns are.
<i>Re-establish land ownership boundaries after operation, at operator's cost</i>	Yes	Yes	Rosemont has established land ownership markings before operation, all at Rosemont cost. These boundaries will be maintained throughout the project to the extent practicable. This does not appear to be a mitigation item.	Although it is unclear as to why the markings are necessary, Rosemont could ensure they are re-established.
<i>Use Small Tracts Act authority to see small FS lands amidst private parcels</i>	Unknown	Unknown	Rosemont would be interested in discussing purchase of any small tracts that would become available.	
<i>Operator provide compensatory land designations</i>	Unknown	Unknown	It is unclear of the meaning of this item; it appears to be a land exchange.	

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<i>Vary slope with reclamation based on intended management of land and resources (i.e. grazing, vegetation, erosion prevention)</i>	Possibly	Possibly	Slopes were determined based on the goal of minimizing erosion, promoting vegetation, and use for ranching and wildlife.	Rosemont will direct the project team engineers to continue to examine appropriate slope treatments.
<i>Lessen slope of tailings and waste rock areas while maintaining footprint</i>	Possibly	Possibly	The goal of this mitigation strategy is unclear – lessening the slope while maintaining the footprint would make the facilities grow in height and, depending upon the slope requested, may not be wholly feasible within the footprint. It is also unclear what the ultimate goal of flatter slopes would be.	Rosemont cannot perform more work without more specific information.
<i>Combine utility corridors and roads</i>	Possibly	Possibly	Power line utility corridors are regulated by the Arizona Corporation Commission, and they prefer to use existing linear features for placement of these facilities. To the extent practicable, Rosemont intends to place roads and utilities in co-incident easements/corridors	Rosemont intends to do this to the extent practicable.
<i>Adjust trucking schedules to avoid school bus traffic</i>	Possibly	Possibly	Rosemont has shown a schedule of deliveries and shipments that avoids peak travel times to the extent possible.	If a bus schedule has been submitted to the Forest Service, Rosemont will examine the current proposed schedule and incorporate the bus traffic to manage truck traffic at those times.

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<i>Convert stock ponds to wildlife water areas</i>	Possibly	Possibly	Rosemont has been discussing appropriate pasturing techniques, drinkers, and stock ponds with the AGFD. Because Rosemont intends to continue ranching, it would be inappropriate to eliminate stock ponds. Rosemont intends to work with AGFD to develop appropriate water features as practicable.	Rosemont will continue discussions with AGFD.
<i>Create water features</i>	Possibly	Possibly	Presuming the Forest Service means diversion water rather than operational water, this mitigation strategy provides some opportunity.	Rosemont will incorporate ponding, trickle drains, and other water management strategies into the design concepts currently being developed.
<i>Reconfigure (redesign toe of tailings and waste rock piles)</i>	Possibly	Possibly	The toe was placed to approximate the landscape so the goal of this mitigation item is unclear.	Rosemont would like clarification on this issue.
<i>Relocate popular trails</i>	Possibly	Possibly	It is unclear what trails are included in this statement. Rosemont has proposed relocating access to several areas and would be interested in what trails are included.	Rosemont would need additional information to respond to this request.
<i>Co-located a communication tower to improve coverage</i>	Possibly	Possibly	Rosemont has already improved internet coverage in the area and has worked with Verizon to re-align a transmitter to provide additional coverage.	Communications towers are not covered by our purpose and need and therefore this mitigation is outside the scope of what Rosemont can control.

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<i>Identify water sources for fire</i>	Possibly	Possibly	On-site fires will be managed with water supplies that are on-site, MSHA requires specific fire water be contained at all times. For uses outside of the facility, Rosemont cannot identify additional water sources as water rights are regulated by the State.	Rosemont will work with local fire departments on improvements to infrastructure where possible to provide additional resources.
<i>More variable heights on the piles</i>	Yes	Yes	Rosemont has been working on designs that would create a more natural appearance to the landscape as well as protect the reclaimed surfaces so that water does not erode the surface in a way that could compromise the reclamation designs.	Rosemont will request the engineers continue to examine appropriate treatments.
<i>Electric trolley/rail out of the area</i>	No	No	<i>There are no trolley or rail lines currently located in proximity to the project.</i>	<i>Rosemont does not plan to investigate bringing rail service to the site.</i>
<i>One way access route</i>	Yes	No	<i>The west access road would have to be completely upgraded to handle loaded truck traffic in either direction; the overall impact of that would be much greater than the access/service road currently contemplated.</i>	<i>Based on the findings in the traffic report, Rosemont does not plan to bring truck traffic over the ridge.</i>
<i>Use Sonoita Highway</i>	Possibly	No	It is unclear what this will accomplish. The Old Sonoita Highway does not run directly to the project so SR83 will still have to be used. It also runs through a number of neighborhoods.	Rosemont does not understand the value that this mitigation measure would bring.

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<i>Relocate SR83</i>	Yes	Possibly	SR83 is not something that Rosemont can control; however ADOT is making modifications to the roadway not associated with the Rosemont Project that may prove beneficial overall.	Rosemont cannot do anything to help this alternative.
<i>Expand and Use Secondary Access</i>	Possibly	Possibly/No	The west access road would have to be completely upgraded to handle loaded truck traffic in either direction, the overall impact of that would be much greater than the access/service road currently contemplated.	Based on the findings in the traffic report, Rosemont does not plan to bring truck traffic over the ridge.
<i>Coach water accumulation</i>	Yes	Yes	This mitigation strategy provides some opportunity.	Rosemont will incorporate ponding, trickle drains, and other water management strategies into the design concepts being developed.
<i>Change east access to avoid riparian</i>	Yes	Yes	Rosemont has already been looking at roadway adjustments.	Rosemont’s engineers will continue this development.
<i>Use LPS lighting</i>	Yes	Yes	This was proposed in the MPO.	
<i>Identify key protection area and adjust scheduling of operations</i>	No	No	Operations will run 24-hours a day, 7-days per week.	Rosemont does not see how this could be workable.
<i>More efficient equipment</i>	Yes	Yes	Rosemont has already been looking at and plans to purchase the most efficient equipment available.	Rosemont will continue to work with equipment vendors.

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<p><i>The EIS should consider an alternative that includes using rail transportation for ore, spoils and/or tailings. A rail line could be constructed to connect to the existing rail line connecting Nogales and Tucson (Port of Tucson). This alternative could transport ore to an off-site processing location, possibly in the vicinity of a smelter, and could transport the waste rock to an off-site location for use in other industrial processes.</i></p>	<p>No</p>	<p>No</p>	<p>This would be cost prohibitive, would not make operational sense, and does not appear to meet the purpose and need of the project.</p>	<p>Rosemont will do no additional work.</p>

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<p><i>The EIS should consider an alternative that includes separate routes for fully-loaded ore trucks and empty trucks. The fully-loaded trucks could travel directly west to connect to I-19, which could connect to I-10, which could then connect to the Port of Tucson railhead at Kolb and I-10. Empty trucks could return on the east side of the Santa Rita Mountains via SR 83. The route for ore trucks could be accomplished by:</i></p> <ul style="list-style-type: none"> • <i>traveling by tunnel west through the Santa Rita Mountains;</i> • <i>traveling on a summit road west over the Santa Rita Mountains;</i> • <i>switching the proposed primary and secondary access roads;</i> • <i>using the existing Helvetia Road; and/or</i> • <i>using the existing Box Canyon Road.</i> 	Yes	No	<p>As stated above, the west access road would have to be completely upgraded to handle loaded truck traffic in either direction. The overall impact of that would be much greater than the access/service road currently contemplated. In addition, a tunnel may or may not be feasible dependent upon costs.</p>	<p>Based on the findings in the traffic report, Rosemont does not plan to bring truck traffic over the ridge.</p>

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<p><i>The EIS should evaluate using high pressure/high temperature leaching to process the sulfide ore as an alternative to extracting and shipping the copper concentrate for offsite processing. Using this newly developed processing method may reduce impacts by decreasing truck traffic, recycling sulfuric acid generated by this process, reduced air emissions associated with smelting, eliminating smelter fees, and could provide the ability to fully utilize the SX/EW circuit and manage production levels.</i></p>	Possibly	No	<p>Because of the low acid generation component (namely pyrite) of the ore at Rosemont, it is not amenable to the high pressure concentrate leach method.</p>	<p>Rosemont does not plan to address this issue.</p>
<p><i>The EIS should consider an alternative that makes use of the tailings and waste rock for industrial purposes, such as the manufacturing of concrete, bricks, pipes, and other infrastructure materials.</i></p> <p><i>The proponent should be required to comply with ISO 14001 Standards for Environmental Management in the operation of the mine.</i></p>	Possibly	Possibly	<p>Because of the high processing rate at Rosemont, it is unlikely that the entire amount of tailings or waste rock can be used. In addition, additional operations will mean added emissions, power use, etc.</p> <p>Rosemont plans to develop an EMS; however full certification under ISO may not be available or practicable.</p> <p>These do not appear to be alternatives.</p>	<p>Rosemont is not in the concrete, brick, pipe, etc. business. We do not plan to move this process forward.</p> <p>Rosemont will develop the EMS.</p>

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<p>Issue: Alternatives to an Open Pit Mine</p> <p><i>The EIS should consider an alternative that uses sinking mine shafts to subterranean levels and constructing adits (horizontal tunnels) to reach the ore, instead of creating an open pit. Modern underground mining techniques exist to support blasting and cutting equipment. Use of robotic technologies may be feasible. Ore could be extracted by mechanical rail conveyances. Reclamation of this type of mine would include closure of shafts and tunnels.</i></p>	No	No	This is not that type of ore body, the ore is disseminated rather than in veins or isolated zones.	Rosemont does not plan to work on this process.

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<p><i>The EIS should consider an alternative where the ore is leached in its original underground location instead of extracting it from the ground to process. This alternative would use injection and recovery wells to leach the ore underground. These wells, constructed with acid-resistant castings, penetrate the copper-bearing ore, and are sealed from the surface through the ore zones. A weak acid leach solution could be pumped through the cracks in the ore, dissolving the copper into a concentrated solution, which in turn would be pumped up through the injection well for processing. A continuous ring of recovery wells could surround the injection wells to prevent leach solution from escaping. This alternative avoids the excavation of ore rock, overburden, and tailings. 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. The clean wells could then be backfilled.</i></p>	<p>No</p>	<p>No</p>	<p>In situ mining will not work on a sulfide ore body and this technique has never been commercially proven.</p>	<p>Rosemont does not plan to address this.</p>

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<p><i>The EIS should consider an alternative that would use a type of sublevel caving mining technology called Vertical Crater Retreat. This alternative would eliminate the need for an open pit and would produce less waste rock.</i></p>	No	No	This is not that type of ore body	Rosemont does not plan to work on this process.
<p>Issue: Alternatives for Limiting Overall Project Boundary</p> <p><i>The EIS should consider an alternative that limits the mining footprint to fee simple lands or patented mining claims, to protect the current uses of NFS lands.</i></p>	No	No	The location and existing grades of land available will not allow the material to be stacked safely.	Rosemont does not intend to complete additional work on this issue.
<p><i>The EIS should consider an alternative that utilizes a continuous backfill technology so that the open pit would be progressively filled in with the waste rock, spoils, and overburden generated from the mining operations. This alternative would allow only for temporary storage of such materials on NFS land.</i></p>	No	No	The configuration of the pit does not allow for continuous backfill	Rosemont does not intend to complete additional work on this issue.

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<p>Issue: Alternatives for Limiting Times or Conditions under Which Mining Can Occur</p> <p>The EIS should consider an alternative that suspends mining operations:</p> <ul style="list-style-type: none"> • during high winds; • during extreme drought conditions; • during periods of excellent “seeing conditions” at the surrounding dark-sky observatories; and/or • during the night (i.e., allow day-use only). 	No	No	The processes are continuous flow processes which are not amenable to being shut down “at a whim”. This is not a realistic alternative for a continuous operation.	Rosemont does not plan to address this alternative.

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<p>Issue: Alternatives for Employing State-of-the-Art Technologies to Reduce Environmental Impacts</p> <p>The EIS should consider an alternative that uses alternative or additional technologies developed 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, including:</p> <ul style="list-style-type: none"> • finding an alternative to polymers to mix with the tailings for dust mitigation (as polymers are plastic and do not degrade); • using solar/wind/geothermal/natural gas technology for energy conservation; and/or • installing solar panels on tailings and waste rock piles. 	<p>?</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>?</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>It is unclear who this independent set of consultants would be, Rosemont already utilizes a number of consultants for this purpose.</p> <p>The materials planned for use on the tailings are not plastic and actually are used for reseeded.</p> <p>TEP is required to provide a % of the power using renewable energy, Rosemont has proposed solar in MPO.</p> <p>This would be something Rosemont may be interested in exploring.</p>	<p>Rosemont does not plan further action.</p> <p>Rosemont does not plan further action.</p> <p>Rosemont will investigate this potential opportunity.</p>

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<p>Issue: Alternative Water Sources for Mining Operations</p> <p><i>The EIS should consider an alternative source of water as a primary supply source or to supplement clean groundwater that is proposed for the mining operations. Potential alternative sources may include:</i></p> <ul style="list-style-type: none"> • <i>gray/reclaimed water from surrounding towns and cities;</i> • <i>Central Arizona Project (CAP) water; and/or</i> • <i>desalinated ocean water.</i> 	Yes	No	<p>Rosemont does not have water rights associated with CAP and can only purchase excess water allocations. Reclaimed water and desalinated ocean water will require infrastructure projects that could make this project infeasible. In addition, the water necessary for the process must be available continuously and it is unclear what the volumes might be available from any of the alternative sources.</p>	<p>Water law in Arizona is regulated by ADWR. Rosemont has the water rights to the water necessary for this project and has already been recharging CAP water in the basin. No additional work on this issue is planned.</p>
<p><i>The EIS should also consider a CAP-fed lake on the west side of the Santa Rita Mountains that could be used as the mine’s source of process water and as a public recreation facility.</i></p>	No	No	<p>Rosemont has purchased excess CAP allocations for recharge and to meet conservation goals. CAP-fed lakes will create a surface area for evaporation and will not recharge water to the basin.</p>	<p>Rosemont does not plan to do additional work on this issue.</p>

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<p>Issue: Other Alternatives for Reducing or Eliminating Impacts</p> <p><i>The EIS should examine the full range of reasonable alternatives, including but not limited to use of alternative technologies; alternative sites or alternative design of major mine facilities; a smaller project area; other viable ore bodies; different pit geometries; pit backfilling; and other alternatives that may be in whole or in part outside of the authority of the Forest Service.</i></p>	?	?	<p>In general, Rosemont owns the ore body described by the MPO, not other ore bodies. The pit geometries are determined by the economics of the material with constraints. Alternative technologies for processing ore do not exist. Pit backfilling is previously addressed.</p>	<p>This is not specific enough to address so Rosemont does not plan further action.</p>
<p><i>The EIS should evaluate the potential of re-opening closed copper mines in the region that have existing infrastructure for ore processing. This alternative would offer the potential to:</i></p> <ul style="list-style-type: none"> • <i>recycle and reuse existing facilities;</i> • <i>prevent new disturbance of Forest Service lands and reduce environmental impacts;</i> • <i>reinvigorate local economies near the closed mines.</i> 	No	No	<p>Rosemont does not own either one of the two closed facilities in the region. BHP just finished closing San Manuel so there are no existing facilities and Park Corporation owns Twin Buttes and has been doing reclamation and facilities closure for that operation.</p>	<p>Rosemont does not plan to address this further.</p>
<p><i>The EIS should consider an alternative that extends the mine's lifetime to 40–50 years, and thus reduces project-related impacts.</i></p>	Possibly	No	<p>Extending the mine life increases not reduces the impact.</p>	<p>Rosemont does not plan to address this further.</p>

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Forest Service Preliminary Alternatives / Mitigation	Workable?	Feasible?	Comment	How to address? Changes?
<p><i>The EIS should consider an alternative that provides for public acquisition of private lands in the project area via land exchange with Augusta. A land exchange could include the incorporation of the northern range of the Santa Rita Mountains within the Cienega Creek watershed into the Las Cienegas National Conservation Area, and thus provide in-perpetuity conservation of the Rosemont area.</i></p>	Unk	Unk	<p>This appears to be outside the scope of the proposal under the 1872 mining laws and other public land use laws. This also does not appear to address the issues identified.</p>	<p>Rosemont cannot address this alternative.</p>
<p><i>The EIS should consider an alternative that would use Sycamore Canyon for waste rock and tailings storage, instead of Barrel Canyon. Tailings and waste rock in Sycamore Canyon would not be visible either from SR 83 to the east or the Santa Cruz Valley to the west.</i></p>	Yes	Possibly	<p>Sycamore Canyon does not appear to be large enough to hold 1.2 billion tons of tails/waste rock at the slopes that are proposed for reclamation it is also within the SDCP biological core.</p>	<p>Rosemont requests that the Forest Service determine if this is a feasible mitigation strategy and would have to do some additional review/analysis.</p>

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<p><i>The EIS should consider an alternative in which proponent is required to install a non-porous lining under the tailings, waste rock dumps, and berms to prevent the release of processing fluids and contaminants into the environment.</i></p>	<p>Possible</p>	<p>No</p>	<p>Rosemont assumes that the Forest Service means that the tailings and the waste disposal area would be lined with a geosynthetic liner such as HDPE. Because the tailings are not saturated when they are placed and the waste rock is dry, there is little to no seepage out of either facility. In addition, geochemical test work has determined that water quality from either facility will be equal to or better than groundwater in the area. Lining the facility would not provide protection and would in fact place a barrier between the facility and the environment that would restrict water movement and not allow natural processes to occur at closure.</p>	<p>Rosemont has no plans to address this mitigation strategy.</p>

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