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December 13, 2013

Received
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Environmental Review Office

Colonel Kim Colloton
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
P.O. Box 532711
Los Angeles, CA 90053-2325

Re: EPA Evaluation of Rosemont Mine Compensatory Mitigation

Dear Colonel Colloton:

Rosemont Copper Company (Rosemont) is committed to developing a copper mine in southern Arizona in a manner that sets new industry standards for an Arizona copper mining facility. However, while doing so, we intend to ensure that both the voluntary actions we choose to take as corporate stewards, and those actions required for Rosemont to meet environmental standards under the various environmental rules, regulations, and laws, are appropriately delineated and correctly applied.

Attached to this letter are Rosemont's initial comments regarding an evaluation by the Environmental Protection Agency (EPA) of the Rosemont Copper Project (Project) titled "EPA Evaluation of Impacts to the Aquatic Ecosystem and Proposed CWA Compensatory Mitigation for the Rosemont Mine Pima County, Arizona" (EPA Evaluation) that was sent to you under a cover letter dated November 7, 2013. The EPA Evaluation concerns the 404 permit that Rosemont is currently seeking from the U.S. Corps of Engineers (Corps) to fill ephemeral washes and to bury a single functioning spring in connection with its proposed copper mining and processing facility in southern Arizona. The EPA Evaluation concludes that Rosemont's "proposed mitigation [is] grossly inadequate to compensate for [the] mine impacts" of the Project (EPA Evaluation, p. 9). As explained below, the EPA Evaluation reaches this conclusion based on a misapplication of the 404(b)(1) Guidelines (Guidelines) as they relate to: (1) the identification of the "secondary effects" of Rosemont's proposed discharge for which mitigation is required; (2) on a mischaracterization of many of the impacts of the proposed Project; and (3) on a mischaracterization of the mitigation proposal. Its conclusions are therefore in error. When the effects are properly identified and characterized by the Corps, and as the mitigation proposal is refined, it will be clear that Rosemont has developed a proposal, that when finalized, will meet the requirements for compensatory mitigation for the unavoidable impacts that the Project has on "waters of the United States."

The discussion of the EPA Evaluation is divided into several sections, below:

I. Introduction;
II. A discussion of what constitutes secondary impacts of the discharge;
III. A discussion of how EPA mischaracterizes Project impacts, including those that are not part of the 404 regulatory process;
IV. Rosemont's 404 mitigation package and proposal; and
V. Conclusion.

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I. INTRODUCTION

In connection with the Project, which is a copper mine proposed for Pima County, Arizona, Rosemont has applied to the Corps for a 404 permit to fill ephemeral washes and a single functioning spring. The area impacted by the Project includes a network of first and second order washes and ravines, and covers approximately 5400-acres at the Project site[1]. The filled area will be occupied primarily by the Project's dry stack tailings facility and waste rock storage areas. Other Project components include an open pit, utility and access corridors, and ore processing facilities.

This Project has undergone a 6-year process of public and agency review pursuant to the National Environmental Policy Act (NEPA), which has culminated in a comprehensive Final Environmental Impact Statement (FEIS). The FEIS concludes the Project can meet environmental requirements and proceed, subject to appropriate conditions and mitigation requirements still under development. Rosemont has received approval for all permits required by the state of Arizona for water use, water transport, storm water management, and surface and groundwater protection, including approved mine closure and reclamation plans. From a water quality standpoint, only the Clean Water Act 404 and 401 approvals have yet to be issued.

To obtain the 404 permit, Rosemont must have an adequate plan in place to mitigate the unavoidable impacts to jurisdictional waters that may result from its proposed discharge, as required by EPA's 404(b)(1) Guidelines (Guidelines) and the Corps mitigation rules. 33 CFR Part 230; 40 CFR Part 230, Subpart J. Rosemont has developed a conceptual proposal that would achieve this goal. The principal features include:

- An in-lieu fee (ILF) project at Pantano Dam, made possible by the acquisition of a critical in-holding in the Cienega Creek Natural Preserve and the accompanying 1,122 acre-feet per annum (AFA) of senior surface water rights in Cienega Creek associated with that parcel;
- A permittee-responsible (or potential ILF) project at the 1,200-acre Sonoita Creek Ranch, which comes with its own 590 AFA surface water right and tremendous opportunities for riparian restoration and enhancement; and
- Conservation parcels within the Davidson Canyon watershed along significant xero-riparian corridors along Barrel, Davidson, and Mulberry Canyons.

The November 7, 2013 EPA Evaluation concludes that Rosemont's "proposed mitigation [is] grossly inadequate to compensate for mine impacts," EPA Evaluation, p.9. EPA recommended that Rosemont's 404 permit application should therefore be rejected for the Project as proposed. EPA Cover Letter, p. 2. As discussed below, the EPA Evaluation's conclusion is based on a misapplication of the Guidelines as they pertain to the identification of the "secondary effects" for which mitigation is required and on a mischaracterization of many of the Project's impacts. The Evaluation also mischaracterizes and discounts the mitigation proposals advanced by Rosemont. The conclusions of the EPA Evaluation are therefore in error.

When the "secondary effects" of the discharge are correctly identified and characterized and Rosemont's mitigation proposal is given proper weight, it is our belief that the proposal, once finalized, will be more than adequate to compensate for the unavoidable impacts of its proposed discharge to

[1] See Rosemont FEIS, Volume 1 – Executive summary, Table ES1. Alternative comparisons table: disturbance elements, page xxiv

waters.

II. THE EVALUATION INCORRECTLY IDENTIFIES THE IMPACTS FOR WHICH COMPENSATORY MITIGATION IS REQUIRED

As discussed in the FEIS, the Rosemont Project will directly impact approximately 40 acres of ephemeral washes and five springs. Most of these direct impacts will result from the tailings and waste rock facilities fill in Barrel and Wasp canyons, which are relatively broad, low-gradient ephemeral washes. The impacts also include fill for the plant facilities, access and haul roads, utilities, and associated infrastructure. Of the five springs to be directly impacted by the Project (FEIS, p. 563), only one (Rosemont Spring) both occurs in its natural state (with flows of less than a gallon a minute) and supports even modest riparian-type vegetation. Of the remaining features identified as springs, two (Unnamed Springs No. 2 and 3) are seeps that likely are seasonally dry as evidenced by lack of riparian vegetation. The remaining two (Bee Spring and Mueller) were developed (man-made) to fill water sources for livestock use. In addition, the Project will result in some loss of downstream surface water flows to Barrel and Davidson canyons. An algorithm developed for the Project estimates that the downstream loss of Waters is an additional 28.4 acres[2]. This represents a loss of function, which gradually diminishes downgradient of the Project. These impacts simply reduce flows but the drainage areas will remain.

The EPA Evaluation finds that Rosemont's proposed mitigation for these impacts is deficient because it fails to compensate for all of the unavoidable "secondary effects" of the proposed discharge (as characterized by Region IX's Wetlands Office, which we believe is the primary author of the EPA Evaluation). The EPA Evaluation focuses, in particular, on the potential impacts that the open pit may have on groundwater levels in the bedrock formations surrounding the pit, and on how those impacts could affect surface flows some distance from the Project site. It also defines "secondary effects" too broadly by assuming that the "secondary effects" of the proposed discharge to "waters of the United States" are the same as the potential cumulative or possible indirect impacts to water resources from the Project as a whole, as disclosed in the FEIS. This is not how "secondary effects" are defined by the Guidelines.

"Secondary effects" are defined by the Guidelines as the "effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material." 40 CFR 230.11 (h)(1). A correct determination of the "secondary effects" of a proposed discharge is obviously critical to any evaluation of the adequacy of a plan to mitigate those effects. Without such a determination, it is impossible to determine whether the proposed mitigation is "commensurate with the amount and type of impact that is associated with a particular" discharge. 40 CFR 230.93(a)(1). The Wetlands Office appears to ignore this fact when it attempts to explain in its Evaluation how the impacts of the Project, as a whole, for which it claims compensatory mitigation is required, fit within the Guidelines' definition of "secondary effects."

To insure that the concept of "secondary effects" is properly understood by those affected by, or by those authorized to regulate those affected by the Clean Water Act, the Guidelines provide three specific examples to define such effects. The first example is "fluctuating water levels in an

[2] FEIS Volume 5, Appendix A U.S. Army Corps of Engineers' Section 404(b)(1) Alternatives Analysis, Section 3.1.3, page 38

impoundment and downstream associated with the operation of a dam." The second example is "septic tank leaching and surface runoff from residential or commercial developments on fill." The third example is "leachate and runoff from a sanitary landfill located in waters of the United States." What these examples illustrate is that to qualify as a "secondary effect" of a discharge, the effect must be a result of water moving across or through, or being manipulated by, the structure or feature that has been created by the discharge. In the first example, the discharge creates a dam, and the dam then affects the water levels both in the impoundment and downstream; in the second example, the discharge creates dry land on which a residential or commercial development may be built, and the development on the land then results in leaching into the groundwater from septic tanks that are placed in the fill and surface runoff from the fill; in the third example, the discharge creates a sanitary landfill, and the storm water that falls on the landfill then produces leachate into the groundwater as it passes through the landfill and runoff from its surface.

So there would be no misunderstanding about the meaning of the examples, these examples were followed by an explicit statement that "activities to be conducted on fast land created by the discharge of dredged or fill material in waters of the United States may have secondary impacts within those waters which should be considered in evaluating the impact of creating those fast lands." This statement is specific to activities conducted on a structure or feature created by the discharge. Significantly, the Guidelines do not discuss impacts of activities that are not subject to section 404 jurisdiction but that may have been facilitated by creation of the fast lands, or activities that might not take place elsewhere "but for" the creation of that fast land.

Unfortunately, activities not subject to 404 jurisdiction are exactly what the Wetlands Office included in its EPA Evaluation. It considered the "secondary effects" of Rosemont's proposed discharge to include the effects on aquatic resources (e.g., the potential effects of the mine pit on groundwater levels) resulting from all Project activity conducted anywhere within the Project area, rather than simply the effects to Waters based on the activities conducted on the "fast land" created by the discharge—i.e., the effects in "waters of the United States" of the tailings, waste rock, and ancillary facilities. The Wetlands Office simply assumes, that because Rosemont's proposed discharge is part of a larger project that will be facilitated by the issuance of the 404 permit, any effects that the Project will have on aquatic resources are "secondary effects" of the discharge, and therefore must be mitigated. This overreaching is contrary to the Guidelines, and the explicit guidance provided.

In describing the "secondary effects" that it claims must be mitigated, the Wetlands Office makes repeated references to "project impacts" or "mine impacts." See EPA Evaluation p. 5, 8, and 9 for example. The Wetlands Office does not identify the "secondary effects" of the discharge itself. Additionally on page 1 of EPA's Evaluation, the Wetlands Office erroneously concludes that the "project does not comply with ... the Guidelines." It is, of course, not the entire Rosemont Project that must comply with the 404 permit mitigation Guidelines; it is the discharge component of the Project, as the Guidelines plainly state. The Wetlands Office not only fails to clearly define that distinction, it appears to disregard it altogether in making its Evaluation.

The Wetlands Office does not explain how the impacts it identifies can be reconciled with the illustrative examples of such effects that are provided in the Guidelines. Additionally, its identification of impacts attributable to the proposed discharge are in direct conflict with guidance provided on the issue of "secondary effects" by EPA's General Counsel. The guidance was issued on March 17, 1983 in response to a question that was asked by the Assistant Administrator for Water in the course of preparing the Guidelines. The Assistant Administrator asked, "Must the guidelines consider secondary

impacts?" In response, the General Counsel stated:

> By "secondary impacts," I am assuming that you mean reasonably foreseeable impacts of the discharge itself that occur away from the immediate site of the discharge, e.g., downstream impacts or impacts from the altered circulation as opposed to impacts on whatever is buried by the discharged material. Such secondary impacts must be considered in the guidelines.
>
> ....
>
> When one moves beyond secondary impacts, as defined above, to impacts caused by the subsequent operation of a project or by associated development, the question becomes more difficult. While it is hard to answer in the abstract, in general whether such impacts must be considered would appear to depend on the directness of the causal connection and the predictability of the impacts, interpreted in the light of reason. For example, where fill is discharged to build a dam whose *purpose* is to manipulate water flow, the permitting authority, in evaluating the impacts of the fill, may reasonably take into account the fact that water levels will be manipulated. On the other hand, when a barge-loading facility for an upland factory involves some fill, the water quality impacts of the factory are outside the scope of the guidelines, even if they are, in a sense, a "result" of the fill.

Like the Guidelines, the guidance allows for the possibility that some downstream effects of the structure or feature created by a discharge are properly considered "secondary effects" of the discharge. In the guidance, as in the Guidelines, the example of a dam is used. Because the dam is created by the discharge, and has as its purpose the storage and release of water, the General Counsel concludes that "the permitting authority may reasonably take into account the fact that water levels will be manipulated" as a result of the fill, and the effects of the manipulation may therefore properly be considered a "secondary effect" of the discharge. On the other hand, the General Counsel uses the example of a discharge that is necessary to construct "a barge-loading facility for an upland factory" to illustrate effects that would not properly be considered "secondary effects" of the discharge. It is apparent that the General Counsel reasons that because the upland factory would not be created by the discharge itself, "the water quality impacts of the factory are outside the scope of the Guidelines, even if they are, in a sense, a 'result' of the fill"—i.e., even if the factory might not be built if the 404 permit is not issued.

This latter example is directly analogous to the situation presented by Rosemont's proposed discharge. To facilitate the operation of its Project, which equates to the "upland factory" in the General Counsel's example, Rosemont needs to construct tailings, waste rock, and ancillary facilities; similar to the "barge-loading facility" in the General Counsel's example, and the construction of those facilities will require "some fill." While the water quality impacts of the Project as a whole could possibly be considered, "in a sense, a 'result' of the fill," in that they might not take place if the 404 permit is not issued, "they are [nonetheless] outside the scope of the guidelines" because the impacts are not effects of the discharge itself; they are the effects of some other activity, in Rosemont's case the operation of the open pit, which is not regulated under section 404.

Based on the examples given in the Guidelines and in the guidance, it is clear that for an effect on aquatic resources to be considered a "secondary effect" of the "discharge itself," the effect must be the result of water interacting with the structure or feature created by the discharge—i.e., it must be the result of water running across or through, or being manipulated by, the structure or feature that is created by the discharge. This is what is meant by the Guidelines' definition of "secondary effects" as

"effects that are associated with a discharge of dredged or fill materials, but [that] do not result from the actual placement of the dredged or fill material." The Wetlands Office either overlooked or dismissed the regulatory definition and erroneously concluded that the discharge would "result in the loss, conversion and functional degradation of aquatic and terrestrial habitats over several thousand acres" (see EPA Evaluation, p. 2). As a result of this mistaken belief by the Wetlands Office, and thus the limits of its section 404 authority, EPA's Evaluation stating that Rosemont's mitigation proposal is inadequate is in error.

III. THE EVALUATION MISCHARACTERIZES MANY OF THE IMPACTS OF THE PROJECT

Even if the Wetlands Office had properly identified the "secondary effects" of the proposed discharge, it mischaracterized the likelihood, severity and extent of many of them, including those which do not even require 404 mitigation (i.e., groundwater drawdown). The EPA Evaluation identifies three types of what it terms "Indirect/Secondary Impacts" for which it claims that 404 permit mitigation is required. In order of their significance, they are "Groundwater Drawdown," "Reductions in Surface Water Flow Downstream of the Mine," and "Lost Functions to Waters Upstream of Mine." EPA generally: (a) mischaracterizes the effects of the Project on groundwater resources (which are not a secondary effect of the discharge in any event); (b) mischaracterizes effects on downgradient surface water flows (which are being accounted for and addressed through compensatory mitigation); and (c) wrongly suggests that loss of waters upgradient of the Project were not fully counted (they have been and the effects are being addressed through compensatory mitigation). Each type of impact is discussed below.

Groundwater Drawdown

The FEIS reveals that the open pit will lower or drawdown groundwater levels in the regional aquifer underlying the Project area, both during active mining operations and afterwards. The EPA Evaluation claims that this groundwater drawdown will result in

> "....dramatic and persistent changes to surface hydrologic and hydraulic regimes driven by groundwater hydrology," particularly in Davidson Canyon and the lower reaches of Cienega Creek , that it "will reduce streamflows, increase water temperatures, and disrupt breeding, spawning, rearing and migratory movements, or other critical life history requirements of fish and wildlife resources,"

and that it

> "....will add to a baseline trend of decreasing groundwater, causing a permanent reduction of water in streams and wetlands along Empire Gulch, Mattie Canyon, Gardner Canyon and Cienega Creek with potential adverse impacts to over 30 seasonal and perennial wetlands, and threatened and endangered aquatic habitat dependent plants, fish and wildlife."

EPA Evaluation, p. 3-4.[4] However, this characterization considerably exaggerates the potential effects and cannot be reconciled with the conclusions reached in the FEIS. On page 355, the FEIS states that:

[4] For perspective on the statement, Empire Gulch is approximately 5 miles south and east of the Project site, Mattie Canyon is approximately 10 miles due east of the Project site, Gardner Canyon is 6 miles south of the Project site, and Cienega Creek is between 8 and 13 miles east and north of the Project site. The watershed at the Project site drains from the Project location in Barrel Canyon, east approximately 3 miles to Davidson Canyon and then north approximately 13 miles before reaching the confluence with Cienega Creek.

1) "[w]ith respect to drawdown in the regional aquifer, the weight of the available evidence suggests that it is unlikely that flows in Davidson Canyon are connected to the regional aquifer that would be impacted by the mine site;"
2) even if a connection between the regional aquifer and Davidson Canyon exists, the groundwater models show no "drawdown at the confluence of Davidson Canyon and Cienega Creek" after 150 years, and only a drawdown of "0.1 foot or less" after 1,000 years; and
3) such small levels "are beyond the reasonable ability of the models to predict impacts and are not suggestive of any likely changes" in the reduction of surface flow in lower Davidson Canyon, "even assuming that the springs and underflow in Davidson Canyon are connected to the regional aquifer."

On page 294, the FEIS describes uncertainties associated with groundwater models:

> "The models used to predict impacts to groundwater availability have a level of uncertainty that must be considered when interpreting the results. While the models can mathematically predict groundwater drawdown to thousandths of a foot, in reality this level of refinement is meaningless. The models were designed for the purpose of predicting the inflow of groundwater to the mine pit and the general drawdown that would occur in the regional aquifer; however, the farther the predictions are in terms of distance from the mine pit and the farther out in time the predictions occur, the less certain they become. The groundwater modeling experts contracted by the [Forest Service] determined that the reasonable limits of certainty to the groundwater models is the 5 to 10 foot drawdown contour .... Within this contour, the groundwater models would be able to reasonably predict changes to wells, springs, and streams. Changes below this threshold are beyond the capabilities of the models to accurately predict."

Further, on page 290 of the FEIS there is a discussion regarding temporal and distal uncertainties:

> "[A] common opinion among experts is that the site-specific groundwater models—or any groundwater models—do not have the ability to predict impacts on distant waters such as Cienega Creek [and] Davidson Canyon ... where these impacts are the result of small groundwater changes ... at remote periods in the future (hundreds or even thousands of years from now)."

The studies and conclusions reported in the FEIS are based on three different groundwater models, two of which were subjected to peer review. These models represent the best science available. In its assumptions and with no scientific backing, the Wetlands Office states that the surface flows in Davidson Canyon and Cienega Creek "can be sensitive to changes in groundwater supply measured in inches, ... the applicability of even the best available modeling with respect to answering questions about probable impacts" is questioned. EPA Evaluation, p. 5. These statements are not supported by the thorough technical analysis and disclosures in the FEIS. Instead, they are simply speculation.

<u>Reductions in Surface Water Flow Downstream of the Mine</u>

The EPA Evaluation cites an evaluation performed by Rosemont that shows a reduction in surface flows at the confluence of Cienega Creek and Davidson Canyon as the result of mine operations. EPA took that reduction as "a signal that impacts [to surface water flows] are likely to extend some point beyond this confluence" into the lower reaches of Cienega Creek, and are "likely to be significant, especially given the cumulative effects of predicted reductions in groundwater levels." EPA Evaluation, p. 3.

Again, this is simply speculation by the Wetlands Office that is not supported by technical study and analysis. The FEIS contains an extensive evaluation of the potential impact of mine operations on surface flows in perennial streams, including the lower reaches of Cienega Creek. As the principal contributor to perennial stream flows are the subsurface expression of groundwater sources, the FEIS flags the same uncertainty about its predictions with respect to perennial stream flow as were cited in connection with the discussion of groundwater drawdown. Pages 524 to 525 of the FEIS states that:

> "While the analysis [of reductions in surface flow] ... is quantitative, it reflects predicted impacts from relatively small amounts of groundwater drawdown, often fractions of a foot, that are occurring decades, hundreds, or even a thousand years in the future....[S]uch small drawdowns are beyond the ability of these groundwater models, or any groundwater model, to accurately predict .... It is important to understand that the detailed predictions [provided in the FEIS] are meant to inform the decision and to show what could potentially happen if the model predictions were to occur as modeled; however, this does not change the overall uncertainty."

In addition, page 525 of the FEIS notes that "[t]here are other trends and exacerbating factors occurring in the watershed that add to the uncertainty of predicting impacts to perennial streams" from mine operations. In other words, whatever the predictions, the effect of mine operations would be, at worst, only one of several contributing factors.

Against that background, the FEIS discloses its technical conclusion that "the lowest estimates of drawdown" produced by the models "would not change the perennial nature of" Lower Cienega Creek, "even up to 1,000 years after closure," and that "the highest estimates of drawdown would not change the perennial nature of the stream up through 50 years after closure, but the stream would gradually become intermittent by 150 years after closure and would become ephemeral 1,000 years after closure." FEIS, p. 539. While it may tempt EPA to only use the worst-case projection, and to use the longest time period – 1,000 years – into the future, this sort of speculation is hardly a legitimate basis on which to challenge the thorough analysis performed during the NEPA process.

It is important when discussing possible impacts to Lower Davidson Canyon and Cienega Creek to keep the physical setting in mind. Lower Cienega Creek is located approximately 13 miles downstream from the Project. Modeled flow reductions from Project activities at a downstream point (14.4 river miles from the Project) immediately above the confluence of Davidson Canyon with Cienega Creek are estimated to be 4%. At its confluence with Cienega Creek, Davidson Canyon amounts to approximately 51.3 square miles of drainage while the entire Cienega Creek drainage at the Pantano Dam is 457 square miles. This means Davidson accounts for 11% of the drainage at Pantano Dam. The Project site is approximately 7.2 square miles. This amounts to 14% of the Davidson Canyon drainage area and 1.5% of the drainage area above Pantano Dam. Calculations of runoff from these areas have shown that the change in flows is indiscernible from background flow below the confluence of Davidson Canyon and Cienega Creek. To assert, as EPA does, that "impacts are likely to extend some point beyond" the confluence of Davidson Canyon and Cienega Creek" is unsupported by data and contradicted by, flow modeling, numerous investigations provided by Rosemont in support of their 404 permit and the FEIS, and common sense. This analysis is presented in the FEIS on page 355.

In fact, the FEIS goes to great length to discuss the potential reductions in flow and the modeling; "In reality, flows from the project site would need to flow downstream approximately 12 miles in an ephemeral stream channel (desert wash) composed of pockets of highly transmissive sediments before those flows would contribute recharge to lower Davidson Canyon. Recharge is more likely to derive from closer tributaries, although certainly during larger flow events, contribution from Barrel Canyon

would occur." (FEIS, p. 355)

Lost Functions to Waters Upstream of Mine

The EPA Evaluation claims that there will be "secondary impacts to drainages upstream of the mine" that "include severing surface hydrology and connectivity, decreasing quality of wildlife habitat, and fragmentation of animal movement corridors," and that these impacts "need to be more completely quantified and ultimately mitigated." EPA Evaluation, p. 3. In fact, the Project lies against a hillside and the ephemeral washes that exist above the operations site are therefore quite limited. Even assuming that the ephemeral washes upstream of the Project site are jurisdictional, what the EPA Evaluation overlooks is that the "upgradient impacts" to those washes (totaling 0.18 acres) have already been quantified and included as part of the 40 acres identified as direct impacts of the proposed discharge. Moreover, the preferred alternative for the Project layout was selected as a result of the NEPA alternatives analysis, which included consideration of the criteria for the Least Environmentally Damaging Practical Alternative (LEDPA) under the Guidelines. The selection process criteria were chosen to insure that as many upstream drainages as possible (including McCleary Canyon) would remain open, connected, and free-flowing, and that the impacts to any particular drainage would be minimized.

IV. ROSEMONT'S 404 MITIGATION PROPOSAL WILL, WHEN FINALIZED, COMPENSATE FOR ALL UNAVOIDABLE IMPACTS TO "WATERS OF THE UNITED STATES" FROM ROSEMONT'S PROPOSED DISCHARGE

Rosemont's 404 mitigation proposal

Rosemont is proposing three projects to compensate for unavoidable impacts to Waters from its proposed discharge:

- A potential in-lieu fee (ILF) project at Pantano Dam, made possible by the acquisition of a critical in-holding in the Cienega Creek Natural Preserve that the Dam is located on, as well as the accompanying 1,122 acre-feet per annum (AFA) of senior surface water rights in Cienega Creek associated with that parcel.
- A permittee-responsible (or potential ILF) project at the 1,200-acre Sonoita Creek Ranch (SCR) which comes with its own 590 AFA surface water right and opportunities for riparian restoration and enhancement.
- Conservation parcels within the Davidson Canyon watershed along significant xeroriparian corridors along Davidson Canyon and two tributaries (Mulberry and Barrel Canyons) (collectively the "Davidson Canyon" parcels.

The projects listed above are part of a larger mitigation package that will be associated with the final Mine Plan of Operations (MPO). These mitigation measures are described in Appendix B of the FEIS. This broader package includes efforts to minimize and offset impacts to a variety of resources, including for example, endangered species and wildlife habitat.

In selecting the proposed 404 mitigation projects, Rosemont had to be cognizant of the hierarchy of mitigation approaches preferred by the mitigation rule: (1) established mitigation banks, (2) ILF projects, and/or (3) Permittee responsible mitigation. However, there are no currently approved mitigation banks available to Rosemont. Therefore, Rosemont evaluated the next approach, an ILF. A number of

ILF sponsoring entities and Corps staff have been working to develop projects consistent with the mitigation rules. However, at this juncture there is not an approved ILF project that Rosemont can rely upon for mitigation credits. If an ILF project cannot be timely approved, Rosemont will need to complete a permittee responsible plan.

Development of Rosemont's 404 mitigation proposal

Rosemont arrived at the proposed 404 mitigation parcels through an extensive acquisition effort that was part of the larger mitigation package development. Recognizing the rule preference for a watershed based approach to compensatory mitigation, Rosemont sought parcels and projects located within the drainages potentially impacted by the Project. Barrel Canyon lies in the upper reaches of the Davidson Canyon watershed, which is in turn part of the Cienega Creek watershed, which is ultimately a tributary to the Santa Cruz River Basin. As shown in Figure 1, the vast majority of lands in the Cienega Creek watershed are public (federal, state, or county) and not available for acquisition. Rosemont was able to acquire private lands in the upper Davidson Canyon watershed (Mulberry and Davidson Canyons) and those lands are proposed as part of the 404 mitigation package. Due to their relatively undisturbed condition (limited to cattle grazing), these lands are proposed primarily for preservation purposes. Again, given the predominance of public lands, there were no other available mitigation opportunities in the Barrel Canyon/Davidson Canyon watersheds immediately down-gradient of the Rosemont Project.

An opportunity to secure and restore flows in the lower Cienega Creek watershed was found that is associated with the Pantano Dam (Dam), a storage impoundment located on lower Cienega Creek and surrounded by the Cienega Creek Nature Preserve (Preserve). The Dam is currently used to store and divert water for a golf course and has substantial appurtenant surface water rights (1,122 AFA). Pima County has long had interest in acquiring the rights to this water for use in restoring and enhancing the Preserve. While out of kind (Rosemont's impacts are almost entirely associated with ephemeral systems), from a Clean Water Act standpoint this presents an ideal and extremely rare opportunity in Southern Arizona to restore a perennial system. The Dam and lower Cienega Creek watershed ultimately discharge into the downstream reach of the Santa Cruz River designated as navigable.

In addition, in the adjacent Sonoita Creek watershed, and not in the Cienega Creek watershed, Rosemont has acquired the right to purchase the Sonoita Creek Ranch (SCR). This property consists of approximately 1,200 acres of land and appurtenant water rights along Sonoita Creek between Sonoita and Patagonia, Santa Cruz County, Arizona (Figure 1). Sonoita Creek is a major tributary of the Santa Cruz River and ultimately discharges upstream of the southernmost navigable water reach of the Santa Cruz River near Green Valley. Prior to Rosemont acquiring the right to purchase the SCR property, the Arizona Game & Fish Department (AGFD) had identified this ranch as having high conservation value for sensitive wildlife and fish species due to the presence of significant surface water and the appurtenant water right (over 590 AFA), as well as the property's potential as a corridor link between the Canelo Hills and the Santa Rita Mountains.

However, Rosemont believes that the conservation value of the Pantano Dam parcel and associated water rights are likely to be great enough to meet all 404 mitigation requirements for the Project. In fact, based on preliminary plans, Rosemont anticipates that the Project will be able to be fully mitigated through the purchase of mitigation credits from an ILF project, which is under development. Rosemont has agreed to convey substantial surface water rights associated with Pantano Dam to the ILF sponsor, Pima County Regional Flood Control District (PCRFCD) and the Tucson Audubon Society. The agreement also includes the conveyance of the two-acre parcel , which contains the Pantano Dam, diversion

facilities, and a nearby groundwater well to PCRFCD, as well as substantial funding to implement and maintain the ILF project.

In the event that the Pantano Dam ILF project will not fully mitigate the impacts of the fill discharge at the Rosemont Project, SCR offers considerable mitigation potential, either as a permittee-responsible project or as another ILF project. SCR is of a size and ecological value that mere preservation of the parcel would provide substantial ecological benefit to onsite aquatic resources. The upper Davidson Canyon parcels are also in reserve if needed.

Despite EPA assertions that these projects are "grossly inadequate" (EPA Evaluation, p. 9), Rosemont believes these parcels and projects, once fully defined, designed, and developed, will clearly present unique and valuable mitigation opportunities for Clean Water Act purposes. As explained above, they are proximate to mine operations and represent the best mitigation opportunities in the area.

Sufficiency of mitigation offered.

After having applied the Corps' South Pacific Division (SPD) standard operating procedures (SOPs), Rosemont believes that Pantano Dam (potentially on its own) and SCR (if needed with or without the upper Davidson Canyon parcels) provide sufficient mitigation. SPD developed the SOPs in order to have a regional, standardized process to determine compensatory mitigation ratios pursuant to the Corps' mitigation rules (33 CFR Part 332). This was done in response to inconsistencies in determining mitigation ratios across Corps districts and project managers. Public Notice 12501-SPD Regulatory Program Standard Operating Procedure for Determination of Mitigation Ratios was published on December 19, 2012 followed by subsequent updates and clarifications on August 5, 2013. These procedures instruct Corps project managers to complete Steps 2 through 10 of Attachment 12501.1 – SPD Mitigation Ratio Setting Checklist (Checklist), which compares elements of a permit applicant's proposed mitigation plan (e.g., watershed location, risk, temporal loss, etc.) to the proposed project impacts, producing a final mitigation ratio for each proposed mitigation site or type.

The initial step of the Checklist is to establish a baseline ratio based upon a qualitative or quantitative comparison between the aquatic functions and values present at the impact and mitigation sites. The SPD does not currently have a Corps-approved quantitative functional assessment available for use in Arizona or for ephemeral washes, so a qualitative assessment is required.

Per Corps direction, Rosemont utilized the Rapid Stream Riparian Approach (RSRA) functional model to assess the functions of the proposed Project and mitigation sites to inform the establishment of baseline ratios for the Checklist. The RSRA model had been developed for wetter systems than what occur at the Rosemont Project and the proposed 404 mitigation sites. Therefore, substantial modifications were made to the model for better application to ephemeral systems.

To date, Rosemont and the Corps have calculated preliminary mitigation ratios on two elements of Rosemont's proposed mitigation package (Sonoita Creek Ranch and Davidson Canyon Parcels). We understand that the Corps and the ILF sponsor are completing an assessment of available credits associated with the Pantano Dam project.

In making their ratio determination, the Corps was informed by the results of Rosemont's functional assessment as well as Attachment 12501.3-SPD Examples for SPD Mitigation Ratio Setting Checklist, which provided examples of completed Checklists very similar to portions of Rosemont's proposed mitigation package. The permittee-responsible mitigation ratios calculated by the Corps ranged from 4:1 to 6.1:1 for preservation of wetlands and waters of the United States and 9.1:1 for preservation of

upland buffer at the mitigation parcels. The Corps also calculated mitigation ratios ranging from 3.6:1 to 6.2:1 on a conceptual ILF project at Sonoita Creek Ranch for establishment of wetland and riparian habitat.

Thus, using the functional assessment and working through the Checklist indicated that the three projects would collectively have available credits substantially higher than the 68 acres of direct and indirect impacts the Corps is requiring Rosemont to mitigate. EPA has criticized the use of the Corps' SOPs and the functional assessment done by Rosemont. However, these efforts were undertaken at the direction of Corps staff, following the current Corps' guidance and represent Corps staff providing the best direction available in light of: (a) the lack of an agency-approved standardized functional assessment; and (b) SPD's efforts to standardize the application of mitigation ratios to Corps' permits across the Districts that make up the South Pacific Division. If EPA has broad policy differences with the Corps over which functional assessments to use, or what procedures should be used to determine mitigation ratios, it should address those concerns outside of the permit process. The EPA should not delay or undermine a permit applicant's attempts to secure a permit while these issues are worked out.

In summary, the mitigation credits likely available at each site are:

> **Pantano Dam:** Rosemont's initial proposal was to release water currently impounded by the Dam into the bed of what is now Pantano Wash. There are 22 acres of jurisdictional waters (all now ephemeral) immediately below the Dam that would benefit from this release. In addition, Rosemont understands that Pima County has been working on more detailed plans that would result in enhancement of riparian areas and ephemeral tributaries within the Preserve so as to obtain additional credit. While Rosemont is not privy to those discussions, the credits available should be significant and may be sufficient to mitigate all 68 acres of Project impact to Waters.
>
> **Sonoita Creek Ranch:** Rosemont is working on a revised Habitat Mitigation and Monitoring Plan (HMMP) for SCR. An earlier version of mitigation proposed for this site would have included significant enhancement of jurisdictional waters, riparian buffer and upland buffer, plus preservation of wetlands, yielding almost 200 acres of credit based on the Checklist. This is understandable given that the SCR includes over 1,200 acres in size located in and around the floodplain of Sonoita Creek, with access to approximately 590 acre-feet of "wet water" each year. Even if this amount of credit proves optimistic as the new HMMP is developed, Rosemont asserts that there is sufficient credit available on this parcel to supplement any credits necessary after considering the Pantano Dam ILF project. In addition, if the ILF at Pantano proves unworkable, SCR could meet all of Rosemont's compensatory mitigation obligations.
>
> **Davidson Canyon Preservation Lands:** Putting these lands through a similar analysis yielded 14 acres of mitigation credit, all in the preservation category. This simply adds weight to the point that mitigation proposals by Rosemont can be considered sufficient to meet 404 requirements.

In summary, some combination of these projects will meet Rosemont's compensatory 404 mitigation obligations. These are the best and indeed most appropriate properties available for mitigation purposes in proximity to the Project, and offer unique riparian restoration opportunities in a region with very little surface water available.

V. Conclusion

Rosemont remains committed to meeting and maintaining compliance with all regulatory requirements for the Project, and understands that the scale and nature of the Project demands solid mitigation

planning, execution, and agency oversight. However, Rosemont also believes that its plans should be applied, measured, and judged on their true merits, on their full scope, and on their full potential to meet the individual regulatory requirements the law requires. The rules are clear that agencies are to use the best science available, not simply speculation about what could happen hundreds of years into the future.

The statements made in EPA's November 7 letter appear to ignore regulatory guidance, Guidelines, or agency requirements, and in fact seem premature by inappropriately exaggerating impacts of the Project without the benefit of consideration of the FEIS, Draft Record of Decision conditions, Biological Opinion conservation measures, or voluntary conservation and mitigation measures. Having these documents available should provide a common understanding of the Project and facilitate the analysis and discussions.

Rosemont looks forward to your visit early next year, which will give us the opportunity to provide you with a Project briefing along with a tour. Rosemont believes that a site visit would be helpful to give you context regarding the Project, the overall setting of the area, the proposed mitigation sites, and the proximity of the specific areas referenced in the EPA letter. We will continue to work with your staff to schedule this visit.

Regards,

Katherine Ann Arnold, P.E.
Vice-President, Environmental and Regulatory Affairs

Attachment: *Figure 1: Surface Management*

cc: Marjorie Blaine, U.S. Army Corps of Engineers
Jared Blumenfeld, U.S. EPA Region IX
Jim Upchurch, U.S. Forest Service
Henry Darwin, Arizona Department of Environmental Quality
Mike Fulton, Arizona Department of Environmental Quality
David Baker, Bureau of Land Management
Steven Spangle, U.S. Fish and Wildlife Service

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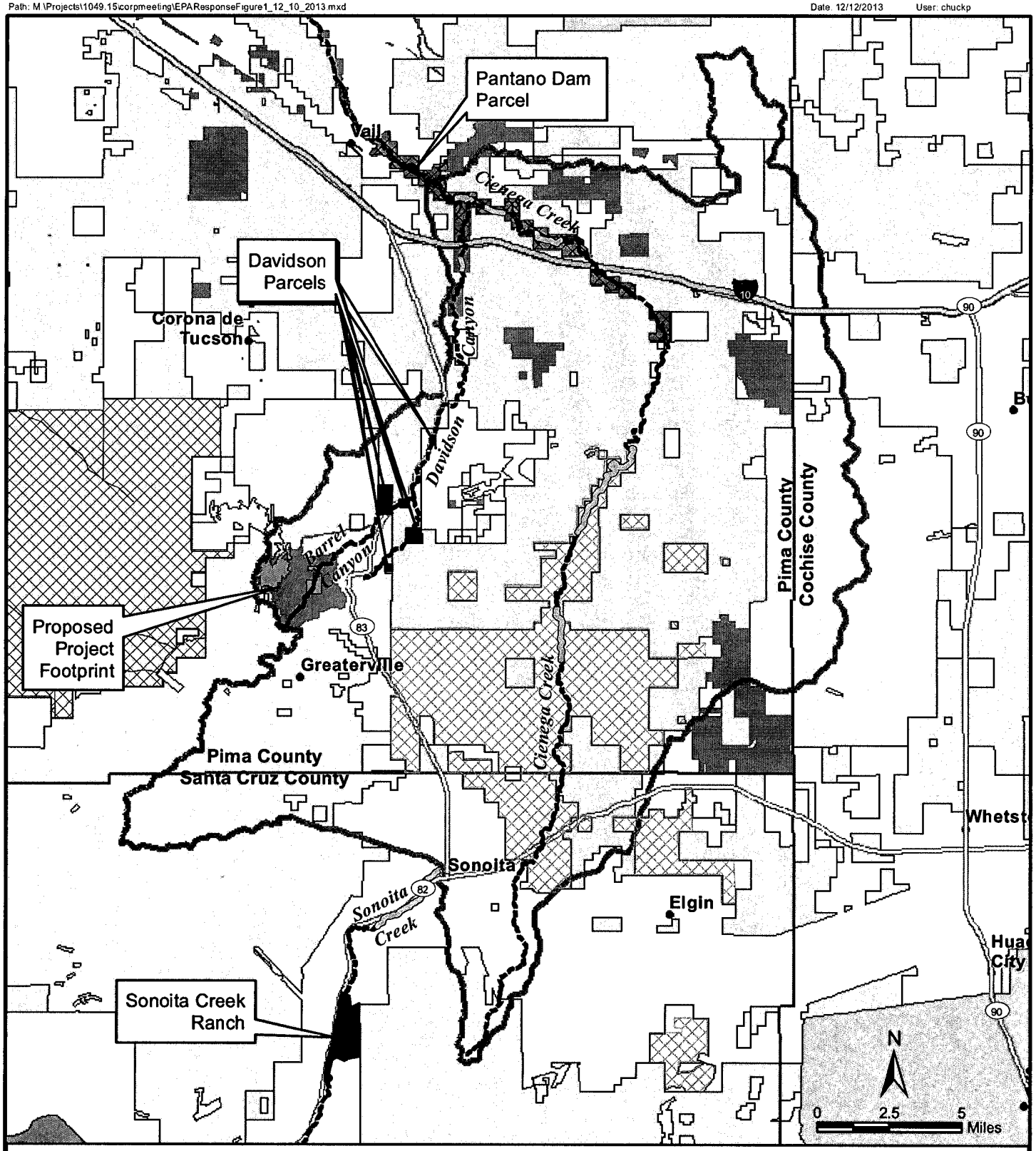

Data Source: BLM, Pima County
ESRI Base Data,
Integrated Watershed Summary,
Rosemont Copper 2012

- Perennial Stream Reach
- Ephemeral Drainage Channel
- Proposed Project Footprint
- Mitigation Site
- CIENEGA CREEK NATURAL PRESERVE
- LAS CIENEGAS NATIONAL CONSERVATION AREA
- SANTA RITA EXPERIMENTAL RANGE
- Cienaga Creek Watershed (USGS)

Surface management

- US Forest Service (USFS)
- Pima County
- Bureau of Land Management (BLM)
- Military
- National Park Service (NPS)
- Private Land (No Color)
- State Trust Land
- State Wildlife Area

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SURFACE MANAGEMENT

Figure 1