

# Rosemont Copper Mine

## Objection Review

**Objection # (s):** 0010-BManderscheid; 0036-Rosemont; 0048-RBarthelson; 0056-SWhitehouse; 0084-SSSR; 0090-AZGFD; 0091-PimaCounty; 0092-GFurnier

**Resource Area(s):** Surface Water Resources – General (SWR-1)

### Objection Issue:

- 0048-1: The impacts in...upper Davidson Canyon near the mine are substantial... but they minimize their impacts because they are not part of the ... lower canyon... except that as a wildlife and plant-life corridor, the water resources throughout the wash are likely to be important.
- 0056-6: Impacts to surface water quality, including Outstanding Arizona Waters, will exceed State water quality standards and are unacceptable (summarized from the original).
- 0090-1: The FEIS does not contain any disclosure or analysis of the potential effects of mining activities on downgradient surface waters, aquatic wildlife or riparian resources of Davidson Canyon or Cienega Creek.
- 0090-3: No data exists for the statement in the FEIS at 410 that “[b]oth Cienega Creek and Davidson Canyon are outside any area of direct impact from the proposed [mine] project but could be indirectly impacted by reductions in stream flow. A full analysis of impacts to these Outstanding Arizona Waters is included in the “Seeps, Springs, and Riparian Areas” resource section in this chapter”.
- 0090-17: The FEIS lacks a qualitative prediction of the potential of copper constituents in stormwater runoff from the waste rock facility and its impact on surface waters in Barrel Canyon, Davidson Canyon and Cienega Creek.
- 0090-18: The FEIS lacks a qualitative prediction of the potential of selenium, copper, lead or zinc constituents in stormwater runoff from the waste rock facility and its impact on surface waters in Barrel Canyon, Davidson Canyon and Cienega Creek.
- 0010-3: The EPA believes there is serious concern for significant degradation of waters on human health and welfare due to groundwater depletion and loss of cultural resources as well as concern over the very nature of mining; tailings, runoff of contaminated water, serious depletion of underground water levels.
- 0010-2: As nearly as I can tell, the mine will draw vast amounts of water and the threat to the already distressed wet areas will dry up the few remaining continuous streams in southeastern Arizona, including, according to the EPA, substantial loss and/or degradation of water quality and other aquatic ecosystem functions in upstream tributaries of these rare and protected aquatic resources. The proposed project site supports 101.6 acres of waters, including wetlands in the Cienega Creek watershed,

providing sediment transport and deposition downstream, energy dissipation, groundwater recharge, hydrologic and geochemical connectivity and biological connectivity to the Santa Cruz River. Davidson Canyon Wash is a rare spring-fed, low elevation desert stream supporting a variety of rare flora and fauna. At least seven endangered or threatened species occur within or adjacent to this area projecting adverse impacts as reasonably foreseeable. There is a very real threat to water quality in both of these areas.

- 0056-5: This plan fails to adequately protect the vital watersheds in the area. Surface water flow into drainages downstream of the mine will be permanently decreased and the loss of seeps, springs and riparian areas will cause permanent adverse effects that will never be undone.
- 0010-11: The Fort's (Huachuca) pumping continues at an unsustainable level and still threatens the San Pedro. If the ground water pumping is not reduced, the San Pedro River and the life it supports will disappear, which becomes more evident with the growing destruction caused by long-term drought.
- 0091-6: The County and District object to the failure to recognize in the Draft ROD the District's authority to regulate floodplain activities on private property related to the Rosemont Copper project.
- 0084-144: The FEIS concludes that any stormwater discharge would not result in an impact to the downstream Outstanding Water because ADEQ's issuance of coverage under the Multi-Sector General Permit (MSGP) would not allow it. FEIS at 473. Yet this conclusion cannot be reached until the required Storm Water Pollution Prevention Plan (SWPPP) has been submitted and accepted by ADEQ under the MSGP requirements. For the purposes of NEPA, it cannot be assumed that mitigation measures applied under the SWPPP would be fully effective without foreknowledge of the nature of the mitigation and control measures that would be employed. The failure to review and analyze these future mitigation measures, and their effectiveness, violates NEPA.
- 0036-28: Sentence states that "analysis suggests that several constituents, including sulfate, molybdenum, arsenic, sodium, and mercury may be elevated in stormwater.". Neither waste rock SPLP/MWMP leach test results nor baseline stormwater quality indicate elevated concentrations of sulfate, sodium, mercury, molybdenum, and/or arsenic in the stormwater. Stormwater will be regulated under the MSGP, which requires compliance with applicable surface water quality standards. (DROD, page 22, 2nd paragraph)
- 0036-30: There is a discussion that states: "...mine pit lake water quality would potentially exceed the aquifer quality standard for thallium and ammonia....: There is no AWQS for ammonia and aquifer water standards do not apply to man---made bodies of water. Rosemont requests that the reference to ammonia be eliminated and that the statement be made clearer so there is no confusion that the standards are used for comparison purposes only. (Volume 1, page xxx, Executive Summary, 5th paragraph)
- 0092-6: The USFS has also not required the company to guarantee the baseline flow and water quality in Ciénega Creek, a resource in which the public has a significant investment.

**Remedy Supplied by Objector** (if any):

0090-1: Conduct an analysis of constituents in waste rock stormwater runoff and compare with current existing water quality data for OAWs Davidson Canyon and Cienega Creek.

0090-3: Conduct the analysis by utilizing the existing water quality data for Lower Davidson Canyon and Cienega Creek collected by Rosemont in 2008, and the 2012-2013 surface water quality data collected in Davidson Canyon and Cienega Creek by ADEQ and turned over to SWCA by ADEQ in September 2013.

0090-17: Perform additional waste characterization for Bolsa Quartsite, Arkose and Limestone for presence of leachable copper in waste rock; determine the potential for degradation of Barrel Canyon, Davidson Canyon and Cienega Creek surface water quality standards under the applicable surface water standards (acute and chronic), and disclose the results in FEIS Tables 97, 105, 108, 111, 112 and accompanying text.

0090-18: Perform additional waste characterization to determine the potential of the waste rock to exceed Arizona surface water quality standards (acute and chronic) for selenium, copper, zinc and lead and disclose the results in FEIS Tables 68 (Summary of Effects); Table 71 (Expected Water Quality from Tailings Facility) and accompanying text.

0091-6: The FEIS must include recognition of that authority and the ROD must condition approval of the MPO on compliance with the District's floodplain regulations.

0092-6: Require a multi-billion dollar deposit in a USFS escrow account to cover potential environmental and economic damages to others and require the company guarantee the baseline flow and water quality in Ciénega Creek.

**Law, Regulation and/or Policy:** Council on Environmental Quality (CEQ) Regulations at 40 CFR 1500-1508; Clean Water Act including Section 303, 401 (State Water Quality Certification), 402 (Arizona Pollutant Discharge Elimination System), and 404; Executive Order 11988 – Floodplain Management; Executive Order 11990 – Wetlands; Forest Service Manuals 2520, 2530, and 2880; Forest Service Technical Guides FS-881 and FS-990a.

**Review Team Member Response:**

Response to objection issues 0010-2, 0048-1, 0056-5, 0056-6, 0084-144, 0090-1, 0090-3, 0010-3, and 0092-6

The objectors contend the proposed mine will impact the water quantity, water quality, and the systems (i.e., Outstanding Arizona Water, riparian resources and aquatic wildlife) supported by these resources in Davidson Canyon and along Cienega Creek, downstream of the mine, and that the FEIS does not disclose potential effects. The objectors also contend surface water quality downstream of the mine, including Outstanding Arizona Waters, will exceed state water quality standards and suggest the Forest Service violated NEPA by failing to review and analyze measures to mitigate state water quality standard exceedances prior to completing the FEIS.

In Chapter 3 of the FEIS [PR 047511\_3, 4, pp. 139-1131], information about each resource (i.e., Surface Water Quantity, Biological Resources, etc.) is presented, including a discussion of how the resource could be impacted by the proposed mining activities. The location of stream reaches of concern are displayed in Figure 67; and Table 106 further describes their location, flow regime, and whether they have special status [PR 047511\_3, pp. 490-491].

The DROD [PR 047504] and FEIS [PR 047511\_2, pp. 30-43; and PR 047511\_6, pp. B-1 – B-102] contain information on strategies to mitigate and monitor impacts of the mining activities. The FEIS discloses that there will be unavoidable adverse effects to resources [PR 047511\_4, pp. 1134-1137] and irreversible and irretrievable commitments of resources [PR 047511\_4, pp. 1137-1143].

The Forest Service reviewed the draft stormwater pollution prevention plan prepared by Rosemont Copper to gain an understanding of expected stormwater controls and stormwater sampling points and acknowledges the document has not been approved by ADEQ. As such, it is expected to be modified based on their review [PR 047511\_3, p. 446]. The Responsible Official also acknowledges ADEQ's authority to set and enforce water quality standards under the Clean Water Act in Arizona. To that end, the Forest Service has worked closely with ADEQ (a formal cooperating agency) in the development of the FEIS. While the Forest Service may move forward with finalizing the EIS, they have made it clear to Rosemont Copper that the MPO will not be approved, authorizing them to begin ground disturbing activities, until all certifications and approvals required by other federal agencies, state agencies, and local governments have been completed. A list of permits, licenses, and authorizations needed to implement the decision are presented in the DROD [PR 047504, pp. 15, and 44-45].

The Forest Service has met the requirements of NEPA by acknowledging and deferring the determination of compliance with the CWA to the appropriate regulatory authority (ADEQ or the Corps), while still disclosing potential impacts to these resources. The Forest Service has also clearly identified that the mine may not be implemented without all permits being issued by ADEQ and the Corps.

The objectors also note that the Forest Service has also not required the company to guarantee the baseline flow and water quality in Ciénega Creek. The comprehensive mitigation and monitoring plan in the FEIS [PR 047511\_6, Appendix B] is one method for compliance with both the CWA and Forest Service requirements to minimize impacts on Forest Service surface resources. The plan incorporates mitigation and monitoring components that are required from all agencies with jurisdiction to require mitigation, including the Corps, USFWS, and ADEQ, as well as mitigation the Forest Service itself can require the company to minimize impacts to Forest Service surface resources [PR 047511\_6, Appendix B, pp. B3 – B6]. All mitigation specific to surface water quantity, surface water quality, and riparian resources is listed and analyzed for effectiveness in the FEIS [PR 047511\_3, pp. 439-442, 480-484, 566-569]. Through this plan, the Forest Service has minimized impacts to surface resources to the extent allowable. However, the Forest Service does not have authority to require mitigations for surface resources beyond the boundaries of the Forest Service, such as those requested by the objectors.

### Response to objection issues 0090-17 and 0090-18

The objector contends the FEIS lacks qualitative predictions of the potential of assorted constituents (i.e., copper, lead, selenium, etc.) in stormwater runoff from the waste rock facility and its impacts on surface water in Barrel Canyon, Davidson Canyon and Cienega Creek effects. The Forest Service has a responsibility for proper disclosure of impacts under NEPA. According to 40 CFR 1500.22, the agency will include within the environmental impact statement:

- (1) incomplete or unavailable information,
- (2) the relevance of the incomplete or unavailable information to evaluating significant adverse impacts, and
- (3) a summary of credible scientific evidence that is relevant to evaluating such impacts, and the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.

40 CFR 1502.24 states agencies should:

- (1) assure the scientific integrity of the analyses and discussion,
- (2) describe methodologies used, and
- (3) cite references or sources used.

The Surface Water Quality Section in the FEIS describes the stormwater analysis procedures conducted in preparing the EIS and summarizes existing base flow data for Davidson Canyon and Lower Cienega Creek as well as baseline stormwater quality samples for Barrel Canyon in Tables 100-102 [PR 047511\_3, pp. 453-461]. This section also predicts stormwater water quality with respect to selenium, lead, copper and zinc concentrations [PR 04711\_3, pp. 471-477]

The objector specifically mentions the prediction of copper, lead, selenium, and zinc constituents in stormwater runoff from the waste rock facility. This analysis is included in the FEIS [PR 047511\_3, pp. 470-477]; expected copper, lead, selenium, and zinc concentrations in stormwater runoff from waste rock (both dissolved and total) are included in Table 105, pages 475-477. The objector remedy also calls for performance of additional waste rock characterization for Bolsa Quartzite, Arkose, and Limestone for the presence of leachable copper. The project record contains leaching tests for these geologic formations specifically for copper [PR 012370] and they were utilized for the surface water quality analysis [PR 045677]. The objector also specifically requests that predicted concentrations be compared to applicable surface water quality standards. The stormwater runoff water quality is compared in the FEIS to the applicable surface water quality standards in Barrel Canyon [PR 047511\_3, p. 472].

The Responsible Official addresses this concern in the DROD as follows, "... the seepage from the tailings facility is expected to meet aquifer water quality standards and for all alternatives stormwater runoff from the waste rock facility would not exceed applicable surface water quality standards in Barrel Canyon, except for some water quality parameters that are already observed in stormwater runoff (silver, lead, mercury). The selected action has less risk of unplanned releases due to the removal of the heap leach facility. I recognize that protection of water quality is of great importance and that modeling and predictions have some uncertainty; therefore, I have incorporated a wide variety of monitoring measures to ensure that any unexpected changes in water quality are identified" [PR 047504, p. 14].

With regard to this objection, the Forest Service complied with the CWA based on information found in the FEIS, DEIS, and memo, "Revised Analysis of Surface Water Quality." The memo [PR 045677] fully addresses issues of analysis adequacy concerning water quality in the riparian areas and Outstanding Arizona Waters (OAWs) and the analysis derived from this effort is contained in the FEIS with a level of scientific effort that meets the requirements of NEPA. With respect to potential impacts of surface water quality and OAWs, the analysis meets the disclosure requirements under NEPA; however, the FEIS analysis does not need to conclude that no impacts will occur, as this authority lies with ADEQ.

#### Response to objection issue 0010-11

The objector is concerned if pumping of ground water by Fort Huachuca is not reduced it will threaten the San Pedro River and the life it supports.

The San Pedro River basin is hydrologically separate from the basin where the mine is located. As such, effects of the mine proposal on the basin are not included in the FEIS. However, research from the San Pedro River basin did inform the riparian analysis. The FEIS recognizes the San Pedro River as providing, "...a pertinent analog for the project area, particularly for Cienega Creek and Davidson Canyon. Not only is the San Pedro River geographically close (approximately 20 miles eastward, in the next adjacent valley), but it shares similar elevations (roughly 4,500 to 3,500 feet above mean sea level) and climatology (approximately 12 to 20 inches of rain per year). The San Pedro River also encompasses a wide variety of hydrologic conditions, and, like Cienega Creek, it represents a riparian corridor passing through an alluvial valley with a strong dependence on groundwater resources" [PR 047511\_3, p. 497].

#### Response to objection issue 0091-6

The objector (Pima County) objects to the Coronado's failure to recognize in the ROD the Pima County Regional Flood Control District's authority to regulate floodplain activities on private property related to the Rosemont Copper project.

The FEIS recognizes that other agencies will have a role in issuing a variety of required permits and authorizations [PR 047511\_2, pp. 56-59, 94 and 047511\_3, pp. 406-408, and 448]. Table 3 in the FEIS identifies permits and authorizations that may be applicable to the proposed Rosemont Copper Mine and notes Pima County Regional Flood Control District as having the authority to issue a floodplain use permit "...for activities that might obstruct, retard, or divert the flow of water in a watercourse. Required for private lands in unincorporated areas of Pima County" [PR 047511\_2, p. 59].

Appendix B of the FEIS notes, "The Forest Service has no authority, obligation, or expertise to determine or enforce compliance with other agencies' laws or regulations. The Forest Service seeks to coordinate with other agencies to approve a legally compliant final mine plan of operations (MPO). However, it is the operator's responsibility to ensure that its actions comply with applicable laws" [PR 047511\_6, p. B-3]. The DROD recognizes that other agencies may require permits and authorizations and explains that Rosemont Copper shall comply with all

current and future permits including those issued by other regulatory agencies including Pima County [PR 047504, pp. 31, 33, and 44].

#### Response to objection issue 0036-28

The objector (Rosemont Copper) requests the basis for the statement in the DROD "...analysis suggests that several constituents, including sulfate, molybdenum, arsenic, sodium, and mercury may be elevated in stormwater..." [PR 047504, p. 22].

The statement referenced above in the DROD, is summarized from the Seeps, Springs and Riparian Areas section in the FEIS [PR 047511\_3, p. 549, para 3] and Table 112 Summary of screening analysis to identify potential problem constituents in mine runoff [PR 047511\_3, pp. 550-552], which was previously summarized from SWCA Draft Memorandum, dated August 25, 2013 [PR 045677].

The surface water quality analysis was prepared with input from other agencies. A PAFEIS (Preliminary Administrative FEIS) was prepared by SWCA in July 2013. The PAFEIS responded to comments from the U.S. Environmental Protection Agency (USEPA) and the Arizona Department of Environmental Quality (ADEQ) on the DEIS [PR 015781]. Additional comments were received on the PAFEIS from USEPA and ADEQ [PR 047453, PR 047457]. SWCA draft memorandum dated August 25, 2013 [PR 045677] details the revised surface water quality analysis included in the FEIS in response to these comments. The analysis of surface water quality included in the FEIS is responsive to and compliant with USEPA and ADEQ collaboration. The FEIS analysis of surface water quality was reasonable and sufficient to facilitate an informed decision.

#### Response to objection issue 0036-30

The objector (Rosemont Copper) objects to the statement "...mine pit lake water quality would potentially exceed the aquifer quality standard for thallium and ammonia..." [Vol. 1, Executive Summary, p. xxx] when there is no AWQS for ammonia and aquifer water standards do not apply to man-made bodies of water. The objector's claim is validated in the FEIS section on Groundwater Quality and Geochemistry [PR 047511\_3, p. 389] and Table 68 Summary of effects [PR 047511\_3, p. 369]. The objector requests the reference to ammonia be eliminated and the statement be made clear, so there is no confusion that the standards are used for comparison purposes only [Vol. 1, Executive Summary, p. xxx].

An errata sheet dated February 18, 2014 [PR 047940] changes this statement in the executive summary, p. xxx, as follows:

"As modeled, mine pit lake water quality would potentially exceed the aquifer quality standard for thallium and ammonia and..." This should be changed as follows: "As modeled, mine pit lake water quality would potentially exceed the aquifer quality standard for thallium and ammonia, the surface water quality standard for ammonia, and..."

**Recommended Remedy by Review Team Member** (if any): The remedies suggested by the objectors are not warranted. No remedies are required.

**Review Team Member:** Roy Jemison – EAP/WSA

# Rosemont Copper Mine

## Objection Review

**Objection # (s):** 0084-SSSR; 0104-PascuaYaquiTribe

**Resource Area(s):** Surface Water Resources – Legal (SWR-3)

**Objection Issue:**

- 0084-162: Discharges from mine diversion channels must be covered by an NPDES permit and be considered when determining whether a project meets all water quality requirements. P. 50-51. The FEIS does not fully review the quality of the waters that will be discharged from all culverts and similar Project point sources - in violation of NEPA.
- 0084-161: The Project Fails To Comply With The Clean Water Act And All Environmental Law, Standards, And Requirements. p. 45. Also, the Project cannot be approved without the required CWA Section 401 Certification. (p. 49). Without the required CWA permits (and Section 401 Certification), the USFS cannot approve the Plan of Operations. P. 50. The FEIS and Draft ROD's failure to ensure that all water quality standards, including all beneficial uses, will be protected at all times violates CWA Section 313, as well as the Organic Act and Part 228 regulations.
- 0104-4: When discussing the mine's adverse effects to the natural world, including a resource as precious as water, it is crucial for the USFS to consider the extent to which the proposed mining project impacts water within the regional area and the federal reserved, state, and aboriginal water rights of Tribes, including but not limited to the Pascua Yaqui Tribe.
- 0084-150: The USFS attempts to shift responsibility for dealing with expected surface water quality problems to the ADEQ storm water permitting process. The Coalition objects to any USFS decision to approve Rosemont Copper Project facilities when the agency knows the project will result in violations of state-adopted water quality standards. The Coalition particularly objects to approval of the project when it is known that the project will discharge bioaccumulative pollutants such as mercury and selenium.
- 0084-158: We have significant concerns regarding this statement in the FEIS: "based on discussions with ADEQ on preliminary drafts of the FEIS, it was made clear to the Coronado that the responsibility and jurisdiction for assessing whether the mine meets anti-degradation criteria lie with ADEQ. The person seeking authorization for a regulated discharge to a tributary to, or upstream of, an Outstanding Arizona Water (in this case Rosemont Copper) has the responsibility to demonstrate to the State of Arizona that the regulated discharge will not degrade existing water quality in the downstream Outstanding Arizona Water. This demonstration by Rosemont Copper, and determination by the State of Arizona, has not yet been completed." (FEIS at 549.) Thus, it is incorrect for the USFS to rely on ADEQ and assume that this project does not violate state

standards, when ADEQ itself does not even know whether the project will meet the standards.

**Remedy Supplied by Objector (if any):**

0104-4: Select the no action alternative.

0084-150: Include discussion of additional mitigation measures to address discharges of storm water runoff or seepage that are predicted to violate surface water quality standards for dissolved silver, dissolved cadmium, total and dissolved lead, dissolved mercury, and total selenium.

0084-158: The USFS must issue a revised DEIS that indicates the outstanding questions regarding Rosemont's compliance with state water standards, and that addresses the issues we raise above.

**Law, Regulation and/or Policy:** Council on Environmental Quality (CEQ) Regulations at 40 CFR 1500-1508; Clean Water Act (CWA), Sections 404 and 303; Executive Order 11988 – Floodplain Management; Executive Order 11990 – Wetlands; Forest Service Manual (FSM) 2520, 2530, and 2880; FS-881 and FS-990a (Technical Guides); CWA – Section 401 State Water Quality Certification, CWA – Section 402 Arizona Pollutant Discharge Elimination System; Arizona Pollutant Discharge Elimination system (Title 18 Arizona Administrative Code Chapter 9); Arizona Water Quality Standards (Title 18 Arizona Administrative Code Chapter 11); San Xavier Reservation Water Protection Program (Title 45 Arizona Administrative Code Chapter 16; 45-2711)

**Review Team Member Response:**

Response to objection issue 0104-4

The objector contends it is crucial for the Forest Service to consider the extent to which the proposed mining project impacts water within the regional area and the federal reserved, state, and aboriginal water rights of Tribes, including but not limited to the Pascua Yaqui Tribe.

The Forest Service acknowledges that federal land management agencies are required to consult with American Indian tribes not only under mandated law but also under the U.S. Government's trust responsibility to tribal nations. The Pascua Yaqui Tribe is recognized by the Forest Service as a stakeholder with interest in and association to the Santa Rita Mountains [PR 047504, pp. 54-55].

The contention is that the FEIS does not adequately address the impacts to American Indian tribe water resources. Impacts to American Indian water resources are addressed in several ways. Under ARS 45-2711, which implements the Tohono O'odham Settlement Agreement, special restrictions are enacted to ensure that new wells do not impact the Tohono O'odham Nation. As shown in the FEIS [PR 047511\_3, p. 326], the West side pumping cone of depression at 20 years will produce 10 feet of drawdown at the Desert Diamond casino. Ultimately, greater than 10 feet of drawdown will occur from mine pumping at the casino [PR 047511\_3, p. 331]. The legal requirements concerning groundwater drawdown and the Tohono O'odham Nation are described

in the FEIS and analyzed [PR 047511\_3, p. 319, 339]: “Under these statutes, the ADWR in general may not approve a well that results in a drawdown of more than 10 feet after 5 years of pumping at the Tohono O’odham reservation boundary. When applying for well drilling permits, Rosemont Copper would need to provide sufficient demonstration to the ADWR of compliance with these restrictions. However, based on modeling conducted to support the FEIS and described in this section, it does not appear that the Rosemont Copper water supply would violate these statutory restrictions. Further, the groundwater wells already drilled by Rosemont Copper in the Sahuarita area were reviewed and approved by the ADWR.” The effect is described in the FEIS [PR 047511\_3, p. 339]. Modeled drawdowns greater than 10 feet are projected at the Desert Diamond Casino and within the Nation boundary after 20 years; the regulatory requirement is limited to 5 years. The modeled estimates of pumping impacts are compliant with Arizona statutes regarding protection of groundwater resources of the Tohono O’odham Nation.

No such rules are enacted specifically for the Pascua Yaqui; however, the Pascua Yaqui reservation is located on the opposite side of the Tohono O’odham San Xavier reservation from the pumping and the rules are therefore, equally protective of the Pascua Yaqui.

The FEIS has also analyzed the effects to water resources in general, including impacts to wells and the aquifer on the west side of the Santa Rita Mountains near the Tohono O’odham and Pascua Yaqui, impacts to sacred springs, and socioeconomic and environmental justice impacts related to water resources.

The potential impact of reduced water supply to well owners on the east side and west side of the Santa Rita Mountains is acknowledged in the FEIS as an issue [PR 047511\_2, pp. 16- 17], and analyzed [PR 047511\_3, pp. 288-362]. The economic effects from groundwater impacts and Environmental Justice issues are also covered in the FEIS [PR 047511\_4, pp. 1107-1124]. Sacred spring impacts were raised as a significant issue in the FEIS [Issue 6C.1 and 6C.2, PR 047511\_2, p. 22]. The number of sacred springs potentially impacted is identified in the FEIS [PR 047511\_4, p. 1022]. The Forest Supervisor has chosen the alternative that impacts the lowest number of sacred springs [PR 047504, p. 19]. There is also provision for visiting the potentially affected springs before mining operations begin [PR 047511\_6, p. D-9].

The FEIS discloses, as required under NEPA, impacts to American Indian community water supplies, and the analysis indicates that pumping is consistent with existing Arizona statutes.

#### Response to objection issue 0084-161

The objector contends the project fails to comply with the Clean Water Act and all environmental law, standards and requirements.

Under the General Mining Law, claimants have a statutory right to conduct mining activities in compliance with Federal and State statutes and regulations [PR 047511\_2, p. 7]. The Rosemont Copper Company is exercising its statutory rights to conduct mining activities, and the analysis of the MPO is in compliance with statutes and regulations. Notwithstanding this statutory right, mining operations are subject to further regulation. Forest Service mining regulations under 36

CFR 228.8(a)-(e) address requirements for environmental protection of air and water quality, scenic values, and fish and wildlife habitat, and disposal and treatment of solid waste. Mining operations are to be conducted in a way that minimizes adverse environmental impacts on National Forest surface resources and comply with Federal and State air quality standards, including the Clean Air Act; and applicable Federal and State water quality standards, including the Federal Water Pollution Control Act (Clean Water Act).

The State of Arizona has specific jurisdiction over water quality deriving from the Clean Water Act Section 401 (33 United States Code 1341) and Section 402 (33 United States Code 1342). Arizona regulations (Title 18 Arizona Administrative Code Chapter 11) identify surface water standards that must be met, including those for Outstanding Arizona Waters. Arizona administers Section 402 authority through the Arizona Pollutant Discharge Elimination System (Title 18 Arizona Administrative Code Chapter 9), which requires permitting for discharges to waters of the U.S. This jurisdiction includes the requirement for a permittee to undertake corrective measures in the event of violations.

The State of Arizona has the sole authority to make a determination under Clean Water Act Section 401 concerning a proposed project and potential actions that may violate State Water Quality regulations by degrading Outstanding Arizona Waters (OAWs) [PR 047511\_3, p. 503]. The FEIS states that no federal permit action may be approved if the state denies certification [PR 047511\_3, p. 449]. The DROD also states that a 401 certification must be issued prior to approval of a final MPO [PR 047504, p. 44], and that the Forest Supervisor consulted with the Arizona Department of Environmental Quality (ADEQ) about the likelihood of 401 certification being issued [PR 047504, p. 15]. The 401 permit also may require mitigation measure be implemented by the permittee under certain conditions.

The objector is referred to the ROD [PR 047504, pp. 44-46] and FEIS [PR 047511\_2, pp. 59-61] which describes the permits, licenses and authorizations needed to implement the decision. In addition, it describes the sequence of events in the project approval and implementation process. Rosemont will have to obtain all state, local government and other federal agency approvals and provide them to the Forest Service before the Forest Service approves the MPO which gives Rosemont the go ahead to begin ground disturbing activities. By adhering to the process outlined in the FEIS and Draft ROD the Forest will be in compliance with the CWA, environmental laws, standards and requirements. Keeping open lines of communication with the cooperating agencies will also ensure the project is kept in compliance [PR 047504, p. 55].

#### Response to objection issue 0084-162, 84-150, and 84-158

The objector contends the FEIS does not fully review the quality of the waters that will be discharged from all culverts and similar Project point sources, in violation of NEPA. The objector contends the Forest Service attempts to shift responsibility for dealing with expected surface water quality problems to the ADEQ storm water permitting process. The Coalition objects to any USFS decision to approve Rosemont Copper Project facilities when the agency knows the project will result in violations of state-adopted water quality standards. The objector objects to the Coronado yielding the responsibility and jurisdiction for assessing whether the mine meets anti-degradation criteria to ADEQ.

In order to determine whether water quality standards are met, the stormwater permit requires water quality monitoring of stormwater discharges at any outfall location (i.e., where the facility discharges into a WUS, including dry washes) [PR 047511\_2, p. 473]. The objector is referred to the ROD [PR 047504, pp. 44-46] for clarification of the permits and processes this project must comply with to be operational. By having the project demonstrate that it is in compliance with State water quality laws and regulations the Forest Service will not be in violation of NEPA from a water quality stand point.

The State of Arizona has delegated authority to issue permits under Clean Water Act Section 402 for discharge of stormwater to waters of the U.S. [PR 047511\_3, p. 449-450] and has issued authorization for the project [PR 045094]. The Forest reviewed the Stormwater Pollution Prevention Plan submitted as part of the AZPDES authorization, which contains many of the operational details for compliance with the permit, [PR 046071].

The FEIS analyzes the water quality of stormwater that comes into contact with waste rock [PR 047511\_3, pp. 471-477]. This analysis is pertinent to any stormwater allowed to leave the site, regardless of point of discharge. As noted in the FEIS, other potential discharges would not be released [PR 047511\_3, p. 471]: “The heap leach and dry-stack facilities would not be exposed to surface runoff, nor would the plant site or processing facilities. Precipitation falling on these areas during operations would be fully contained and not released downstream, and postclosure, the heap leach (except for the Barrel Alternative) and dry-stack tailings facility would be capped with waste rock.”

The FEIS also analyzes potential downstream impacts to Outstanding Arizona Waters, in addition to identifying that ADEQ has the authority to issue the 401 water quality certification [PR 047511\_3, pp. 547-555].

Compliance with Section 402 of the CWA is under the jurisdiction of the State of Arizona, and permit authorization has been issued. The ROD clearly states that the project cannot be implemented without issuance of water quality certification under Section 401 of the CWA. The Forest has not relied solely on these authorities, but has also met the requirement for disclosure of potential impacts by analyzing the water quality of runoff contacting waste rock, which is applicable to all expected discharges from the mine site, and analyzing potential impacts to Outstanding Arizona Waters.

**Recommended Remedy by Review Team Member** (if any): The remedies suggested by the objectors are not warranted. No remedies are required.

**Review Team Member:** Roy Jemison – EAP/WSA

# Rosemont Copper Mine

## Objection Review

**Objection # (s):** 0084-SSSR; 0091-PimaCounty

**Resource Area(s):** Surface Water Resources – Mitigation (SWR-4)

**Objection Issue:**

- 0091-11: Lack of detail in mitigation and monitoring plans concerning actions to be taken to restore damages of downstream water and riparian resources.
- 0091-17: Rosemont Copper still intends to capture and retain surface water from watersheds northeast of the tailings, west of the mine pit, and south of the waste rock disposal area. Instead, this water should be released downstream to mitigate reductions in streamflows and impacts to riparian vegetation.
- 0084-155: The FEIS does not adequately support the statement that mitigation measures compensate for impacts to waters of the U.S. The proposed mitigation is grossly inadequate to compensate for mine impacts. The compensatory mitigation proposals do not account for the interrelationship of the headwater streams and the surrounding terrestrial ecology and will not replace the high quality resources in the Cienega Creek watershed. The proposed mitigation is insufficient to meet the restrictions on discharge required by the Guidelines at 40 CFR 230.10(d) and 40 CFR 230.12(a)(3)(iv). A complete mitigation plan that satisfies each element of the 2008 Mitigation Rule will be necessary to comply with the CWA (including Section 404). Also, such revised mitigation plans should have been in the Draft EIS, and as such any such consideration in the FEIS without full public review beforehand violates NEPA. The USFS' failure to prevent or adequately mitigate against such devastating impacts (dewater or significantly reduce the flows in the area's surface waters, springs, and seeps with permanent, and severe impacts to fish, wildlife, aquatic life, recreation, and water quality) violates a host of federal and state laws, regulations, and policies, including the Clean Water Act, the Endangered Species Act, the Organic Act/Part 228, the NFMA, etc. For the loss of springs/seeps and surface and ground waters, the agency's plan to simply monitor the losses before even considering corrective action (and even there the agency fails to acknowledge its authorities to prevent these impacts as noted herein) not only fails to protect these resources, it violates NEPA's mandate that mitigation measures be fully reviewed in the Draft and Final EISs for public review.
- 0091-12: Unclear description of how stormwater flows will be monitored after mine closure to assess post-closure and mitigation effects on downstream riparian vegetation and water resources.
- 0084-156: Surface water quantity and sediment monitoring: (FEIS Appendix B at B-16.) Given the importance of sediment monitoring as a verification of the degree of

storm/surface water control and effectiveness, and as a general indicator of the degree of sediment impairment or reduction, monitoring once every five years is grossly insufficient.

**Remedy Supplied by Objector** (if any):

0091-17: Surface waters collected in Areas 1 and 2 certainly do not have to be captured and held in PCA2 and PCA3. These waters can, and should, be collected and transferred via a continuous perimeter drainage channel, and released downstream into the Trail Creek - Barrel Canyon drainage system as a fundamental stormwater management component of the facility operational and postclosure condition. The Forest Service should require Rosemont Copper to professionally design, and construct, an approximate 5000 ft long stormwater management channel along the northeastern perimeter of the Tailings mound to collect surface waters from the lower eastern side slope (Area 3 on Objection Figure 1). Surface waters collected along the base of this slope should be routed to the tailings mound side slope stormwater channel shown at location SW-3, for transfer into the northern Wrap-A-Round channel and release in perpetuity at the channel outlet into downstream Barrel Canyon.

0084-115: The USFS cannot approve any of the action alternatives, and the FEIS and Draft ROD must be remanded back to the Coronado.

0084-156: Require that sediment monitoring occurs at least annually and that the testing should occur after or near the end of the typical monsoon season for the Rosemont/Tucson area to best access the impact or degree of annual differences. The agency should also require a trend analysis for this mitigation plan with an appropriate explanation as part of the annual Rosemont multi-agency task group reporting requirements.

**Law, Regulation and/or Policy:** Clean Water Act including Section 303, 401 (State Water Quality Certification), 402 (Arizona Pollutant Discharge Elimination System), and 404; Endangered Species Act of 1973, as Amended; Executive Order 11988 – Floodplain Management; Executive Order 11990 – Wetlands; 40 CFR 230; Forest Service Manuals 2520, 2530, and 2880; Forest Service Technical Guides FS-881 and FS-990a.

**Review Team Member Response:**

Response to objection issue 0091-11

The objector contends there is a lack of detail in the mitigation and monitoring plans concerning actions to restore damages of downstream water and riparian resources.

The Draft Record of Decision [PR 047504, pp. 30-43] spells out in detail the mitigation measures, frequency of monitoring, and measures to be taken by Rosemont Copper, as well as specific compliance references.

In addition, the Forest Service chose to incorporate an adaptive management approach to monitoring, in order to avoid predicting and requiring actions that may or may not be effective if

a problem does occur during operations. Adaptive management is a key component of many of the mitigation and monitoring measures [PR 047511\_6, Appendix B]: FS-SR-01 (p. B-8 – B-11); FS-SR-02 (p. B-11 – B-13); FS-BR-04 (B-42 – B-44); FS-BR-16 (B-43), and OA-SW-01 (B-88 – B-99). Adaptive management is also a key component in the Biological Opinion [PR 047511\_7, Appendix F, pp. 31, 33, 35, 47, 49, 51, 57, 60, 93, 98-100, 111, 139, 141, 167, 205, 223-224, 267, and 288.]

The adaptive management approach is described in the FEIS [PR 047511\_2, pp. 95-97], and would consist of a multi-jurisdictional review team to analyze data and propose recommendations to the Forest Supervisor for necessary mitigation actions. This approach is responsive to Forest Service guidance as it would ensure effective mitigation for Forest Service surface resources, if needed.

#### Response to objection issue 0091-12

The objector contends that the description of how stormwater flow will be monitored after mine closure to assess post-closure and mitigation effects on downstream riparian vegetation and water resources is unclear.

In consideration of the uncertainty associated with predicting long-term impacts to stream flow, three monitoring components have been incorporated into the “Mitigation and Monitoring Plan.” [PR 047511\_3, p. 545-546]. The monitoring includes:

- **Monitoring to determine impacts from pit dewatering on downstream sites in Barrel and Davidson Canyons (FS-BR-22).** Monitoring would be conducted of surface water, alluvial groundwater, and deeper groundwater at sites in Barrel and Davidson Canyons. Several locations have already been installed and are being actively monitored, whereas others would require access from landowners [PR 047511\_6, B-48 – B-50].
- **Periodic validation and rerun of groundwater model throughout life of mine (FS-BR-27).** This measure would involve basic data collection of water levels, meteorological data, and water balance components, which would allow for the predictions of groundwater impacts to be revised based on actual hydrologic observations [PR 047511\_6, B-53 – B-55].
- **Continued operation and data gathering of USGS flow gage that would provide data for surface water flows downstream of the mine site (RC-SW-01).** Rosemont Copper would annually fund the USGS to operate and maintain the existing flow gage at Barrel Canyon for at least 5 years [PR 047511\_6, pp. B-93 – B-94].

The protocol which specifically addresses the post mining monitoring is RC-SW-01. The other two protocols are important to note in that they help provide baseline data for comparison of post mine conditions. Measure RC-SW-01 clearly states that “Funding would continue for at least 5 years after mining and processing operations cease, or until closure of the aquifer protection permit, whichever is longer” [PR 047511\_6, Appendix B, p. B-94].

Response to objection issue 0084-155

The objector contends the FEIS does not adequately support the statement that mitigation measures compensate for impacts to waters of the U.S., and that the proposed mitigation is grossly inadequate to compensate for mine impacts. In addition, it does not support guidelines at 40 CFR 230.10, the CWA and could violate NEPA.

With respect to mitigation of water or riparian resources, there are legal and regulatory requirements under Forest Service mining regulations (36 CFR 228), Section 404 of the Clean Water Act (CWA) under the authority of the U.S. Army Corps of Engineers (Corps), authorities under Sections 401 and 402 of the CWA delegated to the State of Arizona, and project components brought forward under Endangered Species Act consultation and incorporated into the Biological Opinion either as applicant-proposed conservation measures or terms and conditions imposed in the Biological Opinion.

Under the General Mining Law, claimants have a statutory right to conduct mining activities in compliance with Federal and State statutes and regulations [PR 047511\_2, p. 7]. The Rosemont Copper Company is exercising its statutory rights to conduct mining activities, and the analysis of the MPO is in compliance with statutes and regulations. Notwithstanding this statutory right, mining operations are subject to further regulation. Forest Service mining regulations under 36 CFR 228.8(a)-(e) address requirements for environmental protection of air and water quality, scenic values, and fish and wildlife habitat, and disposal and treatment of solid waste. Mining operations are to be conducted in a way that minimizes adverse environmental impacts on National Forest surface resources and comply with Federal and State air quality standards, including the Clean Air Act; and applicable Federal and State water quality standards, including the Federal Water Pollution Control Act (Clean Water Act).

As part of CWA Section 404 individual permit requirements for dredge and fill of waters of the United States, a Habitat Mitigation and Monitoring Plan (HMMP) must be prepared in accordance with the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency's (EPA) "Final Rule for Compensatory Mitigation for Losses of Aquatic Resources" (33 CFR Parts 325 and 332 and 40 CFR Part 320; published in 73 Fed. Reg. 19594-19705).

The State of Arizona has specific jurisdiction over water quality deriving from the Clean Water Act Section 401 (33 United States Code 1341) and Section 402 (33 United States Code 1342). Arizona regulations (Title 18 Arizona Administrative Code Chapter 11) identify surface water standards that must be met, including those for Outstanding Arizona Waters. Arizona administers Section 402 authority through the Arizona Pollutant Discharge Elimination System (Title 18 Arizona Administrative Code Chapter 9), which requires permitting for discharges to waters of the U.S. This jurisdiction includes the requirement for a permittee to undertake corrective measures in the event of violations.

The State of Arizona has the sole authority to make a determination under Clean Water Act Section 401 concerning a proposed project and potential actions that may violate State Water Quality regulations by degrading Outstanding Arizona Waters (OAWs) [PR 047511\_3, p. 503].

The FEIS states that no federal permit action may be approved if the state denies certification [PR 047511\_3, p. 449]. The DROD also states that a 401 certification must be issued prior to approval of a final MPO [PR 047504, p. 44], and that the Forest Supervisor consulted with the Arizona Department of Environmental Quality (ADEQ) about the likelihood of 401 certification being issued [PR 047504, p. 15]. The 401 permit also may require mitigation measure be implemented by the permittee under certain conditions.

On October 11, 2011, Rosemont submitted a CWA Section 404 permit application to the Corps requesting a Section 404 permit to discharge fill materials into potential waters of the United States in connection with proposed project activities [PR 015734]. Subsequently, additional package components were submitted to the Corps. These include the 404(b)(1) alternatives analysis [PR 044793, also included as Appendix A of the FEIS PR 047511], and mitigation components proposed in the HMMP. Note that the full HMMP has not been submitted to the Forest Service; analysis was based on a summary of expected HMMP components [PR 018989] as well as analysis of these components as part of Endangered Species Act consultation [PR 018947]. The Biological Opinion [PR 047079 also included in PR 047511\_7, Appendix F] incorporates the proposed conservation measures derived from the HMMP summary documents, as well as other applicant-proposed conservation measures.

The comprehensive mitigation and monitoring plan in the FEIS [PR 047511\_6, Appendix B] is one method for compliance with both the CWA and Forest Service requirements to minimize impacts on Forest Service surface resources. The plan incorporates mitigation and monitoring components that are required from all agencies with jurisdiction to require mitigation, as described above, including the Corps, USFWS, and ADEQ, as well as mitigation the Forest Service itself can require minimizing impacts to Forest Service surface resources [PR 047511\_6, Appendix B, pp. B3-B6]. All mitigation specific to riparian resources is listed and analyzed for effectiveness in the FEIS [PR 047511\_3, pp. 566-569]. Through this plan, the Forest Service has minimized impacts to surface resources to the extent allowable.

The objector specifically notes that the mitigation proposed is “grossly inadequate to compensate for mine impacts.” The Forest Service does not have the authority or jurisdiction to require mitigation to fully compensate for all mine impacts. The Corps does have the authority to require compensation for impacts to waters of the U.S., and the Forest Service is compliant with the CWA by incorporating all mitigation required by the Corps. However, the FEIS discloses that the adequacy of the proposed mitigation to compensate for impacts to waters of the U.S. lies solely with the Corps [PR 047511\_3, p. 568]: “It should also be noted that sufficiency of the mitigation on the Davidson Canyon parcels or Sonoita Creek Ranch to offset impacts to jurisdictional WUS has yet to be determined by the USACE” and [PR 047511\_3, p. 569]: “It should also be noted that sufficiency of the mitigation activities on Cienega Creek to offset impacts to jurisdictional WUS, either from transfer of water rights or implementation of conservation funds, has yet to be determined by the USACE... It should also be noted that sufficiency of the mitigation proposed at Pantano Dam and in the stream channel downstream to offset impacts to jurisdictional WUS has yet to be determined by the USACE.”

### Response to objection issue 0091-17

The objector contends surface runoff water currently planned to be captured and held on the mining site should be released downstream to mitigate reductions in stream flows and impacts to riparian vegetation.

The FEIS describes in detail how, where and why stormwater will be managed for the proposed (Barrel) alternative [PR 047511\_3, pp. 424-426]. The Barrel alternative was revised based on feedback from the public to retain less water on site, thus making it available for downstream riparian resources [PR 047095, PR 017349]. Where possible, diversions have been designed to minimize the amount of water retained on site by routing water around process areas. These activities are presented in the FEIS under mitigation and monitoring as:

- **Concurrent placement of perimeter buttress (FS-SR-03).** Placement of the perimeter buttress would allow reclamation activities to take place earlier, concurrent with mine operations. [PR 047511\_6, p. B-14 – B-15]
- **Location, design, and operation of facilities and structures intended to route stormwater around the mine and into downstream drainages (FS-SW-01).** Various stormwater diversion channels and location of facilities have been designed and located in order to maintain flow downstream as much as possible and avoid contact of stormwater with processing facilities and ore stockpiles. [PR 047511\_6, p. B-23].
- **Stormwater diversion for Barrel Alternative designed to route more stormwater into downstream drainages postclosure (FS-SW-02).** Following publication of the DEIS, the Coronado undertook an effort to apply the concepts of geomorphic reclamation to the Barrel Alternative. The result is a design that would route more stormwater into downstream drainages postclosure than previous designs. [PR 047511\_6, p. B-24]

The FEIS points out that during active mining, certain areas of the mine site are required to be zero discharge under the multisector general stormwater permit, which has been obtained by Rosemont Copper [PR 047511\_3, p. 424]. By adjusting the design of the Barrel alternative, impacts to downstream riparian vegetation and water resources will be minimized.

The objector identifies a specific area of the drainage plan that they believe could be improved. Stormwater from the west side of the mine site is routed around the mine pit and discharged into perimeter containment areas called PCA-2 and PCA-3. The objector proposes that stormwater management could be redesigned to discharge stormwater downstream from these areas. The design as it stands was the result of iterative collaboration that considered engineering, reclamation, and mine operations, as described in the project record [PR 047095]. The design itself is contained in the site water management plan [PR 017349, p. 9] and describes the amount of water retained under extreme precipitation conditions (500-year storm) and that the presence of the Barrel Canyon ridgeline prevents discharge downstream: “Under the maximum watershed conditions the 500-year, 24-hour event will generate a WSE of approximately 5,262 feet amsl in PCA 2 corresponding to a runoff volume of 28 ac-ft. The maximum WSE is below the Barrel Canyon Ridgeline elevation of 5,280 feet amsl. At closure, an overflow channel will also connect PCA 2 with PCA 3 (Figure 10).” By contrast to the 28 acre-feet contained in PCA-2 and PCA-3 during the 500-year 24-hour storm, the total post-mine runoff from the mine site under the 100-

year 24-hour event is 1,162 acre-feet [PR 017358, p. 6, PR 047511\_3, p. 435]. This allows a conservative comparison that the retained water represents less than 3% of the runoff in Barrel Canyon.

Response to objection issue 0084-156

The objector contends that given the importance of sediment monitoring as a verification of the degree of storm/surface water control and effectiveness, that monitoring once every 5 years as stipulated in the FEIS Sediment Transport Monitoring protocol FS-SR-05 [PR 047511\_6, p. B-16] is grossly insufficient.

This mitigation and monitoring protocol is listed as a tool to validate mitigation effectiveness in the sections for Soil and Vegetation, Surface Water Quality, Surface Water Quantity, and Seeps, Springs and Riparian Areas [PR 047511\_3, pp. 214, 467, 480 and 555]. The rationale for developing this monitoring protocol was to confirm predictions contained in the FEIS, as well as to monitor any potential changes (scour, aggradation) to infrastructure within Barrel Canyon (highway 83 bridge) [PR 047009].

**Recommended Remedy by Review Team Member (if any):**

With respect to the remedy for objection issue 0091-17, at the Pima County resolution meeting, they suggested that storm water (run-on) from outside the pit area, rather than be diverted to an infiltration pond, could be run (via a “perimeter channel”), downstream to the watershed. They acknowledged this would be costly but believed it was feasible. The Forest Supervisor should discuss the legal and practical feasibility of some method of routing this clean storm water to the watershed below to see if Rosemont wishes to propose such a change to its plans.

**Review Team Member:** Roy Jemison – EAP/WSA

# Rosemont Copper Mine

## Objection Review

**Objection # (s):** 0084-SSSR; 0090-AZGFD; 0091-PimaCounty

**Resource Area(s):** Surface Water Resources – Effects (SWR-5)

**Objection Issue:**

- 0084-146: The FEIS has inadequately addressed the problems of selenium in groundwater and surface waters and their effects on wildlife. The USFS should have required completion of this characterization of waste rock and tailings prior to release of the final EIS. The USFS officer should have taken a conservative stance with respect to the uncertainties listed in the comment (FEIS at Appendix G-65) above rather than rendering a positive decision which precludes any adjustments should the information obtained about arsenic and selenium issues be unfavorable. The reports by Hoag, Sieber and Rasmussen 2012, and Kline et al, (2012), contain a considerable amount of weasel wording with respect to descriptors of the work accomplished, especially in the use of the adjective adequate. The reports give the impression that the positive opinions with respect to Rosemont, Tetra Tech, and related consultant work were at best marginal and really cannot address the concerns about the possibilities of the adverse effects which generated the USFS questions.
- 0084-147: The USFS did not respond adequately to Coalition comments questioning the adequacy of the methods used to determine sediment yield. The USFS ignored Coalition comments specifically pointing out the deficiencies of the 1968 Pacific Southwest Inter-Agency Committee Method (PSIAC Method) used to determine sediment yield. The Coalition objects to the use of the PSIAC method. Despite the cited deficiencies the USFS chose to continue using the more subjective, qualitative, and less accurate method of estimating sediment yield in the FEIS.
- 0084-148: The USFS did not adequately respond to the Coalition's issue regarding the use of the 500-year storm event and its recommended use in the Rosemont modeling approach. We object to the USFS failure to address the 500-year storm event in the Rosemont modeling approach to provide higher precipitation values to estimate stormwater flows in downstream drainages or to design stormwater management facilities.
- 0084-149: The USFS response in the FEIS to Coalition concerns regarding surface water quality impacts from the Rosemont Copper Project is inadequate. USFS conclusions are based on a limited number of synthetic precipitation leaching procedure (SLPL) tests and by averaging SPLP test results. There is no FEIS discussion of the assumptions used in the modeling procedure nor is there any real discussion of the uncertainties associated with the methods that the USFS used to reach its conclusions regarding surface water

quality. The Coalition objects to USFS use of weighted averages to compare storm water runoff quality to applicable water quality standards. We object to the unsupported surface water quality conclusions stated in the FEIS. Also, the modeling procedures and the use of weighted averages to predict the quality of storm water runoff do not appear to have been subjected to peer review.

- 0084-151: There are numerous deficiencies in analytical protocols, reporting of results, and failures to meet Arizona water quality standards. In response, the USFS refers the reader to Vol. 2 of the FEIS, which then refers to and summarizes several peer-reviews of earlier reports (e.g. Hudson and Williamson, 2011; SWCA Revised Analysis, 8/25/ 13; Rosemont Copper, 2012t). (FEIS Appendix G #875, #906.) These peer-reviews are in general critical of the way in which analytical data are presented, and sometimes critical of the quality of the data itself. But the peer-reviews may then conclude that the original reports provide adequate justification for the conclusions drawn - the FEIS then translates this final finding into the FEIS without actually trying to fix anything, or even deem the inadequacies unacceptable. Rather than address the issues we raise, the data reporting status has become even more confused since the DEIS was issued. The situation with arsenic is a complete muddle, because of the discordance between Arizona standards and Federal standards, and therefore because of the persistent issue of labeling groundwater different from surface water. The USFS has completely abdicated their responsibility here, and allowed Arizona, through ADEQ, to put the agency in an untenable position.
- 0084-152: In addition to the repeated error that compliance with water quality standards is under the sole "jurisdiction of ADEQ," the USFS cannot rely on the fact that "standards are already exceeded." Neither the FEIS nor Draft ROD contains any such plan or the required NEPA review of these exceedances. Further, the FEIS's reliance on mitigation measures that "are likely to reduce" these exceedances does not ensure that all water quality standards "shall be maintained and protected." 40 CFR § 131.12 (a)(1).
- 0084-153: The FEIS fails to provide an adequate analysis of the potential impacts from acid rock drainage. The USFS incorrectly states in its discussion of acid mine drainage in the FEIS that water with a pH greater than 4.5 " ... is said to be alkaline and has the capacity to neutralize acid." (See FEIS at 468.)
- 0084-166: The FEIS fails to adequately analyze impacts to seeps, springs, and riparian areas, including reasonably likely impacts to Outstanding Arizona Waters.
- 0084-170: The analysis is inadequate for the public and the USFS to analyze cumulative impacts to seeps, springs and riparian areas. Two reasonably foreseeable actions were not analyzed - climate change (such as increased flooding, extreme weather events, greater temperature variations, water shortages and activities needed to adapt to climate change) and potential new mines, including three Rosemont Copper identified sites.
- 0090-2: Statements in the FEIS are not supported by the analysis of the potential environmental effects of mine stormwater runoff in Barrel Canyon. Specific document locations are cited.
- 0091-13: Deficiencies in the analysis of downstream water volume effects on Davidson Canyon, Cienega Creek and Outstanding Arizona Waters have resulted in the underestimation of reductions in surface water flows in FEIS.

- 0091-10: Long-term impacts from reduction of sediment yield have not been fully disclosed; and, in particular, such impacts to Outstanding Arizona Waters should be analyzed.
- 0091-14: The FEIS does not consider risk from the likelihood of post-fire sediment impacts that could impact drainage infrastructure.
- 0084-168: The FEIS does not discuss the extensive riverine and palustrine wetland systems within and adjacent to Empire Gulch, Gardner Canyon and Cienega Creek that will or may be indirectly impacted by the proposed action. P. 63-64. The FEIS fails to adequately consider impacts to wetlands and fails to consider adequate mitigation for those impacts.
- 0091-9: Cumulative runoff reduction impacts on downstream riparian and water resources, Davidson Canyon and Cienega Creek, are not fully disclosed.
- 0084-157: Lastly, the FEIS admits that it failed to conduct any quantitative assessment of the cumulative impacts from other actions/activities that may adversely affect water quality in the affected waters.
- 0091-7: Potential runoff reduction impacts on downstream riparian and water resources for all phases of mine life are not fully disclosed – just the post-closure phase.

**Remedy Supplied by Objector (if any):**

0084-146: The USFS must revise its analysis to address the problems of selenium in groundwater and surface waters and their effects on wildlife.

0084-147: Quantify impacts this project will have on sediment yield, as required by law.

0084-148: The USFS must incorporate the 500-year design storm into its analysis to generate a more reasonable range of model inputs and design parameters for stormwater management facilities.

0084-149: Include discussion of additional mitigation measures to address discharges of storm water runoff or seepage that are predicted to violate surface water quality standards for dissolved silver, dissolved cadmium, total and dissolved lead, dissolved mercury, and total selenium.

0084-151: The USFS must issue a revised DEIS that indicates the outstanding questions regarding Rosemont's compliance with state water standards, and that addresses the issues we raise above.

0084-166: The USFS should conduct more extensive and complete groundwater flow modeling and revise its analysis of these impacts.

0084-170: Prepare a comprehensive cumulative impacts analysis that includes potential new mines, including those on the three Rosemont Copper identified sites, as well as climate change.

0090-2: Perform additional waste rock characterization, analysis and amend the draft ROD and FEIS. Specifics are provided in the objection.

0084-168: The USFS must fully analyze impacts to individual wetlands and must discuss reasonable mitigation measures for those impacts, rather than simply "assume" that these impacts are somehow covered by other sections of the analysis.

**Law, Regulation and/or Policy:**

Federal: National Environmental Policy Act of 1969; 40 CFR 1500-1508, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act; CWA – Section 404, CWA – Section 303, Executive Order 11988 – Floodplain Management, Executive Order 11990 – Wetlands, FSMs 2520, 2530, and 2880; FS-881 and FS-990a (Technical Guides), State: CWA – Section 401 State Water Quality Certification, CWA – Section 402 Arizona Pollutant Discharge Elimination System.

**Review Team Member Response:**

Response to objection issue 0084-146

The objector indicates that the analysis of selenium is insufficient.

Known levels of selenium and other elements of concern have been presented and discussed in the appropriate resource sections in Chapter 3 of the FEIS. Impacts to wildlife species from these elements of concern are presented by species in the Biological Resources section of Chapter 3 [PR 047511\_3, pp. 570-651 and PR 047511\_4, pp. 653-725]. In areas of the mine operations, such as water features, where wildlife could be exposed to higher levels of materials of concern, mitigation measures will be incorporated into the final MPO to minimize adverse effects [PR 047511, pp.36-38 and PR 047511\_6, pp. B-1 – B-120].

With regard to the objection 0084-146, the information found in the FEIS, DEIS, and memo, "Revised Analysis of Surface Water Quality." The memo [PR 045677] fully addresses issues of analysis adequacy concerning surface water quality and the analysis derived from this effort is contained in the FEIS with a level of scientific effort that meets the requirements of NEPA. With respect to potential impacts of surface water quality on wildlife, the analysis meets the disclosure requirements under NEPA.

Response to objection issues 0084-147

The objector contends the Forest Service ignored Coalition comments specifically pointing out deficiencies of the 1968 Pacific Southwest Inter-Agency Committee (PSIAC) method used to determine sediment yield. The Coalition criticized the PSAIC method as an outdated, empirical model that is too generalized for site specific analysis. The Coalition pointed out that the PSAIC model was a scoring/ranking model and was less rigorous and more subjective than other available models that produce more accurate sediment yield. They commented that the PSIAC was a qualitative tool and that a quantitative method should have been used to predict sediment yield given the complexity for the proposed action and action alternatives.

The FEIS describes how the PSAIC method was used to determine expected changes in sediment yield (specifically, total suspended solid concentrations) from the project area to the USGS stream gage in Lower Barrel Canyon [PR 047511\_3, p. 446]. It goes on to say the potential for downstream scour or aggradation caused by changes to upstream sediment yield is assessed qualitatively, based on two independent analyses and field observations performed by Golder Associates and WestLand Resources Inc. (Patterson and Annandale 2012; Rosemont Copper Company 2012a) [PR 044880 and PR 017311]. These studies were used in conjunction with the sediment yield modeling to analyze impacts on surface water quality. The Coronado investigated the use of sediment transport models (such as HEC-6) and determined that given the type of system that exists in Barrel Canyon (Patterson and Annandale 2012) [PR 044880] and the difficulty of applying sediment transport models to ephemeral systems (Duan et al. 2008; Ruff et al. 1986) [PR 045091 and PR 045092], running these models would not further inform the decision.

In the publication “Report of the Water Management Subcommittee on Factors Affecting Sediment Yield in the Pacific Southwest Area and Selection and Evaluation of Measures for Reduction of Erosion and Sediment Yield,” by the Pacific Southwest Inter-Agency Committee, 1968, applications and conditions for use of the model are described [PR 013005]. It recommends the model be used for broad planning purposes only rather than specific projects where intensive investigations of sediment yield would be required. It further more recommends the model not be used for areas smaller than 10 square miles.

Comments regarding the use of the PSIAC method were received from Pima County on June 30, 2011 [PR 015514] in response to review of an internal draft version of the EIS. A technical response to those comments on the use of the PSIAC method were received from Tetra Tech on August 18, 2011 [PR 015619], which reference additional technical studies supporting use of the model. The use of the sediment model also factored in to the use of the model. With respect to water quality and downstream effects, the sediment model was used to provide a relative difference between the pre-mine watershed and the post-mine disturbed watershed [PR 047511\_3, p. 467], in order to determine potential effects downstream. The selected model and model parameters are less critical for determining relative difference, as long as consistent pre- and post-mine parameters are used. The actual downstream effects on geomorphology were analyzed using two qualitative reports [PR 047511\_3, pp. 464-467; PR 044880; PR 017311, p. 101]; absolute magnitude of sediment reduction did not affect this analysis. The counter argument made by Tetra Tech and the context in which the sediment model was used informed the decision by the Forest Service to accept use of the PSIAC model.

#### Response to objection issue 0084-148

The objector contends the Forest Service did not adequately respond to the Coalitions’ issue regarding the use of the 500-year storm event and its recommended use in the Rosemont’s modeling approach. The Coalition specifically criticized the agency’s use of the 100-year, 24-hour storm event as the design storm for purposes of storm water runoff modeling. They recommended the agency use a larger design storm (i.e, the 500-year storm event) to account for occurrences of multi-day precipitation events that were likely due to expected climate change.

The full suite of work used by the Forest Service to assess surface water model parameters and design storms is described in the memo titled “Summary of Review Conducted on Surface Water Modeling and Stormwater Management Design” [PR 047005]. This included contracting additional modeling sensitivity analyses in response to concerns raised [PR 046066] as well as contracting an iterative peer review of the site water management plan developed by Rosemont [PR 017305, PR 013789, PR 015019, PR 015018, PR 016943, PR 015305]. These analyses helped inform the acceptance of the stormwater design by the Forest Service.

In addition, it should be noted that the 100-year, 24-hour storm is not the sole design criteria used in the analysis. Design of stormwater control features includes a variety of design storms, including 500-year, 24-hour storms and probably maximum precipitation events [PR 047511\_2, pp. 64]. Similarly, the waste rock infiltration analysis included both the 100-year, 24-hour storm as well as a multi-day precipitation event as suggested by the objector [PR 017310, p. 21].

#### Response to objection issue 0084-149

The objector contends that the surface water quality analysis is flawed, uses flawed assumptions, and these assumptions are not disclosed in the FEIS.

An FEIS [PR 047511] analysis must meet the regulatory requirements of Clean Water Act (33 United States Code 1251–1376) and the objective of “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” The State of Arizona has specific jurisdiction over water quality deriving from the Clean Water Act Section 401 (33 United States Code 1341) and Section 402 (33 United States Code 1342). Arizona regulations (Title 18 Arizona Administrative Code Chapter 11) identify surface water standards that must be met, including those for Outstanding Arizona Waters. Arizona administers Section 402 authority through the Arizona Pollutant Discharge Elimination System (Title 18 Arizona Administrative Code Chapter 9), which requires permitting for discharges to waters of the U.S.

The State of Arizona has the sole authority to make a determination under Clean Water Act Section 401 concerning a proposed project and potential actions that may violate State Water Quality regulations by degrading Outstanding Arizona Waters (OAWs) [PR 047511\_3, p. 503]. The FEIS states that no federal permit action may be approved if the state denies certification [PR 047511\_3, p. 449]. The DROD also states that a 401 certification must be issued prior to approval of a final MPO [PR 047504, p. 44], and that the Forest Supervisor consulted with the Arizona Department of Environmental Quality (ADEQ) about the likelihood of 401 certification being issued [PR 047504, p. 15].

The State of Arizona has delegated authority to issue permits under Clean Water Act Section 402 for discharge of stormwater to waters of the U.S. [PR 047511\_3, p. 449-450] and has issued authorization for the project [PR 045094]. The Forest reviewed the Stormwater Pollution Prevention Plan submitted as part of the AZPDES authorization, which contains many of the operational details for compliance with the permit [PR 046071].

The Forest Service also has a responsibility for proper disclosure of impacts under NEPA. According to 40 CFR 1500.22, the agency will include within the environmental impact statement:

- (1) incomplete or unavailable information,
- (2) the relevance of the incomplete or unavailable information to evaluating significant adverse impacts, and
- (3) a summary of credible scientific evidence that is relevant to evaluating such impacts, and the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.

40 CFR 1502.24 states agencies should:

- (1) assure the scientific integrity of the analyses and discussion,
- (2) describe methodologies used, and
- (3) cite references or sources used.

The procedures and methods used to assess surface water quality in the project area are discussed in the FEIS [PR 047511, pp. 453-454] and presented in tables 100-102 [PR 047511, pp. 455-461]. Water samples were collected at a number of different locations and at different times in the project area, as described in the text. Synthesis of the available data were compiled by SWCA Environmental Consultants [PR 045677] and discussed by the Forest Service in the FEIS. The detailed assumptions used for the analysis are described in this same memo [PR 045677]. The Forest Service envisions the project being compliant with water quality standards through implementation of mitigation and monitoring measures [PR 047511\_3, pp. 480-484 and PR 047511\_6] and adhering to required federal, state and local laws, rules and regulations as specified in the DROD [PR 047504, pp.44-45].

A Preliminary Administrative FEIS (PAFEIS) was prepared by SWCA in July 2013. The PAFEIS responded to comments from U.S. Environmental Protection Agency (USEPA) and the Arizona Department of Environmental Quality (ADEQ) on the DEIS [PR 015781]. Additional comments were received on the PAFEIS from USEPA and ADEQ [PR 047453, PR 047457]. SWCA draft memorandum dated August 25, 2013 [PR 045677] details the revised surface water quality analysis included in the FEIS in response to these comments. The analysis of surface water quality included in the FEIS is responsive to and compliant with USEPA and ADEQ collaboration, and met the disclosure requirements under NEPA regulations. The involvement of USEPA and ADEQ in contributing to the FEIS [PR 047511], the requirement for state water quality certification prior to implementation of the project, and the issuance of a permit by the state for discharge of waste rock runoff, meets the regulatory requirements of Clean Water Act (33 United States Code 1251-1376).

The comprehensive mitigation and monitoring plan in the FEIS [PR 047511\_6, Appendix B] is one method for compliance with both the CWA and Forest Service requirements to minimize impacts on Forest Service surface resources. The plan incorporates mitigation and monitoring components that are required from all agencies with jurisdiction to require mitigation, including the Corps, USFWS, and ADEQ, as well as mitigation the Forest Service itself can require the company to minimize impacts to Forest Service surface resources [PR 047511\_6, Appendix B, pp. B3 – B6]. All mitigation specific to surface water quantity, surface water quality, and

riparian resources is listed and analyzed for effectiveness in the FEIS [PR 047511\_3, pp. 439-442, 480-484, 566-569]. Through this plan, the Forest Service has minimized impacts to surface resources to the extent allowable.

#### Response to objection issue 0084-151

The objector contends that there are numerous deficiencies in water quality analysis, reporting of results, and failure to meet surface water standards.

Concerns raised by the objector were not without some justification as documented in the FEIS [PR 047511\_3, pp. 363-364]. To clarify for the FEIS the water quality information available for the project, SWCA [PR 045677] was contracted to perform a revised surface water quality analysis. Issues addressed by SWCA included clarification of data for use by regulating agencies, questions regarding laboratory procedures and data analysis. The results of the analysis aided the forest's ability to determine if the project would be able to meet surface water quality standards [PR 047511\_3, p. 479]. The issue regarding arsenic was clearly stated in the FEIS [PR 047511\_3, p. 372]. The Forest Service use of the legal water quality standard in the state of Arizona is appropriate and consistent with state permitting requirements.

#### Response to objection issue 0084-152

The objector contends that the FEIS improperly relies on ADEQ's jurisdiction over water quality, or the fact that some surface water standards are already exceeded.

The FEIS analysis meets the regulatory requirements of the Clean Water Act (CWA; 33 United States Code 1251–1376) and the objective to “restore and maintain the chemical, physical, and biological integrity of the nation's waters.” The State of Arizona has specific jurisdiction over water quality deriving from the Clean Water Act Section 401 (33 United States Code 1341) and Section 402 (33 United States Code 1342). Arizona regulations (Title 18 Arizona Administrative Code Chapter 11) identify surface water standards that must be met, including those for Outstanding Arizona Waters. Arizona administers Section 402 authority through the Arizona Pollutant Discharge Elimination System (Title 18 Arizona Administrative Code Chapter 9), which requires permitting for discharges to waters of the U.S.

The State of Arizona has the sole authority to make a determination under Clean Water Act Section 401 concerning a proposed project and potential actions that may violate State Water Quality regulations by degrading Outstanding Arizona Waters (OAWs) [PR 047511\_3, p. 503]. The FEIS states that no federal permit action may be approved if the state denies certification [PR 047511\_3, p. 449]. The DROD also states that a 401 certification must be issued prior to approval of a final MPO [PR 047504, p. 44], and that the Forest Supervisor consulted with the ADEQ about the likelihood of 401 certification being issued [PR 047504, p. 15].

The State of Arizona has delegated authority to issue permits under Clean Water Act Section 402 for discharge of stormwater to waters of the U.S. [PR 047511\_3, p. 449-450] and has issued authorization for the project [PR 045094]. The Forest reviewed the Stormwater Pollution

Prevention Plan submitted as part of the AZPDES authorization, which contains many of the operational details for compliance with the permit, [PR 046071].

The CEQ regulations instruct federal agencies to cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and comparable State and local requirements, unless the agencies are specifically barred from doing so by some other law (40 CFR1506.2). ADEQ is listed in the FEIS [PR 047511\_3, p. i.] as a cooperating agency. The Coronado worked closely with the USACE, EPA, and ADEQ regarding permits under their purview [PR 047504, p. 55] in preparing the FEIS.

A Preliminary Administrative FEIS (PAFEIS) was prepared by SWCA in July 2013. The PAFEIS responded to comments from USEPA and ADEQ on the DEIS [PR 015781]. Additional comments were received on the PAFEIS from USEPA and ADEQ [PR 047453, PR 047457]. SWCA draft memorandum dated August 25, 2013 [PR 045677] details the revised surface water quality analysis included in the FEIS in response to these comments. The analysis of surface water quality included in the FEIS is responsive to and compliant with USEPA and ADEQ collaboration. The involvement of USEPA and ADEQ in contributing to the FEIS [PR 047511], the requirement for state water quality certification prior to implementation of the project, and the issuance of a permit by the state for discharge of waste rock runoff, meets the regulatory requirements of Clean Water Act (33 United States Code 1251–1376).

It is noted in the FEIS that some water quality standards were exceeded for water samples collected in the project area [PR 047504, pp. 14-15, PR 047511\_3, p. 454, 474, and 479, PR 045677]. However, the potential for contaminants to enter surface water during operation of the mine are considered low as laws, rules, regulations, and monitoring and mitigation measures will be in the MPO which Rosemont Copper must be in compliance with in order to operate [PR 047504, pp. 44-45, PR 047511, pp. 448-451, 480-484, and PR 047511\_6]. For example, under the stormwater permit, discharge of stormwater containing concentrations of any constituents above surface water quality standards in Barrel Canyon would be prohibited. Rosemont Copper would be required to implement control measures to reduce concentrations if occurring. Permit requirements would also prohibit any discharges that occur to surface waters in Barrel Canyon from causing or contributing to a decrease in the existing water quality of the downstream Outstanding Arizona Waters in Davidson Canyon (AAC R-18-11-101). In addition, the action alternatives are designed to contain stormwater contacting processing facilities, tailings, or ore onsite and monitoring protocols would be put in place at the point of compliance [PR 047511\_3, pp. 468-479].

Ultimately, it is Rosemont Copper's responsibility to demonstrate compliance with water quality standards and acquire the 401 certification from the State prior to approval of the final MPO by the Forest Supervisor [PR 047504, p. 15]. Rosemont Copper has agreed to enter into a voluntary collection agreement with the Coronado to fund work performed by Coronado employees, consultants, and/or cooperators assigned to administer and monitor the project. [PR 047504, p. 32]. With regard to the objections 0084-152, the information found in the FEIS, DEIS, and memo, "Revised Analysis of Surface Water Quality." The memo [PR 045677] fully addresses issues of analysis adequacy concerning surface water quality and the analysis derived from this effort is contained in the FEIS with a level of scientific effort that meets the requirements of

NEPA. That authority for water quality certification lies with ADEQ does not preclude disclosure requirements under NEPA. The Forest Service has performed analyses to disclose potential impacts to water resources; however, the FEIS analysis does not need to conclude that no impacts will occur, as this authority lies with ADEQ.

#### Response to objection issue 0083-153

The objector contends that the FEIS fails to provide adequate analysis of potential impacts from acid rock drainage.

The statement “that water with a pH greater than 4.5 ...is said to be alkaline and has the capacity to neutralize acid” in the FEIS [PR 047511\_3, p. 468] was adapted from the publication “Treating Acid Mine Drainage From Abandoned Mines in Remote Areas” (Metesh et al. 1998) [PR 016711]. Metesh et al. (1998) cited Hedin et al. (1994) for the original information. The complete citation for Hedin et al (1994) is: Hedin, R.S.; Narin, R.W.; Kleinmann, R.L.P. 1994. Passive treatment of coal mine drainage. Inf. Circ. 9389. U.S. Department of the Interior, Bureau of Mines. The statement is correct in the context presented.

The acid rock drainage analysis in the FEIS provides a thorough description of the rock material [PR 047511\_3, pp. 365-398] on site and how it will be managed and monitored during operation of the mine [047511\_3, pp. 468-471 and PR 047511\_6, pp. B-1 – B-101]. The analysis is supported in the project record by references [PR 012105, PR 013788, and PR 013382] and peer reviews [PR 013425, PR 017372 and PR 017366].

The Forest Service also developed a suite of additional waste rock and tailings characterization measures, as well as additional monitoring measures, to ensure that predictions made in the FEIS are valid once operations begin [PR 047511\_3, pp. 368-369, 379, 471].

With regard to objector issue 00834-153, the Forest Service complied with law, regulation, and policy based on the analysis found in the FEIS [PR 047511], DEIS [PR 015781], and numerous references. The acid rock drainage analysis facilitated an informed decision.

#### Response to objection issues 0084-166 and 0084-170

The objector contends that the FEIS fails to adequately analyze effects and cumulative effects to seeps, springs, riparian areas and Outstanding Arizona Waters, with specific mention of climate change and mining of additional mineral deposits.

The analyses of impacts and cumulative effects to seeps, springs, riparian areas and Outstanding Arizona Waters can be found at the following locations in the FEIS [PR 047511\_3]: impacts to surface water flow [pp. 398-443], riparian areas [pp. 485-570], and impacts to biological resources [pp. 570-725]. More specifically, effects on surface flow reductions are described on pp. 429-436; perennial stream flow are described on pp. 524-539; effects on riparian vegetation are described on pp. 541-545; effects on wetland complexes in the Cienega Creek watershed are addressed on pp. 496, 541-542; and effects on Outstanding Arizona Waters (which includes Davidson Canyon) are described on pp. 547-555.

Cumulative effects on surface flows are discussed on p. 437 and riparian systems on pp. 564-565. A description of Rosemont Copper-owned mineral deposits in the vicinity of this project is contained in Appendix A, CWA 404(b)(1) Alternatives Analysis [PR 047511\_2, pp. 23-26]. However, according to FEIS Appendix G, “There are no other proposals for mining in the immediate Rosemont area at this time. Augusta Resources owns mineral resources adjacent to the area proposed for mining in the Rosemont Copper Project [including Broad Top Butte, Copper World and Peach Elgin]. Development of these resources is not ripe for inclusion as a reasonably foreseeable action in the Rosemont EIS because there is currently no concrete proposal for such an action, these mineral resources have not been adequately explored to determine economic feasibility and basic information such as type of mining, estimates of tailings and waste rock, etc. is not available and cannot be determined given current information. While further exploration and eventual mining could occur at some unknown time in the future, it would require further permitting and NEPA analysis should it involve federal lands or resources, including public notice and involvement” [PR 047511\_6, pp. G-14, G-21, G-69]. The selection criteria used for determining reasonably foreseeable actions, and specifically these mineral deposits, is described in the FEIS [PR 047511\_3, pp. 139-143] and in the record [PR047497].

Required disclosures concerning riparian systems for Unavoidable Adverse Effects and Irreversible and Irrecoverable Commitments of Resources are located in the FEIS [PR 047511\_3] at pp. 1135 and 1139, respectively.

Climate change has been explicitly addressed in each section of the FEIS. The climate change scenario used to construct these analyses is in the record [PR 047362].

With regard to objector issues 0084-166, and 0084-170, the Forest Service complied with law, regulation, and policy based on the analysis found in the FEIS [PR 047511], DEIS [PR 015781], and numerous references. The seeps, springs and riparian analysis in addition to the Outstanding Arizona Waters discussion and analysis, cumulative effects and climate change scenario and analysis facilitated an informed decision.

#### Response to objection issue 0090-2

The objector contends statements in the FEIS are not supported by the analysis of the potential environmental effects of mine stormwater runoff in Barrel Canyon. It may be the objector is confused by the information presented in the tables and text referenced in the objection. The information in Table 105 [FEIS at 475] is the result of runoff water analyses performed by SWCA [PR 045677] compared to ADEQ water quality standards applicable to Barrel Canyon. The information in Table 97 [FEIS at 447] and Table 111 [FEIS at 548] are summary tables and contain narrative predictions synthesizing the entire analysis that follows in the section. The same applies for the text referenced in the FEIS [pp. 472, 548 and 663] and the DROD [PR 047504, p. 14].

Two aspects that may be causing confusion should be specifically noted. First, there are two different analyses of water quality, an analysis of stormwater runoff from waste rock in Barrel

Canyon, and the “screening analysis” which predicts—to the extent possible—what potential issues could affect the Outstanding Arizona Water in lower Davidson Canyon. These two analyses use different assumptions. Second, the results of these analyses are compared against different legal standards.

With regard to objection issue 0090-2, the Forest Service complied with the CWA based on information found in the FEIS, DEIS, and memo, “Revised Analysis of Surface Water Quality”. The memo [PR 045677] fully addresses issues of analysis adequacy concerning surface water quality and the analysis derived from this effort is contained in the FEIS with a level of scientific effort that meets the requirements of NEPA. That authority for water quality certification lies with ADEQ does not preclude disclosure requirements under NEPA. The Forest Service has performed analyses to disclose potential impacts to water resources; however the FEIS analysis does not need to conclude that no impacts will occur, as this authority lies with ADEQ.

#### Response to objection issues 0091-7, 0091-9, 0091-10, 0091-13, and 0091-14

The objector highlighted several issues and resources perceived to be deficient or not having adequate coverage in the FEIS and ROD. For the issues and resources of expressed concern, the objector is directed to the following pages: surface runoff predictions – FEIS pp. 423-438 and 523-566; reduced sediment yield – pp. 213-214 and 463-468.

One specific issue raised is that the analysis of impacts from the reduction of surface water to downstream riparian area and Outstanding Arizona Waters has not been analyzed for all phases of mine life. Reductions for pre-mining, active mining, and post-closure were analyzed and reported in the FEIS [PR 047511\_3, Table 90, p. 429] and formed the basis for analysis of riparian impacts.

Several objection issues contend that cumulative impacts to surface flow were not analyzed, specifically from fires. The approach taken by the Coronado to address cumulative effects in the FEIS was to identify and analyze the impacts of past and present actions in the “Affected Environment” part of each resource section. Then in the Cumulative Effects part of the resource section to address the cumulative impacts of the action alternatives and any applicable reasonably foreseeable actions as identified on the Coronado ID Team’s list of reasonably foreseeable future actions, provided in the introduction to chapter 3 [PR 047511\_3, p. 140-143, 437]. Prior to conducting cumulative effects analysis for the Rosemont Copper Project DEIS, the Coronado ID Team undertook an effort to identify past, present and reasonably foreseeable actions. Sources for potential past, present and reasonably foreseeable actions were identified by ID Team members, cooperating agencies, and public comment received during the scoping process [PR 047497]. The reasonably foreseeable actions applied specifically to surface water resources are documented in the record as well [PR 044888]. The two phased approach used to address the cumulative effects analysis in the FEIS provides a quantitative component and a narrative component [PR 047511\_3, pp. 427-436 and 437 respectively]. The CEQ regulations do not specify that the cumulative effects analysis has to be quantitative [40 CFR 1502.24 and 40 CFR 1508.7].

Another specific issue concerns whether long-term impacts to sediment yield were considered. The downstream impacts to geomorphology due to reduced sediment load were analyzed using two qualitative reports [PR 047511\_3, pp. 464-467; PR 044880; PR 017311, p. 101]. These analyses considered the changes in sediment yield resulting from the mine which will persist in perpetuity, and are not limited to the operational life of the mine only.

Another specific issue concerns whether long-term changes in sediment yield were considered with respect to impacts on Outstanding Arizona Waters. These changes were directly assessed for each Outstanding Arizona Water [PR 047511\_3, Table 111, p. 548; Table 113, p. 554].

Another specific issue concerns the validity of the surface water models, and that they underestimate impacts. The full suite of work used by the Forest Service to assess surface water model parameters and design storms is described in the memo titled “Summary of Review Conducted on Surface Water Modeling and Stormwater Management Design” [PR 047005]. This included contracting additional modeling sensitivity analyses in response to concerns raised [PR 046066] as well as contracting an iterative peer review of the site water management plan developed by Rosemont [PR 017305, PR 013789, PR 015019, PR 015018, PR 016943, PR 015305]. These analyses helped inform the acceptance of the surface water models by the Forest Service.

The Forest Service complied with law, regulation, and policy based on the analysis found in the FEIS [PR 047511], DEIS [PR 015781], and numerous references listed above. Surface water resources and sediment yield analysis facilitated an informed decision.

#### Response to objection issue 0084-168

The objector claims the FEIS does not discuss the wetland systems within and adjacent to the Empire Gulch, Gardner Canyon and Cienega Creek to the south and west of the project area. The objector is partially correct. Impacts brought about by the proposed project are included in the analyses and discussions of the Surface Water, Groundwater and Seeps, Springs and Riparian Area sections of the FEIS [PR 047511\_3, pp. 288-570]. The wetland systems and complexes within and adjacent to the Empire Gulch, Gardner Canyon and Cienega Creek drainages are explicitly acknowledged in the FEIS, and lie within the hydriparian vegetative zone that is analyzed for impacts in the FEIS [PR047511\_3, p. 496]. The impacts resulting from drawdown are analyzed for the wetland complexes as well as the other hydriparian vegetation [PR 047511\_3, pp. 541-547]. For example: “In the long term, wetland complexes within the hydriparian zone would likely experience drying and mortality of obligate wetland plants, and aquatic vegetation would experience widespread mortality.” [PR 047511\_3, p. 541].

The comprehensive mitigation and monitoring plan in the FEIS [PR 047511\_6, Appendix B] is one method for compliance with both the CWA and Forest Service requirements to minimize impacts on Forest Service surface resources. The plan incorporates mitigation and monitoring components that are required from all agencies with jurisdiction to require mitigation, including the Corps, USFWS, and ADEQ, as well as mitigation the Forest Service itself can require to minimize impacts to Forest Service surface resources [PR 047511\_6, Appendix B, pp. B3 – B6]. All mitigation specific to surface water quantity, surface water quality, and riparian resources is

listed and analyzed for effectiveness in the FEIS [PR 047511\_3, pp. 439-442, 480-484, 566-569]. Specific mitigations that may affect the indicated wetlands include measures FS-BR-05 for establishment of alternative water sources [PR 047511\_6, Appendix B, pp. B32-B33], and FS-BR-16 for the Cienega Creek Conservation fund [PR 047511\_6, pp. B-43]. Through this plan, the Forest Service has minimized impacts to surface resources to the extent allowable. However, the Forest Service does not have authority to require mitigations for surface resources beyond the boundaries of the Forest Service, such as those requested by the objector.

#### Response to objection issue 0084-157

The objector claims the FEIS admits that it failed to conduct any quantitative assessment of cumulative impacts from other actions/activities that may adversely affect water quality in the affected waters.

The approach taken by the Coronado to address cumulative effects in the FEIS was to identify and analyze the impacts of past and present actions in the “Affected Environment” part of each resource section. Then in the Cumulative Effects part of the resource section to address the cumulative impacts of the action alternatives and any applicable reasonably foreseeable actions as identified on the Coronado ID Team’s list of reasonably foreseeable future actions, provided in the introduction to chapter 3 [PR 047511\_3, p. 140-143, 437]. Prior to conducting cumulative effects analysis for the Rosemont Copper Project DEIS, the Coronado ID Team undertook an effort to identify past, present and reasonably foreseeable actions. Sources for potential past, present and reasonably foreseeable actions were identified by ID Team members, cooperating agencies, and public comment received during the scoping process [PR 047497]. The two phased approach used to address the cumulative effects analysis in the FEIS provides a quantitative component and a narrative component [PR 047511\_3, pp. 427-436 and 437 respectively]. The CEQ regulations do not specify that the cumulative effects analysis has to be quantitative [40 CFR 1502.24 and 40 CFR 1508.7].

However, all available water quality data was used in the existing condition and effects analysis for the project. Due to limited available data, qualitative analysis was conducted and disclosed.

**Recommended Remedy by Review Team Member** (if any): The remedies suggested by the objectors are not warranted. No remedies are required.

**Review Team Member:** Roy Jemison – EAP/WSA

# Rosemont Copper Mine

## Objection Review

**Objection # (s):** 0091-PimaCounty

**Resource Area(s):** Surface Water Resources – Modeling (SWR-6)

**Objection Issue:**

- 0091-16. The hydrological analysis supporting the surface water evaluation is inadequate, as the modeling should have considered shorter duration, high-intensity rainfall events; and the FEIS misrepresents the methods followed as those prescribed by Pima County.

**Remedy Supplied by Objector** (if any): None

**Law, Regulation and/or Policy:** Council on Environmental Quality (CEQ) regulations at 40 CFR 1500-1508

**Review Team Member Response:**

The objector states the FEIS [PR 047511] hydrological analysis supporting the surface water evaluation is inadequate, as the modeling should have considered shorter duration, high-intensity rainfall event; and the FEIS misrepresents the methods followed as those prescribed by Pima County.

According to 40 CFR 1500.22, the agency will include within the environmental impact statement:

- (1) incomplete or unavailable information,
- (2) the relevance of the incomplete or unavailable information to evaluating significant adverse impacts, and
- (3) a summary of credible scientific evidence that is relevant to evaluating such impacts, and the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.

40 CFR 1502.24 states agencies should:

- (1) assure the scientific integrity of the analyses and discussion,
- (2) describe methodologies used, and
- (3) cite references or sources used.

The technical memorandum, “Rosemont Hydrology Method Justification” [PR 012104, p. 14], describes the precipitation events used to model peak-flow storm runoff:

“...For permanent and semi-permanent containment structures, runoff volumes will generally be calculated using, at a minimum, the 100-year, 24-hour event. Less frequent, larger events, such

as the 500-year, 24-hour event or the General PMP event, may also be used. For temporary or sediment-control structures, lesser storm events may be used. The runoff volumes calculated using PC-Hydro were less than the volumes generated using the 100-year, 24-hour event for the scenarios modeled herein.”

The FEIS [PR 047511\_3, pp. 401-404] states the following model inputs: “...The high precipitation value of 5.35 inches was based on the 24-hour storm depth derived from methods recommended by Pima County Regional Flood Control District (i.e., the National Oceanic and Atmospheric Administration Atlas 14, Upper 90% Confidence Limits). The low precipitation value of 4.75 inches was based on the 24-hour storm depth, which was used in the Rosemont Copper model.”

A memo titled “Summary or Review Conducted on Surface Water Modeling and Stormwater Management Design” discusses the process by which the modeling method and protocol were determined for use in the FEIS analysis concerning surface water modeling [PR 047005, pp. 2-6]: “...Based on the strength of the iterative peer review process, the assessment of sensitivity analyses (Chee and Hemmen 2011, Patterson and Baxter 2012), and other reviews of the work conducted by Rosemont (Zeller 2011), the Coronado has determined that the surface flow and sediment modeling used in the FEIS is reasonable and appropriate to provide an informed analysis in the FEIS, and that the sizing and design of stormwater control features is reasonable and appropriate to provide an informed analysis in the FEIS.”

This memo and the FEIS [047511\_3, pp. 400-405] clearly and adequately describe Pima County flood/peak-flow modeling methods. The memo states: “...The public comments were provided for review by Golder, and an approach was selected to help assess the concerns raised. Golder was contracted to conduct new surface water modeling. The purpose of the Golder surface water modeling in 2012 was not to conduct new modeling to replace the surface water modeling conducted by Rosemont, which had been determined to be reasonable and appropriate through a process of professional review. The purpose of the Golder surface water modeling was to run specific sensitivity analyses, using the model suggested in comments by Pima County (PC-Hydro), to assess how varying different hydrologic parameters (i.e., precipitation and curve number) could affect the results of the model. Golder conducted the modeling and provided the final results in October 2012 (Baxter and Patterson 2012)” [PR 047005, pp. 3-4]

The intent of stormwater and peak-flow modeling is to calculate minimal storage and routing infrastructure needed. Based on the project record [PR 015018], minimal storage and infrastructure is intended to hold and route 100-year storm (or equivalent) precipitation events (or equivalent), and in some cases even larger storms. The analysis and design does not use any storms of lesser magnitude than the 100-year precipitation event.

The Forest Service conducted a rigorous scientific NEPA analysis concerning stormwater/surface water analysis. The Golder modeling used in the FEIS analysis shows the variability in predictions that could occur if different parameters were chosen. This is fully acknowledged in the FEIS and is the purpose of conducting modeling as part of the FEIS analysis. This demonstrates that the Forest met the scientific rigor required in 40 CFR 1500.2 and 1502.24.

**Recommended Remedy by Review Team Member** (if any): No remedy is required.

**Review Team Member:** James N Snyder, R3-EAP/WSA

# Rosemont Copper Mine

## Objection Review

**Objection # (s):** 0084-SSSR

**Resource Area(s):** Surface Water Resources – Clean Water Act (SWR-7)

**Objection Issue:**

- 0084-160: The proposed project does not comply with the restriction on discharge as required by the 404(b)(1) Guidelines. Indirect effects may also result in significant degradation to outstanding natural resource waters in violation of applicable water quality standards. P. 64. The proposed project's potential to result in reduction in stream flows to Davidson Canyon Wash and Cienega Creek, its alteration of sediment transport, groundwater drawdown, and contribution of metals such as selenium represents a failure to maintain and protect existing water quality in those AOWs. This would be inconsistent with applicable antidegradation policy. The 404(b)(1) Guidelines at 40 CFR 230.10(b)(1) restrict discharges that would violate applicable State water quality standards (which include anti degradation policies) in waters. Such significant degradation of the aquatic ecosystem in Outstanding Natural Resource Waters is also not consistent with the 404(b)(1) Guidelines at 40 CFR 230.10(c), and 230.11(h).
- 0084-145: Secondary impacts have yet to be analyzed upstream of the mine and downstream of the mine beyond the confluence of Davidson Canyon and Cienega Creek. Moreover, the secondary impacts that are currently assessed by the Forest Service rely upon models that, while valid, lack the sensitivity to detect adverse impacts to much of the affected arid aquatic environment. These assessments will be necessary under the CWA/404 Guidelines to make defensible decisions regarding the regulatory restrictions on discharges and the possibility of mitigation.
- 0084-169: Although the FEIS estimates 407 acres of mapped hydro riparian habitat in the assessment area, a subset of these are jurisdictional waters of the United States that have not been delineated. Without a jurisdictional determination covering the assessment area, the public, as well as the Corps and EPA, are unable to determine the full scope of indirect impacts to areas regulated under the Clean Water Act. The discussion of hydroriparian vegetation types does not acknowledge that portions of this vegetation type include jurisdictional wetlands regulated under the federal CWA. The reach and extent of these federally regulated wetlands have not been delineated; therefore, the extent of indirect impacts to these waters has yet to be determined in violation of NEPA.

**Remedy Supplied by Objector** (if any): None

**Law, Regulation and/or Policy:** Council on Environmental Quality (CEQ) regulations at 40 CFR 1500-1508; Forest Service mining regulations at 36 CFR 228.8; Clean Water Act (CWA) [33 U.S.C. §1251 et seq. (1972)], 40 CFR 230; Arizona Pollutant Discharge Elimination System (Title 18 Arizona Administrative Code Chapter 9); Arizona Water Quality Standards (Title 18 Arizona Administrative Code Chapter 11)

**Review Team Member Response:**

Response to objection issue 0084-160 and 0084-169

The objector contends that the proposed mine activity is not consistent with requirements under the CWA.

The State of Arizona has specific jurisdiction over water quality deriving from the Clean Water Act Section 401 (33 United States Code 1341) and Section 402 (33 United States Code 1342). Arizona regulations (Title 18 Arizona Administrative Code Chapter 11) identify surface water standards that must be met, including those for Outstanding Arizona Waters. Arizona administers Section 402 authority through the Arizona Pollutant Discharge Elimination System (Title 18 Arizona Administrative Code Chapter 9), which requires permitting for discharges to waters of the U.S.

The State of Arizona has the sole authority to make a determination under Clean Water Act Section 401 concerning a proposed project and potential actions that may violate State Water Quality regulations by degrading Outstanding Arizona Waters (OAWs) [PR 047511\_3, p. 503]. The FEIS states that no federal permit action may be approved if the state denies certification [PR 047511\_3, p. 449]. The DROD also states that a 401 certification must be issued prior to approval of a final MPO [PR 047504, p. 44], and that the Forest Supervisor consulted with the Arizona Department of Environmental Quality (ADEQ) about the likelihood of 401 certification being issued [PR 047504, p. 15].

The State of Arizona has delegated authority to issue permits under Clean Water Act Section 402 for discharge of stormwater to waters of the U.S. [PR 047511\_3, p. 449-450] and has issued authorization for the project [PR 045094]. The Forest reviewed the Stormwater Pollution Prevention Plan submitted as part of the AZPDES authorization, which contains many of the operational details for compliance with the permit, [PR 046071].

The Corps of Engineers has the authority under Section 404 of the Clean Water Act to regulate dredge and fill into waters of the U.S., including that to occur as a result of mine operations. On October 11, 2011, Rosemont submitted a CWA Section 404 permit application to the U.S. Army Corps of Engineers (Corps) requesting a Section 404 permit to discharge fill materials into potential waters of the United States in connection with proposed Project activities [PR 015734]. Subsequently, additional package components were submitted to the Corps. These include the 404(b)(1) alternatives analysis [PR 044793, also included as Appendix A of the FEIS PR 047511], and mitigation components proposed in the HMMP. Note that the full HMMP has not

been submitted to the Forest Service; analysis was based on a summary of expected HMMP components [PR 018989] and analysis of these components as part of Endangered Species Act consultation [PR 018947]. The objector notes that jurisdictional waters were not appropriately delineated; the Forest Service relied upon the Corps authority to determine what waters are considered jurisdictional [PR 047511\_3, p. 463], which are described in the 404(b)(1) alternatives analysis accepted by the Corps and included in the FEIS [PR 047511\_6, Appendix A, and PR 044793].

Regardless of the jurisdiction and authority for administering sections of the Clean Water Act, the Forest Service also has a responsibility under NEPA regulations to analyze and disclose potential impacts to these resources. Potential impacts to surface water quality are analyzed in the FEIS [PR 047511\_3, pp. 443-485]. Potential impacts to riparian areas, streamflow, and Outstanding Arizona Waters are analyzed in the FEIS [PR 047511\_3, pp. 485-570].

The Forest Service has met the requirements of NEPA by acknowledging and deferring the determination of compliance with the CWA to the appropriate regulatory authority (ADEQ or the Corps), while still disclosing potential impacts to these resources. The Forest Service has also clearly identified that the mine may not be implemented without all permits being issued by ADEQ and the Corps. The FEIS and DROD also note that the authority for determining CWA compliance lies with other agencies, but that the mine cannot proceed without obtaining appropriate permits [PR 047511\_3, p. 449, 503], [PR 047504, p. 15, 45]. Appendix B of the FEIS notes, "The Forest Service has no authority, obligation, or expertise to determine or enforce compliance with other agencies' laws or regulations. The Forest Service seeks to coordinate with other agencies to approve a legally compliant final mine plan of operations (MPO). However, it is the operator's responsibility to ensure that its actions comply with applicable laws" [PR 047511\_6, p. B-3].

#### Response to objection issue 084-145

The objector indicates that impacts were not properly assessed, specifically impacts upstream of the mine, downstream of the mine beyond the confluence of Davidson Canyon and Cienega Creek, and that impacts rely upon models that, while valid, lack the sensitivity to detect adverse impacts to much of the affected arid aquatic environment.

Impacts to riparian resources are analyzed within the analysis areas explicitly defined in the FEIS, including riparian resources [PR047511\_3, pp. 488-489] and surface water resources [PR 047511\_3, pp. 398, 443-444]. Both analysis areas extend beyond the confluence of Davidson Canyon and Cienega Creek [PR 047511\_3, Figure 66 on p. 489 and Figure 61 on p. 399]. The criteria for establishing the analysis area is given [PR 047511\_3, p. 398]: "The analysis for surface water quantity resources considers all alternatives plus all connected actions, and the analysis area is based on the following two considerations: (1) the direct modification of the topography and alteration of the surface water regime in the project area as a result of mining and the development of mine infrastructure; and (2) the indirect effects of mining activities on downgradient surface water drainages." Upstream areas that are not within the disturbance footprint would not meet these criteria or have any change to surface water hydrology from mining activities. However, it should also be noted that upstream areas were analyzed for

impacts that might result from groundwater drawdown [PR 047511\_3, pp. 288-362, 485-570]. This includes any springs that were identified in these areas, as well as areas in the vicinity of the mine that were identified by cooperating agencies as being intermittent streams [PR 047511, p. 486].

A Preliminary Administrative FEIS (PAFEIS) was prepared by SWCA in July 2013. The PAFEIS responded to comments from USEPA and ADEQ on the DEIS [PR 015781]. Additional comments were received on the PAFEIS from USEPA and ADEQ [PR 047453, PR 047457]. SWCA draft memorandum dated August 25, 2013 [PR 045677] details the revised surface water quality analysis included in the FEIS and a memorandum dated October 30, 2013 [PR 045678] details the revised riparian analysis included in the FEIS in response to these comments. The analysis of surface water quality and riparian impacts included in the FEIS is responsive to and compliant with USEPA and ADEQ collaboration, and specifically how the groundwater models are used to assess impacts to riparian areas and perennial streams.

In addition, in response to public and cooperating agency comments on the DEIS, the Forest Service conducted a cooperating agency meeting to specifically discuss riparian impact methodologies, including discussion of available techniques, literature, and mapping [PR 045377]. The involvement of USEPA and ADEQ, as well as other cooperating agencies, in contributing to the riparian impact analysis in the FEIS demonstrates that the analysis meets the regulatory requirements of Clean Water Act (33 United States Code 1251–1376).

With regard to objector issue 0084-145, the Forest Service complied with law, regulation, and policy based on the analysis found in the FEIS [PR 047511], DEIS [PR 015781], and Cooperating Agency Discussion of Riparian Mapping and Functional Assessments (Thursday, June 28, 2012) [PR 045377]. Riparian assessments and analysis facilitated an informed decision.

**Recommended Remedy by Review Team Member** (if any): No remedy required.

**Review Team Member:** Roy Jemison – EAP/WSA