To: Miller, Clay[Miller.Clay@epa.gov]; Kaiser, Russell[Kaiser.Russell@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]; Evans, David[Evans.David@epa.gov]
From: Leidy, Robert
Sent: Wed 2/26/2014 8:08:52 PM
Subject: RE: Photos of Santa Rita Mtns. and Cienega watershed biodiversity

FYI. Link to some nice photos of Santa Rita Mountains and Cienega Creek watershed biodiversity.

http://lensontheland.com/

Robert A. Leidy, Ph.D.

U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

To: Brush, Jason[Brush.Jason@epa.gov]
Cc: Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]; Kaiser, Russell[Kaiser.Russell@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]; Bose, Laura[Bose.Laura@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]
From: Goldmann, Elizabeth
Sent: Thur 2/13/2014 10:01:47 PM
Subject: RE: RM - Mitigation Ratio Checklist SOP

Ex. 5 - Deliberative Process

From: Brush, Jason
Sent: Thursday, February 13, 2014 1:25 PM
To: Goldmann, Elizabeth
Cc: Flannery-Keith, Erin; Miller, Clay; Kaiser, Russell; Pendergast, Jim; Bose, Laura; Goforth, Kathleen; Leidy, Robert
Subject: Fw: RM - Mitigation Ratio Checklist SOP

Thanks Liz - in lieu of this week's HQ call, I'm forwarding your notes to WD and will also forward the weekly report item from yesterday's LA meeting separately.

Laura - apparently there's a draft 401. **Ex. 5 - Deliberative Process**

Ex. 5 - Deliberative Process

From: Goldmann, Elizabeth
Sent: Thursday, February 13, 2014 12:31:42 PM
To: Brush, Jason
Cc: Jessop, Carter; Leidy, Robert
Subject: FW: RM - Mitigation Ratio Checklist SOP

Hi Jason

Rob will participate on the CEQ call tomorrow. Jane knows the call is covered. As a follow up

to our conference call with Sallie and Marjorie, I sent an email to Marjorie regarding the Mitigation Ratio Checklist SOP (see below).

Ex. 5 - Deliberative Process

Lastly, she noted ADEQ sent Rosemont a draft 401. This draft 401 would go out on PN.

-Elizabeth

From: Goldmann, Elizabeth
Sent: Wednesday, February 12, 2014 3:58 PM
To: 'Blaine, Marjorie E SPL'
Subject: RM - Mitigation Ratio Checklist SOP

Hi Marjorie

Ex. 5 - Deliberative Process

I will also forward to you the technical memo on Arizona Water Rights. The document is over 400 pages due to appendices containing AZ DWR documents on pending applications. It is so large, I will send you the 10 page memo, including the list of documents in the appendices.

Thanks,

Elizabeth

To: Kaiser, Russell[Kaiser.Russell@epa.gov]
From: Pendergast, Jim
Sent: Thur 2/6/2014 1:45:54 PM
Subject: RE: HGM references

Ex. 5 - Deliberative Process

From: Kaiser, Russell
Sent: Thursday, February 06, 2014 7:37 AM
To: Flannery-Keith, Erin; Miller, Clay; Evans, David; Pendergast, Jim
Subject: FW: HGM references

Ex. 5 - Deliberative Process

Russell L. Kaiser

Chief, Wetlands & Aquatic Resources Regulatory Branch

1301 Constitution Ave., N.W.

Room 7217M West Bldg.

Washington, DC 20004

P: 202.566.0963

From: Kaiser, Russell
Sent: Thursday, February 06, 2014 7:30 AM
To: Brush, Jason; Sumner, Rich; Leidy, Robert; Goldmann, Elizabeth
Subject: RE: HGM references

Ex. 5 - Deliberative Process

Also, could one of you forward me the article – I would be very interested in reading it…
Thanks

Russell L. Kaiser

Chief, Wetlands & Aquatic Resources Regulatory Branch

1301 Constitution Ave., N.W.

Room 7217M West Bldg.

Washington, DC 20004

P: 202.566.0963

From: Brush, Jason
Sent: Tuesday, February 04, 2014 8:35 PM
To: Sumner, Rich; Leidy, Robert; Goldmann, Elizabeth
Cc: Kaiser, Russell
Subject: RE: HGM references

Ex. 5 - Deliberative Process

Russ, see Rich's perspective on the HGM question right before his close, below.

From: Sumner, Rich
Sent: Tuesday, February 04, 2014 10:00 AM
To: Leidy, Robert
Cc: Goldmann, Elizabeth; Brush, Jason
Subject: RE: HGM references

Hi Rob,

Sorry for the delay in response. I was away visiting friends and family down your way (San Jose). A good time was had by all.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Best regards,

Rich

Ex. 5 - Deliberative Process

Richard Sumner

USEPA

200 SW 35th Street

Corvallis, OR 97333

541.754.4444

Sumner.Richard@epa.gov

From: Leidy, Robert
Sent: Friday, January 31, 2014 8:55 AM
To: Sumner, Rich
Subject: FW: HGM references

Hi Rich,

Ex. 5 - Deliberative Process

Best,

Rob

Robert A. Leidy, Ph.D.

U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

From: Julia Fonseca [mailto:Julia.Fonseca@pima.gov]

Sent: Tuesday, December 17, 2013 4:07 PM
To: Leidy, Robert
Subject: HGM references

Hi, Robert,

You requested some information about the hydrogeomorphic methods used in Arizona. See the attached pdf for a description taken from a Corp restoration study for the Santa Cruz River in Tucson.

http://rfcd.pima.gov/largefiles/pdli2/PDIeis.pdf The Paseo DEIS is posted here. It is the source for the above document.

But there is a final EIS. See EIS No. 20050477, Final EIS, COE, AZ, Santa Cruz River, Paseo de las Iglesias Feasibility Study, To Identify, Define and Solve Environmental Degradation, Flooding and Water Resource Problems, City of Tucson, Pima County, AZ, Wait Period Ends: December 19, 2005, Contact: Michael J. Fink 602-640-2001 Ext. 252.

http://www.usace.army.mil/Portals/2/docs/civilworks/CWRB/stcruz/SantaCruzRiverPaseodLI_Project_Summar 25-06.pdf This is a policy review of some of the issues that came out when the Corps reviewed the Paseo project.

To: Kaiser, Russell[Kaiser.Russell@epa.gov]; Diamond, Jane[Diamond.Jane@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Leidy, Robert[Leidy.Robert@epa.gov]
Cc: Miller, Clay[Miller.Clay@epa.gov]; Bromm, Susan[Bromm.Susan@epa.gov]; Evans, David[Evans.David@epa.gov]
From: Brush, Jason
Sent: Sat 2/1/2014 4:06:10 AM
Subject: The relevance c Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Leidy, Robert
Sent: Friday, January 31, 2014 9:59:43 AM
To: Kaiser, Russell
Cc: Brush, Jason; Miller, Clay; Goldmann, Elizabeth
Subject: RE: problems with Ex. 5 - Deliberative Process

Russ,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Let me know if you have any more questions and I will get back to you on the functional assessment.

Best,

Rob

Robert A. Leidy, Ph.D.

U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

From: Kaiser, Russell
Sent: Thursday, January 30, 2014 6:57 PM
To: Leidy, Robert
Cc: Brush, Jason; Miller, Clay
Subject: Re: problems with Ex. 5 - Deliberative Process

Rob,

Ex. 5 - Deliberative Process

All thoughts and comments greatly appreciated! Thanks much - Russ

---

From: Leidy, Robert
Sent: Thursday, January 30, 2014 4:47:27 PM
To: Greczmiel, Horst; Goforth, Kathleen; Brush, Jason; Kaiser, Russell; Bromm, Susan
Cc: Goldmann, Elizabeth; Jessop, Carter; Miller, Clay
Subject: FW: problems with Ex. 5 - Deliberative Process

All,

I asked Julia Fonseca, Pima County (see Julia's discussion, below) to send the attached to me and I am forwarding to you. This is very relevant to our conversation at Empire Ranch on the National Conservation Area yesterday.

Best,

Rob

Robert A. Leidy, Ph.D.

U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

From: Julia Fonseca [mailto:Julia.Fonseca@pima.gov]
Sent: Thursday, January 30, 2014 11:17 AM
To: Leidy, Robert
Subject: Phil, Paper

Hi,

You requested an email for Phil Rosen: pcrosen@email.arizona.edu

Jean Calhoun mentioned the idea of calibrating and improving the models with time as a means of adaptive management. The problems with monitoring at distant locations like Empire Gulch are time lags, noise and most importantly, that the trajectory is set early on by groundwater depletion. The latter type of problem of using monitoring for adaptive management is discussed on pages 6-7 of the attached paper. The whole paper is really good perspective for understanding groundwater-dependent wetland depletion in the Western US.

They spent 15 to 20 years developing and arguing about groundwater models in the San Pedro River, during which the groundwater depletion continued. What was more effective was land acquisitions to reduce ag pumping by TNC, and groundwater recharge (albeit the effluent will degrade water quality and perhaps ultimately the biological integrity of the wetlands).

Julia Fonseca

Environmental Planning Manager

Pima County Office of Sustainability and Conservation

201 N. Stone, 6th floor

Tucson, AZ 85701

(520) 724-6460

Julia.Fonseca@pima.gov

To: Kaiser, Russell[Kaiser.Russell@epa.gov]; Fertik, Rachel[Fertik.Rachel@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
Cc: Landers, Timothy[Landers.Timothy@epa.gov]; Topping, Brian[Topping.Brian@epa.gov]
From: Miller, Clay
Sent: Tue 1/14/2014 1:16:06 PM
Subject: Fw: Need for understanding of OW level c Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

water quality memo_29oct09.pdf

Russ, Rachel, Erin. Can we tak today about this.

From: Brush, Jason
Sent: Monday, January 13, 2014 9:40:00 PM
To: Evans, David; Kaiser, Russell; Flannery-Keith, Erin; Miller, Clay; Fertik, Rachel
Cc: Diamond, Jane; Goldmann, Elizabeth; Goforth, Kathleen; Jessop, Carter; Leidy, Robert; Campbell, Rich; Bose, Laura
Subject: Need for understanding of OW level Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Dear HQ colleagues -

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Jason A. Brush
Supervisor, Wetlands Office
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-8)
San Francisco, CA 94105
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desk: 415.972.3483
fax: 415.947.3537
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To: Evans, David[Evans.David@epa.gov]; Kaiser, Russell[Kaiser.Russell@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]; Fertik, Rachel[Fertik.Rachel@epa.gov]
Cc: Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Graves, Karin[Graves.Karin@epa.gov]; Campbell, Rich[Campbell.Rich@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]
From: Brush, Jason
Sent: Thur 12/19/2013 10:08:18 PM
Subject: FW: Rosemont Copper Company Comments responding to Nov 7, 2013 letter: EPA to Corps
Letter to Colonel Colloton re EPA Evaluation - 13Dec2013.pdf
Rosemont.404Mitigation.EPA.assessment[1].pdf

Incoming letter attached, along with ours. Pasted below are our Ex. 5 - Deliberative Process Ex. 5 - Deliberative Process -JB

Top Messages:

Ex. 5 - Deliberative Process

Summary

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Diamond, Jane
Sent: Monday, December 16, 2013 10:25 AM
To: Brush, Jason; Goldmann, Elizabeth; Leidy, Robert
Subject: FW: Rosemont Copper Company Comments responding to Nov 7, 2013 letter: EPA to Corps
Importance: High

I haven't yet read.

From: Blumenfeld, Jared
Sent: Monday, December 16, 2013 10:13 AM
To: Diamond, Jane; Scott, Jeff
Subject: Fw: Rosemont Copper Company Comments responding to Nov 7, 2013 letter: EPA to Corps

Importance: High

Jared Blumenfeld, EPA

From: Jamie Sturgess <jsturgess@rosemontcopper.com>
Sent: Friday, December 13, 2013 3:06:34 PM
To: Blumenfeld, Jared
Subject: Rosemont Copper Company Comments responding to Nov 7, 2013 letter: EPA to Corps

December 13, 2013

Jared Blumenfeld

Regional Administrator

Region 9

US EPA

Jared:

Today was a milestone day for the Rosemont Copper Company, as the Final EIS Notice of Availability has been published in the Federal Register.

This NOA allows the Army Corps of Engineers to formally proceed with processing the 404 permit application Rosemont has submitted, and which your agency has recently opined on.

In addition, a Draft Record of Decision was made available to the public by the US Forest Service, with a public comment/objection period starting January 1, 2014 and lasting some 45 days from then.

We are both aware of ongoing discussions between the CEQ and the several federal agencies related to those proceedings.

This note is to provide you advance courtesy copy of the Rosemont response to the Nov 7, 2013 letter from EPA to the Corps related to the mitigation plans available to the EPA at that time.

For your convenience, I enclose a copy of the conclusion from todays Rosemont letter.

Perhaps we could meet and discuss where and how we might provide leadership to bring the different perspectives on the Rosemont project closer together.

I will try and schedule such a meeting for early in the new year.

Best regards for the Holidays and for the New Year

Jamie Sturgess

Senior Vice President

Augusta Resource Corporation /Rosemont Copper Company

303 300 0134 office

(Conclusion from letter of Dec 13, 2013 Rosemont to US Corps of Engineers)

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.

To: Kaiser, Russell[Kaiser.Russell@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]; Fertik, Rachel[Fertik.Rachel@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Brush, Jason
Sent: Tue 12/17/2013 3:04:13 AM
Subject: Fw: Rosemont Copper Company Comments responding to Nov 7, 2013 letter: EPA to Corps
Letter to Colonel Colloton re EPA Evaluation - 13Dec2013.pdf
Rosemont.404Mitigation.EPA.assessment[1].pdf

Ex. 5 - Deliberative Process

From: Diamond, Jane
Sent: Monday, December 16, 2013 10:25:21 AM
To: Brush, Jason; Goldmann, Elizabeth; Leidy, Robert
Subject: FW: Rosemont Copper Company Comments responding to Nov 7, 2013 letter: EPA to Corps

I haven't yet read.

From: Blumenfeld, Jared
Sent: Monday, December 16, 2013 10:13 AM
To: Diamond, Jane; Scott, Jeff
Subject: Fw: Rosemont Copper Company Comments responding to Nov 7, 2013 letter: EPA to Corps
Importance: High

Jared Blumenfeld, EPA

From: Jamie Sturgess <jsturgess@rosemontcopper.com>
Sent: Friday, December 13, 2013 3:06:34 PM
To: Blumenfeld, Jared
Subject: Rosemont Copper Company Comments responding to Nov 7, 2013 letter: EPA to Corps

December 13, 2013

Jared Blumenfeld

Regional Administrator

Region 9

US EPA

Jared:

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Best regards for the Holidays and for the New Year

Jamie Sturgess

Senior Vice President

Augusta Resource Corporation /Rosemont Copper Company

303 300 0134 office

(Conclusion from letter of Dec 13, 2013 Rosemont to US Corps of Engineers)

V. Conclusion

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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.

To: Kaiser, Russell[Kaiser.Russell@epa.gov]; Evans, David[Evans.David@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]; Fertik, Rachel[Fertik.Rachel@epa.gov]
From: Brush, Jason
Sent: Mon 12/16/2013 5:51:30 PM
Subject: FW: Arizona Daily Star: Forest Service: Rosemont will hurt air, reduce water flows but can't be denied

From: Goforth, Kathleen
Sent: Monday, December 16, 2013 9:47 AM
To: Scott, Jeff; Brush, Jason; McKaughan, Colleen; Rader, Cliff
Subject: FW: Arizona Daily Star: Forest Service: Rosemont will hurt air, reduce water flows but can't be denied

FYI

From: Yogi, David
Sent: Monday, December 16, 2013 8:56 AM
To: Zito, Kelly; Keener, Bill; Maier, Brent; PerezSullivan, Margot; Marincola, JamesPaul; Jessop, Carter; Goforth, Kathleen; Herrera, Angeles; Heller, Zoe; Ryerson.Teddy
Subject: Arizona Daily Star: Forest Service: Rosemont will hurt air, reduce water flows but can't be denied

FYI

- David

David Yogi • Public Information Officer • U.S. Environmental Protection Agency • Region 9 • 75 Hawthorne Street, San Francisco, CA 94117 • Ph: 415.972.3350 • Mobile: 415.760.5419

Forest Service: Rosemont will hurt air, reduce water flows

but can't be denied

December 14, 2013 12:00 am • By Tony Davis

http://azstarnet.com/news/local/forest-service-rosemont-will-hurt-air-reduce-water-flows-but/article_85ffd8f4-9366-5a3f-9d54-50417e2ea5f4.html

The Rosemont Mine could worsen air quality in Saguaro National Park, disturb cultural resources — including human burial sites — and reduce water flows into Davidson Canyon and Cienega Creek, said the U.S. Forest Service.

The "No Action" alternative is the environmentally best alternative among six proposals for the mine site currently before the Forest Service, the agency said Friday.

But the service "cannot materially interfere with reasonably necessary activities" under the 1872 Mining Law and other laws and regulations that opened up the West to mining as long as the mine is legal, the service said.

Of five mining proposals available for Rosemont, the "Barrel Alternative" that it has chosen not only meets all the laws, but is the best one environmentally, the Forest Service said.

Those and many more thoughts went into the service's new draft decision that, if ratified, would approve the mine on more than 5,000 acres in the Santa Rita Mountains, southeast of Tucson.

Released Friday, the decision from Coronado National Forest Supervisor **Jim Upchurch** sets the stage for what's likely to be a highly contentious four months, starting Jan. 1.

That's when opponents and critics of the mine can start filing formal objections. By early May, Upchurch must make a final decision.

Upchurch wrote his decision is based on a thorough review of the final Rosemont environmental impact statement and consultation with the public, government agencies, interested tribes and the public record. He said he considered "relevant scientific information, public concerns and opposing viewpoints."

Friday, three federal agencies that have raised concerns about the mine — the National Park Service, the Bureau of Land Management and the Environmental Protection Agency — weren't ready to say if they would formally object. A Tucson environmentalist, **Randy Serraglio** of the Center for Biological Diversity, said environmentalists will definitely file objections.

The EPA declined a request from the Star for an interview on the decision. The BLM didn't return a phone call from the newspaper. A Saguaro National Park official said the agency hopes to resolve its differences with the Forest Service through discussions, although the park service isn't ruling out filing an objection.

Pima County Administrator **Chuck Huckelberry**, an early opponent, said, "We will obviously

comment on the draft record of decision. If we file anything that's going to be meaningful, it would take the form of a formal objection."

While the Forest Service agreed with other agencies that major impacts will occur, it didn't give ground on every detail of the agencies' issues with the project. In a statement, the opposition group Save the Scenic Santa Ritas said the mine proposal has numerous problems caught by the agencies that the environmental report — and this decision — failed to address.

But Upchurch wrote of trying to resolve scientific uncertainties and disagreements, "I have also sought out and considered the professional opinion of resource specialists from federal agencies, private industry and third-party consultants. I have met on numerous occasions with interested members of the public to listen to their concerns and issues."

In his 96-page decision, Upchurch also laid out a list reasons showing the Barrel Alternative was the best of the five proposals presented. Among his reasons:

• Barrel was the only one of the options the Forest Service concluded will meet federal air-quality standards at the site's fence line. While it would be possible to move the fence line for the other four options farther from mine activities to meet the air rules, Upchurch wrote that he did not regard that as an acceptable option because that would close off more forest lands to the public.

• The Barrel Alternative would reduce surface-water flows into neighboring Barrel and Davidson canyons by the smallest amount. Barrel would cut flows by 17 percent, compared to 23 to 46 percent for the other proposals, although those levels are still unacceptable to opponents.

• Upchurch wrote that all five mine alternatives would meet state groundwater and surface-water quality standards, including seepage of pollutants from mine tailings into groundwater. However, he did not mention concerns raised by the state Game and Fish Department that dissolved solids and sulfates — which don't have legal standards, but can affect taste and health — could seep into groundwater.

• The Barrel Alternative would cause the second-lowest reductions of sediment delivered by stormwater into Barrel Canyon. Sediment is important to prevent scouring of the canyon's stream channel.

• The Barrel choice would reduce groundwater flows into Cienega Creek by the lowest percentage: 4.4 percent compared to 11.7 percent for Rosemont Copper's mine proposal.

• Barrel would harm the second-smallest number of acres of streams and creeks that are protected by the Federal Clean Water Act — about 68 acres. The EPA, however, has projected impacts of more than 100 acres.

• Barrel would have slightly less sky brightness than the other alternatives, a benefit for the neighboring Whipple Observatory.

• Barrel is the only alternative without the mine's proposed heap leaching, so its selection avoids risk of groundwater contamination from leaching chemicals.

• While the five mine alternatives would potentially hurt or dry up about 78 springs and seeps in

the mine area, Barrel tied with another alternative for the smallest number of springs — 16 — that are likely to be harmed.

So far, the only federal agency to comment on the mine's impacts since release of the final environmental report is the National Park Service.

The biggest concerns are an increase in deposits of nitrogen onto the park's ground due to nitrogen oxide emissions from mine haul trucks, and the degrading of visibility at both park units due to emissions. The nitrogen deposits could help the spread of invasive plants in the park, particularly buffelgrass.

Upchurch, while acknowledging these problems could occur, wrote they wouldn't violate the Federal Clean Air Act. The Park Service wants more mitigation measures, but the Forest Service hasn't agreed to them, said **Scott Stoneham**, Saguaro's chief of science and resource management.

Now, the Park Service is seeking negotiations with the Forest Service to resolve these concerns, possibly with the federal Council on Environmental Quality facilitating the discussions, Stoneham said.

"We're held responsible for insuring conservation and protection of resources of Saguaro National Park, and that's what we're committed to," he said.

Contact reporter Tony Davis at tdavis@azstarnet.com or 806-7746. Follow him on Twitter at tonydavis987.

To: Evans, David[Evans.David@epa.gov]; Kaiser, Russell[Kaiser.Russell@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]
From: Brush, Jason
Sent: Fri 12/13/2013 6:02:16 PM
Subject: "EPA" concerns on Rosemont

Let's talk by phone soon. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Goforth, Kathleen
Sent: Thursday, December 12, 2013 7:07:48 PM
To: Herrera, Angeles; Jessop, Carter; Scott, Jeff; Diamond, Jane; Brush, Jason
Subject: Fw: Roesmont Mine - Response

Ex. 5 - Deliberative Process

From: Rader, Cliff
Sent: Thursday, December 12, 2013 6:59:30 PM
To: Greczmiel, Horst
Cc: Kaiser, Russell; Pendergast, Jim; Jessop, Carter; Brush, Jason; Hessert, Aimee; Scott, Jeff; Diamond, Jane; Goforth, Kathleen; Bromm, Susan; Herrera, Angeles; Suriano, Elaine; Kaiser, Russell; Miller, Clay; Peck, Gregory; Marshall, Tom
Subject: Roesmont Mine - Response

Horst:

As requested, I am forwarding EPA Region 9's response to your request regarding:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Bromm, Susan[Bromm.Susan@epa.gov]
Cc: Kaiser, Russell[Kaiser.Russell@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Brush, Jason[Brush.Jason@epa.gov]; Hessert, Aimee[Hessert.Aimee@epa.gov]; Rader, Cliff[Rader.Cliff@epa.gov]; Scott, Jeff[Scott.Jeff@epa.gov]; Diamond, Jane[Diamond.Jane@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]
From: Herrera, Angeles
Sent: Fri 12/13/2013 2:15:02 AM
Subject: FW: Revised email to Horst w/ Jared's input incorporated

Hi Susan,

Attached please find our revised email for Horst. My apologies for getting this to you so late. We were waiting to get Jared's approval. If you concur with the revised email, please go head and email it directly to Horst and cc all of us. If we don't hear back from you, we will send it to Horst by 11:30pm (EST) so we can meet his midnight deadline. Please note that I will be on vacation beginning tomorrow. Thanks, Angeles

---

Angeles Herrera

Associate Director

Community and Ecosystems Division

(415) 972-3144

From: Jessop, Carter
Sent: Thursday, December 12, 2013 5:59 PM
To: Herrera, Angeles
Cc: Goforth, Kathleen
Subject: Revised email to Horst w/ Jared's input incorporated

Horst –

This is in response to your 12/9 request for EPA's:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Carter W. Jessop

U.S. EPA, Region 9

Environmental Review Office (CED-2)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3815

jessop.carter@epa.gov

To: Bromm, Susan[Bromm.Susan@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Diamond, Jane[Diamond.Jane@epa.gov]; Scott, Jeff[Scott.Jeff@epa.gov]
Cc: Kaiser, Russell[Kaiser.Russell@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Brush, Jason[Brush.Jason@epa.gov]; Hessert, Aimee[Hessert.Aimee@epa.gov]; Rader, Cliff[Rader.Cliff@epa.gov]
From: Herrera, Angeles
Sent: Thur 12/12/2013 10:43:47 PM
Subject: Re: Rosemont: Proposed email to Horst

We will as soon as we get Jared's approval. Thxs

This message is being sent via Blackberry. Please excuse typos.

From: Bromm, Susan
Sent: Thursday, December 12, 2013 3:37:33 PM
To: Goforth, Kathleen; Diamond, Jane; Scott, Jeff
Cc: Kaiser, Russell; Pendergast, Jim; Herrera, Angeles; Jessop, Carter; Brush, Jason; Hessert, Aimee; Rader, Cliff
Subject: RE: Rosemont: Proposed email to Horst

Please send us a new version of this based on the comments we sent this morning so that we can meet Horst's deadline of midnight. Thanks

From: Goforth, Kathleen
Sent: Wednesday, December 11, 2013 8:56 PM
To: Rader, Cliff
Cc: Kaiser, Russell; Pendergast, Jim; Herrera, Angeles; Jessop, Carter; Brush, Jason; Hessert, Aimee; Bromm, Susan
Subject: Rosemont: Proposed email to Horst

Below is what Region 9 proposes to send to Horst by COB (not midnight!) tomorrow (Thursday) in response to his request during last Friday's interagency call, as clarified by his 12/9 email message:

Horst –

This is in response to your 12/9 request for EPA's:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Miller, Clay[Miller.Clay@epa.gov]; Kaiser, Russell[Kaiser.Russell@epa.gov]; Peck, Gregory[Peck.Gregory@epa.gov]
From: Rader, Cliff
Sent: Thur 12/12/2013 5:43:35 PM
Subject: FW: Rosemont Mine Update - URGENT

-----Original Message-----
From: Goforth, Kathleen
Sent: Thursday, December 12, 2013 12:28 PM
To: Rader, Cliff; Hessert, Aimee
Cc: Bromm, Susan; Herrera, Angeles
Subject: RE: Rosemont Mine Update - URGENT

Ex. 5 - Deliberative Process

Still a little confused about the meeting, since what we were told is on Jared's calendar is a call at noon our time (3pm yours) TODAY.

-Kathy

-----Original Message-----
From: Rader, Cliff
Sent: Thursday, December 12, 2013 7:57 AM
To: Goforth, Kathleen; Hessert, Aimee
Cc: Bromm, Susan; Herrera, Angeles
Subject: RE: Rosemont Mine Update - URGENT

From CEQ: "The call will be at 4:30 today - tomorrow at 3 was a place holder in the event we need a follow-up to today's call."

Ex. 5 - Deliberative Process

-----Original Message-----
From: Goforth, Kathleen
Sent: Wednesday, December 11, 2013 10:08 PM
To: Rader, Cliff; Hessert, Aimee
Cc: Bromm, Susan; Herrera, Angeles

Subject: Re: Rosemont Mine Update - URGENT

Thanks. We have received confirmation that Jared received an invitation for a call at noon (3pm your time) tomorrow, but we don't yet know his availability. Is that a precursor to the 4:30 EST call or was the 4:30 call rescheduled?

Ex. 5 - Deliberative Process

From: Rader, Cliff
Sent: Wednesday, December 11, 2013 6:13:19 PM
To: Goforth, Kathleen; Hessert, Aimee
Cc: Bromm, Susan; Herrera, Angeles
Subject: RE: Rosemont Mine Update - URGENT

Ex. 5 - Deliberative Process

I'll send you any info I get when I get it! thanks.

Cliff Rader
Director, NEPA Compliance Division
202-564-7159

From: Goforth, Kathleen
Sent: Wednesday, December 11, 2013 7:26 PM
To: Rader, Cliff; Hessert, Aimee
Cc: Bromm, Susan; Herrera, Angeles
Subject: RE: Rosemont Mine Update - URGENT

Cliff -
Do you have call-in info? I noticed that Jared was only cc'd on Horst's message below -- is he expected to be on the call? Is Region invited to participate? Jared is out of office today, along with entire senior mgmt team, so we have been unable to determine whether he received an invitation or not, and no one else here received one.
-Kathy

-----Original Message-----
From: Rader, Cliff
Sent: Wednesday, December 11, 2013 9:33 AM
To: Goforth, Kathleen; Herrera, Angeles; Jessop, Carter
Cc: Bromm, Susan; Hessert, Aimee
Subject: RE: Rosemont Mine Update - URGENT

Yes, Horst changed the call to Thursday at 4:30 pm EST (see below)

Ex. 5 - Deliberative Process

-----Original Message-----
From: Greczmiel, Horst [mailto: Ex. 6 - Personal Privacy
Sent: Tuesday, December 10, 2013 4:48 PM

To: 'Cal Joyner (cjoyner@fs.fed.us)'; 'Robert Bonnie (robert.bonnie@osec.usda.gov)'; 'Jim Upchurch (jupchurch01@fs.fed.us)'; Rader, Cliff; Kopocis, Ken
Cc: Blumenfeld, Jared
Subject: RE: Rosemont Mine Thursday 3pm Call moved to 4:30 eastern

Apologies for the confusion - the call is on Thursday.

Horst Greczmiel
Associate Director for NEPA Oversight
Council on Environmental Quality

Ex. 6 - Personal Privacy

*

Please consider the environment before printing this e-mail

-----Original Message-----
From: Goforth, Kathleen
Sent: Wednesday, December 11, 2013 12:21 PM
To: Rader, Cliff; Herrera, Angeles; Jessop, Carter
Cc: Bromm, Susan; Hessert, Aimee
Subject: RE: Rosemont Mine Update - URGENT

We are on schedule, based on the info in Horst's message, i.e., that he wants our email by midnight Thursday night and the meeting will happen on Friday. I am reviewing the draft email message now, with goal of getting it to R9 senior management today and to you by COB, so that we can get it to Horst by COB tomorrow.

Russ Kaiser's message says that the political call is now being held on Thursday afternoon. That's news to us -- can you confirm? If true, it puts everything on even more of a rush and may make it more difficult to get all of the appropriate people on the call.

-Kathy

-----Original Message-----
From: Rader, Cliff
Sent: Wednesday, December 11, 2013 9:09 AM
To: Goforth, Kathleen; Herrera, Angeles; Jessop, Carter
Cc: Bromm, Susan; Hessert, Aimee
Subject: FW: Rosemont Mine Update - URGENT
Importance: High

Can you give us a sense of where you are in getting drafts of these documents completed? Thanks.

-----Original Message-----
From: Kaiser, Russell
Sent: Wednesday, December 11, 2013 7:30 AM
To: Brush, Jason; Flannery-Keith, Erin; Miller, Clay
Cc: Evans, David; Pendergast, Jim; Rader, Cliff; Srinivasan, Gautam
Subject: FW: Rosemont Mine Update - URGENT
Importance: High

Jason - The questions that were referenced in my previous email are noted below. However, the one that relates most directly to us is the following:

Ex. 5 - Deliberative Process

Pls note that the political call is now being held on Thursday afternoon. As such, we will need to provide a coordinated response to the above question to Ken by COB today, which means that I will need to get your information to Benita & Dave by mid afternoon today.

Russell L. Kaiser
Chief, Wetlands & Aquatic Resources Regulatory Branch
1301 Constitution Ave., N.W.
Room 7217M West Bldg.
Washington, DC 20004
P: 202.566.0963

From: Kopocis, Ken
Sent: Sunday, December 08, 2013 12:15:01 PM
To: Neugeboren, Steven; Best-Wong, Benita
Cc: Evans, David
Subject: FW: Rosemont Mine Update

See the message below.
Particular reference to the upcoming timelines for action. This is very tight. Please let me know that the appropriate people will be able to participate.
Steve, Cliff Rader is on the message, but please also coordinate with appropriate NEPA folks in OGC.
Let me know if you need anything from me. I expect to be in the office first thing Monday morning, weather permitting.
Thank you,
Ken

-----Original Message-----
From: Greczmiel, Horst [mailto:
Ex. 6 - Personal Privacy
Sent: Sunday, December 08, 2013 8:06 AM
To: Rader, Cliff; Cal Joyner (cjoyner@fs.fed.us); Ann Acheson - CEQ (aacheson@fs.fed.us); Joe Carbone (jcarbone@fs.fed.us); Jim Upchurch (jupchurch01@fs.fed.us); Brian Amme (bamme@blm.gov); Kerry Rodgers (kerodgers@blm.gov); Kopocis, Ken; Goforth, Kathleen; Dave Sire (david_sire@ios.doi.gov); 'Marjorie.E.Blaine@usace.army.mil'; 'David.J.Castanon@usace.army.mil'; Deborah Rawhouser (Deborah_Rawhouser@blm.gov)
Cc: Robert Bonnie (robert.bonnie@osec.usda.gov); Giles-AA, Cynthia; Guzy, Gary S.; Blumenfeld, Jared; Meg.E.Gaffney-Smith@usace.army.mil; Chip Smith (Charles.R.Smith567.civ@mail.mil); Meryl Harrell (meryl.harrell@osec.usda.gov); Manisha Patel (manisha@manishapatel.net); Boots, Michael J.; Crook, Lowry
Subject: Rosemont Mine Update
Importance: High

Ex. 5 - Deliberative Process

Please contact me if you have any questions or concerns regarding our next steps.

Thank you, Horst

Horst Greczmiel
Associate Director for NEPA Oversight
Council on Environmental Quality

Ex. 6 - Personal Privacy

Please consider the environment before printing this e-mail

To: Kaiser, Russell[Kaiser.Russell@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
Cc: Bose, Laura[Bose.Laura@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Rader, Cliff[Rader.Cliff@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]
From: Brush, Jason
Sent: Wed 12/11/2013 6:59:46 PM
Subject: RE: Rosemont -- Fw: Email to CEQ

Ex. 5 - Deliberative Process

From: Kaiser, Russell
Sent: Wednesday, December 11, 2013 9:16 AM
To: Brush, Jason; Miller, Clay; Flannery-Keith, Erin; Fertik, Rachel
Cc: Goldmann, Elizabeth; Leidy, Robert; Bose, Laura; Goforth, Kathleen; Jessop, Carter; Rader, Cliff; Pendergast, Jim
Subject: RE: Rosemont -- Fw: Email to CEQ

From a process perspective, I am guessing the fact sheet will be given to OFA and OFA will give it to Ken K.? When you present to OFA, it would be greatly appreciated if you could share with WD also – thanks much!

I pose the following questions – what specifically does the Region want in case this question is asked by Horst? It appears based on the below that you would like:

Ex. 5 - Deliberative Process

Russell L. Kaiser

Chief, Wetlands & Aquatic Resources Regulatory Branch

1301 Constitution Ave., N.W.

Room 7217M West Bldg.

Washington, DC 20004

P: 202.566.0963

From: Brush, Jason
Sent: Wednesday, December 11, 2013 11:37 AM
To: Kaiser, Russell; Miller, Clay; Flannery-Keith, Erin; Fertik, Rachel
Cc: Goldmann, Elizabeth; Leidy, Robert; Bose, Laura; Goforth, Kathleen; Jessop, Carter
Subject: Rosemont -- Fw: Email to CEQ

NEPA remains in the lead here. But here's what they've prepared, with my input late yesterday. I asked Castanon how Corps planned to respond to CEQ's item "b". No response.

From: Brush, Jason
Sent: Tuesday, December 10, 2013 5:35:25 PM
To: Jessop, Carter
Cc: Goldmann, Elizabeth; Leidy, Robert; Goforth, Kathleen
Subject: RE: Email to CEQ

Looks awesome. Re: "characterization issues" just a few nits.

Ex. 5 - Deliberative Process

That's it! Nice work!!

JB

From: Jessop, Carter
Sent: Tuesday, December 10, 2013 5:11 PM
To: Brush, Jason
Cc: Goldmann, Elizabeth; Leidy, Robert
Subject:

Jason, Liz and Rob,

Here is the draft language I came up with to fulfill Horst Greczmiel's request. If you could please give it a look and let me know if I let out anything important, I would greatly appreciate

Ex. 5 - Deliberative Process

Kathy is reviewing this concurrently. We hope to send it to OFA as early as possible tomorrow.

Thank you.

- Carter

------DRAFT-------

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Carter W. Jessop

U.S. EPA, Region 9

Environmental Review Office (CED-2)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3815

jessop.carter@epa.gov

To: Kaiser, Russell[Kaiser.Russell@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]; Fertik, Rachel[Fertik.Rachel@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Brush, Jason
Sent: Wed 12/11/2013 5:03:08 PM
Subject: Fw: Rosemont -- Fw: Email to CEQ

She's right. My bad. Please respect this POV.

From: Goforth, Kathleen
Sent: Wednesday, December 11, 2013 8:56:32 AM
To: Brush, Jason
Subject: RE: Rosemont -- Fw: Email to CEQ

Jason –

I have not reviewed this yet. I don't expect to make any major changes, since Carter and I discussed his rough draft yesterday; but we were not planning to send it to HQ until later today after I, then Angeles and Jeff, had a chance to review it. Cliff requested the opportunity to review it before we send to CEQ. Please help us avoid having multiple versions in circulation.

Thanks –

-Kathy

From: Brush, Jason
Sent: Wednesday, December 11, 2013 8:37 AM
To: Kaiser, Russell; Miller, Clay; Flannery-Keith, Erin; Fertik, Rachel
Cc: Goldmann, Elizabeth; Leidy, Robert; Bose, Laura; Goforth, Kathleen; Jessop, Carter
Subject: Rosemont -- Fw: Email to CEQ

NEPA remains in the lead here. But here's what they've prepared, with my input late yesterday. I asked Castanon how Corps planned to respond to CEQ's item "b". No response.

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Sent: Tuesday, December 10, 2013 5:35:25 PM
To: Jessop, Carter
Cc: Goldmann, Elizabeth; Leidy, Robert; Goforth, Kathleen
Subject: RE: Email to CEQ

Looks awesome. Re: "characterization issues" just a few nits.

Ex. 5 - Deliberative Process

That's it! Nice work!!

JB

From: Jessop, Carter
Sent: Tuesday, December 10, 2013 5:11 PM
To: Brush, Jason
Cc: Goldmann, Elizabeth; Leidy, Robert
Subject:

Jason, Liz and Rob,

Here is the draft language I came up with to fulfill Horst Greczmiel's request. If you could please give it a look and let me know if I let out anything important, I would greatly appreciate it. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Kathy is reviewing this concurrently. We hope to send it to OFA as early as possible tomorrow.

Thank you.

- Carter

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Carter W. Jessop

U.S. EPA, Region 9

Environmental Review Office (CED-2)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3815

jessop.carter@epa.gov

To: Herrera, Angeles[Herrera.Angeles@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Diamond, Jane[Diamond.Jane@epa.gov]; Brush, Jason[Brush.Jason@epa.gov]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Scott, Jeff[Scott.Jeff@epa.gov]
Cc: Bromm, Susan[Bromm.Susan@epa.gov]; Peck, Gregory[Peck.Gregory@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]; Kaiser, Russell[Kaiser.Russell@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]; Suriano, Elaine[Suriano.Elaine@epa.gov]; Hessert, Aimee[Hessert.Aimee@epa.gov]
From: Rader, Cliff
Sent: Sun 12/8/2013 4:33:27 PM
Subject: FW: Rosemont Mine Update
20131107_EPA_Letter.pdf

I saw Jared on the addressee list, but just in case you haven't already gotten this, see below.

I will ask Horst to clarify this list of action items; at the meeting on Friday, I thought he asked for agencies

Ex. 5 - Deliberative Process

Let's plan on talking on Monday!

Cliff Rader
Director, NEPA Compliance Division
202-564-7159

From: Greczmiel, Horst < **Ex. 6 - Personal Privacy**
Sent: Sunday, December 08, 2013 8:06 AM
To: Rader, Cliff; Cal Joyner (cjoyner@fs.fed.us); Ann Acheson - CEQ (aacheson@fs.fed.us); Joe Carbone (jcarbone@fs.fed.us); Jim Upchurch (jupchurch01@fs.fed.us); Brian Amme (bamme@blm.gov); Kerry Rodgers (kerodgers@blm.gov); Kopocis, Ken; Goforth, Kathleen; Dave Sire (david_sire@ios.doi.gov); 'Marjorie.E.Blaine@usace.army.mil'; 'David.J.Castanon@usace.army.mil'; Deborah Rawhouser (Deborah_Rawhouser@blm.gov)
Cc: Robert Bonnie (robert.bonnie@osec.usda.gov); Giles-AA, Cynthia; Guzy, Gary S.; Blumenfeld, Jared; Meg.E.Gaffney-Smith@usace.army.mil; Chip Smith (Charles.R.Smith567.civ@mail.mil); Meryl Harrell (meryl.harrell@osec.usda.gov); Manisha Patel (**Ex. 5 - Deliberative Process** Boots, Michael J.; Crook, Lowry
Subject: Rosemont Mine Update

My appreciation to those able to attend or participate in our meeting last week. As we discussed at that meeting, **Ex. 5 - Deliberative Process**

Ex. 5 - Deliberative Process

Here is a brief snapshot of upcoming events based on our collective efforts to focus the issues and identify productive next steps:

Ex. 5 - Deliberative Process

Please contact me if you have any questions or concerns regarding our next steps.

Thank you, Horst

Horst Greczmiel
Associate Director for NEPA Oversight
Council on Environmental Quality

Ex. 6 - Personal Privacy

Please consider the environment before printing this e-mail

To: Kaiser, Russell[Kaiser.Russell@epa.gov]; Evans, David[Evans.David@epa.gov]
From: Pendergast, Jim
Sent: Tue 12/3/2013 8:46:00 PM
Subject: Re: Rosemont: Forest Service posted FEIS on website

No
Jim Pendergast
EPA Wetlands Division
202-566-0398

From: Kaiser, Russell
Sent: Tuesday, December 03, 2013 10:45:29 AM
To: Pendergast, Jim; Evans, David
Subject: FW: Rosemont: Forest Service posted FEIS on website

FYI... **Ex. 5 - Deliberative Process**
Ex. 5 - Deliberative Process **Will keep you informed - Russ**

Russell L. Kaiser

Chief, Wetlands & Aquatic Resources Regulatory Branch

1301 Constitution Ave., N.W.

Room 7217M West Bldg.

Washington, DC 20004

P: 202.566.0963

From: Rader, Cliff
Sent: Monday, December 02, 2013 1:58 PM
To: Miller, Clay; Kaiser, Russell
Subject: FW: Rosemont: Forest Service posted FEIS on website

From: Goforth, Kathleen
Sent: Monday, December 02, 2013 1:23 PM
To: Scott, Jeff; Rader, Cliff; Herrera, Angeles; Diamond, Jane; McKaughan, Colleen
Cc: Brush, Jason; Maier, Brent; Stollman, Scott
Subject: Rosemont: Forest Service posted FEIS on website

Carter checked the Forest Service's website this morning and found that they posted the Rosemont FEIS on Friday. We knew they had been targeting the end of November for website posting, but recent discussions had raised the possibility that that might not occur. Forest Service did not contact us in advance. The website says that the official objections period will not begin until the FEIS notice appears in the Federal Register, but it gives no indication of when that notice is expected to be published. Carter is in the process of reviewing the news articles linked below. **Ex. 5 - Deliberative Process**

Ex. 5 - Deliberative Process

-Kathy

Kathleen Martyn Goforth, Manager

Environmental Review Office (CED-2)

U.S. EPA, Region IX

75 Hawthorne Street

San Francisco, CA 94105

415-972-3521

From: Leidy, Robert
Sent: Monday, December 02, 2013 9:04 AM
To: Goldmann, Elizabeth; Brush, Jason; Jessop, Carter; Goforth, Kathleen; Herrera, Angeles
Subject: FW: Rosemont Mine Final EIS articles

From: Drobka, Diane [mailto:ddrobka@blm.gov]
Sent: Sunday, December 01, 2013 3:01 PM
To: Viola Hillman; Daniel Moore; Timothy Shannon; Dennis Sylvia; Karen Simms; Jeffrey Simms; Ben Lomeli; Colleen Hickman; Julie Decker
Subject: Rosemont Mine Final EIS articles

Arizona Daily Star November 30

http://azstarnet.com/news/local/govt-and-politics/move-afoot-to-move-green-valley-rosemont-mine-to-santa/article_c0cbef8f-f635-52e5-b238-2cd181e150f9.html

Arizona Daily Star November 29

http://azstarnet.com/news/local/latest-rosemont-mine-report-is-out/article_85653c44-592e-11e3-b6c4-0019bb2963f4.html

Arizona Daily Star November 29

http://azstarnet.com/business/national-and-international/rosemont-meets-almost-all-environmental-laws-final-federal-report-says/article_6b51204c-49d8-55df-a78b-bae973f2e03c.html

Green Valley News and Sun November 30

http://www.gvnews.com/news/local/forest-service-report-

points-to-likely-approval-for-rosemont-mine/article_4fc5d680-59eb-11e3-bb20-001a4bcf887a.html

KPHO, Phoenix

http://www.kpho.com/story/24102098/us-forest-services-releases-report-on-arizona-mine

Inside Tucson Business November 29

http://www.insidetucsonbusiness.com/blogs/forest-services-publishes-final-rosemont-environmental-impact-statement/article_08925ab2-592e-11e3-9469-0019bb2963f4.html

San Francisco Chronicle November 30

http://www.sfgate.com/news/science/article/US-Forest-Services-releases-report-on-Arizona-mine-5024218.php

The Republic (Ohio) November 30

http://www.therepublic.com/view/story/c832b6ad53ec4e1fbb01866e
Rosemont-Mine

--

Diane Drobka

Public Affairs Specialist

BLM Gila District - Safford/Tucson

928-348-4403

To: Diamond, Jane[Diamond.Jane@epa.gov]
From: Kaiser, Russell
Sent: Tue 10/14/2014 8:36:22 PM
Subject: RE: Your meeting with HudBay tomorrow

Thanks Jane. I just put in a request earlier today to Jason inquiring about your meeting. Appreciate the info... Russ

Sent from my Windows Phone

From: Diamond, Jane
Sent: 10/14/2014 4:10 PM
To: Kopocis, Ken
Cc: Best-Wong, Benita; Kaiser, Russell; Brush, Jason; Goforth, Kathleen; Woo, Nancy; Blumenfeld, Jared; Bethel, Heidi; Goldmann, Elizabeth; Evans, David; Martynowicz, Trina
Subject: Your meeting with HudBay tomorrow

Hi Ken. I understand HudBay has time with you tomorrow, so here's a quick summary of recent Rosemont Mine activities.

Ex. 5 - Deliberative Process

Let me know if you need more info. We can also have someone from the region on the phone if that would be helpful.

Jane Diamond
Water Director
U.S. Environmental Protection Agency
Region 9, San Francisco
415-947-8707
415-972-3275

OW Staff Meeting Talking Points
12-2-2013

Redacted non-responsive

Rosemont Mine (AZ)

- On November 25-26, there were a series of calls involving OW-AA (Ken) with USDA (USEC Bonnie) and CEQ (Greczmiel) to discuss the [redacted]
- Ex. 5 - Deliberative Process

Redacted non-responsive

To: Kopocis, Ken[Kopocis.Ken@epa.gov]
Cc: Bethel, Heidi[Bethel.Heidi@epa.gov]
From: Nandi, Romell
Sent: Tue 10/14/2014 8:27:29 PM
Subject: additional info on Region 9 and Hudbay Minerals

Ken:

I know you got the email from Jane Diamond, but Heidi said you also wanted to know if Region 9 has met with Hudbay Minerals themselves.

The answer is no - Hudbay has not requested a meeting with Region 9 since acquiring the Rosemont Copper Company in June, 2014.

Romell Nandi
Office of Wetlands, Oceans, and Watersheds
Special Assistant to the Director
ph: (202) 566-1203

-----Original Message-----
From: Diamond, Jane
Sent: Tuesday, October 14, 2014 1:10 PM
To: Kopocis, Ken
Cc: Best-Wong, Benita; Kaiser, Russell; Brush, Jason; Goforth, Kathleen; Woo, Nancy; Blumenfeld, Jared; Bethel, Heidi; Goldmann, Elizabeth; Evans, David; Martynowicz, Trina
Subject: Your meeting with HudBay tomorrow

Hi Ken. I understand HudBay has time with you tomorrow, so here's a quick summary of recent Rosemont Mine activities.

Ex. 5 - Deliberative Process

Let me know if you need more info. We can also have someone from the region on the phone if that would be helpful.

Jane Diamond
Water Director
U.S. Environmental Protection Agency
Region 9, San Francisco
415-947-8707
415-972-3275

To: Kopocis, Ken[Kopocis.Ken@epa.gov]
From: Bromm, Susan
Sent: Mon 4/14/2014 6:30:24 PM
Subject: FW: Rosemont mine: EPA Region 9 comments on draft ADEQ 401 Certification
Rosemontdraft401cert.EPAcommentltr.PDF

Ken,

We just learned about this letter on the Friday Rosemont call. Hope Region 9 had consulted with OW on it.....

Susan

-----Original Message-----
From: Rader, Cliff
Sent: Monday, April 14, 2014 10:54 AM
To: Bromm, Susan
Subject: FW: Rosemont mine: EPA Region 9 comments on draft ADEQ 401 Certification

-----Original Message-----
From: Goforth, Kathleen
Sent: Friday, April 11, 2014 7:20 PM
To: Rader, Cliff; Hanf, Lisa
Subject: FW: Rosemont mine: EPA Region 9 comments on draft ADEQ 401 Certification

Cliff, per your request.
Lisa, I just noticed that you had not been cc'd on this.
-Kathy

-----Original Message-----
From: Brush, Jason
Sent: Monday, April 07, 2014 5:43 PM
To: Castanon, David J SPL; Blaine, Marjorie E SPL; Diebolt, Sallie SPL; Greczmiel, Horst; Calhoun, Jean; 'Jim Upchurch (jupchurch01@fs.fed.us)'; 'Ray Suazo (rmsuazo@blm.gov)'
Cc: Martynowicz, Trina; Diamond, Jane; Johnson, Kathleen; Goforth, Kathleen; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Pendergast, Jim; Kaiser, Russell; Miller, Clay; Kermish, Laurie; Campbell, Rich; Hagler, Tom
Subject: FW: Rosemont mine: EPA Region 9 comments on draft ADEQ 401 Certification

Federal partners: For your information, I'm attaching EPA Region 9's comments to the Arizona Department of Environmental Quality regarding their draft CWA Section 401 water quality certification for the proposed Rosemont copper mine.

Jason A. Brush
Supervisor, Wetlands Office
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-8)
San Francisco, CA 94105
~~~~~~~~~~~~~~~~~~~~~~~~~
desk: 415.972.3483
fax: 415.947.3537
~~~~~~~~~~~~~~~~~~~~~~~~~

-----Original Message-----
From: Brush, Jason
Sent: Monday, April 07, 2014 5:19 PM
To: 'rosemont401comments@azdeq.gov'; Michael A. Fulton; 'Linda C. Taunt'
Cc: Diamond, Jane; Kermish, Laurie; Johnson, Kathleen; Goforth, Kathleen; Dunning, Connell; Jessop, Carter; Vollmer, Jared; Sablad, Elizabeth; Campbell, Rich; Hagler, Tom; Woo, Nancy
Subject: Rosemont mine: EPA Region 9 comments on draft ADEQ 401 Certification

Mike and Linda - Thank you again for the extension to the comment period. I've attached EPA's comments on Jane's behalf. Please give either of us a ring if you'd like to discuss.

Best,
Jason

Jason A. Brush
Supervisor, Wetlands Office
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-8)
San Francisco, CA 94105
~~~~~~~~~~~~~~~~~~~~~~~~
desk: 415.972.3483
fax: 415.947.3537
~~~~~~~~~~~~~~~~~~~~~~~~

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

APR 07 2014

Michael Fulton, Water Quality Division Director
Arizona Department of Environmental Quality
Surface Water Section/State 401 Certification/MS 5415A-1
1110 West Washington Street
Phoenix, Arizona 85007

Subject: State of Arizona Clean Water Act (CWA) Draft Section 401 Water Quality Certification for the Rosemont Copper Project, Pima County, Arizona

Dear Mr. Fulton:

Thank you for the extended opportunity to review the draft CWA Section 401 water quality certification (certification) and supporting information for discharges associated with the proposed Rosemont Copper Project. With Arizona's designation of portions of the Cienega Creek watershed as "Outstanding Arizona Waters" (OAWs), the EPA supports the state's broadest exercise of legal discretion to protect these remarkable resources. We are submitting the enclosed comments as a continuation of our interagency coordination on the mine's potential water quality consequences to the OAWs of the Cienega Creek watershed.

After careful consideration, EPA believes the draft certification and supporting information provide an insufficient basis from which to conclude existing water quality will be maintained (*e.g.*, ongoing attainment of designated beneficial uses). In general, the draft certification relies on lagging indicators (post-discharge monitoring) to trigger corrective actions, rather than a preventative approach to ensure the protection of water quality in the OAWs. Those corrective actions also lack critical specificity with regard to water supply, the ability to arrest and reverse water quality problems should they be detected, and the enforceability of conditions given varying jurisdiction over proposed monitoring areas.

The U.S. Forest Service's Final Environmental Impact Statement (FEIS) and supporting documentation conclude that the Rosemont Copper Project will adversely modify surface and groundwater hydrology, sediment transport, and pollutant loadings in the watershed. EPA believes the available evidence indicates a substantial risk to designated beneficial use standards (*e.g.*, fish, wildlife and habitat) set by the state for Davidson Canyon and Cienega Creek. The EPA recommends that no 401 certification be issued unless the discharger can implement specific preventative actions that provide a high degree of confidence that designated uses will be maintained.

Printed on Recycled Paper

Please do not hesitate to contact me with any questions or concerns you may have regarding the enclosed comments at (415) 947-8707.

Sincerely,

Jane Diamond
Director
Water Division

cc: Jim Upchurch, U.S. Forest Service
Colonel Kimberly Colloton, U.S. Army Corps of Engineers
Jean Calhoun, U.S. Fish and Wildlife Service
Ray Suazo, Bureau of Land Management
Chuck Huckelberry, Pima County

EPA Region 9 comments on the *Draft Section 401 Water Quality Certification for the Rosemont Copper Project* dated February 21, 2014 (Draft 401 Certification), and the *Basis for State 401 Certification Decision Rosemont Copper Project ACOE Application No. SPL-2008-00816-MB* (Basis for Decision)

Protecting "Outstanding" Water Quality Downstream of the Rosemont Mine

The State of Arizona has designated reaches of both Davidson Canyon and Cienega Creek as OAWs due to, among other factors, their exceptional ecological and recreational significance and the presence of federally endangered and threatened species. Water quality in these reaches currently meets or exceeds applicable water quality standards, and any lowering of water quality in OAWs is prohibited.

ADEQ states in its Basis for Decision that, "In order to issue a State 401 water quality certification, ADEQ must be satisfied that any modifications to hydrology, sediment transport or water quality, as a result of the proposed activities under the § 404 permit, will not result in adverse water quality impacts to the downstream OAWs."[1]

Rosemont Mine proposes no direct discharges to OAWs. However, as ADEQ acknowledges in its Basis for Decision, "As part of its certification process, ADEQ may impose additional controls, conditions or mitigation measures, on indirect discharges that occur upstream of or to tributaries of an OAW to maintain and protect existing water quality in a downstream OAW."[2]

ADEQ has proposed the following additional measures in its Draft 401 Certification to maintain and protect existing water quality in Davidson Canyon and Cienega Creek:

5.2 Specific Conditions

1) Within 180 days of the effective date of the CWA 404 permit, the applicant shall submit to ADEQ, for review and approval, a surface water mitigation program designed to maintain aquatic and riparian resources at pre-project levels in Davidson Canyon and Lower Cienega Creek. The program shall include, but is not limited to, a description of measures that will be taken to offset predicted reductions in surface water flow, in response to the project, along with a proposed schedule for implementation. The Final Environmental Impact Statement (FEIS) predicts a 17.2% reduction in average annual post-closure stormwater runoff volume as a result of the proposed activities. The surface water mitigation program shall describe measures that will offset the reduced runoff volume should it occur. The draft mitigation program shall be submitted to the address and contact person in Section 4.0.

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[1] Basis for Decision at pg. 2.

[2] Basis for Decision at pg. 2; *see also* ADEQ Draft Antidegradation Implementation Procedures (April 2008) at pg. 4 ("ADEQ will impose whatever controls are necessary on indirect discharges that occur upstream of or to tributaries of an OAW to maintain and protect existing water quality in a downstream OAW.") Available at: http://www.azdeq.gov/environ/water/standards/download/draft_anti.pdf.

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> The mitigation program shall identify measures, as necessary, to ensure that any water used to mitigate a predicted reduction in stream flows, meets applicable Arizona surface water quality standards, including for Outstanding Arizona Waters, where applicable.
>
> Within 30 days of ADEQ approval of the program, the applicant shall implement the approved mitigation program in accordance with the schedule set forth in the approved program. Should the results of required monitoring and/or revised hydrologic modeling (FEIS Mitigation Measures FS-BR-22, FS-BR-27, FS-GW-02, FS-SR-05) indicate that water quality in Davidson Canyon or Lower Cienega Creek is adversely affected by the activities certified herein, ADEQ may request that the COE suspend the CWA 404 Permit and require additional mitigation.

ADEQ found that if Rosemont adheres to the conditions and mitigation in the 401 Certification (*i.e.,* Specific Conditions 5.2), and also to CWA § 404 permit conditions, the U.S. Forest Service's Final Environmental Impact Statement's (FEIS) mitigation measures, and the State's 2010 Mining AZPDES Multi Sector General Permit's requirements, then the Rosemont Copper Project should not cause or contribute to exceedences of surface water quality standards nor cause water quality degradation in the downstream receiving waters including Davidson Canyon Wash and Cienega Creek.[3] ADEQ based its finding on a consideration of the following 5 factors:

1. Change in ambient concentrations predicted at the appropriate critical flow conditions and the nature, persistence and potential effects of the parameter;
2. Changes in loadings and the nature, persistence and potential effects of the parameter;
3. Reduction in available assimilative capacity;
4. Degree of confidence in the various components of any modeling technique utilized; and
5. Potential for cumulative effects.

After a careful review of ADEQ's consideration of these five factors, EPA believes ADEQ's certification decision, and its finding that the current conditions and mitigation in the 401 certification (*i.e.,* Specific Conditions 5.2) will prevent water quality degradation in Davidson Wash and Cienega Creek, is not justified and the risk of water quality degradation remains high. EPA provides further consideration of the five factors, as discussed below:

Factors 1 and 2: Sediment is a critical and under-analyzed water quality parameter

As ADEQ correctly acknowledges in its Basis for Decision, changes to sediment transport in streams can adversely affect water quality by increasing total suspended sediment in surface water flows and altering the physical integrity of the system, thereby causing problems with scour or aggradation which have the potential to result in water quality degradation.[4] ADEQ also recognizes that potential impacts on surface water quality due to the proposed fill activities could include changes in downstream sediment yield and therefore changes in geomorphology caused by the loss of waters of the U.S.[5] Yet,

[3] Basis for Decision at pg. 3.
[4] Basis for Decision at pg. 8.
[5] Basis for Decision at pp. 6 and 8.

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ADEQ concludes that the proposed fill activities will not have a significant impact on the geomorphology of Barrel and Davidson Canyons.

To draw these conclusions of no significant impact, ADEQ relies on a very limited review of sediment transport effects. ADEQ uses the US Forest Service's (USFS) geomorphic assessment of Barrel Creek by Patterson and Annandale (2012), a 2-day survey using three variables: sediment availability, channel geometry, and water flow. Patterson and Annandale reason that since the Rosemont mine impacts 13% of the entire catchment area, there would not be significant impact to the fluvial geomorphology of the stream system.[6] This conclusion presumes a simple and direct proportionality of the Rosemont mine's sediment contribution to other parts of the watershed, and considers no temporal variability. In reality, the impacts of mining activities on sediment transport are likely to change over time during the active mine life and after closure, with potentially significant consequences to channel stability and aquatic and riparian habitat. Thus, suspended and bedload transport analyses are necessary to evaluate the impacts to OAWs from mine-driven sediment changes.

Without the benefit of these additional analyses, EPA believes that ADEQ would be premature to conclude that there will be little change to lower Davidson Canyon's geomorphology (and water quality) as a result of the fill.

Factor 3: Reduction in available assimilative capacity

According to the FEIS, natural stormwater runoff that currently feeds the OAWs will be diminished up to 40% over the 24.5 – 30 year life of the mine.[7] ADEQ acknowledges a post-closure reduction in runoff volume of 17.2%, and concludes that this reduction could result in a potential loss of assimilative capacity and therefore potential degradation of water quality and/or riparian areas.[8]

For 404 permitting purposes, the Corps of Engineers requested that Rosemont conduct an analysis of indirect impacts from stormwater diversion. Considering the attenuation of impacts as the contributing watershed becomes larger, Rosemont calculated a reduction in average annual volume of stormwater flow in the Davidson Canyon OAW of approximately 8%, resulting in indirect impacts to 2.2 acres of surface waters within the OAWs during Rosemont mine operation.[9] EPA maintains Rosemont's analysis is flawed and the reduction in stormwater flow will adversely affect the entire wetted channel of the OAW. Rosemont did not calculate the indirect impacts to Lower Cienega Creek.

To address predicted reductions in runoff volume, the draft certification proposes that Rosemont develop and implement a surface water mitigation program designed to maintain aquatic and riparian resources at pre-project levels in Davidson Canyon and Lower Cienega Creek. The program shall include measures to offset predicted reductions in surface water flow (17.2% at post-closure), and a proposed schedule for implementation.[10]

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[6] Basis for Decision at pg. 8.
[7] FEIS, Volume 2, Chapter 3, Table 66. Summary of effects
[8] Basis for Decision at pg. 10.
[9] Email from Brian Lindenlaub, Westlands Resources, to Elizabeth Goldmann, EPA dated January 15, 2014.
[10] Basis for Decision at p. 11, Draft 401 Certification, Specific Condition 5.2.1.

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EPA appreciates ADEQ's inclusion of this Special Condition. EPA, however, is concerned that there is inadequate detail or certainty about the prospective surface water mitigation program's ability to offset the reduction in available assimilative capacity. For instance, EPA believes that since the 401 certification's coverage extends over the entire active mine period, and since the natural stormwater runoff that currently feeds the OAWs will be diminished up to 40% over the 24.5 – 30 year life of the mine, the mitigation targets should be based on the 40% surface runoff reductions predicted during the life of the mine, as opposed to the 17.2% post-closure reductions estimated by ADEQ.

In addition, the potential strategies described in the draft 401 certification to offset loss (*e.g.,* purchasing, retiring, severing and transferring of water rights) depend on administrative actions that are not certain to occur. Without certainty of measurable water supply and delivery, and corresponding contingencies for failure to secure such water, EPA does not believe these activities may be reasonably relied upon to replace the loss of wet water in the OAWs and prevent their degradation. We therefore recommend that ADEQ have Rosemont submit its surface water mitigation program to ADEQ for approval *prior* to issuance of the 401 water quality certification to ensure that Rosemont has secured enough available "wet" water to maintain aquatic and riparian resources at pre-project levels in Davidson Canyon and Lower Cienega Creek.

Factor 4: Degree of Confidence in various components of any modeling technique utilized

In its Basis for Decision, ADEQ correctly notes the uncertainty of the USFS models in predicting impacts to downstream waters.[11] ADEQ concludes that based on modeling and observation (*e.g.,* models, Tetra Tech field observations, SRK Consulting review), Lower Davidson Canyon is not hydraulically connected to the regional aquifer that would be impacted by pit dewatering.[12] With regard to Lower Cienega Creek, ADEQ states the potential reduction in perennial stream flow would be driven by the reduction in contribution from both Davidson Canyon and Upper Cienega Creek, but this reduction in surface flows would be minimal.[13]

The EPA believes that the uncertainty associated with available modeling does not support the above conclusions. Uncertainty equates to greater risk, which argues for a more protective or precautionary application of standards.

As previously stated, changes in sediment loading and a reduction in assimilative capacity will adversely affect water quality in Davidson Canyon and Lower Cienega Creek OAWs. In addition, pit dewatering will adversely impact approximately 20 miles of the Upper Cienega Creek OAW. According to the FEIS, the best-fit models show that mine related groundwater drawdown will result in intermittent conditions in Upper Cienega Creek after 150 years. By 150 years after closure, the risk of dry or low-flow conditions occurring in Upper Cienega Creek would increase to 88-283 days per year. Another model estimate shows Cienega Creek becoming intermittent within 50-150 years.[14] As a contributing

[11] Basis for Decision at p. 11.
[12] Basis for Decision at p. 11.
[13] Basis for Decision at p. 13.
[14] FEIS, Chapter 3, Table 108.

surface water source to Lower Cienega Creek, reductions in flow in Upper Cienega Creek will result in degradation of water quality in downstream OAW receiving waters.

Factor 5: Potential for Cumulative Impacts

EPA concludes from a careful read of the evaluation of cumulative impacts contained in the Basis for Decision that the scope and magnitude of impacts associated with the proposed Rosemont Copper Project, and the context in which these impacts will occur, have not been adequately presented.[15] The Rosemont mine represents an assemblage of impacts that are additive to the existing trend of declining water availability due to climate change, drought, and other factors. Insufficient information is provided in the draft certification and the Basis for Decision to demonstrate that the implementation of a surface water mitigation program will replace flows being captured or truncated from the proposed mine, either as a stand-alone impact or in the context of cumulative impacts to water quality such as drought and climate change.

Monitoring for sediment and flow changes

In general, impacts should be avoided wherever practicable prior to contemplating ways they can be minimized or mitigated. In the case of water quality in OAWs, impacts must be avoided by definition. The draft certification proposes corrective action should impacts to geomorphology occur, but it is unclear whether corrective measures can be put in place to prevent the degradation of OAWs should scour or aggradation be detected, or whether these measures can be effective given the potential lag time between detection and implementation of potential remedies.[16]

The USFS will require the Rosemont mine to monitor sediment between the mine and SR83 to identify areas of scour or aggradation (FEIS mitigation measure FS-SR-05), and Rosemont has agreed to share these data with ADEQ. However, these measures are only applicable on USFS lands; the USFS has no authority, obligation, or expertise to determine or enforce compliance with other agencies' laws or regulations.[17] In addition, based on the monitoring locations on USFS lands, it is questionable whether these monitoring measures and sites would capture changes to the beneficial uses associated with water quality standards at downstream OAWs.

EPA also believes Specific Condition 5.2.1 would benefit from a clearer description of the suspension procedures triggered if degradation is detected. Currently, the draft certification's proposed condition 5.2.1 states that ADEQ "may request" suspension of the CWA 404 permit if degradation is detected and require additional mitigation. However, the condition lacks specificity on implementation and timing of the suspension process and remedies, if any, should monitoring show degradation of an OAW. At minimum, adverse changes in water quality detected in OAWs should require immediate suspension of the 401 certification (and thus of the CWA 404 permit).

[15] Basis for Decision at p. 13.
[16] Basis for Decision at p. 8.
[17] FEIS, Appendix B, Page B-3

Other Water Quality Concerns

A Corps Memorandum dated October 29, 2009 addresses water quality certification as follows, "The state's certification of compliance with applicable effluent limitations and water quality standards will be considered conclusive with respect to water quality considerations, unless the Regional Administrator (RA) of the U.S. Environmental Protection Agency (U.S. EPA) notifies the district engineer of "other water quality aspects" that should be taken into consideration when making a decision on a permit application for an activity that results in a discharge of dredged or fill material into waters of the United States."[18]

EPA first notified the District Engineer of water quality concerns in a letter dated February 13, 2012. If the state's 401 water quality certification is not modified to adequately address the concerns regarding the protection of Davidson Canyon and Cienega Creek, EPA expects to request the District Engineer evaluate these particular water quality issues raised and documented by EPA both for purposes of the Corps public interest review at 33 CFR 320.4(d) and compliance with 40 CFR 230.10(b)(1) in the decision document for the §404 Clean Water Act permit action.

[18] Memorandum for Major Subordinate Commands and District Commands Subject: Water Quality Certification dated October 29. 2009 at p. 1.

To: Kopocis, Ken[Kopocis.Ken@epa.gov]; Peck, Gregory[Peck.Gregory@epa.gov]
Cc: Bathersfield, Nizanna[Bathersfield.Nizanna@epa.gov]
From: Klasen, Matthew
Sent: Fri 3/14/2014 9:31:22 PM
Subject: FW: Gentle Reminder: Rosemont FOIA responses due
R9 Users Guide to Creating Paperless FOIA Responses Using Outlook-JG.docx.docx
FOIA Guidelines 2013.doc

Ken and Greg:

I asked Jeanne Geselbracht in R9 to add me to the distribution list for this Rosemont-focused FOIA to make sure we in the IO do appropriate searches. Folks working on this identified you both as likely custodians of responsive documents. (The request seeks Rosemont-relevant docs from July-December 2013.)

I'm happy to stop by sometime next week to do a search for both of you. (Ken, I suspect Thursday and Friday will not be the best times.) We're now past the response deadline, so I'm sure the reminders will continue coming.

Thanks,
Matt

Matt Klasen

U.S. Environmental Protection Agency

Office of Water (IO)

(202) 566-0780

cell (202) 505-0787

From: Geselbracht, Jeanne
Sent: Wednesday, March 12, 2014 6:38 PM
To: Athas, Ellen; Blumenfeld, Jared; Bohning, Scott; Bose, Laura; Bromm, Susan; Brush, Jason;

Campbell, Rich; Diamond, Jane; Dunning, Connell; Ebbert, Laura; Evans, David; Fertik, Rachel; Flannery-Keith, Erin; Fleming, Terrence; Gaudario, Abigail; Giles-AA, Cynthia; Goforth, Kathleen; Goldmann, Elizabeth; Graves, Karin; Hagler, Tom; Hanf, Lisa; Hashimoto, Janet; Heller, Zoe; Herrera, Angeles; Hessert, Aimee; Hillenbrand, John; Holladay, Cleveland; Jessop, Carter; Johnson, Kathleen; Kaiser, Russell; Keener, Bill; Kermish, Laurie; Klasen, Matthew; Kopocis, Ken; Kurpius, Meredith; Lakin, Matt; Leidy, Robert; Maier, Brent; Manzanilla, Enrique; Marshall, Tom; Martynowicz, Trina; McKaughan, Colleen; Miles, Erin; Miller, Clay; Nudd, Gregory; Overman, Pamela; Peck, Gregory; Pendergast, Jim; PerezSullivan, Margot; Rader, Cliff; Rios, Gerardo; Rivera, Shirley; Roemele, Julie; Ryerson.Teddy; Sachs, Carol; Schultz, Frances; Scott, Jeff; Srinivasan, Gautam; Strauss, Alexis; Sumner, Rich; Suriano, Elaine; Yogi, David; Zito, Kelly; Plenys, Thomas; Moyer, Robert; Lyons, John
Cc: Silver, Perry
Subject: Gentle Reminder: Rosemont FOIA responses due

Dear FOIA Responders,

This is a gentle reminder that the deadline for putting your responsive Rosemont records into the Rosemont shared drive is COB Thursday March 13.

When you have completed this task:

•□□□□□□□□ Please send me a brief email verifying that you have completed a diligent search for documents responsive to this FOIA request. Those of you who already sent me a note when you finished need not send another one.

•□□□□□□□□ Remember to send your search time cost estimate to your division FOIA contact.

Thank you!

Jeanne Geselbracht
Environmental Review Section (ENF-4-2)
U.S. EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

Phone: (415) 972-3853

From: Geselbracht, Jeanne
Sent: Thursday, February 27, 2014 5:07 PM
To: Athas, Ellen; Blumenfeld, Jared; Bohning, Scott; Bose, Laura; Bromm, Susan; Brush, Jason; Campbell, Rich; Diamond, Jane; Dunning, Connell; Ebbert, Laura; Evans, David; Fertik, Rachel; Flannery-Keith, Erin; Fleming, Terrence; Gaudario, Abigail; Giles-AA, Cynthia; Goforth, Kathleen; Goldmann, Elizabeth; Graves, Karin; Hagler, Tom; Hanf, Lisa; Hashimoto, Janet; Heller, Zoe; Herrera, Angeles; Hessert, Aimee; Hillenbrand, John; Holladay, Cleveland; Jessop, Carter; Johnson, Kathleen; Kaiser, Russell; Keener, Bill; Kermish, Laurie; Klasen, Matthew; Kopocis, Ken; Kurpius, Meredith; Lakin, Matt; Leidy, Robert; Maier, Brent; Manzanilla, Enrique; Marshall, Tom; Martynowicz, Trina; McKaughan, Colleen; Miles, Erin; Miller, Clay; Nudd, Gregory; Overman, Pamela; Peck, Gregory; Pendergast, Jim; PerezSullivan, Margot; Rader, Cliff; Richmond, Dawn; Rios, Gerardo; Rivera, Shirley; Roemele, Julie; Ryerson.Teddy; Sachs, Carol; Schultz, Frances; Scott, Jeff; Srinivasan, Gautam; Strauss, Alexis; Sumner, Rich; Suriano, Elaine; Yogi, David; Zito, Kelly
Cc: Jackson, Clarice; Silver, Perry; Anaya, Mercedes
Subject: Please Read: Rosemont FOIA Instructions

Dear FOIA Responders,

This email contains instructions (see attachment) on how to respond to our recent Rosemont FOIA request, and a list (below) of the types of documents that are responsive to the request. We have created a dedicated Rosemont Shared Drive for this FOIA. The due date for copying all your responsive files onto the Rosemont Shared Drive is **COB March 13, 2014**.

RESPONSIVE DOCUMENTS

Only documents sent or received by EPA from July 1, 2013 thru December 24, 2013 pertaining to the Rosemont Mine EIS – whether it be the Draft EIS, the Preliminary Administrative Final EIS or the Final EIS. (You will not need to retrieve any emails from Lotus Notes. All your relevant emails will be coming from the Outlook mail system.)

RESPONSIVE DOCUMENTS INCLUDE:

•□□□□□□□□ Emails, letters, memoranda and other correspondence between EPA personnel (including all draft versions and internal edits); between EPA personnel and other federal government agencies (e.g., USFS, BLM, Corps of Engineers); and between EPA personnel and other non-federal state (e.g., ADEQ) and local entities (e.g. Pima County), private parties, non-governmental entities (e.g., "Save the Santa Rita's"). All attachments to such correspondence are also responsive.

•□□□□□□□□ Memoranda to file (including hand written notes) and other reports and studies sent or received by EPA personnel.

DO NOT INCLUDE:

•□□□□□□□□ Microsoft Outlook Calendar entries that contain no substantive discussion of Rosemont Mine

•□□□□□□□□ Physical calendar entries that contain no substantive discussion of Rosemont Mine

•□□□□□□□□ Meeting invitations or scheduling discussions that contain no substantive discussion of Rosemont Mine

•□□□□□□□□ 'To-do' lists and similar reminders that contain no substantive discussion of Rosemont Mine

•□□□□□□□□ Electronic or hand written notes from routine meetings and engagements that contain no substantive discussion of Rosemont Mine

•□□□□□□□□ Workload reports, "weekly reports"

•□□□□□□□□ Marginal notes in publically available documents (e.g., notes in the margins of the FEIS)

•□□□□□□□□ Email messages that simply forward publicly available documents without an accompanying substantive discussion of Rosemont Mine

•□□□□□□□□ Copies of form letters

If you are in Region 9, and on the list of responders to this FOIA request, Adobe Acrobat Pro should have already been temporarily installed on your computer. Pro may be uninstalled after March 13.

When you have completed your FOIA response, please fill out the cost worksheet (page 2 in the attached FOIA Guidelines) and return it to your Program FOIA Coordinator. This is needed for reporting FOIA obligation costs.

Thanks to Perry Silver for all his hard work on the attached R9 User's Guide to Creating Paperless FOIA Responses!

If you have any questions, please call or email me.

Jeanne Geselbracht
Environmental Review Section (ENF-4-2)
U.S. EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

Phone: (415) 972-3853

To: Kopocis, Ken[Kopocis.Ken@epa.gov]
From: Magruder, DeMara
Sent: Tue 1/7/2014 9:04:09 PM
Subject: FW: Arizona Trip

Hi, Ken. I spoke to Jane Diamond and she would love for you to go with them. She also said that someone from Wetlands may be going with them as well.

DeMara Magruder

202-564-2310

From: Diamond, Jane
Sent: Tuesday, January 07, 2014 3:57 PM
To: Magruder, DeMara; Blumenfeld, Jared
Cc: Gaudario, Abigail; Brush, Jason
Subject: RE: Arizona Trip

Hi DaMara. I tried to phone you but rang to voice mail, so will send you this short email response. Please feel free to call me at 415-972-3275.

Jared and I are going to tour the area around the proposed Rosemont Mine with the Corps of Engineers and may meet with the Tohono O'odham Nation and other local stakeholders on January 29. Logistics are still being developed—we'll keep you posted. Is Ken thinking of joining us? I'd appreciate seeing the invite. Thanks, Jane

From: Magruder, DeMara
Sent: Tuesday, January 07, 2014 12:47 PM
To: Blumenfeld, Jared; Diamond, Jane
Cc: Gaudario, Abigail
Subject: Arizona Trip

Hello. I work with Ken Kopocis. He has been invited to Farmers Investment Co. in Sahuarita, AZ. Ken said that he believes that someone from Region 9 is going to Arizona at the end of this month.

Do you know who is going to Arizona and if so, can we find out the logistics of the trip?

Thank you.

DeMara Magruder

Executive Administrative Assistant

Scheduler for Ken Kopocis and Ellen Gilinsky

Office of Water/Immediate Office

1200 Pennsylvania Avenue, N.W.

Washington, DC 20460

Tel: 202-564-2310

To: Kopocis, Ken[Kopocis.Ken@epa.gov]; Rader, Cliff[Rader.Cliff@epa.gov]
Cc: Bromm, Susan[Bromm.Susan@epa.gov]; Blumenfeld, Jared[BLUMENFELD.JARED@EPA.GOV]; Scott, Jeff[Scott.Jeff@epa.gov]; Diamond, Jane[Diamond.Jane@epa.gov]; Johnson, Kathleen[Johnson.Kathleen@epa.gov]; Herrera, Angeles[Herrera.Angeles@epa.gov]; Hanf, Lisa[Hanf.Lisa@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Brush, Jason[Brush.Jason@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Ryerson.Teddy[Ryerson.Teddy@epa.gov]; Hagler, Tom[Hagler.Tom@epa.gov]; Campbell, Rich[Campbell.Rich@epa.gov]; Marshall, Tom[marshall.tom@epa.gov]; Bromm, Susan[Bromm.Susan@epa.gov]; Martynowicz, Trina[Martynowicz.Trina@epa.gov]
From: Dunning, Connell
Sent: Fri 1/3/2014 7:06:57 PM
Subject: One more follow up point -- Update on Rosemont for CEQ Interagency call --- 1/3/14

Ken –

Regarding your question about coming to an understanding with FS about scope of project impacts:

(b) (5)
[redacted]

All –

And although today's call will be addressing only the referral timeline and not substantive issues, I wanted to give you a heads up about one additional piece of information that just arrived at our office yesterday…. Pima County Administrator Chuck Huckelberry sent a letter to Corps District Engineer Col. Kim Colloton criticizing the adequacy of Rosemont's proposed mitigation for impacts to aquatic resources. This should not come up today, but is important for future discussion about mitigation.

I will forward it to you under a separate, follow up email due to the document size with images (8 MB).

Thanks,

Connell

Connell Dunning

Environmental Review Office

US EPA Region IX, Pacific Southwest

75 Hawthorne St (CED-2), SF, CA 94105

dunning.connell@epa.gov

phone - 415-947-4161 fax- 415-947-8026

From: Dunning, Connell
Sent: Friday, January 03, 2014 9:30 AM
To: Kopocis, Ken; Rader, Cliff
Cc: Bromm, Susan; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich; Marshall, Tom; Bromm, Susan
Subject: RE: Update on Rosemont for CEQ Interagency call --- 1/3/14

Ken –

My understanding is that there have not been substantive discussions due to the holidays.

Regarding your question about whether or not we have come to an understanding about the scope of project impacts, I will send a second email with the status of that "ask" once I can confirm where that stands.

Cliff – Thanks for the follow up points and your clarification about mitigation. Regarding the timing of the referral period, it is optimal to allow sufficient time for coordination to pursue additional mitigation the Corps may require and a better understanding of what the Corps mitigation proposal will be.

Thanks,

Connell

Connell Dunning

Environmental Review Office

US EPA Region IX, Pacific Southwest

75 Hawthorne St (CED-2), SF, CA 94105

dunning.connell@epa.gov

phone - 415-947-4161 fax- 415-947-8026

From: Kopocis, Ken
Sent: Friday, January 03, 2014 6:14 AM
To: Rader, Cliff; Dunning, Connell
Cc: Bromm, Susan; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich; Marshall, Tom; Bromm, Susan
Subject: RE: Update on Rosemont for CEQ Interagency call --- 1/3/14

Connell (or Cliff),

You stated that there have been no major new developments since 12/20. Is that because discussions have not led to any advances, or because there have not been discussions because of the holidays, or what is the reason?

Ken

From: Rader, Cliff
Sent: Friday, January 03, 2014 9:07 AM
To: Dunning, Connell; Kopocis, Ken
Cc: Bromm, Susan; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich; Marshall, Tom; Bromm, Susan
Subject: RE: Update on Rosemont for CEQ Interagency call --- 1/3/14

Thanks Connell!

A few points...

Ex. 5 - Deliberative Process

Cliff Rader

Director, NEPA Compliance Division

202-564-7159

From: Dunning, Connell
Sent: Thursday, January 02, 2014 6:19 PM
To: Kopocis, Ken
Cc: Bromm, Susan; Rader, Cliff; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich
Subject: Update on Rosemont for CEQ Interagency call --- 1/3/14

Interagency Rosemont Call with CEQ – January 3rd, 3:00pm EST ---- Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ken –

In preparation for the CEQ Interagency call on Rosemont Mine tomorrow, 1/3/14, we have the

following status update.

Purpose of Call: - Discuss whether or not to establish an end date for the referral period extension that the USFS has granted EPA.

Update: There have been no major new developments since our last interagency call Dec. 20, 2013.

Summary of current EPA position as expressed on Dec. 13 and Dec. 20, 2013:

(b) (5)

[redacted]

Let us know if you have any questions prior to tomorrow's call.

We will join you then.

Connell Dunning

Acting NEPA Manager (Kathy Goforth returning 1/6/14)

Connell Dunning

Environmental Review Office

US EPA Region IX, Pacific Southwest

75 Hawthorne St (CED-2), SF, CA 94105

dunning.connell@epa.gov

phone - 415-947-4161 fax- 415-947-8026

To: Kopocis, Ken[Kopocis.Ken@epa.gov]; Rader, Cliff[Rader.Cliff@epa.gov]
Cc: Bromm, Susan[Bromm.Susan@epa.gov]; Blumenfeld, Jared[BLUMENFELD.JARED@EPA.GOV]; Scott, Jeff[Scott.Jeff@epa.gov]; Diamond, Jane[Diamond.Jane@epa.gov]; Johnson, Kathleen[Johnson.Kathleen@epa.gov]; Herrera, Angeles[Herrera.Angeles@epa.gov]; Hanf, Lisa[Hanf.Lisa@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Brush, Jason[Brush.Jason@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Ryerson.Teddy[Ryerson.Teddy@epa.gov]; Hagler, Tom[Hagler.Tom@epa.gov]; Campbell, Rich[Campbell.Rich@epa.gov]; Marshall, Tom[marshall.tom@epa.gov]; Bromm, Susan[Bromm.Susan@epa.gov]
From: Dunning, Connell
Sent: Fri 1/3/2014 5:30:24 PM
Subject: RE: Update on Rosemont for CEQ Interagency call --- 1/3/14

Ken –

My understanding is that there have not been substantive discussions due to the holidays.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks,

Connell

Connell Dunning

Environmental Review Office

US EPA Region IX, Pacific Southwest

75 Hawthorne St (CED-2), SF, CA 94105

dunning.connell@epa.gov

phone - 415-947-4161 fax- 415-947-8026

From: Kopocis, Ken
Sent: Friday, January 03, 2014 6:14 AM
To: Rader, Cliff; Dunning, Connell
Cc: Bromm, Susan; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich; Marshall, Tom; Bromm, Susan
Subject: RE: Update on Rosemont for CEQ Interagency call --- 1/3/14

Connell (or Cliff),

Ex. 5 - Deliberative Process

Ken

From: Rader, Cliff
Sent: Friday, January 03, 2014 9:07 AM
To: Dunning, Connell; Kopocis, Ken
Cc: Bromm, Susan; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich; Marshall, Tom; Bromm, Susan
Subject: RE: Update on Rosemont for CEQ Interagency call --- 1/3/14

Thanks Connell!

A few points...

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Cliff Rader

Director, NEPA Compliance Division

202-564-7159

From: Dunning, Connell
Sent: Thursday, January 02, 2014 6:19 PM
To: Kopocis, Ken
Cc: Bromm, Susan; Rader, Cliff; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich
Subject: Update on Rosemont for CEQ Interagency call --- 1/3/14

Interagency Rosemont Call with CEQ – January 3rd, 3:00pm EST ---- Ex. 6 - Personal Privacy Passcode Ex. 6 - Personal Privacy

Ken –

In preparation for the CEQ Interagency call on Rosemont Mine tomorrow, 1/3/14, we have the following status update.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Summary of current EPA position as expressed on Dec. 13 and Dec. 20, 2013:

Ex. 5 - Deliberative Process

Let us know if you have any questions prior to tomorrow's call.

We will join you then.

Connell Dunning

Acting NEPA Manager (Kathy Goforth returning 1/6/14)

Connell Dunning

Environmental Review Office

US EPA Region IX, Pacific Southwest

75 Hawthorne St (CED-2), SF, CA 94105

dunning.connell@epa.gov

phone - 415-947-4161 fax- 415-947-8026

To: Kopocis, Ken[Kopocis.Ken@epa.gov]
From: Rader, Cliff
Sent: Fri 1/3/2014 2:19:20 PM
Subject: RE: Update on Rosemont for CEQ Interagency call --- 1/3/14

Ken -

I've been out on holiday travel; arrived home last night, so I'll have let R9 answer this one!

thanks.

Cliff Rader
Director, NEPA Compliance Division
202-564-7159

From: Kopocis, Ken
Sent: Friday, January 03, 2014 9:14 AM
To: Rader, Cliff; Dunning, Connell
Cc: Bromm, Susan; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich; Marshall, Tom; Bromm, Susan
Subject: RE: Update on Rosemont for CEQ Interagency call --- 1/3/14

Connell (or Cliff),

Ex. 5 - Deliberative Process

Ken

From: Rader, Cliff
Sent: Friday, January 03, 2014 9:07 AM
To: Dunning, Connell; Kopocis, Ken
Cc: Bromm, Susan; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich; Marshall, Tom; Bromm, Susan
Subject: RE: Update on Rosemont for CEQ Interagency call --- 1/3/14

Thanks Connell!

A few points...

Ex. 5 - Deliberative Process

Cliff Rader

Director, NEPA Compliance Division

202-564-7159

From: Dunning, Connell
Sent: Thursday, January 02, 2014 6:19 PM
To: Kopocis, Ken
Cc: Bromm, Susan; Rader, Cliff; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich
Subject: Update on Rosemont for CEQ Interagency call --- 1/3/14

Interagency Rosemont Call with CEQ – January 3rd, 3:00pm EST ---- Ex. 6 - Personal Privacy
Passcode Ex. 6 - Personal Privacy

Ken –

In preparation for the CEQ Interagency call on Rosemont Mine tomorrow, 1/3/14, we have the following status update.

Ex. 5 - Deliberative Process

Summary of current EPA position as expressed on Dec. 13 and Dec. 20, 2013:

Ex. 5 - Deliberative Process

Let us know if you have any questions prior to tomorrow's call.

We will join you then.

Connell Dunning

Acting NEPA Manager (Kathy Goforth returning 1/6/14)

Connell Dunning

Environmental Review Office

US EPA Region IX, Pacific Southwest

75 Hawthorne St (CED-2), SF, CA 94105

dunning.connell@epa.gov

phone - 415-947-4161 fax- 415-947-8026

To: Evans, David[Evans.David@epa.gov]
Cc: Magruder, DeMara[Magruder.Demara@epa.gov]; Penman, Crystal[Penman.Crystal@epa.gov]
From: Kopocis, Ken
Sent: Fri 1/17/2014 12:38:12 PM
Subject: Rosemont Mine

Dave,

Cynthia, Jared and I spoke last nigh **Ex. 5 - Deliberative Process**

Ex. 5 - Deliberative Process

I do not need a formal presentation, a dialogue will be fine.

Please work with Crystal/DeMara to set it up.

Thanks,
Ken

To: Rader, Cliff[Rader.Cliff@epa.gov]; Dunning, Connell[Dunning.Connell@epa.gov]
Cc: Bromm, Susan[Bromm.Susan@epa.gov]; Blumenfeld, Jared[BLUMENFELD.JARED@EPA.GOV]; Scott, Jeff[Scott.Jeff@epa.gov]; Diamond, Jane[Diamond.Jane@epa.gov]; Johnson, Kathleen[Johnson.Kathleen@epa.gov]; Herrera, Angeles[Herrera.Angeles@epa.gov]; Hanf, Lisa[Hanf.Lisa@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Brush, Jason[Brush.Jason@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Ryerson.Teddy[Ryerson.Teddy@epa.gov]; Hagler, Tom[Hagler.Tom@epa.gov]; Campbell, Rich[Campbell.Rich@epa.gov]; Marshall, Tom[marshall.tom@epa.gov]
From: Kopocis, Ken
Sent: Fri 1/3/2014 4:14:35 PM
Subject: Re: Update on Rosemont for CEQ Interagency call --- 1/3/14

Connell,

Ex. 5 - Deliberative Process

Thanks again,
Ken

From: Rader, Cliff
Sent: Friday, January 03, 2014 9:07:29 AM
To: Dunning, Connell; Kopocis, Ken
Cc: Bromm, Susan; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich; Marshall, Tom; Bromm, Susan
Subject: RE: Update on Rosemont for CEQ Interagency call --- 1/3/14

Thanks Connell!

A few points...

Ex. 5 - Deliberative Process

Cliff Rader
Director, NEPA Compliance Division
202-564-7159

From: Dunning, Connell
Sent: Thursday, January 02, 2014 6:19 PM
To: Kopocis, Ken
Cc: Bromm, Susan; Rader, Cliff; Blumenfeld, Jared; Scott, Jeff; Diamond, Jane; Johnson, Kathleen; Herrera, Angeles; Hanf, Lisa; Goforth, Kathleen; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Ryerson.Teddy; Hagler, Tom; Campbell, Rich
Subject: Update on Rosemont for CEQ Interagency call --- 1/3/14

Interagency Rosemont Call with CEQ – January 3rd, 3:00pm EST --- Ex. 6 - Personal Privacy
Passcode Ex. 6 - Personal Privacy

Ken –

In preparation for the CEQ Interagency call on Rosemont Mine tomorrow, 1/3/14, we have the following status update.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Summary of current EPA position as expressed on Dec. 13 and Dec. 20, 2013:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Let us know if you have any questions prior to tomorrow's call.

We will join you then.

Connell Dunning

Acting NEPA Manager (Kathy Goforth returning 1/6/14)

Connell Dunning

Environmental Review Office

US EPA Region IX, Pacific Southwest

75 Hawthorne St (CED-2), SF, CA 94105

dunning.connell@epa.gov

phone - 415-947-4161 fax- 415-947-8026

To: Landers, Timothy[Landers.Timothy@epa.gov]
Cc: Campbell, Rich[Campbell.Rich@epa.gov]
From: Goldmann, Elizabeth
Sent: Mon 1/11/2016 8:48:56 PM
Subject: draft deliberative - do not release under FOIA
Draft Table of Contents.Rosemont Mine impact analysis.docx
Draft impact analysis.Rosemont Mine.docx
Draft Table 1.Rosemont Mine impact analysis.docx

;
Hi Tim

I have attached a draft deliberative document on our analysis of the Rosemont Mine Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Please call or email me if you have any questions.

Sincerely,

Elizabeth

Elizabeth Goldmann

Physical Scientist

U.S. Environmental Protection Agency

75 Hawthorne St. (WTR-2-4)

San Francisco, CA 94105

(415) 972-3398

Goldmann.elizabeth@epa.gov

To: Moutoux, Nicole[Moutoux.Nicole@epa.gov]; Johnson, Kathleen[Johnson.Kathleen@epa.gov]; Leff, Karin[Leff.Karin@epa.gov]
Cc: Carter Jessop[carterjessop@gmail.com]; Watt, Jamey[Watt.Jamey@epa.gov]; Suriano, Elaine[Suriano.Elaine@epa.gov]; Dunning, Connell[Dunning.Connell@epa.gov]
From: Goforth, Kathleen
Sent: Fri 7/15/2016 12:06:49 AM
Subject: FW: 60-Day notice on Rosemont ESA from CBD

Center for Biological Diversity sent a "60-day Notice of Endangered Species Act Violations related to the Proposed Rosemont Copper Mine in Arizona" to FWS, DOI, Forest Service, COE, and EPA (Tomas Torres), alleging violations of the ESA and Administrative Procedure Act. The

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

-Kathy

Kathleen Martyn Goforth, Manager

Environmental Review Section (ENF-4-2)

U.S. Environmental Protection Agency, Region 9

75 Hawthorne Street

San Francisco, CA 94105

415-972-3521

From: Brush, Jason
Sent: Thursday, July 14, 2016 9:44 AM

To: Goforth, Kathleen <Goforth.Kathleen@epa.gov>; Goldmann, Elizabeth <Goldmann.Elizabeth@epa.gov>; Campbell, Rich <Campbell.Rich@epa.gov>
Cc: Kermish, Laurie <Kermish.Laurie@epa.gov>; Gullatt, Kristin <Gullatt.Kristin@epa.gov>; Woo, Nancy <Woo.Nancy@epa.gov>; Leidy, Robert <Leidy.Robert@epa.gov>; Jessop, Carter <JESSOP.CARTER@EPA.GOV>
Subject: 60-Day notice on Rosemont ESA from CBD

FYI – Just rec'd a 60-day notice from CBD which names EPA in addition to the lead action agencies. A paper copy is heading to each of you in the "to" line.

Jason A. Brush
Supervisor, Wetlands Section
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-2-4)
San Francisco, CA 94105
~~~~~~~~~~~~~~~~~~~~~~~~~~~~
desk: 415.972.3483
~~~~~~~~~~~~~~~~~~~~~~~~~~~~

To: Landers, Timothy[Landers.Timothy@epa.gov]
Cc: Miller, Clay[Miller.Clay@epa.gov]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Campbell, Rich[Campbell.Rich@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Woo, Nancy[Woo.Nancy@epa.gov]
From: Brush, Jason
Sent: Thur 4/28/2016 12:30:06 AM
Subject: FW: Rosemont briefing - PLEASE REVIEW
04-27-16 Rosemont Briefing_Presentation.JB.ppt

Hi Tim – In addition to Rob's talking points below, I've translated much of the content we discussed this morning into notes on each slide in the attached revision to the PPT. I think this

Ex. 5 - Deliberative Process

Jason A. Brush
Supervisor, Wetlands Section
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-2-4)
San Francisco, CA 94105
~~~~~~~~~~~~~~~~~~~~~~~~~~~~
desk: 415.972.3483
~~~~~~~~~~~~~~~~~~~~~~~~~~~~

From: Leidy, Robert
Sent: Wednesday, April 27, 2016 11:08 AM
To: Landers, Timothy <Landers.Timothy@epa.gov>; Brush, Jason <Brush.Jason@epa.gov>; Goldmann, Elizabeth <Goldmann.Elizabeth@epa.gov>; Goforth, Kathleen <Goforth.Kathleen@epa.gov>
Cc: Miller, Clay <Miller.Clay@epa.gov>; Campbell, Rich <Campbell.Rich@epa.gov>
Subject: RE: Rosemont briefing - PLEASE REVIEW

Tim,

For today's discussion.

Rob

Robert A. Leidy, Ph.D.

Ecologist/Enforcement Officer

U.S. Environmental Protection Agency

Wetlands Office (WTR-2-4)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Landers, Timothy
Sent: Wednesday, April 27, 2016 9:35 AM
To: Brush, Jason <Brush.Jason@epa.gov>; Goldmann, Elizabeth <Goldmann.Elizabeth@epa.gov>; Goforth, Kathleen <Goforth.Kathleen@epa.gov>; Leidy, Robert <Leidy.Robert@epa.gov>
Cc: Miller, Clay <Miller.Clay@epa.gov>
Subject: RE: Rosemont briefing - PLEASE REVIEW

Thanks Jason. Here is the current version of the presentation incorporating your feedback, recognizing that many of your margin notes will be helpful context for me when presenting. Take a look and we can discuss during our call later today.

From: Brush, Jason
Sent: Tuesday, April 26, 2016 3:19 PM
To: Miller, Clay <Miller.Clay@epa.gov>; Goldmann, Elizabeth <Goldmann.Elizabeth@epa.gov>; Moutoux, Nicole <Moutoux.Nicole@epa.gov>; Goforth,

Kathleen <Goforth.Kathleen@epa.gov>; Goforth, Kathleen <Goforth.Kathleen@epa.gov>; Suriano, Elaine <Suriano.Elaine@epa.gov>; Leff, Karin <Leff.Karin@epa.gov>
Cc: Goodin, John <Goodin.John@epa.gov>; Eisenberg, Mindy <Eisenberg.Mindy@epa.gov>; Landers, Timothy <Landers.Timothy@epa.gov>; Kaiser, Russell <Kaiser.Russell@epa.gov>; Leidy, Robert <Leidy.Robert@epa.gov>; Woo, Nancy <Woo.Nancy@epa.gov>
Subject: RE: Rosemont briefing - PLEASE REVIEW
Importance: High

Thanks for giving us a peek, Clay. Attached are some quick margin notes to consider either for modifying the ppt, or for emphasis while speaking. If you have time, I'd like to talk on the phone about it with you. Thanks - JB

Jason A. Brush
Supervisor, Wetlands Section
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-2-4)
San Francisco, CA 94105
~~~~~~~~~~~~~~~~~~~~~~~~~~~~
desk: 415.972.3483
~~~~~~~~~~~~~~~~~~~~~~~~~~~~

To: Miller, Clay[Miller.Clay@epa.gov]; Landers, Timothy[Landers.Timothy@epa.gov]
Cc: Campbell, Rich[Campbell.Rich@epa.gov]
From: Goldmann, Elizabeth
Sent: Mon 4/18/2016 6:18:58 PM
Subject: Draft: Water Usage/Replenishment - Rosemont Mine

Information on water usage/replenishment for the Rosemont Mine.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Elizabeth Goldmann

Physical Scientist

U.S. Environmental Protection Agency

75 Hawthorne St. (WTR-2-4)

San Francisco, CA 94105

(415) 972-3398

Goldmann.elizabeth@epa.gov

To: Landers, Timothy[Landers.Timothy@epa.gov]
From: Leidy, Robert
Sent: Tue 4/12/2016 1:52:47 PM
Subject: RE: scheduling for next week

Hi Tim,

Could you please let me know what your travel plans are for next week? I am planning on arriving to Phoenix the morning of April 20th and driving 1.5 hrs to Tucson. If you are interested and your schedule works we could spend the entire day visiting the Cienega Creek watershed prior to our field meeting on the 21st. This would also give us the opportunity to talk about issues. If not, then let's get together that evening to talk.

Best,

Rob

Robert A. Leidy, Ph.D.

Ecologist/Enforcement Officer

U.S. Environmental Protection Agency

Wetlands Office (WTR-2-4)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

To: Brush, Jason[Brush.Jason@epa.gov]
Cc: Landers, Timothy[Landers.Timothy@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]
From: Goldmann, Elizabeth
Sent: Mon 4/11/2016 5:53:48 PM
Subject: CEQ briefing paper - attachment 5
Attachment 5_Rosemont_USFS NEPA Analysis_Info Paper_10 Mar 2016_cwj kmg.....docx

EPA's comments on the USFS NEPA Analysis Info Paper. It was approved by Kathleen Johnson and sent to CEQ.

Elizabeth Goldmann

Physical Scientist

U.S. Environmental Protection Agency

75 Hawthorne St. (WTR-2-4)

San Francisco, CA 94105

(415) 972-3398

Goldmann.elizabeth@epa.gov

To: Suriano, Elaine[Suriano.Elaine@epa.gov]
Cc: Landers, Timothy[Landers.Timothy@epa.gov]
From: Jessop, Carter
Sent: Sat 2/27/2016 12:14:48 AM
Subject: RE: Note - FYI - 2/26/16 Rosemont call summary
FOIA Checklist 2015.doc
OEI Search Form Request Jessop 003747.doc
Assurance of Payment Template.docx
EPA-R9-2016-003747_11302376_1(02-08-2016 Letter to US EPA with FOIA Request).pdf
EPA-R9-2016-003747.pdf

Elaine,

Non-responsive

-Carter

Carter W. Jessop

U.S. EPA, Region 9

Environmental Review Section (ENF-4-2)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3815

jessop.carter@epa.gov

From: Suriano, Elaine
Sent: Friday, February 26, 2016 3:17 PM
To: Jessop, Carter <JESSOP.CARTER@EPA.GOV>
Cc: Landers, Timothy <Landers.Timothy@epa.gov>
Subject: Note - FYI - 2/26/16 Rosemont call summary

C –

My notes from today's call below.

Non-responsive

Talk to you soon, E…

-

-

Summary of 2/26/16 Rosemont Con. Call

-

Agency Updates

-

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

CEQ still working on overview papers and waiting for comments from FS.

Elaine Suriano

Environmental Scientist

Office of Federal Activities (2252A)

WJC South - 7235C

1200 Penna. Ave., NW

Washington, DC 20460

PH 202 564 7162 - FX 202 564 0070

suriano.elaine@epa.gov

To: Landers, Timothy[Landers.Timothy@epa.gov]
From: Leff, Karin
Sent: Thur 1/14/2016 5:25:42 PM
Subject: RE: OW IO Clearance of Suggested Edits/Comments on CEQ Rosemont Read-Ahead Materials

Thanks Tim. Will cc you upon sending. Who else should I cc?

Karin Leff

Acting Director, NEPA Compliance Division

Office of Federal Activities

US EPA- OECA

202.564.7068 (w)

202.236.3669 (c)

From: Landers, Timothy
Sent: Thursday, January 14, 2016 10:20 AM
To: Leff, Karin <Leff.Karin@epa.gov>; Suriano, Elaine <Suriano.Elaine@epa.gov>
Cc: Goodin, John <Goodin.John@epa.gov>; Kaiser, Russell <Kaiser.Russell@epa.gov>; Miller, Clay <Miller.Clay@epa.gov>; Best-Wong, Benita <Best-Wong.Benita@epa.gov>; Evans, David <Evans.David@epa.gov>; Eisenberg, Mindy <Eisenberg.Mindy@epa.gov>; Peck, Gregory <Peck.Gregory@epa.gov>
Subject: RE: OW IO Clearance of Suggested Edits/Comments on CEQ Rosemont Read-Ahead Materials

DRAFT, DELIBERATIVE

Karin and Elaine:

To close the loop, I wanted to provide you with the complete set of R9/OW/OFA consolidated edits and comments on the CEQ Rosemont read-ahead materials. This includes a revised version of the Cover Memo – the subject of additional internal review and conversation following our briefing with Joel yesterday afternoon. Thanks for your help in communicating these with CEQ by this afternoon's deadline. Any questions, don't hesitate to ask.

Tim Landers

U.S. EPA

Wetlands Division

202-566-2231

From: Rodgers, Kerry E. EOP/CEQ < Ex. 6 - Personal Privacy
Sent: Tuesday, January 12, 2016 4:50 PM
To: robert.bonnie@osec.usda.gov; meryl.harrell@osec.usda.gov; patrick.holmes@osec.usda.gov; aacheson@fs.fed.us; jcarbone@fs.fed.us; cjoyner@fs.fed.us; jupchurch01@fs.fed.us; tparker03@fs.fed.us; kdewberry@fs.fed.us; msvogel@fs.fed.us; Leff, Karin; Suriano, Elaine; Beauvais, Joel; Peck, Gregory; Miller, Clay; Blumenfeld, Jared; Ryerson.Teddy (Separated); Goforth, Kathleen; Brush, Jason; Dunning, Connell; Hanf, Lisa (Separated 8/22/15); Martynowicz, Trina; Gaudario, Abigail; Diamond, Jane (Separated 4/30/15); Johnson, Kathleen; Jessop, Carter; Penman, Crystal; Woo, Nancy; jennifer.a.moyer@usace.army.mil; Charles.R.Smith567.civ@mail.mil; david.b.olson@usace.army.mil; Wade.L.Eakle@usace.army.mil; David.J.Castanon@usace.army.mil; Sallie.Diebolt@usace.army.mil; carol_braegelmann@ios.doi.gov; mtupper@blm.gov; bamme@blm.gov; lbaker@blm.gov; uhong@blm.gov; rmsuazo@blm.gov; drawhous@blm.gov; jshoemaker@blm.gov; tshannon@blm.gov; Christy_JohnsonHughes@fws.gov; Benjamin_Tuggle@fws.gov; steve_spangle@fws.gov; jean_calhoun@fws.gov; jason_douglas@fws.gov
Cc: Mallory, Brenda N. EOP/CEQ; Patel, Manisha D. EOP/CEQ; Drummond, Michael R. EOP/CEQ; Heberling, Paul D. EOP/CEQ
Subject: FW: Next Steps on Rosemont Mine - Invitation for Our Call on Friday, January 15, 3 p.m. Eastern and Reminder for Comments on Papers by Thursday

Good afternoon,

We will resume our Rosemont Mine calls this Friday, January 15, 2016, at 3 p.m. Eastern. We will proceed on the usual every-other-week schedule moving forward. Please mark your calendars and use the following new call-in number and passcode.

Call-In Number: (Ex. 6 - Personal Privacy
Conferee Passco

This Friday's agenda will include: (1) updates from each agency; (2) discussion of the attached draft papers; (3) final check of the e-mail list for our Friday calls; and (4) any other business.

Please review and send me edits/comments on the attached draft papers in track changes by 2 p.m. Eastern on Thursday, January 14, and cc: my colleague Paul Heberling
Ex. 6 - Personal Privacy In particular, please check the cover memo's addressee list and cc: list,

send any changes, and provide e-mail addresses for every addressee and cc: on the cover memo. Also check the attached e-mail list which we use for our Friday calls and send me any changes for your agency. Finally, include any suggestions for additional or reorganized papers in your cover e-mail.

So far, I have received BLM edits/comments from Tim Shannon--many thanks. If anyone else has sent comments to CEQ that I may have missed, kindly re-send them.

Thank you in advance. I look forward to speaking with you on Friday, and let me know if you have any questions before then.

Happy New Year!

Kerry

Kerry E. Rodgers
Deputy Associate Director for NEPA Oversight
Council on Environmental Quality

Ex. 6 - Personal Privacy

-----Original Message-----
From: Greczmiel, Horst G. EOP/CEQ
Sent: Wednesday, December 23, 2015 4:06 PM
To: robert.bonnie@osec.usda.gov; meryl.harrell@osec.usda.gov; patrick.holmes@osec.usda.gov; aacheson@fs.fed.us; jcarbone@fs.fed.us; cjoyner@fs.fed.us; jupchurch01@fs.fed.us; tparker03@fs.fed.us; kdewberry@fs.fed.us; msvogel@fs.fed.us; leff.karin@epa.gov; suriano.elaine@epa.gov; Beauvais.Joel@epa.gov; peck.gregory@epa.gov; Miller.Clay@epa.gov; blumenfeld.jared@epa.gov; ryerson.teddy@epa.gov; Goforth.Kathleen@epa.gov; Brush.Jason@epa.gov; Dunning.Connell@epa.gov; Hanf.Lisa@epa.gov; Martynowicz.Trina@epa.gov; Gaudario.Abigail@epa.gov; Diamond.Jane@epa.gov; Johnson.Kathleen@epa.gov; Jessop.Carter@epa.gov; Penman.Crystal@epa.gov; Woo.Nancy@epa.gov; jennifer.a.moyer@usace.army.mil; Charles.R.Smith567.civ@mail.mil; david.b.olson@usace.army.mil; Wade.L.Eakle@usace.army.mil; David.J.Castanon@usace.army.mil; Sallie.Diebolt@usace.army.mil; carol_braegelmann@ios.doi.gov; mtupper@blm.gov; bamme@blm.gov; lbaker@blm.gov; uhong@blm.gov; rmsuazo@blm.gov; drawhous@blm.gov; jshoemaker@blm.gov; tshannon@blm.gov; Christy_JohnsonHughes@fws.gov; Benjamin_Tuggle@fws.gov; steve_spangle@fws.gov; jean_calhoun@fws.gov; jason_douglas@fws.gov
Cc: Rodgers, Kerry E. EOP/CEQ < Ex. 6 - Personal Privacy >; Heberling, Paul D. EOP/CEQ Ex. 6 - Personal Privacy ; Mallory, Brenda N. EOP/CEQ < Ex. 6 - Personal Privacy
Patel, Manisha D. EOP/CEQ < Ex. 6 - Personal Privacy >; Heberling, Paul D. EOP/CEQ Ex. 6 - Personal Privacy
Subject: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics
Importance: High

Good afternoon,

I'd be remiss if I didn't begin by expressing my heartfelt appreciation for your support and hard work on this, and innumerable other matters, over the past several years. This email provides the papers we discussed as well as some logistics and next steps.

The papers: please review and provide edits/comments in track changes to Ex. 6 - Personal Privacy Ex. 6 - Personal Privacy by January 13th. She will be carrying this forward and bringing my successor, as yet TBD (thank you HR and security clearance processes), up to date. The papers are:

- Cover memo: please review the address list (and please provide email addresses) as well as the substance of the synopsis provided;

- Attachment 1;

- Attachment 2;

- Attachment 2; and

- Attachment 4;

Please keep in mind that the cover memo should provide a concise and accurate synopsis with more detailed information in the attachments - any suggestions on additional or reorganized papers should be provided in the cover email.

The players: The participants of the past every-other-week calls are in the attached Rosemont email list. Please provide Kerry Rodgers and Paul Heberling with any final revisions/additions by January 11th so that she can send out the invite with call-in information. The calls will resume on January 15th to discuss the status of the papers as well as an update on the various reviews and timelines. Kerry Rodgers will send out the invitation for the calls on or about January 12.

We hope that you and yours have a healthy, safe, and restful holiday season and coming year.

Sincerely, Horst

Soon to be the former Associate Director for NEPA Oversight

Council on Environmental Quality

<Rosemont_Cover Memo 23 Dec 2015_EPA Comments v2.docx>

To: Landers, Timothy[Landers.Timothy@epa.gov]; Suriano, Elaine[Suriano.Elaine@epa.gov]
From: Leff, Karin
Sent: Wed 1/13/2016 4:07:31 PM
Subject: RE: ACTION: FW: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics

Just to confirm, are you going to be able to incorporate OW comments into Region 9's edits? I didn't want to see pushy but I think you're best situated to address your concerns. I don't think **Ex. 5 - Deliberative Process** Elaine is back today to collaborate.

Karin Leff

Acting Director, NEPA Compliance Division

Office of Federal Activities

US EPA- OECA

202.564.7068 (w)

202.236.3669 (c)

From: Landers, Timothy
Sent: Tuesday, January 05, 2016 9:51 AM
To: Leff, Karin <Leff.Karin@epa.gov>; Suriano, Elaine <Suriano.Elaine@epa.gov>
Subject: FW: ACTION: FW: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics
Importance: High

Hi Karin/Elaine. I wanted to get your sense of the plan for providing any feedback to CEQ by the 13th on these draft read-ahead materials. I haven't yet spoken to R9 about any comments they might have, but could share with you our initial reactions in OWOW. I can be reached by phone today at Ex. 6 - Personal Privacy or 202-566-2231 the rest of the week.

From: Greczmiel, Horst G. EOP/CEQ [redacted]
Sent: Wednesday, December 23, 2015 4:06 PM
To: robert.bonnie@osec.usda.gov; meryl.harrell@osec.usda.gov; patrick.holmes@osec.usda.gov; aacheson@fs.fed.us; jcarbone@fs.fed.us; cjoyner@fs.fed.us; jupchurch01@fs.fed.us; tparker03@fs.fed.us; kdewberry@fs.fed.us; msvogel@fs.fed.us; Leff, Karin <Leff.Karin@epa.gov>; Suriano, Elaine <Suriano.Elaine@epa.gov>; Beauvais, Joel <Beauvais.Joel@epa.gov>; Peck, Gregory <Peck.Gregory@epa.gov>; Miller, Clay <Miller.Clay@epa.gov>; Blumenfeld, Jared <BLUMENFELD.JARED@EPA.GOV>; Ryerson.Teddy (Separated) <Ryerson.Teddy@epa.gov>; Goforth, Kathleen <Goforth.Kathleen@epa.gov>; Brush, Jason <Brush.Jason@epa.gov>; Dunning, Connell <Dunning.Connell@epa.gov>; Hanf, Lisa (Separated 8/22/15) <Hanf.Lisa@epa.gov>; Martynowicz, Trina <Martynowicz.Trina@epa.gov>; Gaudario, Abigail <Gaudario.Abigail@epa.gov>; Diamond, Jane (Separated 4/30/15) <Diamond.Jane@epa.gov>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>; Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Penman, Crystal <Penman.Crystal@epa.gov>; Woo, Nancy <Woo.Nancy@epa.gov>; jennifer.a.moyer@usace.army.mil; Charles.R.Smith567.civ@mail.mil; david.b.olson@usace.army.mil; Wade.L.Eakle@usace.army.mil; David.J.Castanon@usace.army.mil; Sallie.Diebolt@usace.army.mil; carol_braegelmann@ios.doi.gov; mtupper@blm.gov; bamme@blm.gov; lbaker@blm.gov; uhong@blm.gov; rmsuazo@blm.gov; drawhous@blm.gov; jshoemaker@blm.gov; tshannon@blm.gov; Christy_JohnsonHughes@fws.gov; Benjamin_Tuggle@fws.gov; steve_spangle@fws.gov; jean_calhoun@fws.gov; jason_douglas@fws.gov
Cc: Rodgers, Kerry E. EOP/CEQ [redacted]; Heberling, Paul D. EOP/CEQ [redacted]; Mallory, Brenda N. EOP/CEQ [redacted]; Patel, Manisha D. EOP/CEQ [redacted]; Heberling, Paul D. EOP/CEQ [redacted]
Subject: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics
Importance: High

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I'd be remiss if I didn't begin by expressing my heartfelt appreciation for your support and hard work on this, and innumerable other matters, over the past several years. This email provides the papers we discussed as well as some logistics and next steps.

The papers: ***please review and provide edits/comments in track changes to*** [redacted] ***by January 13th***. She will be carrying this forward and bringing my successor, as yet TBD (thank you HR and security clearance processes), up to date. The papers are:

- Cover memo: please review the address list (and please provide email addresses) as well as the substance of the synopsis provided;

- Attachment 1;

- Attachment 2;

- Attachment 2; and

- Attachment 4;

Please keep in mind that the cover memo should provide a concise and accurate synopsis with more detailed information in the attachments – any suggestions on additional or reorganized papers should be provided in the cover email.

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Sincerely, Horst

Soon to be the former Associate Director for NEPA Oversight

Council on Environmental Quality

To: Leff, Karin[Leff.Karin@epa.gov]
Cc: Suriano, Elaine[Suriano.Elaine@epa.gov]; Brush, Jason[Brush.Jason@epa.gov]; Johnson, Kathleen[Johnson.Kathleen@epa.gov]; Landers, Timothy[Landers.Timothy@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]
From: Jessop, Carter
Sent: Wed 1/13/2016 12:29:41 AM
Subject: RE: Rosemont: Comments on CEQ's attachments
Attachment 1_Rosemont Project Description_Info Paper_23 Dec 2015_EPAR9.docx
Attachment 2_Rosemont Timeline_Info Paper_23Dec15_EPAR9.docx
Attachment 3_Rosemont_EPA Concerns_Info Paper_23 Dec 2015_EPAR9.docx
Attachment 4_Rosemont_USACE Mitigation_Info Paper_23 Dec 2015_EPAR9.docx

Hi Karin,

I will defer to Kathy and Kathleen regarding your questions below, but attached you will find R9's proposed edits to the remaining attachments that compose this package.

Also, I would be happy to answer any technical questions you might have based upon these materials. Please feel free to give me a call if needed.

Thank you.

-Carter

Carter W. Jessop

U.S. EPA, Region 9

Environmental Review Section (ENF-4-2)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3815

jessop.carter@epa.gov

From: Leff, Karin

Sent: Tuesday, January 12, 2016 4:07 PM
To: Goforth, Kathleen <Goforth.Kathleen@epa.gov>
Cc: Suriano, Elaine <Suriano.Elaine@epa.gov>; Brush, Jason <Brush.Jason@epa.gov>; Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>; Landers, Timothy <Landers.Timothy@epa.gov>
Subject: RE: Rosemont: Comments on CEQ's attachments

Ex. 5 - Deliberative Process

Karin Leff

Acting Director, NEPA Compliance Division

Office of Federal Activities

US EPA- OECA

202.564.7068 (w)

202.236.3669 (c)

From: Goforth, Kathleen
Sent: Tuesday, January 12, 2016 4:58 PM
To: Leff, Karin <Leff.Karin@epa.gov>
Cc: Suriano, Elaine <Suriano.Elaine@epa.gov>; Brush, Jason <Brush.Jason@epa.gov>; Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>
Subject: Rosemont: Comments on CEQ's attachments

Karin –

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

-Kathy

Kathleen Martyn Goforth, Manager

Environmental Review Section (ENF-4-2)

U.S. Environmental Protection Agency, Region 9

75 Hawthorne Street

San Francisco, CA 94105

415-972-3521

Attachment 1

ROSEMONT COPPER MINE – PROJECT DESCRIPTION

Hudbay Minerals, Inc. (Hudbay), a Canadian integrated mining company, seeks U.S. Forest Service (USFS) approval of a mine plan of operations (MPO) and U.S. Army Corps of Engineers (Corps) issuance of a Clean Water Act (CWA) Section 404 permit for the proposed Rosemont Copper Mine Project (Project) southeast of Tucson in Pima County, Arizona. The Project would involve constructing, operating, reclaiming, and closing an open-pit mine on National Forest System (NFS) and adjacent private and State lands in the Cienega Creek Watershed. The proposed Rosemont Mine would extract copper, molybdenum, and silver over an anticipated life of 24-30 years.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Attachment 2

ROSEMONT COPPER MINE – TIMELINES

March 2006	The Coronado National Forest (CNF) began government-to-government consultation with 12 tribes after receiving Rosemont Copper's intent to file a preliminary mine plan of operations (MPO)
July 2007	Rosemont Copper submitted a preliminary MPO to the CNF requesting approval to construct, operate, reclaim, and close an open pit copper mine on National Forest System and adjacent State and private lands
February 2008	Rosemont Copper submitted a supplemental preliminary MPO to the CNF
March 2008	The CNF sent a letter to tribes indicating that the Project was continuing
March 13, 2008	USFS Notice of Intent (NOI) to Prepare an EIS (73 FR 13527) requested scoping comments
April 29, 2008	USFS Corrected NOI (73 FR 23181) extended the scoping comment period to mid-July 2008 (120 days total) and announced 3 public hearings

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Attachment 3

ROSEMONT COPPER MINE – EPA NEPA/CWA REVIEW

The Hudbay Minerals, Inc. (Hudbay) proposed Rosemont Copper Mine Project would involve the construction, operation, reclamation, and closure of an open pit mine on National Forest System (NFS) and adjacent private and State lands in the Santa Rita Mountains southeast of Tucson, Arizona, to recover copper and other locatable minerals.

Ex. 5 - Deliberative Process

ED_001077_00008225-00001

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Attachment 4

ROSEMONT COPPER MINE – U.S. ARMY CORPS OF ENGINEERS SECTION 404 RESPONSIBILITIES AND THE ADEQUACY OF PROPOSED MITIGATION

Hudbay Minerals, Inc. (Hudbay), a Canadian integrated mining company, seeks U.S. Forest Service (USFS) approval of a mine plan of operations (MPO) and U.S. Army Corps of Engineers (Corps) issuance of a Clean Water Act (CWA) Section 404 permit for the proposed Rosemont Copper Mine Project (Project) southeast of Tucson, Arizona.

Ex. 5 - Deliberative Process

ED_001077_00008226-00001

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Landers, Timothy[Landers.Timothy@epa.gov]
From: Leff, Karin
Sent: Tue 1/12/2016 10:35:27 PM
Subject: FW: Rosemont: Comments on CEQ's attachments
Attachment 2_Rosemont Timeline_Info Paper_23Dec15_CWJ kmg.docx
Rosemont_Cover Memo 23 Dec 2015_CWJ kmg cwj.docx

Karin Leff

Acting Director, NEPA Compliance Division

Office of Federal Activities

US EPA- OECA

202.564.7068 (w)

202.236.3669 (c)

From: Goforth, Kathleen
Sent: Tuesday, January 12, 2016 4:58 PM
To: Leff, Karin <Leff.Karin@epa.gov>
Cc: Suriano, Elaine <Suriano.Elaine@epa.gov>; Brush, Jason <Brush.Jason@epa.gov>; Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>
Subject: Rosemont: Comments on CEQ's attachments

Karin –

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Kathleen Martyn Goforth, Manager

Environmental Review Section (ENF-4-2)

U.S. Environmental Protection Agency, Region 9

75 Hawthorne Street

San Francisco, CA 94105

415-972-3521

Attachment 2

ROSEMONT COPPER MINE – TIMELINES

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April 29, 2008	USFS Corrected NOI (73 FR 23181) extended the scoping comment period to mid-July 2008 (120 days total) and announced 3 public hearings

Ex. 5 - Deliberative Process

ED_001077_00008228-00001

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

PRE-DECISIONAL, DELIBERATIVE DRAFT
CONFIDENTIAL – FOR INTERNAL USE ONLY DRAFT OF 23 DECEMBER 2015

Memo to:
Robert Bonnie
Chief Tidwell
Stan Meiburg
Jared Blumenfeld
Jo Ellen Darcy
BG Mark Toy
COL Kirk Gibbs
Michael Conner
Dan Ashe
Neil Kornze,

Cc: Patrick Holmes, Ann Acheson, Joe Carbone, Cal Joyner, Kerwin Dewberry, Cynthia Giles, Joel Beauvais, Karin Leff, Gregory Peck, Kathleen Goforth, Lowry Crook, Chip Smith, Jennifer Moyer, Wade Eakle, David Castanon, Benjamin Tuggle, Michael Tupper, Raymond Suazo

ROSEMONT COPPER MINE – OVERVIEW

Project Description

The proposed Rosemont Copper Mine Project (Project) southeast of Tucson in Pima County, Arizona, would involve constructing, operating, reclaiming, and closing an open-pit mine on National Forest System (NFS) and adjacent private and State lands to develop copper and other locatable minerals over an anticipated life of 24-30 years. The project is proposed for construction in the Cienega Creek watershed. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

ED_001077_00008229-00001

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Landers, Timothy[Landers.Timothy@epa.gov]
Cc: Brush, Jason[Brush.Jason@epa.gov]
From: Goldmann, Elizabeth
Sent: Tue 1/12/2016 5:45:43 PM
Subject: Rosemont Mine - water quality correspondence
Letter to Colonel Kim Colloton.pdf
Rosemontdraft401cert.EPAcommentltr.pdf
AGFD Comments 4-4-2014 Draft CWA 404 Permit Rosemont Copper Co.pdf
document2014-04-07-163403.pdf

Hi Tim

Regarding water quality impacts, I have attached EPA's formal comments to the Corps' on Other Water Quality Aspects as well as our comments to ADEQ on the draft 401 cert. In addition, I have attached AGFD and the Corp's comments on the draft 401 cert.

E.

Elizabeth Goldmann

Physical Scientist

U.S. Environmental Protection Agency

75 Hawthorne St. (WTR-2-4)

San Francisco, CA 94105

(415) 972-3398

Goldmann.elizabeth@epa.gov

To: Landers, Timothy[Landers.Timothy@epa.gov]
From: Goldmann, Elizabeth
Sent: Mon 1/11/2016 8:55:04 PM
Subject: Pima County letter to EPA re: surface water impacts
SCA-COPIER-15121716540.pdf

Tim,

Here is a recent letter from Pima County to EPA regarding surface water impacts from the proposed Rosemont Mine on Davidson Canyon and Cienega Creek. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Please call or email me if you have any questions.

Thanks,

Elizabeth

Elizabeth Goldmann

Physical Scientist

U.S. Environmental Protection Agency

75 Hawthorne St. (WTR-2-4)

San Francisco, CA 94105

(415) 972-3398

Goldmann.elizabeth@epa.gov

COUNTY ADMINISTRATOR'S OFFICE
PIMA COUNTY GOVERNMENTAL CENTER
130 W. CONGRESS, FLOOR 10, TUCSON, AZ 85701-1317
(520) 724-8661 FAX (520) 724-8171

C.H. HUCKELBERRY
County Administrator

December 17, 2015

Robert A. Leidy, Ph.D.
Ecologist/Enforcement Officer
U.S. Environmental Protection Agency
Wetlands Office (WTR-2-4)
75 Hawthorne Street
San Francisco, California 94105

Re: **Rosemont Mine – Surface Water Impacts, Davidson Canyon and Cienega Creek**

Dear Dr. Leidy:

Please find the attached December 13, 2015 memorandum by Pima County staff regarding recent analysis of surface water inputs to Davidson Canyon. These data provide much-needed review of impacts of the proposed Rosemont Mine on the surface waters of Davidson Canyon and Cienega Creek. The analysis relies on a new data source: the Regional Flood Control District's installation of an automated data logger in the Davidson #2 Well, which has enabled a closer look at the responsiveness of the water table and the relationship with Davidson Canyon stream flow length. More specifically, staff found that:

- Barrel Canyon provides a disproportional amount of surface water within the Davidson Canyon watershed;
- The shallow groundwater aquifer in Davidson Canyon is highly responsive to pulses of surface water flow. (Further analysis of winter precipitation in 2015 and 2016 using a new dataset at the Davidson #2 Well (intra-day well depths) will provide valuable insight into this important relationship);
- A new analysis of the relationship between depth to water and length of streamflow in Davidson Canyon reaffirms an earlier analysis of a strong statistical relationship between these two variables. That is, as groundwater levels rise and fall, so, too, does the length of flow in Davidson Canyon increase and contract.

Failure to understand the connection between surface water in Davidson Canyon and to account for its loss because of surface water diversions by the Rosemont Mine could lead to irreparable harm to groundwater resources that are critical to the proper hydrological conditions and functions that sustain vegetation and surface water and to the wildlife that depend on these critical resources.

Thank you for consideration of this new information.

Sincerely,

C.H. Huckelberry
County Administrator

CHH/anc

Enclosure

c: Linda Mayro, Director, Sustainability and Conservation
Suzanne Shields, Director, Regional Flood Control District

PIMA COUNTY
SUSTAINABILITY & CONSERVATION

Memorandum

Date: December 13, 2015

To: Linda Mayro, Director, Office of Sustainability and Conservation;
Suzanne Shields, Director, Pima County Regional Flood Control District

From: Brian Powell, Program Coordinator, Office of Sustainability and Conservation;
Julia Fonseca, Environmental Planning Manager, Office of Sustainability and Conservation;
Frank Postillion, Pima County Regional Flood Control District

RE: New analysis of stormflow and groundwater data from Davidson Canyon: Evidence for influence of stormwater recharge of groundwater

---

If constructed, the proposed Rosemont mine will have a host of negative environmental effects for which Pima County staff have focused numerous previous comments (e.g., Pima County 2012, 2013; Huckelberry 2014; Powell et al. 2014). Many issues raised by Pima County remain a concern, including the mine's impact on stormwater flows to Davidson Canyon and Cienega Creek and resulting impacts on surface water extent, groundwater recharge, vegetation, and the species that rely on these resources.

Past analysis by Pima County staff (Powell et al. 2014) focused on the groundwater declines on Cienega Creek and Davidson Canyon and connected observations of well depth to flow measurements made at Marsh Station and to length of streamflow in Cienega Creek and Davidson Canyon. This analysis showed an exceptionally strong relationship between length of surface water flow of Davidson Canyon and depth to groundwater. Modeling of this relationship showed that reduction in groundwater would have a concomitant impact on streamflow length; by one estimate as much as a 30% reduction in flow length (Powell et al. 2014).

The impacts of the proposed Rosemont mine on stormwater and baseflows to Davidson Canyon have been understated in both the final environmental impact statement (U.S. Forest Service 2013) and the draft water quality certification by the Arizona Department of Water Quality (Arizona Department of Environmental Quality 2014). The understated impacts were then carried through to the draft biological opinion (U. S. Fish and Wildlife Service 2013). In the County's comments to the Arizona Department of Environmental

201 N. Stone Ave, 6th flr Tucson, Arizona 85701 Phone: (520)724-6940 Fax: (520) 724-9491

ED_001077_00008240-00003

Quality (Huckelberry 2014), the County identified the need for more information on stormwater impacts to Davidson Canyon. The County's recent analysis (Powell et al. 2014) provided additional evidence that the runoff-recharge relationship in Davidson Canyon is strong, and cutting off upstream contributions to the watershed would be detrimental to the sustenance of surface and shallow groundwater which sustains hydroriparian habitat in the Creek, and is a large reason for its Arizona Outstanding Waters designation.

This current memorandum focuses on looking closely at a new dataset for the Davidson #2 Well (Arizona Department of Water Resources Well Registry #808500) and depth to water as a function of stormflow (cubic feet per second; CFS) at the Davidson Canyon ALERT gauge (#4313), stormflow events at the gauge, and surface water measured at the Barrel Canyon USGS Gauge (#94845680).

Davidson #2 Well is situated approximately 150 feet west of ALERT gauge #4313 and across Davidson Creek (Figure 1). Prior to a new pressure transducer installation it was measured for water levels on a monthly basis with an electrical well sounder. New data from the Davidson #2 Well, which is not pumped and is a monitoring well, comes from the installation of an automated water level depth sensor (pressure transducer) on July 17, 2015; the sensor records depth to water (DTW) four times each day. By contrast, the USGS and Pima County ALERT gauges record data every hour and ALERT gauge reporting is triggered by a stormwater event (see next paragraph). The period of record for most of the analysis in this memorandum is from July 16, 2015 to November 24, 2015.

We compared the DTW to four separate storm events recorded at the Davidson Canyon ALERT gauge. Unlike USGS streamflow discharge gauges, which record all surface flow, the ALERT gauges record only stormflow events that exceed a certain stage. Stage height at both gauges is in turn related to discharge using rating curves developed at each site. For both gauges we used the mean daily CFS as the explanatory variable in the statistical models.

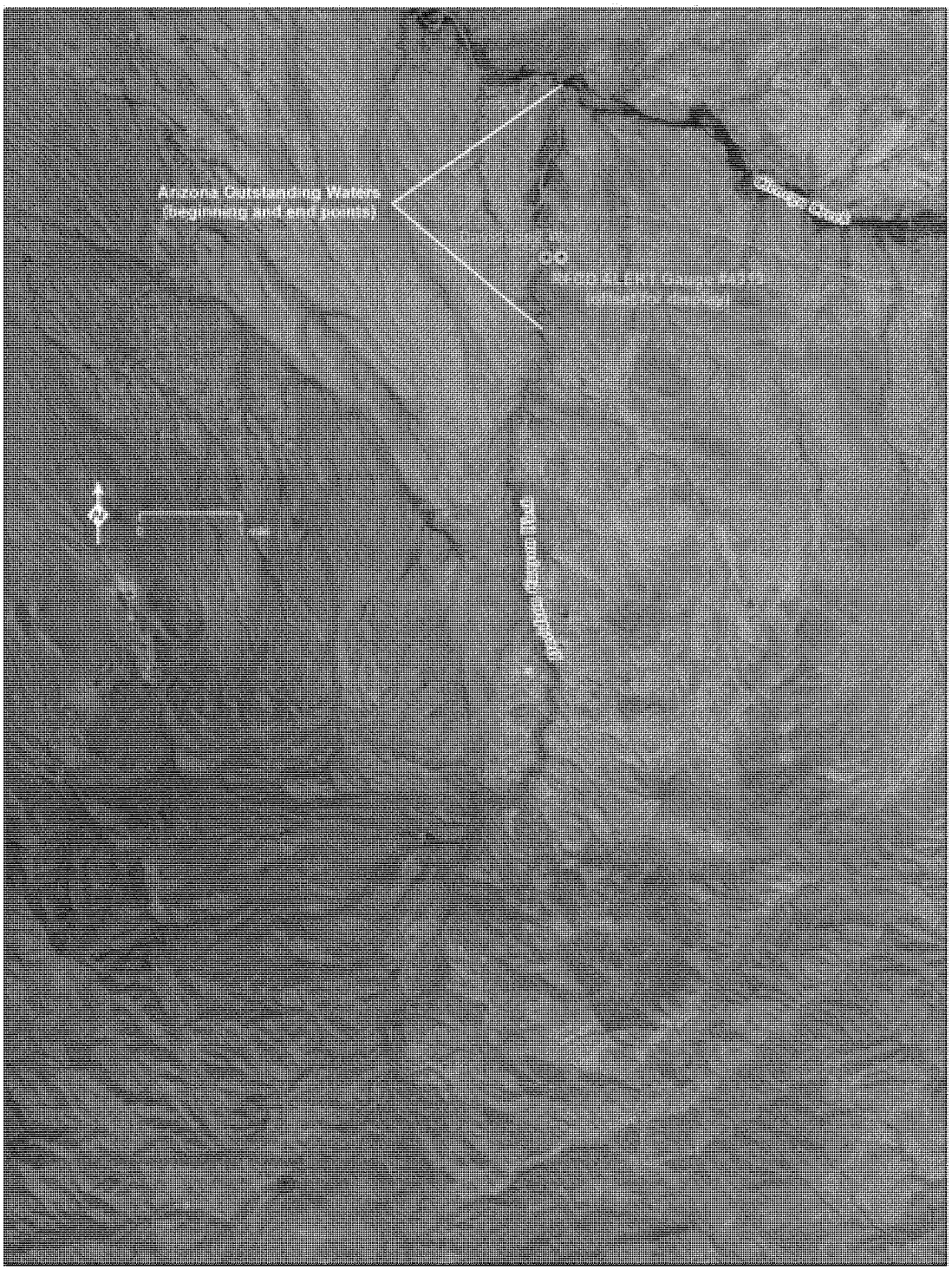

Figure 1. Location of key features related to the current analysis, Davidson Canyon, Pima County, Arizona.

Streamflow Accounting: Barrel Canyon provides a disproportional amount of runoff to Davidson Canyon. The watershed area above the Davidson Canyon Gauge is 32,320 acres, while the area above the Barrel Canyon Gauge is 9,024 acres, 28% of the watershed area of the Davidson gauge. For the period of time that is the focus of this analysis (July 15-November 25), a total of 470 acre feet of stormwater were recorded at the Davidson Canyon gauge. At the Barrel Canyon Gauge 186 acre feet were recorded, 39% of the amount recorded at the Davidson Canyon Gauge. This suggests that the Barrel watershed yields more water than its proportional area within the Davidson watershed. The EIS discussion does not take into account the higher elevation difference of the Barrel watershed and the increased rainfall and runoff of the watershed, and thus underestimates the flow contribution of the Barrel watershed to Davidson Canyon.

Importance of Streamflow to Aquifer Recharge in Davidson Canyon. In this next analysis, we compare the daily change in well depth at Davidson #2 Well to stormwater flows in Davidson Canyon (Fig. 2), baseflow at Barrel Canyon (Fig. 3) and Barrel and Davidson canyon stormflow (Fig. 4).

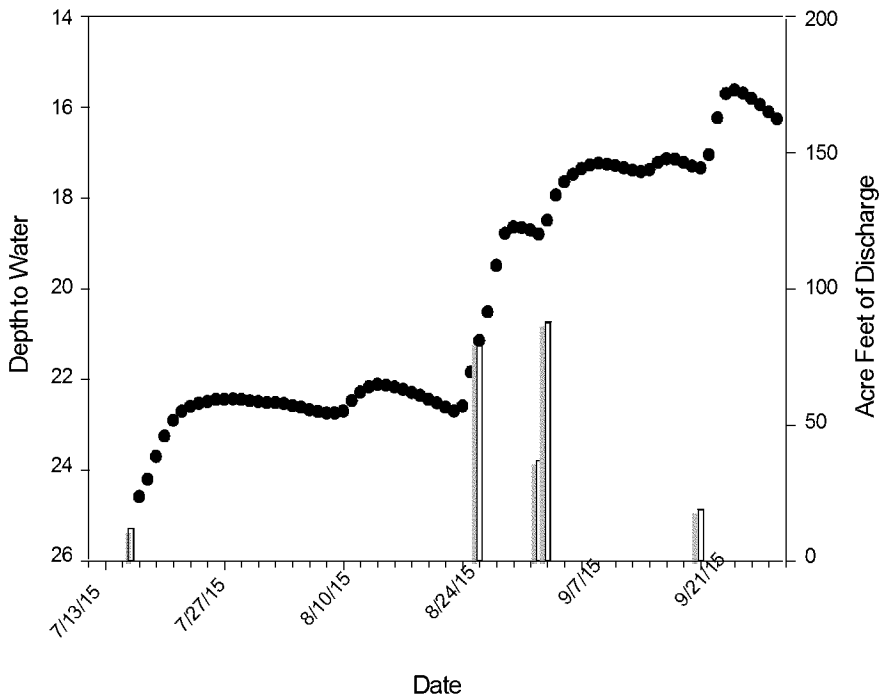

Figure 2. Change in depth to water (feet) at the Davidson #2 Well (black dots) in relationship to stormflow at the Davidson Canyon Gauge, 2015.

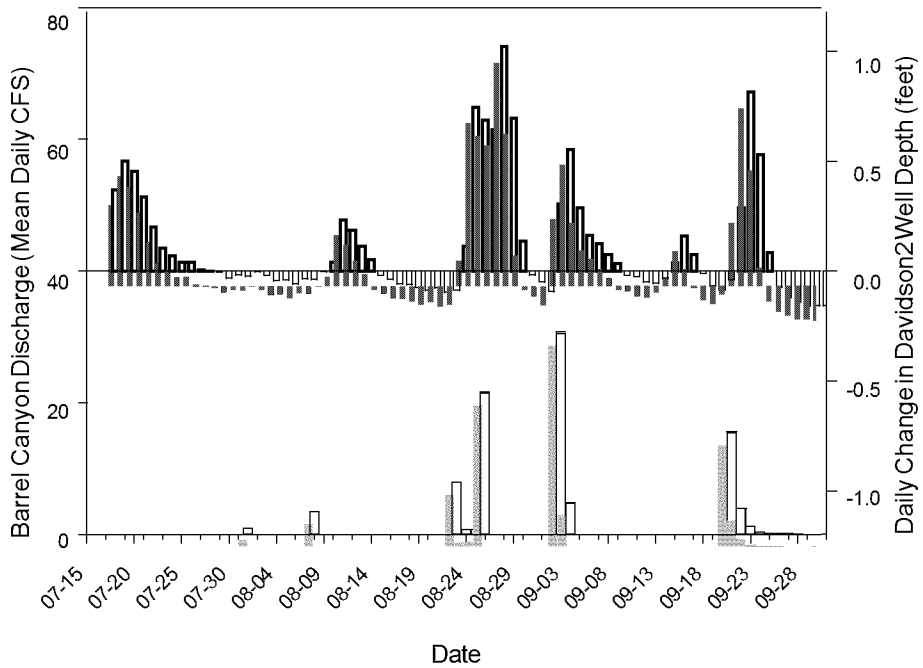

Figure 3. Daily change in depth to water (feet) at the Davidson #2 Well (colored bars) in relationship to flow measured at Barrel Canyon USGS gauge (grey bars), 2015. Daily change is calculated by subtracting average daily well depth (for a particular day) by the average depth for the previous day.

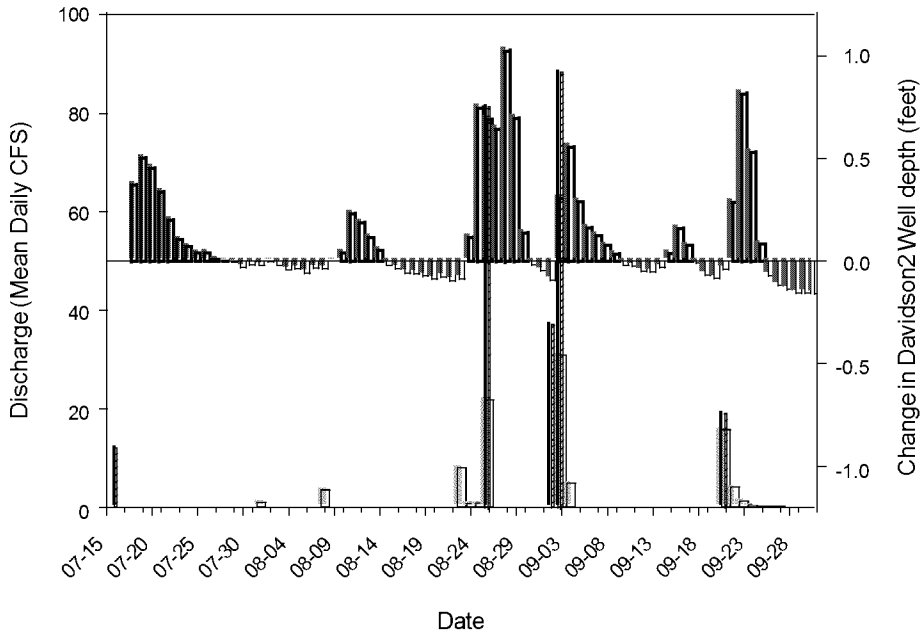

Figure 4. Same graph as Figure 2, but with the inclusion of discharge data from the Davidson Canyon ALERT gauge (solid black line).

A direct relationship between surface water flow and depth to water is evident for almost each period of time well depth increased. This phenomenon is preceded by stormflow in Davidson Canyon and/or measured flow in Barrel Canyon. An exception is an increase in recharge in the middle of September that is not associated with either of these measures, which also underscores the fact that there are many tributary inputs into Davidson Canyon below Barrel Canyon and not all of these may be recorded as stormflow at the Davidson Canyon Gauge.

We then took a more quantitative approach by looking at the daily change in well depth as a function of the relationship to stormflow, as measured at the Davidson Canyon Gauge. To do this we grouped change in well depth for each day into one of two categories in relationship to stormflow: 1) Yes(Y) = day was on or four days after a stormflow event or 2) No(N) = day was before or more than four days after a recorded stormflow event. The results show that there is strong statistical relationship between daily change in well depth and stormflow events (Fig. 5; 2-way t-test, t_{128} = 12.6, P =<0.0001, 95% confidence interval for "No" = -0.057 to -0.0014, "Yes" = 0.349 to 0.475). Thus, there is strong evidence for groundwater response at Davidson #2 well to storm water flow inputs recorded at the Davidson Canyon gauge.

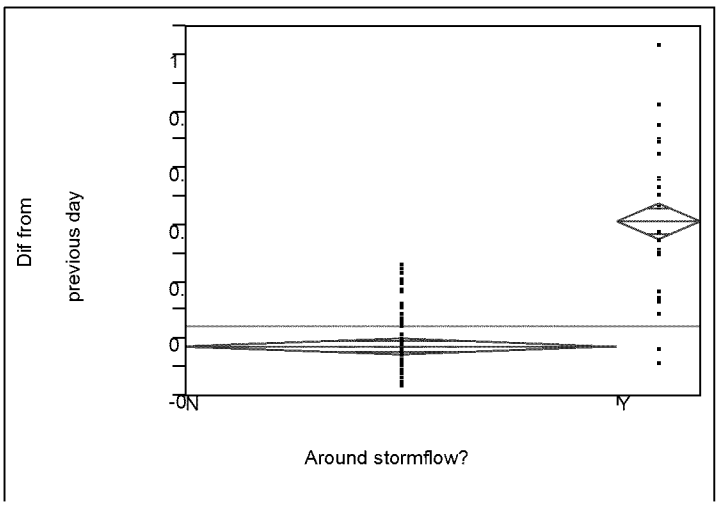

Figure 5. Daily difference in groundwater levels (as measured at the Davidson #2 Well) in relationship to stormwater events. (Y)es = on or four days after a stormflow event; (N)o before or more than four days after a recorded stormflow event.

Because of the limited availability of high-resolution DTW data, this analysis looks only at monsoon and fall flows, not winter flows, which are more likely to include flows from Barrel Canyon than monsoon flows due to the difference between the smaller aerial extent of monsoon storms than winter storms.

The relationship between streamflow length and depth to water in Davidson #2 Well remain strong. In this memorandum we also update the analysis of data from Davidson Canyon relating streamflow length in miles to depth of water in the Davidson #2 Well. These data were first reported in Powell et al. (2014; Figure 5) and used data from 2005-2013. Since that time, we have obtained three new data points: June 2014 and September and November 2015. Figure 6 shows the results, indicating the relationship reported in 2014 holds today, though two of the three most recent observations are further above the regression line, meaning that flow lengths are shorter than would be predicted based on the DTW. An interesting note is that most other observations above the regression line (and where there is flow in Davidson) occur during fall and winter months.

We furthered our analysis of these data by adding three additional variables into a multiple linear regression analysis (depth to water as the response variable): month, year and month*year interactive effect. The resulting model accounted for 88% of the variation in the data (Fig. 7; $R^2 = 0.88$, $F_{9,29} = 16.96$, P =<0.001). Of course, the relationship to depth to water explained most of the variation (as reported in Figure 6),

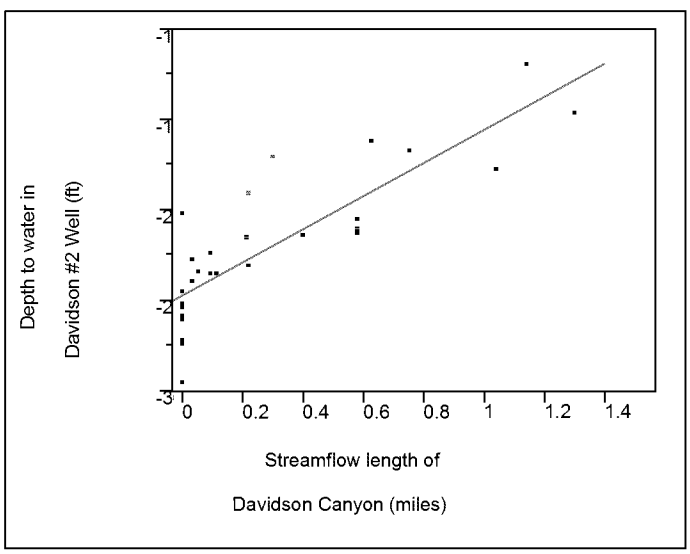

Figure 6. Relationship between length of flow in Davidson Canyon and depth to water at the Davidson #2 Well. The linear model (red line) explains 71% of the variation in the data. The most recent observations (green dots) are from September and November 2015.

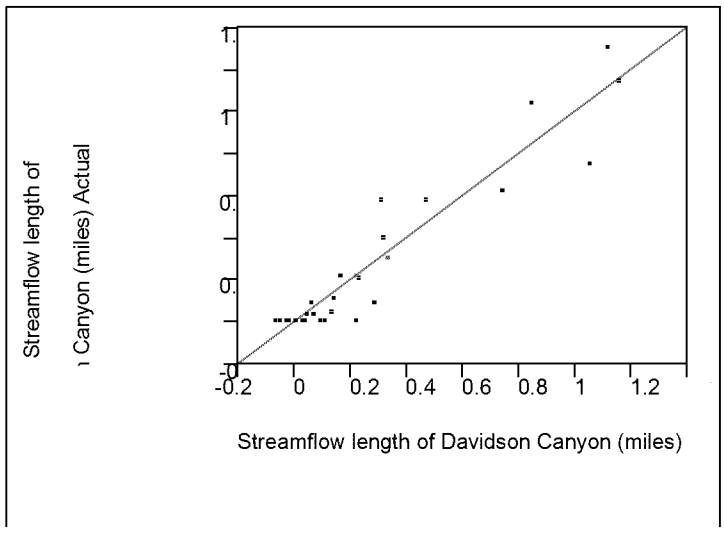

Figure 7. Relationship between length of flow in Davidson Canyon and other variables, from multiple linear regression model. The model (red line) explains 88% of the variation in the data. The most recent observations (green dots) are from September and November 2015.

but the September sampling period and September sampling * year were also statistically significant ($P < 0.01$). Year explained relatively little in the model, but during the period of analysis, presence of surface flow was relatively infrequent during the time period covered by the available data (i.e., 2005 and later). Especially before 2005, visits by Pima Association of Governments staff and others noted perennial water in Davidson Canyon in the winter and spring (Pima Association of Governments 2005), which highlights both the current drought conditions and the historical winter flow in Davidson Canyon.

In summary, our analysis found:

1) Barrel Canyon provides a disproportional amount of surface water within the Davidson Canyon watershed. This is not surprising that most of the high elevations areas of the watershed drain into Barrel Canyon and considering the orographic effect.
2) The shallow groundwater aquifer in Davidson Canyon, in which Davidson #2 Well is embedded, is highly responsive to pulses of surface water flow, whether it be baseflow or stormflow. This relationship was evident from the qualitative observations (Figs. 2-4) and quantitative analyses (Fig. 5). Yet, analysis of the impacts of the proposed Rosemont project on Davidson Canyon and Cienega Creek does not take into account this relationship. Further analysis of winter

precipitation in 2015-2016 using the new dataset at the Davidson #2 Well (intra-day well depths) will provide valuable insight into this important relationship.

3) The new analysis of the relationship between depth to water and length of streamflow in Davidson Canyon, which used three new data points, reaffirms an earlier analysis by Powell et al. (2014) for a strong statistical relationship between these two variables. That is, as groundwater levels rise and fall, so too does the length of flow in Davidson Canyon increase and contract (Fig. 6);
4) Failure to understand the connection between surface water in Davidson Canyon and to account for its loss because of surface water diversions by the Rosemont Mine could lead to irreparable harm to groundwater resources that are critical to the proper hydrological conditions and functions that sustain vegetation and surface water and to the wildlife that depend on these critical resources.

Literature Cited

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Pima County. 2013. Pima County comments- Rosemont Copper Mine Preliminary Administrative Final Environmental Impact Statement. Comments provided on August 14, 20013 to Jim Upchurch, Forest Supervisor, Coronado National Forest, Tucson, Arizona.

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U.S. Forest Service. 2013. Final environmental impact statement for the Rosemont Copper project: A proposed mining operation, Coronado National Forest, Pima County, Arizona. U.S. Department of Agriculture, Forest Service, Southwestern Region. Document number MB-R3-05-6a.

To: Landers, Timothy[Landers.Timothy@epa.gov]
Cc: Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Woo, Nancy[Woo.Nancy@epa.gov]; Johnson, Kathleen[Johnson.Kathleen@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]
From: Brush, Jason
Sent: Fri 1/8/2016 1:10:48 AM
Subject: Re: Next Steps on Rosemont Mine from CEQ

Hi Tim – Please look for a calendar invite from Carter Jessop to get together early next week at staff level with OFA and R9 to discuss the CEQ materials. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Jason A. Brush
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San Francisco, CA 94105
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desk: 415.972.3483
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From: Landers, Timothy
Sent: Tuesday, January 05, 2016 11:57 AM
To: Brush, Jason <Brush.Jason@epa.gov>
Subject: RE: Next Steps on Rosemont Mine from CEQ

Got it, sounds like a plan. Thanks Jason.

From: Brush, Jason
Sent: Tuesday, January 05, 2016 2:51 PM
To: Landers, Timothy <Landers.Timothy@epa.gov>
Cc: Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Goldmann, Elizabeth <Goldmann.Elizabeth@epa.gov>; Goforth, Kathleen <Goforth.Kathleen@epa.gov>; Woo, Nancy <Woo.Nancy@epa.gov>; Torres, Tomas <Torres.Tomas@epa.gov>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>; Moutoux, Nicole <Moutoux.Nicole@epa.gov>
Subject: Next Steps on Rosemont Mine from CEQ

Importance: High

Happy new year, Tim – Carter Jessop, our lead NEPA staff on the project, is reviewing these CEQ materials and, after clearing any wetlands questions with me, will share back to OFA (Karen Leff). Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

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desk: 415.972.3483
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From: Landers, Timothy
Sent: Tuesday, January 05, 2016 10:42 AM
To: Brush, Jason <Brush.Jason@epa.gov>
Subject: FW: ACTION: FW: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics
Importance: High

Hi Jason...new year, same old issues. I wanted to get your sense as to whether the Region (Water or NEPA) is likely to have any comments on these draft read-ahead materials? As you know, comments are due to CEQ by the 13th. We've reviewed here in OWOW and are likely to Ex. 5 - Deliberative Process. I'll be talking with OFA later today to get a sense of any comments they might have. I would be happy to compare notes with you too when you have the chance.

From: Greczmiel, Horst G. EOP/CEQ [Ex. 6 - Personal Privacy
Sent: Wednesday, December 23, 2015 4:06 PM
To: robert.bonnie@osec.usda.gov; meryl.harrell@osec.usda.gov; patrick.holmes@osec.usda.gov; aacheson@fs.fed.us; jcarbone@fs.fed.us; cjoyner@fs.fed.us; jupchurch01@fs.fed.us; tparker03@fs.fed.us; kdewberry@fs.fed.us; msvogel@fs.fed.us; Leff, Karin <Leff.Karin@epa.gov>; Suriano, Elaine <Suriano.Elaine@epa.gov>; Beauvais, Joel <Beauvais.Joel@epa.gov>; Peck, Gregory <Peck.Gregory@epa.gov>; Miller, Clay <Miller.Clay@epa.gov>; Blumenfeld, Jared <BLUMENFELD.JARED@EPA.GOV>; Ryerson.Teddy (Separated) <Ryerson.Teddy@epa.gov>; Goforth, Kathleen <Goforth.Kathleen@epa.gov>; Brush, Jason <Brush.Jason@epa.gov>; Dunning, Connell <Dunning.Connell@epa.gov>; Hanf, Lisa (Separated 8/22/15) <Hanf.Lisa@epa.gov>; Martynowicz, Trina <Martynowicz.Trina@epa.gov>; Gaudario, Abigail <Gaudario.Abigail@epa.gov>; Diamond, Jane (Separated 4/30/15) <Diamond.Jane@epa.gov>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>; Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Penman, Crystal <Penman.Crystal@epa.gov>; Woo, Nancy <Woo.Nancy@epa.gov>; jennifer.a.moyer@usace.army.mil; Charles.R.Smith567.civ@mail.mil; david.b.olson@usace.army.mil; Wade.L.Eakle@usace.army.mil; David.J.Castanon@usace.army.mil; Sallie.Diebolt@usace.army.mil; carol_braegelmann@ios.doi.gov; mtupper@blm.gov; bamme@blm.gov; lbaker@blm.gov; uhong@blm.gov; rmsuazo@blm.gov; drawhous@blm.gov; jshoemaker@blm.gov; tshannon@blm.gov; Christy_JohnsonHughes@fws.gov; Benjamin_Tuggle@fws.gov; steve_spangle@fws.gov; jean_calhoun@fws.gov; jason_douglas@fws.gov
Cc: Rodgers, Kerry E. EOP/CEQ [Ex. 6 - Personal Privacy; Heberling, Paul D. EOP/CEQ [Ex. 6 - Personal Privacy Mallory, Brenda N. EOP/CEQ [Ex. 6 - Personal Privacy Patel, Manisha D. EOP/CEQ [Ex. 6 - Personal Privacy; Heberling, Paul D. EOP/CEQ [Ex. 6 - Personal Privacy
Subject: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics
Importance: High

Good afternoon,

I'd be remiss if I didn't begin by expressing my heartfelt appreciation for your support and hard work on this, and innumerable other matters, over the past several years. This email provides the papers we discussed as well as some logistics and next steps.

The papers: ***please review and provide edits/comments in track changes to*** Ex. 6 - Personal Privacy ***by January 13th***. She will be carrying this forward and bringing my successor, as yet TBD (thank you HR and security clearance processes), up to date. The papers are:

- Cover memo: please review the address list (and please provide email addresses) as well as the substance of the synopsis provided;

- Attachment 1;

- Attachment 2;

- Attachment 2; and

- Attachment 4;

Please keep in mind that the cover memo should provide a concise and accurate synopsis with more detailed information in the attachments – any suggestions on additional or reorganized papers should be provided in the cover email.

The players: The participants of the past every-other-week calls are in the attached Rosemont email list. ***Please provide Kerry Rodgers and Paul Heberling with any final revisions/additions by January 11th so that she can send out the invite with call-in information***. The calls will resume on January 15th to discuss the status of the papers as well as an update on the various reviews and timelines. Kerry Rodgers will send out the invitation for the calls on or about January 12.

We hope that you and yours have a healthy, safe, and restful holiday season and coming year.

Sincerely, Horst

Soon to be the former Associate Director for NEPA Oversight

Council on Environmental Quality

To: Leff, Karin[Leff.Karin@epa.gov]
Cc: Landers, Timothy[Landers.Timothy@epa.gov]; Hessert, Aimee[Hessert.Aimee@epa.gov]
From: Suriano, Elaine
Sent: Tue 1/5/2016 11:28:49 PM
Subject: Update - Rosemont Review materials from CEQ - Due 1/13/16
FW: ACTION: FW: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics

K –

Concerning CEQ's request for comments on the attached:

Tim and I spoke this afternoon and he has id'd the following concerns from OW's vantage:

Ex. 5 - Deliberative Process

Also, Tim spoke with Jason Brush, Reg 9 and he said Carter Jessop is looking at the materials for the NEPA issues and Jason is looking at water issues. Their comments will be reviewed by Kathy G. before coming to HQs.

I am looking at the materials now and will send you any comments I have by tomorrow noon.

Regards, E…

Elaine Suriano

Environmental Scientist

Office of Federal Activities (2252A)

WJC South - 7235C

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suriano.elaine@epa.gov

To: Landers, Timothy[Landers.Timothy@epa.gov]
From: Suriano, Elaine
Sent: Tue 1/5/2016 3:52:25 PM
Subject: RE: ACTION: FW: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics
RE: ACTION: FW: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics

T –

That's good. Any time after 3 works for me.

E…

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To: Miller, Clay[Miller.Clay@epa.gov]; Landers, Timothy[Landers.Timothy@epa.gov]
From: Brush, Jason
Sent: Fri 12/4/2015 11:42:00 PM
Subject: Biodiversity at Rosemont

Here's an excerpt from a publication (cited at bottom) from U of A, done under cooperative agreement with BLM, which manages the Las Cienegas National Conservation Area. Not your average aquatic assemblage for the desert! -JB

Ciénega Creek at Empire Ranch is the most intact lowland aquatic habitat in southern Arizona. It retains the largest, and only substantial, remaining population of Gila topminnow *(Poeciliopsis occidentalis) in the United States, and also supports a strong population of Gila chub (Gila intermedia), both species receiving protection under the Endangered Species Act. A third native fish species, the longfin dace (Agosia chrysogaster), also thrives at the site. The Mexican garter snake (Thamnophis eques), which has declined or disappeared throughout its range in the United States, also appears to retain its strongest United States population at Ciénega Creek. The site retains a breeding population of the threatened Chiricahua Leopard Frog (Rana chiricahuensis), apparently the only one remaining in lowland ciénegas that were probably its historical core habitat in southeastern Arizona. Formerly, this frog overlapped here with its congener, the Lowland Leopard Frog (R. yavapaiensis). The Sonoran Mud Turtle (Kinosternon sonoriense) also occurs at Empire Ranch, rounding a full complement of the aquatic vertebrates originally inhabiting the ciénegas of southern Arizona.*

The riparian environment rivals that seen at Tucson prior to 1900 (Swarth, 1905; Ruthven, 1907; Willard, 1912; Van Denburgh and Slevin, 1913; Brandt, 1951), probably the region's richest; no other known remaining site approaches this. *The creek and ciénega support outstanding examples of cottonwood-willow gallery forest, mesquite bosque, and big sacaton bottoms (Hendrickson and Minckley, 1985). These are home to bird species that have become rare through loss of riparian habitats, including the Southwestern willow flycatcher (Empidonax traillii), Bell's vireo (Vireo bellii), and a great diversity of others. Important lowland populations of riparian and xeroriparian amphibians and reptiles are also known on site. Included in this group are several toads, the checkered garter snake (Thamnophis marcianus), Madrean alligator lizard (Elgaria kingii), southern plateau lizard (Sceloporus undulates consobrinus), and the giant spotted whiptail (Cnemidophorus burti stictogrammus). There are, without doubt, a number of other important amphibian and reptile species populations yet to be found centered within the Ciénega Creek riparian area and in the surrounding sacaton grassland. These three elements, the aquatic, the riparian, and the grassland, are, in the listed order, the most threatened elements of our biota in southern Arizona. Ciénega Creek is a conservation resource equal to any other in the region.*

AQUATIC AND RIPARIAN HERPETOFAUNA OF LAS CIENEGAS NATIONAL CONSERVATION AREA, EMPIRE-CIENEGA RANCH, PIMA COUNTY, ARIZONA

Philip C. Rosen, Assistant Research Scientist School of Natural Resources, University of Arizona Tucson, AZ 85721 520-621-3187 ph 520-670-5001 fax pcrosen@u.arizona.edu

and

Dennis J. Caldwell, Caldwell Design

2109 N 2nd Avenue, Tucson, AZ 85705 dennis@caldwell-design.com

Final Report to:

Bureau of Land Management

Tucson Office

12661 East Broadway

Tucson, AZ 85748

For Cooperative Agreement AAA000011

Task Order No. 6 (BLM, AZ State Office – CESU-FLPMA, University of Arizona)

AZ068-1120-BV-SSSS-25-2B

1 September 2004

To: Miller, Clay[Miller.Clay@epa.gov]; Landers, Timothy[Landers.Timothy@epa.gov]
Cc: Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Woo, Nancy[Woo.Nancy@epa.gov]; Johnson, Kathleen[Johnson.Kathleen@epa.gov]; Torres, Tomas[Torres.Tomas@epa.gov]
From: Brush, Jason
Sent: Fri 12/4/2015 8:43:16 PM
Subject: Re: Rosemont read-ahead for Joel B.'s briefing on Tues 12/8
Rosemont Mine Briefing for Joel.B.docx

Hi Clay and Tim –

I'd not seek to add anything to our materials based on today's CEQ call. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Note that in addition to the challenge of gathering people at the holidays, Horst also announced earlier this week that he will be retiring from federal service effective 12/31/15.

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From: Miller, Clay
Sent: Friday, December 04, 2015 11:51 AM
To: Brush, Jason <Brush.Jason@epa.gov>; Landers, Timothy <Landers.Timothy@epa.gov>
Cc: Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Goldmann, Elizabeth <Goldmann.Elizabeth@epa.gov>; Leidy, Robert <Leidy.Robert@epa.gov>
Subject: RE: Rosemont read-ahead for Joel

Thanks appreciate it…I did add in the footer "DRAFT DELIBERATIVE"

From: Brush, Jason
Sent: Friday, December 04, 2015 2:05 PM
To: Miller, Clay <Miller.Clay@epa.gov>; Landers, Timothy <Landers.Timothy@epa.gov>
Cc: Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Goldmann, Elizabeth <Goldmann.Elizabeth@epa.gov>; Leidy, Robert <Leidy.Robert@epa.gov>
Subject: Rosemont read-ahead for Joel

Hey guys – Here's the material in prep for Tuesday. Note that there's a regular CEQ call in about an hour, so I'll send you an updated version if there's any outcome of that meeting worth putting in here.

Jason A. Brush
Supervisor, Wetlands Section
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-2-4)
San Francisco, CA 94105
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desk: 415.972.3483
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To: Landers, Timothy[Landers.Timothy@epa.gov]
From: Suriano, Elaine
Sent: Tue 11/24/2015 2:53:35 PM
Subject: RE: CEQ Schedule for Rosemont
RE: CEQ Schedule for Rosemont
Rosemont Copper Minebiweekly2.docx

T –

Thks for your note. If you could check the OW info. No rush.

E..

Elaine Suriano

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suriano.elaine@epa.gov

To: Landers, Timothy[Landers.Timothy@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]
From: Bromm, Susan
Sent: Mon 11/23/2015 5:30:36 PM
Subject: Rosemont
Rosemont Mine summary doc_110615 (00000002).docx

Following up from some of the recent calls, Region 9 is proposing to send a recent briefing paper to CEQ (Its recent but a bit outdated). Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Horst made it sound like it was pretty urgent to get this to him so I'd appreciate OW's thoughts as soon as you can.

Thanks

Susan

To: Bromm, Susan[Bromm.Susan@epa.gov]
Cc: Landers, Timothy[Landers.Timothy@epa.gov]
From: Miller, Clay
Sent: Tue 9/1/2015 4:42:53 PM
Subject: RE: Discussion: Followup on Rosemont Mine w/OFA/Region 9

Susan ...Please add Timothy Landers to the invite.. thanks Clay

-----Original Appointment-----
From: Bromm, Susan
Sent: Tuesday, September 01, 2015 12:34 PM
To: Bromm, Susan; Leff, Karin; Goforth, Kathleen; Goodin, John; Kaiser, Russell; Moulta-Ali, Abu; Brush, Jason; Jessop, Carter; Goldmann, Elizabeth; Leidy, Robert; Miller, Clay; Johnson, Kathleen; Evans, David
Subject: Discussion: Followup on Rosemont Mine w/OFA/Region 9
When: Wednesday, September 16, 2015 4:30 PM-5:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Room 7213 WJC South/Conference Call: Call-in Ex. 6 - Personal Privacy Access Code: Ex. 6 - Personal Privacy

Point of Contact for scheduling: Shelly Dawson, (202)564-2633

To: Suriano, Elaine[Suriano.Elaine@epa.gov]
From: Landers, Timothy
Sent: Mon 4/11/2016 7:48:30 PM
Subject: FW: CEQ briefing paper - attachment 5
Attachment 5_Rosemont_USFS NEPA Analysis_Info Paper_10 Mar 2016_cwj kmg.....docx

From: Goldmann, Elizabeth
Sent: Monday, April 11, 2016 1:54 PM
To: Brush, Jason <Brush.Jason@epa.gov>
Cc: Landers, Timothy <Landers.Timothy@epa.gov>; Miller, Clay <Miller.Clay@epa.gov>
Subject: CEQ briefing paper - attachment 5

EPA's comments on the USFS NEPA Analysis Info Paper. It was approved by Kathleen Johnson and sent to CEQ.

Elizabeth Goldmann

Physical Scientist

U.S. Environmental Protection Agency

75 Hawthorne St. (WTR-2-4)

San Francisco, CA 94105

(415) 972-3398

Goldmann.elizabeth@epa.gov

To: Miller, Clay[Miller.Clay@epa.gov]
From: Landers, Timothy
Sent: Wed 1/13/2016 2:49:06 PM
Subject: FW: Rosemont: Comments on CEQ's attachments
Attachment 1_Rosemont Project Description_Info Paper_23 Dec 2015_EPAR9.docx
Attachment 3_Rosemont_EPA Concerns_Info Paper_23 Dec 2015_EPAR9.docx

Here they are. You have free reign to adjust/delete as you see necessary.

From: Jessop, Carter
Sent: Tuesday, January 12, 2016 7:30 PM
To: Leff, Karin <Leff.Karin@epa.gov>
Cc: Suriano, Elaine <Suriano.Elaine@epa.gov>; Brush, Jason <Brush.Jason@epa.gov>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>; Landers, Timothy <Landers.Timothy@epa.gov>; Goforth, Kathleen <Goforth.Kathleen@epa.gov>
Subject: RE: Rosemont: Comments on CEQ's attachments

Hi Karin,

I will defer to Kathy and Kathleen regarding your questions below, but attached you will find R9's proposed edits to the remaining attachments that compose this package.

Also, I would be happy to answer any technical questions you might have based upon these materials. Please feel free to give me a call if needed.

Thank you.

-Carter

Carter W. Jessop

U.S. EPA, Region 9

Environmental Review Section (ENF-4-2)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3815

jessop.carter@epa.gov

From: Leff, Karin
Sent: Tuesday, January 12, 2016 4:07 PM
To: Goforth, Kathleen <Goforth.Kathleen@epa.gov>
Cc: Suriano, Elaine <Suriano.Elaine@epa.gov>; Brush, Jason <Brush.Jason@epa.gov>; Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>; Landers, Timothy <Landers.Timothy@epa.gov>
Subject: RE: Rosemont: Comments on CEQ's attachments

Ex. 5 - Deliberative Process

Karin Leff

Acting Director, NEPA Compliance Division

Office of Federal Activities

US EPA- OECA

202.564.7068 (w)

202.236.3669 (c)

From: Goforth, Kathleen
Sent: Tuesday, January 12, 2016 4:58 PM
To: Leff, Karin <Leff.Karin@epa.gov>
Cc: Suriano, Elaine <Suriano.Elaine@epa.gov>; Brush, Jason <Brush.Jason@epa.gov>; Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>
Subject: Rosemont: Comments on CEQ's attachments

Karin –

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

-Kathy

Kathleen Martyn Goforth, Manager

Environmental Review Section (ENF-4-2)

U.S. Environmental Protection Agency, Region 9

75 Hawthorne Street

San Francisco, CA 94105

415-972-3521

Attachment 1

ROSEMONT COPPER MINE – PROJECT DESCRIPTION

Hudbay Minerals, Inc. (Hudbay), a Canadian integrated mining company, seeks U.S. Forest Service (USFS) approval of a mine plan of operations (MPO) and U.S. Army Corps of Engineers (Corps) issuance of a Clean Water Act (CWA) Section 404 permit for the proposed Rosemont Copper Mine Project (Project) southeast of Tucson in Pima County, Arizona. The Project would involve constructing, operating, reclaiming, and closing an open-pit mine on National Forest System (NFS) and adjacent private and State lands in the Cienega Creek Watershed. The proposed Rosemont Mine would extract copper, molybdenum, and silver over an anticipated life of 24-30 years.

Ex. 5 - Deliberative Process

ED_001077_00008604-00001

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Brush, Jason[Brush.Jason@epa.gov]
From: Landers, Timothy
Sent: Tue 1/5/2016 7:57:11 PM
Subject: RE: Next Steps on Rosemont Mine from CEQ

Got it, sounds like a plan. Thanks Jason.

From: Brush, Jason
Sent: Tuesday, January 05, 2016 2:51 PM
To: Landers, Timothy <Landers.Timothy@epa.gov>
Cc: Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Goldmann, Elizabeth <Goldmann.Elizabeth@epa.gov>; Goforth, Kathleen <Goforth.Kathleen@epa.gov>; Woo, Nancy <Woo.Nancy@epa.gov>; Torres, Tomas <Torres.Tomas@epa.gov>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>; Moutoux, Nicole <Moutoux.Nicole@epa.gov>
Subject: Next Steps on Rosemont Mine from CEQ
Importance: High

Happy new year, Tim – Carter Jessop, our lead NEPA staff on the project, is reviewing these CEQ materials and, after clearing any wetlands questions with me, will share back to OFA (Karen Leff). I've not dug into the attachments, but my sense is that they're 95% culled from the briefing materials Horst requested we all send him, so I don't anticipate major suggested revisions.

FYSA, RA Jared Blumenfeld has scheduled an in-person meeting in LA with the new District Commander, Col. Gibbs, on Friday the 15th on Rosemont. I don't yet know whether he wants me (or other) in-person support on the trip, simply wants TPs, or just wants to wing it as a meet-n-greet. But we have time on his calendar next Tues the 12th to update him and scope it out.

Jason A. Brush
Supervisor, Wetlands Section
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-2-4)
San Francisco, CA 94105
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
desk: 415.972.3483
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

From: Landers, Timothy
Sent: Tuesday, January 05, 2016 10:42 AM
To: Brush, Jason <Brush.Jason@epa.gov>
Subject: FW: ACTION: FW: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics
Importance: High

Hi Jason...new year, same old issues. I wanted to get your sense as to whether the Region (Water or NEPA) is likely to have any comments on these draft read-ahead materials? As you know, comments are due to CEQ by the 13th. We've reviewed here in OWOW and are likely to Ex. 5 - Deliberative Process I'll be talking with OFA later today to get a sense of any comments they might have. I would be happy to compare notes with you too when you have the chance.

From: Greczmiel, Horst G. EOP/CEQ [mailto Ex. 6 - Personal Privacy
Sent: Wednesday, December 23, 2015 4:06 PM
To: robert.bonnie@osec.usda.gov; meryl.harrell@osec.usda.gov; patrick.holmes@osec.usda.gov; aacheson@fs.fed.us; jcarbone@fs.fed.us; cjoyner@fs.fed.us; jupchurch01@fs.fed.us; tparker03@fs.fed.us; kdewberry@fs.fed.us; msvogel@fs.fed.us; Leff, Karin <Leff.Karin@epa.gov>; Suriano, Elaine <Suriano.Elaine@epa.gov>; Beauvais, Joel <Beauvais.Joel@epa.gov>; Peck, Gregory <Peck.Gregory@epa.gov>; Miller, Clay <Miller.Clay@epa.gov>; Blumenfeld, Jared <BLUMENFELD.JARED@EPA.GOV>; Ryerson.Teddy (Separated) <Ryerson.Teddy@epa.gov>; Goforth, Kathleen <Goforth.Kathleen@epa.gov>; Brush, Jason <Brush.Jason@epa.gov>; Dunning, Connell <Dunning.Connell@epa.gov>; Hanf, Lisa (Separated 8/22/15) <Hanf.Lisa@epa.gov>; Martynowicz, Trina <Martynowicz.Trina@epa.gov>; Gaudario, Abigail <Gaudario.Abigail@epa.gov>; Diamond, Jane (Separated 4/30/15) <Diamond.Jane@epa.gov>; Johnson, Kathleen <Johnson.Kathleen@epa.gov>; Jessop, Carter <JESSOP.CARTER@EPA.GOV>; Penman, Crystal <Penman.Crystal@epa.gov>; Woo, Nancy <Woo.Nancy@epa.gov>; jennifer.a.moyer@usace.army.mil; Charles.R.Smith567.civ@mail.mil; david.b.olson@usace.army.mil; Wade.L.Eakle@usace.army.mil; David.J.Castanon@usace.army.mil; Sallie.Diebolt@usace.army.mil; carol_braegelmann@ios.doi.gov; mtupper@blm.gov; bamme@blm.gov; lbaker@blm.gov; uhong@blm.gov; rmsuazo@blm.gov; drawhous@blm.gov; jshoemaker@blm.gov; tshannon@blm.gov; Christy_JohnsonHughes@fws.gov; Benjamin_Tuggle@fws.gov; steve_spangle@fws.gov; jean_calhoun@fws.gov; jason_douglas@fws.gov
Cc: Rodgers, Kerry E. EOP/CEQ < Ex. 6 - Personal Privacy >; Heberling, Paul D. EOP/CEQ < Ex. 6 - Personal Privacy >; Mallory, Brenda N. EOP/CEQ Ex. 6 - Personal Privacy Patel, Manisha D. EOP/CEQ

Ex. 6 - Personal Privacy; Heberling, Paul D. EOP/CEQ

Subject: Next Steps on Rosemont Mine - deliverables are noted in highlighted italics
Importance: High

Good afternoon,

I'd be remiss if I didn't begin by expressing my heartfelt appreciation for your support and hard work on this, and innumerable other matters, over the past several years. This email provides the papers we discussed as well as some logistics and next steps.

The papers: ***please review and provide edits/comments in track changes to*** Ex. 6 - Personal Privacy ***by January 13th***. She will be carrying this forward and bringing my successor, as yet TBD (thank you HR and security clearance processes), up to date. The papers are:

- Cover memo: please review the address list (and please provide email addresses) as well as the substance of the synopsis provided;
- Attachment 1;
- Attachment 2;
- Attachment 2; and
- Attachment 4;

Please keep in mind that the cover memo should provide a concise and accurate synopsis with more detailed information in the attachments – any suggestions on additional or reorganized papers should be provided in the cover email.

The players: The participants of the past every-other-week calls are in the attached Rosemont email list. ***Please provide Kerry Rodgers and Paul Heberling with any final revisions/additions by January 11th so that she can send out the invite with call-in information***. The calls will resume on January 15th to discuss the status of the papers as well as an update on the various reviews and timelines. Kerry Rodgers will send out the invitation for the calls on or about January 12.

We hope that you and yours have a healthy, safe, and restful holiday season and coming year.

Sincerely, Horst

Soon to be the former Associate Director for NEPA Oversight

Council on Environmental Quality

To: Bromm, Susan[Bromm.Susan@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]
From: Landers, Timothy
Sent: Tue 11/24/2015 4:24:42 PM
Subject: RE: Rosemont
Rosemont Mine summary doc_110615 (WARRB comments).docx

DRAFT, DELIBERATIVE

Susan,

I chatted with Clay and, Ex. 5 - Deliberative Process
Ex. 5 - Deliberative Process Please see attached for these edits (in two places) to the briefing paper.

From: Bromm, Susan
Sent: Monday, November 23, 2015 12:31 PM
To: Landers, Timothy <Landers.Timothy@epa.gov>; Miller, Clay <Miller.Clay@epa.gov>
Subject: Rosemont

Following up from some of the recent calls, Region 9 is proposing to send a recent briefing paper to CEQ (Its recent but a bit outdated). Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Horst made it sound like it was pretty urgent to get this to him so I'd appreciate OW's thoughts as soon as you can.

Thanks

Susan

From: Miller, Clay
Location: 7220 WJC South
Importance: Normal
Subject: Fw: Rosemont Mine
Start Date/Time: Fri 10/25/2013 2:30:00 PM
End Date/Time: Fri 10/25/2013 3:00:00 PM

Elizabeth and Jason. I just got this at home and will need to be prepared early tomorrow to answer these questions. Do you have a a few bullets that would respond to Cliff. Call me at home if you have questions. **Ex. 6 - Personal Privacy**

Cliff writes...

Ex. 5 - Deliberative Process

We also need to talk about coordinating between our offices on next steps, esp. given the likelihood that the Final EIS will be posted on the Forest Service website on Nov. 8.

thanks!

From: Rader, Cliff
Sent: Thursday, October 24, 2013 7:44:02 PM
To: Rader, Cliff; Bromm, Susan; Hessert, Aimee; Peck, Gregory; Fertik, Rachel; Miller, Clay; Kaiser, Russell; Pendergast, Jim
Subject: Rosemont Mine
When: Friday, October 25, 2013 10:30 AM-11:00 AM.
Where: 7220 WJC South

Ex. 5 - Deliberative Process

We also need to talk about coordinating between our offices on next steps, esp. given the likelihood that the Final EIS will be posted on the Forest Service website on Nov. 8.

thanks!

From: Brush, Jason
Location: R9-Room-1103-4-MamalaBay/Region-9 - Ex. 6 - Personal Privacy code Ex. 6 - Personal Privacy
Ex. 6 - Personal Privacy
Importance: Normal
Subject: Bi-weekly Rosemont R9-WD update
Start Date/Time: Thur 12/19/2013 7:30:00 PM
End Date/Time: Thur 12/19/2013 8:00:00 PM
Untitled
Untitled

Adding HQ's conference line (thanks!).

Hello all:

I would like to set a recurring, short update call between R9 and Wetlands Division, focused on

Ex. 5 - Deliberative Process

R9's Brush or Goldmann will lead the calls, and will send an agenda at least 24hrs prior.

To: Brush, Jason[Brush.Jason@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]; Kaiser, Russell[Kaiser.Russell@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]; Fertik, Rachel[Fertik.Rachel@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Campbell, Rich[Campbell.Rich@epa.gov]; Bose, Laura[Bose.Laura@epa.gov]
Cc: Graves, Karin[Graves.Karin@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Geredien, Ross[Geredien.Ross@epa.gov]
From: /O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=ADE1A32824404ED5A333DCD77F2DFC4A-JBRUSH

When: Thursday, December 19, 2013 1:00 PM-1:30 PM (UTC-08:00) Pacific Time (US & Canada).
Where: R9-Room-1108-12-BayDelta/Region-9

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*~*

Thanks Erin for the phone line: **Ex. 6 - Personal Privacy**

Agenda for 12/19

1. Introductions / Participants announce themselves
2. Kick-off / purpose of the calls / Scheduling future calls (Jason)
3. Update from R9 (Elizabeth)
4. Update from WD

Ex. 5 - Deliberative Process

6. Adjourn - Merry Christmas!

Hello all:

I would like to set a recurring, short update call between R9 and Wetlands Division, focused on

Ex. 5 - Deliberative Process

R9's Brush or Goldmann will lead the calls, and will send an agenda at least 24hrs prior.

To: Brush, Jason[Brush.Jason@epa.gov]; Kaiser, Russell[Kaiser.Russell@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]; Fertik, Rachel[Fertik.Rachel@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Campbell, Rich[Campbell.Rich@epa.gov]; Bose, Laura[Bose.Laura@epa.gov]
Cc: Graves, Karin[Graves.Karin@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Geredien, Ross[Geredien.Ross@epa.gov]
Subject: Bi-weekly Rosemont R9-WD updated

When: Wednesday, January 15, 2014 12:30 PM-1:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: R9-Room-1108-12-BayDelta/Region-9; R9-Room-1103-4-MamalaBay/Region-9

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

Agenda for 1/15

1 Roll call

Ex. 5 - Deliberative Process

6 Next meeting: scheduled for Jan 30 (day after field trip) – do we want to meet earlier?
7 Adjourn

Changing from Thurs to Wed to not conflict with Monthly Regional Wetlands call.

Time and R9 room change.

Hello all:

I would like to set a recurring, short update call between R9 and Wetlands Division, focused on issues

Ex. 5 - Deliberative Process

R9's Brush or Goldmann will lead the calls, and will send an agenda at least 24hrs prior.

To: Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Leidy, Robert[Leidy.Robert@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]
Cc: Miller, Clay[Miller.Clay@epa.gov]; Woo, Nancy[Woo.Nancy@epa.gov]; Montgomery, Michael[Montgomery.Michael@epa.gov]; Hashimoto, Janet[Hashimoto.Janet@epa.gov]; Sablad, Elizabeth[Sablad.Elizabeth@epa.gov]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]
From: Brush, Jason
Sent: Wed 6/17/2015 7:34:43 PM
Subject: ADEQ response to R9 letter - Rosemont Mine
EPA_Jared_Blumenfeld_Rosemont_Mine_06122015.pdf

From: Linda C. Taunt [mailto:Taunt.Linda@azdeq.gov]
Sent: Wednesday, June 17, 2015 12:24 PM
To: Woo, Nancy
Cc: Goldmann, Elizabeth; Brush, Jason
Subject: EPA letter - Rosemont Mine

Nancy – attached please find ADEQ's response to EPA's April 14, 2015 letter on water quality concerns unaddressed in our CWA 401 certification of the Rosemont Copper Project CWA 404 permit application.

If you or your staff have questions, please do not hesitate to contact Trevor Baggiore, WQD Director or myself.

Sincerely

Linda Taunt

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

Douglas A. Ducey
Governor

Henry R. Darwin
Director

June 12, 2015

Mr. Jared Blumenfeld, Regional Administrator
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105-3901

Re: Letter to U.S. Army Corps of Engineers on State §401 certification for Rosemont Mine

Dear ~~Administrator~~ Jared Blumenfeld:

The Arizona Department of Environmental Quality (ADEQ) has reviewed EPA's recent letter to the U.S. Army Corps of Engineers (Corps) that asserts the State's §401 Certification for Rosemont Mine "lacks sufficient, specific preventative actions to avoid these adverse impacts to water quality, creating a substantial risk to designated beneficial use standards set by the state for Davidson Canyon and Cienega Creek." ADEQ disagrees with EPA's assessment of the State's Certification and is confident that the requirements put in place are protective of water quality in the area and fully enforceable by the Corps as conditions of the CWA 404 permit.

In the April 14, 2015 letter, EPA states that critical water quality aspects remain unaddressed including the need for "a specific and complete monitoring program... to ensure rapid detection of impacts..." In addition, EPA calls for "specification of, and enforcement commitment to, available and sufficient corrective measures...to offset mine-related reduction of assimilative capacity, changes in downstream sediment yield and other potential diminutions of water quality that may be detected."

ADEQ agrees that ongoing data collection is needed to further characterize current conditions in the Cienega Basin as well as during development, operation and closure of the mine and to have measures available to offset any predicted changes. To that end, a key component of the State's Certification was the requirement for Rosemont to develop a Surface Water Mitigation Plan[1] (Plan) which provides for the collection and analysis of water quality data and implementation of mitigation strategies to mitigate projected impacts prior to them occurring.

[1] CWA §401 Certification, Specific Condition #1, p. 6

This Plan is a comprehensive assemblage of water monitoring requirements from various regulatory programs to identify and evaluate changes and variability in groundwater quality and levels, stormwater runoff (quantity and quality), springs discharge, precipitation, stream geomorphology and sediment transport to downstream washes over time. These data will be evaluated to determine if any changes and/or variability are due to natural conditions, mining-related causes or other anthropogenic causes.

The Plan also requires Rosemont to develop a surface water model that will be used as a predictive tool to quantify potential changes from baseline conditions through the staged development of the project. Based on the model predictions, Rosemont, in consultation with ADEQ and other agencies, will determine which mitigation measures should be deployed to maintain water quality. The Plan outlines a number of mitigation measures that may be selected to offset predicted changes if attributable to the mine project. It is anticipated that the predictions and required responses may vary from year to year depending on weather, mining activity and other factors.

In our review, ADEQ considered that the Outstanding Arizona Waters are over 13 miles downstream from the project and there are a number of factors affecting water resources in the Cienega Creek watershed as evidenced by the dramatic decline in surface water flows and the reduced extent of flows in both Lower Cienega Creek and Davidson Canyon Wash since the early 1990s[2,3].

We share EPA's concern about potential impacts to water resources but we are confident that the requirements in the Certification, coupled with the protections of other regulatory programs including the Aquifer Protection Permit and the AZPDES Multi-Sector General Permit for Stormwater Discharge from Industrial Facilities, will ensure protection of Davidson Canyon Wash and Lower Cienega Creek. Through the Surface Water Mitigation Plan, Rosemont must analyze available data, quantify potential changes and select and implement mitigation measures that will protect and maintain water quality in the receiving waters.

Lastly, a number of issues EPA raised in its comment letters on the draft Certification are outside the scope of what ADEQ is legally authorized to consider under Arizona state law (A.R.S. 49-202(C) and (D)). ADEQ's review under §401 extends only to activities conducted within the ordinary high watermark of navigable waters. Therefore ADEQ is not able to address issues such as groundwater drawdown as a result of pit dewatering or well pumping or the recharge potential of subsurface supplies under the §401 program.

---

[2] Powell, Brian, Pima County Office of Sustainability and Conservation, Water Resource Trends in Cienega Creek Natural Preserve, Pima County, AZ, August 2013
[3] FEIS, p. 420

Please do not hesitate to contact me if you have any questions or concerns, or have your Wetlands Section Supervisor contact Trevor Baggiore, Water Quality Division Director at (602) 771-2321.

Sincerely,

Henry R. Darwin
Director

cc: Jamie Kingsbury, Acting Supervisor, Coronado National Forest
Colonel Kim Colloton, District Engineer, LA District, U.S. Army Corps of Engineers

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JAN 05 2012

Colonel R. Mark Toy
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
Attn: Regulatory Branch (SPL-2004-01399-MB)
5205 E. Comanche Street
Tucson, Arizona 85707

Subject: Public Notice (PN) 2008-00816-MB for the proposed Rosemont Copper Mine Project, Rosemont Copper Company, Pima County, Arizona

Dear Colonel Toy:

We have reviewed the December 6, 2011 PN describing the proposed Rosemont Copper Mine Project (Rosemont) located 30 miles southeast of Tucson in Pima County, Arizona. According to the PN, the project would eliminate 38.6 acres of waters of the U.S. (waters) tributary to Davidson Canyon and Cienega creek, both designated as "Outstanding Waters" by the state of Arizona. In 2009, EPA worked closely with your staff regarding the ecosystem functions and services in this watershed, and we identified these waters as "aquatic resources of national importance." With the following comments, we reaffirm this resource designation and respectfully identify the Rosemont permit action as a candidate for review by EPA and Corps headquarters.[i]

EPA is concerned that substantial loss and/or degradation of water quality and other aquatic ecosystem functions is likely if this 4,200-acre mine is constructed and operated as proposed, in the 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. Seven federally listed endangered or threatened species occur within or adjacent to the project area to which adverse impacts are reasonably foreseeable.[ii]

Corps regulations prohibit issuance of a 404 permit if it would jeopardize the continued existence of listed species, or result in violation of water quality or toxic effluent standard (40 CFR 230.10(b)). In addition, pursuant to Section 303 of the Clean Water Act (CWA) and regulations at 40 CFR 131.12, the state's "Outstanding Water" designation means both Davidson Canyon Wash and Cienega Creek must be afforded the highest level of protection, and that no degradation of water quality is allowable.

Only discharges meeting all of EPA's 404(b)(1) Guidelines – a series of independent tests at 40 CFR 230 including the analysis of practicable offsite and onsite alternatives – can be permitted by the Corps. The 404 program contributes to the CWA goals to restore and maintain the chemical, physical and biological integrity of the nation's waters by prohibiting discharges of dredged or fill material that would result in avoidable adverse impacts to the aquatic ecosystem (40 CFR 230.10(a)), or the

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significant degradation of waters or human health and welfare (e.g., due to groundwater depletion and loss of cultural resources; 40 CFR 230.10(c)). Based on our review of the PN and the alternatives analysis submitted by the applicant, compliance with the 404(b)(1) Guidelines has not been demonstrated. There is presently insufficient information to conclude that the proposed project is the "Least Environmentally Damaging Practicable Alternative" (LEDPA), or meets any of the other restrictions on discharges, including the need to ensure appropriate compensatory mitigation for unavoidable impacts.

As additional information on this project becomes available, please ask your staff to contact Elizabeth Goldmann at (415) 972-3398 to continue our partnership in ensuring CWA compliance. If you would like to discuss this project personally, please call me at (415) 972-3572 or have your Regulatory Division Chief contact Jason Brush, Supervisor of our Wetlands Office, at (415) 972-3483.

Sincerely,

Alexis Strauss 5 Jan. 2012

Alexis Strauss
Director
Water Division

cc: Rosemont Copper Company
USFWS, Phoenix
USFWS, Tucson
M. Fulton, ADEQ
ADGF, Phoenix

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[i] This letter follows field level procedures outlined in the 1992 Memorandum of Agreement between EPA and the Department of the Army, Part IV, paragraph 3(a) regarding section 404(q) of the CWA. EPA Region 9 believes the project as proposed "may result in substantial and unacceptable impacts to aquatic resources of national importance."

[ii] This includes species known to occur in aquatic habitat or use these waters for forage or resting: Chiricahua leopard frog (*Lithobates chiricahuensis*), Mexican spotted owl (*Strix occidentalis lucida*), Southerwester willow flycatcher (*Empidonax traillii extimus*), Lesser long-nosed bat (*Leptonycteris yerbabuenae*), Ocelot (*Leopardus pardalis*), Gila chub (*Gila intermedia*), Gila topminnow (*Poeciliopsis occidentialis occidentalis*), and Jacquar (*Panthera onca*).

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

FEB 13 2012

OFFICE OF THE
REGIONAL ADMINISTRATOR

Colonel R. Mark Toy
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
PO Box 532711
Los Angeles, California 90053-2325

Subject: Permit Application No. 2008-00816-MB for the proposed Rosemont Copper Mine Project, Rosemont Copper Company, Pima County, Arizona

Dear Colonel Toy:

On January 5, 2012, the US Environmental Protection Agency (EPA) provided comments in response to your District's Public Notice for a Clean Water Act (CWA) Section 404 permit for the proposed Rosemont Copper Mine (enclosed). The 4,750 acre mine, proposed primarily on Coronado National Forest lands southeast of Tucson, would eliminate and/or significantly degrade hundreds of acres of aquatic and riparian resources including waters of the United States (waters), such as wetlands, springs, seeps and riffle-pool complexes. The significance of these impacts to sensitive and protected aquatic resources, and concerns regarding compliance with federal regulations (40 CFR 230), led us to identify the permit action as a candidate for the US Department of the Army and the EPA headquarters review pursuant to our agencies' Memorandum of Agreement implementing CWA Section 404(q).

In coordination with your staff in Tucson, as well as other federal and state agency regulatory authorities, we have been working to identify data gaps and clarify issues related to the many environmental uncertainties this project raises (please see our enclosed detailed comments). However, given the complexity of the project and the lack of any new substantive information provided since our January 5, 2012 letter, the EPA is now moving to preserve the option to seek higher level review of your pending permit decision. At this time, we respectfully reaffirm our objections on the basis that permit approval will have substantial and unacceptable impacts to "aquatic resources of national importance" (ARNI), including Cienega Creek and Davidson Canyon.

In summary, our enclosed comments detail specific deficiencies in the application related to each of the regulatory restrictions on 404 discharges. Of particular concern, the current proposal:

1. includes an inadequate analysis of off-site and on-site alternatives to demonstrate that the proposal is the least environmentally damaging practicable alternative (LEDPA);
2. provides questionable hydrological assessments concluding that impacts to downstream flows, sediment balance, and chemical contamination will not be significantly adverse or violate state standards;
3. provides no biological assessment (BA) to guide a determination whether the permit action would jeopardize the continued existence of any of ten federally listed threatened or endangered species;

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4. would contribute to the significant degradation of Arizona's rare and fragile wetland resources, reduced by one third over the last century alone;
5. provides no plan to compensate for unavoidable impacts to waters of the United States; and
6. could negatively impact recreation, aesthetics, and ecotourism, a $2.95 billion regional economy.

The above considerations, if unresolved, could provide an adequate basis for permit denial under the regulations in any environmental setting impacting waters of the U.S. In this setting, where virtually pristine ecological and recreational public resources—including state designated "Outstanding Waters"—thrive in a desert environment, it is vital that CWA protections are rigorously applied. Based on the information currently available, the EPA finds this project will result in the significant degradation of waters of the U.S., including substantial and unacceptable impacts to ARNI. This letter follows the field level procedures outlined in the August 1992 Memorandum of Agreement between the EPA and the Department of the Army, Part IV, paragraph 3(b) regarding Section 404(q) of the Clean Water Act.

Thank you for your ongoing partnership implementing the programs of the CWA and protecting human health and the environment. Please call me at (415) 972-3572 with any questions, or have your Regulatory Division Chief contact Jason Brush, our Wetlands Office Supervisor, at (415) 972-3483.

Sincerely,

Jared Blumenfeld

Enclosures:
EPA's Detailed Comments on the Proposed Rosemont Copper Mine 404 Permit Application
EPA letter dated January 5, 2012

cc: US Fish and Wildlife Service, Phoenix
US Fish and Wildlife Service, Tucson
US Forest Service, Coronado National Forest, Tucson
Bureau of Land Management, Tucson
Tohono O'odham Nation, Office of the Chairman and Vice Chairwoman
Arizona Department of Environmental Quality, Phoenix
Arizona Department of Environmental Quality, Tucson
Arizona Department of Game and Fish, Phoenix
Pima County Administrator's Office, Tucson
Rosemont Copper Company

DETAILED COMMENTS ON THE PROPOSED ROSEMONT COPPER MINE 404 PERMIT APPLICATION # 2008-00816-MB

I. Project Description

The Rosemont Copper Company (subsidiary of Canadian Augusta Corporation) proposes to develop the Rosemont Copper Mine Project in Pima County, AZ, approximately 30 miles south of the city of Tucson. The mine would occupy ~4,750 acres of National Forest Service, Bureau of Land Management and some privately owned lands, with the primary land holding being Coronado National Forest. The mine is projected to produce ~4.7 billion pounds of copper, 90 million pounds of molybdenum and 54 million pounds of silver over the proposed 25 year mine life.

Mining will be conducted using conventional open-pit techniques. Waste rock will be blasted and transported by haul truck to a storage area. Ore will be blasted and either transported by haul truck to a leach pad and processed by leaching (oxide ore), or crushed and loaded onto a conveyor for conventional sulfide milling (sulfide ore). Tailings will be stored using a dry stack tailings technique. The placement of waste rock will include perimeter buttresses, with placement of the perimeter of the dry stack tailings storage areas to provide structural and erosional stability of the tailings pile.

The copper concentrate from the milling operations will be shipped off site to a smelter. Leach ore will be placed on the heap leach pad. Solutions from the pad will be collected in a solution pond and then processed through the solvent extraction-electrowinning plant. Copper cathodes generated from the plant will be transported off site for further processing.

The proposed project includes a 950 acre mine pit, 1,460 acre waste rock storage areas, 126 acre heap leach area, 987 acre dry-stack tailings facility, ancillary facilities and structures, access and haul roads, and off site water and power and transmission lines.

II. Environmental Setting

The project site elevation ranges from 4,500 feet to 6,824 feet above mean sea level located in the Semidesert Grasslands biotic community that transition into Madrean Evergreen Woodland association on the higher slopes of the Santa Rita Mountains. The site supports a complex network of ephemeral and intermittent streams that provide critical surface and groundwater flow into perennial Cienega Creek.

The aquatic resources of the Cienega Creek watershed are located in a near pristine landscape rich in biodiversity. Four major drainages occur in the project area: Wasp, McCleary, Scholefield, and Barrel Canyons. Scholefield, Wasp and McLeary Canyons drain to Barrel Canyon which joins Davidson Canyon approximately 4 miles east of the project area. Davidson Canyon is a tributary to perennial Cienega Creek. Barrel Canyon is the largest of the four major drainages with an average channel width of 51 feet. The project site also supports sixty-three seeps and springs. The waters of the U.S. on the project site, in most instances, have riparian habitats associated with them.[1]

[1] Onsite Riparian habitat Assessment and Impact Analysis – Rosemont Project. Prepared for Rosemont Copper Company by WestLand Resources, Inc.. April 2010 (page 15).

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III. Project Impacts

The proposed project will have a variety of impacts to the aquatic environment including direct fill, secondary impacts resulting in functional degradation, and habitat conversion over a large geographic area. The project will result in the loss or conversion of approximately 7,000 acres including semi-desert grassland, Madrean evergreen woodland, riparian, and Sonoran desert scrub communities that form a vast, largely unfragmented, natural landscape. [2]

The proposed permit will authorize the direct fill of at least 38.6 acres of waters (18 linear miles of stream comprised of up to 154 individual drainages), including some direct impact to aquatic habitats associated with several springs.[3] Secondary (indirect) effects on the aquatic environment include dramatic and persistent changes to hydrologic and hydraulic regimes within the project and adjoining watersheds, adversely affecting the functioning of sensitive and regionally significant downstream receiving waters, including wetlands. For example, the Forest Service estimates 1,364 acres of riparian habitat (including a likely significant amount of jurisdictional riparian wetlands[4]) would be degraded or lost from changes to ground and surface water hydrology from the project. Water quality downstream of the project site will be degraded from changes in sediment loads, increasing suspended solids in some areas and altering channel morphology through aggradation and scour. Throughout the Cienega Creek watershed, impairment of floodplain and ecosystem services including water filtration, groundwater recharge, and flood attenuation are probable, as is the disruption of landscape-scale hydrological and ecological connectivity, decreases in regional biodiversity, and a loss of ecosystem stability.

The project will adversely affect three types of "Special Aquatic Sites" identified in the 404(b)(1) Guidelines (wetlands, sanctuaries and refuges, and riffle and pool complexes (40 CFR 230.40 – 45)), as well as Tier 3 "unique" waters (portions of Davidson Canyon and Cienega Creek that are designated by the State of Arizona as "Outstanding Arizona Waters"). These aquatic resources and adjoining habitat support ten federally listed endangered or threatened species for which project impacts are reasonably foreseeable (for example, filling streams will fragment currently continuous wildlife migration corridors).

Impacts to Special Aquatic Sites. Three of the six Special Aquatic Site types described in Subpart E of the Guidelines occur on or adjacent to the proposed project and would be adversely affected by the copper mine. Because of their special ecological characteristics of high food-web productivity, physical habitat critical for all life stages of aquatic life, water quality functions, and other important and easily disrupted ecological functions, these aquatic resources are given special recognition under CWA regulations.[5] Collectively, the Special Aquatic Sites in the project area play a regionally significant role in maintaining the existing, high quality functions and services in this watershed.

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[2] This acreage figure includes impacts associated with the mine site, transmission lines, and other project infrastructure. See DEIS, Ch. 3, Table 98.

[3] Pima County has conducted an independent GIS analysis of the linear and lateral extent of stream channels within the area affected by the Mine Plan of Operations. Pima County estimates that over 100 miles of streams and 116 acres of stream channel and floodplain (< 10-yr. floodplain) will be affected by the proposed project (Letter from Pima County to U.S. Army Corps of Engineers, dated 19 January 2012). Given this data, and the fact that the waters of the U.S. jurisdictional determination is unverified by the Corps, numbers in the PN may underestimate actual impacts to jurisdictional waters authorized by the proposed permit.

[4] DEIS for the Rosemont Copper Project (11 December 2011), Chapter 3, Table 98.

[5] 40 CFR § 230, Subpart E.

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Sanctuaries and refuges are areas designated under state and federal laws or local ordinances to be managed principally for the preservation and use of fish and wildlife resources.[6] Portions of lower Davison Canyon and Cienega Creek are designated by the State of Arizona as "Outstanding Waters" (see discussion, below) and are within the Cienega Creek Natural Preserve (CCNP), a 4,000 acre sanctuary along 12 stream miles noted for its ecological significance and natural beauty as a desert riparian oasis.[7] In addition, portions of Empire Gulch lie within the Las Cienegas National Conservation Area (LCNCA), administered by BLM, a 45,000 acre preserve set aside in large part to protect riparian wetlands and native aquatic organisms including endangered fish and amphibians.

The proposed project is likely to have significant impacts to the downstream reaches of Davidson Canyon, Empire Gulch and Cienega Creek. The state designation of Davidson Canyon and Cienega Creek as "Outstanding Waters" affords them special protection, prohibiting any lowering of water quality. Federal regulations for state-designated outstanding waters similarly state "Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected" (40 CFR 131.12(a)(3)). At this time, the applicant has not provided information demonstrating that modification to surface and groundwater hydrology, sediment transport and pollutant discharges to Davidson Canyon and Cienega Creek as a result of the proposed project will not result in any lowering of water quality, or other unacceptable impacts to onsite and downstream waters.

Wetlands and riffle-pool complexes are also Special Aquatic Sites that will be affected by the secondary effects of groundwater drawdown from the proposed project.[8] Although these resources have not been delineated, a significant proportion of streams and riparian areas are likely to include these special aquatic sites. Riffle and pool complexes are especially valuable as habitat for fish and wildlife, supporting important feeding, spawning, rearing, and refuge functions for aquatic and terrestrial species.

The proposed project will likely significantly change the balance of water along portions of Davidson Canyon and Cienega Creek within the CCNP, and Empire Gulch Creek within the LCNCA adversely impacting special aquatic sites. Specifically, secondary impacts from project-related groundwater drawdown are likely to change and disrupt breeding, spawning, rearing, and migratory movements, or other critical life history requirements of fish and wildlife resources. For example, pools and riffles used by Gila chub, Gila topminnow, and longfin dace would likely shrink or disappear within the CCNP and LCNCA as a result of mine-related groundwater drawdown. Pools and riffles would be especially vulnerable to desiccation during the typically driest months of May and June, and/or during droughts when intermittent pools characterize Cienega Creek embedded within long reaches of dry streambed. Seemingly small reductions in streamflow caused by groundwater drawdown during critically dry months could cause portions of Cienega Creek to stop flowing.[9] Similarly, groundwater drawdown could be expected to result in the loss of springs, and stress and mortality to riparian habitat, including wetlands.

Desert springs, often the sole sources of water for wildlife, support wetland ecosystems including rare and endemic species.[10] Human changes to groundwater are one of the greatest threats to long-term

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[6] 40 CFR § 230.40.
[7] http://rfcd.pima.gov/wrd/landmgt/cienegapreserve/
[8] Wetlands are defined at 40 CFR § 230.41. Riffle-pool complexes are defined at 40 CFR § 230.45.
[9] DEIS for the Rosemont Copper Project (11 December 2011), Chapter 3, Page 387.
[10] Patten, P.T., L. Rouse and J.C. Stromberg. 2007. *Isolated Spring Wetlands in the Great Basin and Mojave Deserts, USA: Potential Response of Vegetation to Groundwater Withdrawal.* Environmental Management DOI 10.1007/s00267-007-9035-9. 16pp.

sustainability of groundwater dependent ecosystems in arid and semi-arid regions.[11] Direct and indirect impacts to these seeps and springs as a result of the preferred alternative will affect the aquatic biota dependent on the range of spring-associated water sources. Following groundwater withdrawal, should the spring continue to flow, the wetlands supported by the outflow would be truncated. The amount of area suitable to support wetland species would be greatly reduced and the species least tolerant of drying conditions would be extirpated first and eventually replaced by transition upland species.[12] Sixty-three springs are expected to be lost from direct disturbance or lowering of the groundwater table during construction and operation.[13] Impacts to Scholefield No. 1 and Fig Tree springs are likely to occur within the active life of the mine as a result of drawdown in the regional aquifer.

Impacts to Surface Water Quantity. Ephemeral stream channel stormwater flows contribute significantly to groundwater recharge in arid regions.[14] Stormwater flows also provide seasonally significant surface water contributions to downstream waters. Collectively, in unaltered watersheds, storm flows are a significant source of water contributing to the base flow of downstream receiving waters.[15] The proposed project will result in alteration of the natural surface hydrology through construction of stormwater basins and diversions around the facility to convey and store stormwater originating upgradient of the mine areas. Impacts related to surface water quantity include the modification of stormwater peak flows, modification to overall runoff volume from the watershed, and the direct loss of stock tanks. Runoff reductions will adversely impact water availability for downstream uses. According to the Forest Service, the proposed project will result in a 33.8% reduction in runoff from the project area, reducing surface flow in Davidson Canyon by 5.4%.[16] Reductions in surface water availability in Davidson Canyon will result in adverse effects to riparian vegetation and wildlife use, including endangered, threatened or sensitive aquatic species (e.g., Huachuca water umbel, Gila chub, Gila topminnow, longfin dace, Chiricahua leopard frog, and lowland leopard frog).

The Pima Association of Governments (PAG) has conducted 20 years of hydrologic monitoring along Cienega Creek, including documentation of the relative contribution of surface and groundwater flows from Davidson Canyon to base flows in Cienega Creek.[17] Davidson Canyon, an intermittent stream upstream of its confluence with Cienega Creek, contributes significant flood flows to Cienega Creek during runoff events. Through analysis of water chemistry and stable isotopes, PAG also found that between 8 and 24% of Cienega's perennial base flows are attributable Davidson Canyon's underflow contributions.[18] Any decreases in the surface flows of Davidson Canyon resulting from the mine are therefore likely to significantly reduce contributing base flows to Cienega Creek.

Impacts to Surface Water Quality. Waters within the Cienega Creek watershed support riparian areas and provide natural erosion and sediment control. These waters carry or reduce pollutants and nutrients; therefore the loss of waters can affect water quality. The proposed project will directly affect sediment yield to downstream waters. The project will have permanent surface water quality impacts to 2.5 miles of Barrel Canyon Wash (23 acres) and 14 miles of Davidson Canyon Wash (234 acres), including a

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[11] Ibid.
[12] Ibid.
[13] DEIS, Ch. 3, Table 108.
[14] Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy, M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest.* U.S. EPA and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.
[15] Ibid.
[16] DEIS, Ch. 3, Tables 69 and 80.
[17] Pima Association of Governments .2003. *Contribution of Davidson Canyon to Base Flows in Cienega Creek*, 40pp.
[18] Ibid.

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reduction of sediment to the downstream reaches of Davidson Canyon Wash of 51.3 percent.[19] The reduction in the delivery of sediment to Davidson Canyon Wash and Cienega Creek have the potential to cause significant geomorphologic changes to downstream washes, resulting in increased channel scour and aggradation, including riparian areas in stream reaches designated as "Outstanding Waters" and CCNP. Aggradation and scour can result in the filling and scouring of pools and riffles used by fish and other aquatic organisms. These changes in channel morphology can also include bank erosion and the loss of riparian vegetation as the channel adjusts to a new sediment, water, and energy equilibrium.

Increased scour will likely result in significant changes to water quality by increasing total suspended sediment in surface water flows. Elevated levels of suspended sediment or moderate-to-high turbidity will likely have significant adverse effects on aquatic organisms in Davidson Canyon Wash and Cienega Creek. Increased suspended sediment and turbidity will have the potential to smother aquatic organisms as sediments settle out. Increases in turbidity can disrupt the feeding, movement, spawning, and rearing of aquatic organisms such as native fish and amphibians; federally listed aquatic species are particularly susceptible to these impacts (*e.g.*, Davidson Canyon's Huachuca water umbel, Gila chub, Gila topminnow, longfin dace, Chiricahua leopard frog, and lowland leopard frog).

Surface water quality may also be adversely impacted by a combination of projected project reductions in surface water quantity and groundwater drawdown. The PAG estimated that Davidson Canyon's relative contribution of base flows in Cienega Creek at Marsh Road between June 2002 and May 2003 ranged from 8-24 percent.[20] Because base flows in Davidson Canyon Wash are lower in dissolved solids, its contribution to Cienega Creek may effectively dilute concentrations of dissolved solids downstream and provide water quality benefits to aquatic species. Significant project related groundwater drawdown is expected to occur in Davidson Canyon, Cienega Creek, Empire Gulch, and Gardner Canyon.[21]

Groundwater drawdown will reduce streamflow, and the surface extent and persistence duration of pools and riffles. Water quality typically decreases as the volume of pools and riffles decrease, including increases in temperature and dissolved solid concentrations, and decrease in dissolved oxygen. These changes can result in increased algal blooms that further reduce the availability of dissolved oxygen. Water quality changes in desiccating pools and riffles can be expected to adversely affect aquatic organisms dependent on these habitats. Native fishes and amphibians such as Gila chub, Gila topminnow, longfin dace, and Chiricahua leopard frog could be expected to see their populations reduced or disappear from declines in water quality where they are known to occur in Davidson Canyon Wash, Cienega Creek, and Empire Gulch.

Impacts Resulting from Groundwater Drawdown. Ephemeral stream channel recharge from stormwater flows contributes significantly to groundwater recharge in arid regions.[22] The projected loss of an estimated 18 miles of stream channel attributable to the proposed project will significantly reduce the groundwater recharge functions within Davidson Canyon. In addition, significant groundwater drawdown will result from excavation of the mining pit.

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[19] DEIS, Ch. 3, Table 87.
[20] Ibid.
[21] DEIS, Ch. 3, Table 100.
[22] Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy,M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest.* U.S. EPA and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.

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The applicant did not analyze adverse effects to Cienega Creek through surface water modifications of its contributing tributaries. However, the applicant did identify several adverse environmental effects to Cienega Creek as a result of the proposed project. Cienega Creek is expected to experience drawdown of 1% to 3% of annual flow after 1,000 years; however, impacts could be much greater during critical periods of low flow (*e.g.*, May-June). During critical times of year, even small flow reductions could cause some portions of Cienega Creek to stop flowing. Although the DEIS states the decrease in groundwater would occur over a long period of time, the reduction in stream flow could impacts aquatic species needing standing or flowing water.[23]

Project groundwater drawdown is also expected to adversely impact 1,364 acres of riparian habitat, representing 29% of the total riparian habitat found within the 145,000-acre project analysis area.[24] This includes secondary impacts to riparian vegetation and wetlands along Cienega Creek (490.4 acres), Davidson Canyon (471.2 acres), Empire Gulch (58.3 acres), and Gardner Canyon (139.6 acres). An unknown, but potentially significant, amount of the total affected riparian acreage is jurisdictional wetlands.[25] Jurisdictional wetlands will most likely occur within areas mapped as hydroriparian and mesoriparian community types. Similarly, groundwater drawdown could be expected to result in the loss of up to 63 springs and associated riparian habitat and wetlands.[26]

Impacts to Reach and Extent of Jurisdictional Waters. Estimates of the extent of waters vary considerably between and within the PN and DEIS. A November 2010 Preliminary Jurisdictional Determination accepted by the Corps states that the entire project area supports 101.6 acres of waters, and the PN suggests 38.6 of these will be filled. However, the reach and extent of jurisdictional waters of the United States have not been formally delineated and may have been underestimated. Pima County has conducted a GIS analysis of the linear and lateral extent of stream channels within the area affected by the Mine Plan of Operations and estimated that over 100 miles of streams and 116 acres of stream channel and floodplain (*i.e.*, <10-yr floodplain) will be affected by the proposed project. The Bureau of Land Management has also expressed concern that riparian wetlands, seeps and springs within Empire Gulch may have been underestimated.[27]

Wetlands and other waters downstream of the project site have also not been delineated (e.g., along Davidson Canyon, Cienega Creek, Empire Gulch, and Gardner Canyon). This is a significant information deficiency because the Forest Service's estimate for secondary impacts to riparian communities along these streams, not including Davidson Canyon Wash, totals approximately 690 acres.[28] Presumably a significant portion of these riparian communities are jurisdictional wetlands, in addition to an unknown acreage of jurisdictional waters that lie below the ordinary high water mark. We are unable to determine the full extent and significance of direct and secondary project impacts in the absence of a complete jurisdictional delineation of all waters potentially impacted by the proposed project.

Other Environmental Considerations. The adverse affects of the project's changes to the regional hydrological regime would be further exacerbated by drought and projected climate change. Long-term ground and surface water monitoring within the Cienega Creek watershed indicates that the duration and extent of streamflow is very susceptible to drought; the length of stream segments that support perennial

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[23] DEIS, Ch. 3, p. 387.
[24] DEIS for the Rosemont Copper Project (11 December 2011), Chapter 3, Tables 98 and 99.
[25] Neither the applicant nor Corps has provided an assessment of jurisdictional wetlands potentially affected by secondary impacts.
[26] DEIS, Ch. 3, Table 108.
[27] U.S. Forest Service, Coronado National Forest, Personal Communication, 2 February 2012.
[28] DEIS, Ch. 3, Table 100.

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flow have been reduced beginning with the droughts of the 1980s.[29] In addition, climate change research and modeling predict a 10-20 percent reduction in precipitation in the desert southwest within the next 75 years, resulting in more arid conditions.[30] The potential cumulative effects of drought, aridity from climate change, and projections of reductions in surface water flows and groundwater drawdown attributable to the proposed project will likely result in significant adverse impacts to the aquatic environment.

IV. Aquatic Resources of National Importance

The EPA has determined that Cienega Creek and its major tributary, Davidson Canyon , are aquatic resources of national importance for the purposes of Part IV of the August 1992 Memorandum of Agreement between the EPA and the Department of the Army regarding Section 404(q) of the Clean Water Act. These aquatic resources are extraordinary, rare and intact ecosystems in a desert environment, and their protection is an explicit priority of local, state and federal agencies, environmental organizations, and the public.

The state of Arizona has designated reaches of both Davidson Canyon and Cienega Creek as Outstanding Arizona Waters (OAW) due to, among other factors, their exceptional ecological and recreational significance and the presence of federally threatened or endangered species. As OAW, their water quality meets or exceeds applicable water quality standards. Davidson Canyon Wash is a rare, spring-fed, low elevation desert stream, supporting a variety of uncommon flora and fauna. It flows to Cienega Creek, is the main surface water in a basin flowing in intermittent and perennial reaches to the northwest through the Las Cienegas National Conservation Area and into the Tucson groundwater Active Management Area.[31] Cienega Creek contributes flows to the Santa Cruz River via Pantano Wash, and contains remnants of a historically extensive cienega system, defined by springs and marsh areas supporting habitat for wildlife and plant species, included threatened and endangered species.

In December 2001, Pima County incorporated the Sonoran Desert Conservation Plan into its comprehensive land use plan by establishing the Conservation Lands System as the regional environmental vision. This system classifies lands into a variety of designations to reflect their relative value and importance in maintaining the biological diversity of Pima County. Davidson Canyon is identified under the plan as Biological Core area, and, along with Cienega Creek, an Important Riparian Area. By connecting the Empire, Santa Rita, and Rincon Mountain ranges—a network identified by the Arizona Department of Game and Fish, BLM and Pima County as critical wildlife movement corridor—Davidson Canyon, Cienega Creek and other riparian areas provide a natural habitat mosaic for the wide dispersal and migration of many species (*e.g.*, black bear, mountain lions, bobcats, coyotes).[32]

The upstream tributaries of Cienega Creek, including Davidson Canyon, Empire Gulch and its headwaters, provide a wide range of functions critical to aquatic ecosystem health and stability. These tributaries provide hydrologic connectivity within the watershed, facilitating the movement of water, sediment, nutrients, wildlife, and plant propagules. Ephemeral and intermittent streams are responsible for a large portion of basin ground-water recharge in arid and semi-arid regions through channel

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[29] http://www.pagnet.org/tabid/912/default.aspx
[30] Letter from Pima County to US Army Corps of Engineers, RE: SPL-2008-00816 Rosemont Mine, dated 19 January 2012.
[31] The Tucson Active Management Area was establishment pursuant to the 1980 Groundwater Management Act and is administered by the Arizona Department of Water Resources. The Tucson AMA has a statutory goal of achieving safe-yield by 2025 in order to address long-term implications of groundwater overdraft.
[32] DEIS, Chapter 3, page 370.

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infiltration. These ephemeral systems contribute to the biogeochemical functions of waters within their watershed by storing, cycling, transforming, and transporting elements and compounds, while facilitating the movement of sediment and debris and dissipating energy as part of natural fluvial adjustment.[33]

Finally, the national importance of these aquatic resources is underscored by the presence of ten federally-listed threatened or endangered species. These species rely, in whole or in part, on the health and extent of these aquatic resources to ensure their continued existence is not jeopardized. For example, listed fish such as the Gila chub (*Gila intermedia*) is primarily found in deep pools in Cienega Creek and Empire Gulch. Gila topminnow (*Poeciliopsis occidentalis occidentalis*), located in Cienega Creek and Davidson Canyon Wash only tolerates a narrow range of conditions and uses runs, riffles and pools for survival. Avian species such as the Southwestern willow flycatcher (*Empidonax traillii extimus*) nest and forage in associated riparian habitat, while the Mexican spotted owl (*Strix occidentalis lucida*) use these aquatic sites for foraging across its range of isolated mountains and canyons with mixed-conifer, pine-oak and riparian forests. Large mammalian predators, such as the ocelot (*Leopardus pardalis)* and jaguar (*Panthera onca*), depend on these stream corridors as critical movement corridors.

V. Clean Water Act 404(b)(1) Guidelines

The purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of waters of the United States. These goals are achieved, in part, by prohibiting discharges of dredged or fill material that would result in avoidable or significant adverse impacts on the aquatic environment pursuant to EPA's *Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials* (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA (Guidelines). The burden to demonstrate compliance with the Guidelines rests with applicant for a 404 permit. The Guidelines contain four main, independent requirements that must be met to obtain a permit.

1. Section 230.10(a) prohibits a discharge if there is a less environmentally damaging practicable alternative to the proposed project.
2. Section 230.10(b) prohibits discharges that will result in a violation of water quality standards or toxic effluent standards, jeopardize a threatened or endangered species, or violate requirements imposed to protect a marine sanctuary.
3. Section 230.10(c) prohibits discharges that will cause or contribute to significant degradation of waters. Significant degradation may include individual or cumulative impacts to human health and welfare; fish and wildlife; ecosystem diversity, productivity and stability; and recreational, aesthetic or economic values.
4. Section 230.10(d) prohibits discharges unless all appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

[33] See Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy,M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest*. U.S. EPA and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.

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Alternatives Analysis – 40 CFR 230.10(a)

Offsite Alternatives

In evaluating the practicability of offsite alternatives, the Corps directed the applicant to determine availability as the date of acquisition of the Rosemont Project in 2005. Based on a 2005 market entry year, the applicant presented an analysis of copper mining projects that were either underway or in the planning stage at that time. Although eleven offsite alternatives are listed in the AA, insufficient information has been provided in the analysis to eliminate some of the alternatives from further consideration.[34] Information regarding the aquatic resources at the eleven offsite alternatives was not provided. In order to remove offsite alternatives from consideration, additional information, including but not necessarily limited to the following, is needed:

> *Availability* - Several of the offsite alternatives (*e.g.,* Safford, Lone Star, Johnson Camp, Monitor and Markham Wash) were eliminated based on the applicant's following statement, "There was no indication that this facility was for sale in 2005, and it was therefore not available for purchase by Augusta." This statement alone does not substantiate whether these sites may or may not have been "available" under the Guidelines. Additional information is necessary in order to determine whether these alternatives were available at market entry.
>
> *Practicability* – The applicant states: "If an offsite alternative consists solely of Mineral Resources, by definition there is insufficient information to determine if extraction is feasible (the industry's term) or practicable (the 404(b)(1) Guidelines' term). It is not until the feasibility study is complete, and the Mineral Reserve identified, that it can be determined whether or not a given project is "capable of being" in light of cost, technology, and logistics." (page 8).

A letter to Westland Resources from Augusta dated August 30, 2010 discussed the history of the Rosemont Deposit. The letter describes the advancement of the Rosemont Project following its purchase in 2005. In particular, when describing the exploration drilling, it states,

> *"At the time of this initial work in 2005 and 2006, it was only appropriate to report on Mineral Resources of the Rosemont Deposit. The estimation of the Mineral Resources and assessment of the reasonable prospects for economic extraction required the judgment of a consulting engineer to serve as the official Qualified Person. In early 2007, the positive results from preliminary assessments of the Rosemont Deposit, allowed for the corporate decision to proceed to the next stage." (page 2)*

In August, 2007, Rosemont Copper Company completed an economic feasibility study for the Rosemont Deposit. Based on this information, it is unclear why other offsite alternatives were eliminated from further consideration for lack of a completed feasibility study by 2005 (market entry). Similar to the Rosemont Deposit, alternatives such as Lone Star, Copper Creek, Monitor, Broad Top Butte, and Peach-Elgin were identified as having mineral resources or were in the exploration phase during 2005. Therefore, these alternatives cannot be removed from further consideration under the Guidelines at this time.[35]

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[34] DEIS Appendix B: *CWA 404(B)(1) Alternatives Analysis Rosemont Copper Project*, September 2011

[35] The AA did not provide information regarding the aquatic resources on each offsite alternative in order to assess the potential environmental impacts associated with constructing a copper mine at these locations.

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Onsite Alternatives

The applicant evaluated six onsite alternatives for construction of the proposed copper mine. Several elements of the project are common to all alternatives: production rates, processing facility output, types of equipment, mineral processing operations and techniques, general plant site location, surface water management approach, reclamation and closure and access and utility alignments. With regard to the development of the onsite alternatives, the applicant considered various configurations of the largest project structural elements.

The onsite alternatives are listed in the AA as:

- Alternative 1 – Mine Plan of Operations
- Alternative 2 – Alternative Tailings Sequence
- Alternative 3 – Barrel Canyon Only
- Alternative 4 – Barrel Canyon Only, Landforming
- Alternative 5 – Scholefield Tailings
- Alternative 6 – Modified Pit Configuration.

The PN identifies Alternative 3 (Barrel Canyon Only) as the applicant's proposed project, and all on-site alternatives as practicable except for Alternative 6. The AA lists the Alternative 3 direct impacts at 37.7 acres of waters and ~207 acres of associated riparian habitat. The PN states the proposed project would impact 38.6 acres of waters. Average annual stormwater flows in Barrel Canyon will be reduced by 33.8 percent with 100-years flows reduced by 34.9 percent.

Comparing other alternatives presented in the AA, direct impacts to waters vary from 26.5 acres (Alternative 5 - Scholefield Tailings) to 50.5 acres (Alternative 4 - Barrel Canyon Only, Landforming). Average annual stormwater flow reductions to Davidson Canyon vary among the alternatives from 18.4% (Alternative 5 - Scholefield Tailings) to 45.8 % (Alternative 1 - Mine Plan of Operations). On both metrics, Alternative 5 - Scholefield Tailings has the fewest impacts to aquatic resources, although the AA dismisses it due to the loss of Scholefield Spring, one of the only wetlands identified within the project site. Yet, the Biological Resources section of the DEIS under *Impacts Common To All Action Alternatives* states:

> "Springs would be impacted by surface disturbance and by drawdown in the regional aquifer. Specifically, impacts to Scholefield No. 1 and Fig Tree springs are likely to occur within the active life of the mine as a result of drawdown in the regional aquifer. Riparian vegetation associated with these springs likely would be lost completely; WestLand Resources estimates approximately 0.8 acre of riparian habitat are associated with these springs (WestLand Resources Inc. 2010d)." (DEIS page 388).

The AA goes on to state that under Alternative 5 - Scholefield Tailings, major drainages remaining open would degrade due to adjacent upland mine operations, yet a functional assessment was not conducted on the project site nor qualitatively or quantitatively presented in the AA or DEIS.

The AA also describes power and water utility alignments impacting up to 0.98 acre of waters, dismissing jack-and-bore technology due to cost and potential for greater environmental impacts to vegetated uplands at the staging area. Based on the information provided to date, the applicant has not demonstrated jack-and-bore technology is more environmentally damaging, or that increased costs render the alternative methods impracticable.

To reduce impacts to waters, additional analysis of onsite alternatives should be conducted. This includes, but is not limited to, the construction of higher waste rock piles, and the potential for partial backfill of the mining pit. Impacts to waters from elements common to onsite alternatives have not been broken down. The EPA recommends a delineation of impacts for each element and a description of avoidance and minimization for these elements (*e.g.,* movement of general plant site location, design of surface water management facilities, primary and secondary access).

Compliance with Other Environmental Standards – 40 CFR 230.10(b)

The Guidelines prohibit any discharge of dredged or fill material if it causes or contributes to violations of an applicable state water quality standard. Based on the information currently available, secondary impacts of the proposed fill discharges would result in significant degradation to outstanding natural resource waters in violation of applicable water quality standards (including anti-degradation policies). Reductions in streamflow, alterations in sediment transport, chemical leaching and groundwater drawdown will degrade water quality (*e.g.,* aquatic wildlife (warmwater) designated uses) and the aquatic ecosystem.

Data provided in the Draft EIS show that modeled water quality for untreated seepage from heap leach exceeds standards for cadmium, fluoride, nickel, and selenium. The modeling also shows that after treatment with an engineered biological system, this seepage would be expected to meets standards. Since the effectiveness of the seepage treatment system is a critical factor in determining whether state standards may be violated by the project, the applicant should provide more information on the engineered biological system that was utilized to model compliance. The modeled results in the EIS suggest concentrations of nickel and selenium well below known instrument detection levels or reduction efficiencies, and thus the EPA is skeptical that the reported efficiencies are scientifically supportable, and concerned that proposed treatments may never perform at the levels necessary to ensure that heap leach drain down does not exceed Arizona Aquifer Water Quality Standards.

Placing detention/retention basins on top of tailings or waste rock also represents a threat to water quality. Contrary to the applicant's stated goal of avoiding infiltration from these basins, such placement would promote infiltration by accumulating any appreciable precipitation into one location where overall evaporation rate is slowed. Even lined basins would create an unnecessary long term maintenance issue that would need to be addressed and paid for post closure.

In addition, the EPA is concerned the synthetic precipitation leaching procedure (SPLP)[36] test results presented in the DEIS may significantly understate the potential for seepage waters to exceed Arizona Aquifer Water Quality Standards. Based on SPLP testing methods, the DEIS concludes that

> "None of the constituents predicted in the waste rock seepage exceed current Arizona Aquifer Water Quality Standards. Arsenic is predicted to exceed the proposed lower arsenic standard of 0.010 milligram per liter" (p. 288).

[36] The SPLP (USEPA Method 1312) was developed to evaluate the fate and transport of metals in an engineered land disposal facility from which municipal solid waste is excluded. USGS modified the procedure to be used to measure fraction that controls rapid leaching. This test provides an indication of extent of leaching of salts and readily dissolvable constituents from dried mine materials. Static tests of this nature provided a preliminary simulation of short-term interaction with rain/snowmelt. These tests do not provide any data regarding when acidification may occur or the rates at which acid generation and neutralization reactions will proceed. As such, they are useful only for screening samples for their potential behavior.

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In EPA's experience, and based on information at other sites, it is highly likely that the ~2,000 acre waste rock pile will produce seepage in an intermittent manner, highly dependent on annual and/or seasonal precipitation cycles. This will result in relatively small amounts of seepage being exposed to large amounts of potential contaminants, leading to leachates of much higher concentration than predicted by SPLP testing methods. Arsenic is present as a contaminant at numerous hardrock sites in the western US and is likely associated with copper mineralization. Because of its relatively high solubility at neutral pH it is often overlooked when focusing on acid rock drainage, and has frequently resulted in concentrations greater than predicted by SPLP tests at other sites.

With regard to selenium, we note that less than doubling of the predicted concentrations (0.036 mg/L) would result in an exceedance of water quality standards (0.05 mg/L). Given the high liquid:solid dilution ratio employed in the SPLP tests performed for the geochemical characterization, the EPA believes that it is highly likely that any seepage produced from waste rock storage facilities would exceed the Arizona Aquifer Water Quality Standard of 0.05 mg/L for selenium. Selenium has been a particular contaminant of concern at other hardrock mine sites in the U.S., is mobilized under neutral conditions similar to arsenic and can result in significant additional reclamation and groundwater remediation costs.

The EPA recommends the applicant explain how static testing methods like SPLP meet the Arizona Department of Environmental Quality's Best Available Demonstrable Control Technology requirements for characterization of mining waste, when it is generally agreed that kinetic testing is the best predictor of long-term water quality. Kinetic test results might form a stronger basis for this analysis, along with methods such as bottle roll leach tests which use a more appropriate 2:1 liquid-to-solid ratio.

At other regional copper porphyry mines (e.g. Sierrita, Mission), adverse water quality impacts have been observed that were not predicted. In addition to baseline site geochemical characterization, we recommend the applicant evaluate regional geochemical site analogs and explain their expectation that the Rosemont mine will have different acid rock drainage and contaminant leaching potential than similar area copper mines.

In addition to considerations related to sediment discussed earlier, even a potential degradation of water quality from arsenic and selenium not exceeding standards could nevertheless be significant. Davidson Canyon and Cienega Creek are OAW (also referred to as Tier III waters under federal anti degradation policy), a status that prohibits any degradation under the law. Arizona's anti degradation rules reinforce this prohibition.[37] Federal anti degradation requirements provide that "water quality shall be maintained and protected" in Tier III waters, and that the water quality in Tier III waters may not be lowered to accommodate economic or social development in the area where the waters are located.[38]

Permitting the proposed project's reduction in stream flows to Davidson Canyon and Cienega Creek, its alteration of sediment transport, groundwater drawdown, and potential contamination of arsenic and selenium would be inconsistent with applicable anti degradation policy because regulatory authorities would have failed to maintain and protect existing water quality in those OAWs. In addition, such significant degradation of the aquatic ecosystem in Outstanding Natural Resource Waters is prohibited by the Guidelines at 40 CFR 230.10(b)(1) and 40 CFR 230.10(c).

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[37] "[d]egradation of an OAW ... is prohibited." ACC R18-11-107

[38] 40 CFR 131.12(a)

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Consistent with Corps regulations and the October 29, 2009 Department of the Army Memorandum regarding Water Quality, the EPA believes the likely impacts to water quality detailed above constitute "other water quality aspects" under 33 CFR 320.4(d) that should be specifically evaluated by the Corps during review of the application. This is particularly important given the potential impacts to OAW, which must be protected from any degradation in water quality.

The Guidelines also state no discharge of dredged or fill material shall be permitted if it jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973. Currently, there is insufficient information to assess the effect of the proposed project on ten federally listed species known to occur within or adjacent to the project site, but potentially significant adverse impacts are reasonably foreseeable. The applicant has not prepared a BA, and thus the USFWS has not yet initiated formal consultation with the USFS to determine the affects of the proposed project on listed species. Therefore, a determination cannot be made whether the project complies with this restriction under the Guidelines.

Significant Degradation – 40 CFR 230.10(c)

Pursuant to the Guidelines, no discharge of dredged or fill material can be permitted which will cause or contribute to significant degradation of waters of the United States. Based on the information currently available and detailed in Section III of this letter, the EPA believes the project, as proposed, will result in significant degradation under the following criteria outlined in regulation:

- Significant adverse effects to water circulation and fluctuation;
- Significant adverse effects to aquatic organisms due to suspended sediments and turbidity;
- Potential arsenic and selenium contamination from seepage waters to downstream waters;
- Significant direct and secondary effects on the structure and function of the aquatic ecosystem and organisms;
- Significant cumulative effects on waters within the 145,000- acre project analysis area;
- Significant secondary effects on the aquatic ecosystem.

Avoidance, Minimization, and Compensation-- 40 CFR 230.10(d)

No discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. For unavoidable impacts that remain, the applicant is required to comply with "Final Rule for Compensatory Mitigation for Losses of Aquatic Resources" (40 CFR Part 230 Subpart J).

Currently, there are no mitigation banks or in-lieu fee programs available to the applicant as compensation for unavoidable impacts to waters. According to the PN, the applicant is evaluating the potential for contiguous offsite Rosemont-owned parcels to offer compensatory mitigation, but no mitigation plan has been submitted. Rosemont anticipates mitigation credit for these parcels will be available through preservation with either a restrictive covenant or conservation easement placed over the mitigation lands. Rosemont is also evaluating offsite parcels within the Santa Cruz River watershed for preservation or restoration of surface water resources. Information provided to date by the applicant is insufficient to demonstrate their mitigation proposal meets the restrictions on discharge required by the guidelines at 40 CFR 230.10(d) and 40 CFR 230.12(a)(3)(iv).

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VI. Conclusion

When considered together, the direct and secondary impacts from discharges of dredged or fill material from the proposed project likely will cause or contribute to significant degradation of waters of the United States. The EPA has reached this conclusion based on the information currently available to us from the Corps PN and the Forest Service's DEIS, assessing the factual determinations required under the Guidelines by Subparts B and G, and consideration of Subparts C-F, with special emphasis on the persistence and permanence of the direct and secondary effects outlined in these subparts. Under these Guidelines we have considered individually and collectively the direct and secondary effects from discharges associated with the proposed project to waters of the United States contributing to significant degradation.

The proposed project will likely result in significant adverse effects: (1) to fish, wildlife and special aquatic sites; (2) on life history stages of aquatic life and other wildlife dependent on aquatic ecosystems; and (3) on aquatic ecosystem diversity, productivity, and stability, through the loss of fish and wildlife habitat.[39] This includes significant adverse effects on the physical, chemical, and biological components of the aquatic environment, including the following factual determinations as required under EPA's 404(b)(1) Guidelines.[40]

- *Water circulation and fluctuation determinations.* The proposed project will have significant adverse effects on downstream flows and normal surface and groundwater fluctuations through the direct discharge of fill material and through secondary impacts resulting from groundwater drawdown. The discharge of fill material will divert and obstruct the natural flow patterns of at least 18 miles of stream channel. The discharge of fill material will alter the bottom contours of these 38.6 acres of waters, resulting in significant downstream changes in the hydrology and hydraulics of high functioning receiving waters.

- *Suspended particulate/turbidity determinations.* Secondary effects from increased scour will likely result in significant changes to water quality by increasing total suspended sediment and turbidity in surface water flows. Elevated levels of suspended sediment or moderate-to-high turbidity will likely have significant adverse effects on aquatic organisms in Davidson Canyon and Cienega Creek. Increased suspended sediment and turbidity will have the potential to smother aquatic organisms as sediments settle out. Increases in turbidity can be expected to disrupt the feeding, movement, spawning, and rearing of aquatic organisms such as native fish and amphibians.

- *Contaminant determinations.* Based on our evaluation of the SPLP test results, the EPA believes the proposed project has a high likelihood of potential arsenic and selenium contamination from seepage waters to downstream waters.

- *Aquatic ecosystem and organism determinations.* The proposed discharge will have significant direct and secondary effects on the structure and function of the aquatic ecosystem and organisms. Adverse effects to the life stages of aquatic life and other wildlife dependent on aquatic ecosystems will occur largely through changes associated with the direct fill of 38.6 acres of waters and the potential adverse secondary effects to 1,364 acres of riparian habitat, including jurisdictional wetlands and other aquatic habitats. Secondary effects to high

[39] 40 CFR §230.10(c)(1-3).
[40] 40 CFR §230.11(a-h).

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functioning downstream waters will accrue primarily from reductions in surface water flows and the drawdown of groundwater related to excavation of a large mining pit and from the burying of 18 miles of stream channel that normally functions to deliver surface water and recharge groundwater. Groundwater drawdown will result in changes to the downstream water table, thereby negatively affecting water currents, circulation, and fluctuation with negative effects on aquatic organisms such as indigenous fish, amphibians, and riparian wetland species.

- *Determination of cumulative effects on the aquatic ecosystem.* Less than 1 percent of Arizona's landscape is wetland. Since the late 1800's, streams and wetlands throughout Arizona have been modified or drained, resulting in the loss of more than one-third of the State's original wetlands.[41] This project will exacerbate the reasonably foreseeable impacts on aquatic resources contributing to the significant cumulative loss of wetlands in Arizona.

- *Determination of secondary effects on the aquatic ecosystem.* Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of fill material, but do not result from the actual placement of the fill material. The proposed project will have significant adverse secondary impacts primarily to receiving waters. These impacts are related primarily to the reductions in surface flows and groundwater drawdown that result in significant adverse impacts to fish and wildlife dependent on healthy wetlands, streams (including pools and riffle sequences) with sufficient flows, and sanctuaries and refuges, for their survival.

- *Water-related recreation and aesthetics.* The proposed project will impair activities undertaken for amusement and relaxation such as canoeing, sightseeing and hiking, and these impacts will persist for at least a quarter century. The loss of values for consideration includes impairment of natural resources which support recreation activities (*e.g,* degradation of habitat). Aesthetics of the aquatic ecosystem apply to the quality of life enjoyed by the general public and property owners. Loss of value to consider includes creating distracting disposal sites and destroying vital elements that contribute to the compositional harmony or unity, visual distinctiveness, or diversity of an area. The project area is an important location for outdoor recreation. A study conducted by the Sonoran Institute shows that approximately $2.95 billion is spent annually for tourism and outdoor recreational activities in Pima and Santa Cruz Counties. Their analysis states that if the proposed project displaces only one percent of travel and tourism-related spending in the region, the economic loss would be greater than the entire annual payroll of the mine.[42]

Based on the information currently available to the EPA, the proposed discharge does not appear to comply with the substantive requirements in the regulations at 40 CFR 230.10 (a) – (d). The EPA believes that the proposed project will result in significant degradation to waters of the U.S. which constitutes substantial and unacceptable impacts to aquatic resources of national importance, including the "Outstanding Waters" of Davidson Canyon and Cienega Creek.

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[41] http://pubs.usgs.gov/wsp2425/state_highlights_summary.html

[42] J.E. Marlow. 2007. Mining's Potential Economic Impacts in the Santa Rita and Patagonia Mountains Region of Southeastern Arizona. Sonoran Institute Study.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JAN 05 2012

Colonel R. Mark Toy
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
Attn: Regulatory Branch (SPL-2004-01399-MB)
5205 E. Comanche Street
Tucson, Arizona 85707

Subject: Public Notice (PN) 2008-00816-MB for the proposed Rosemont Copper Mine Project, Rosemont Copper Company, Pima County, Arizona

Dear Colonel Toy:

We have reviewed the December 6, 2011 PN describing the proposed Rosemont Copper Mine Project (Rosemont) located 30 miles southeast of Tucson in Pima County, Arizona. According to the PN, the project would eliminate 38.6 acres of waters of the U.S. (waters) tributary to Davidson Canyon and Cienega creek, both designated as "Outstanding Waters" by the state of Arizona. In 2009, EPA worked closely with your staff regarding the ecosystem functions and services in this watershed, and we identified these waters as "aquatic resources of national importance." With the following comments, we reaffirm this resource designation and respectfully identify the Rosemont permit action as a candidate for review by EPA and Corps headquarters.[i]

EPA is concerned that substantial loss and/or degradation of water quality and other aquatic ecosystem functions is likely if this 4,200-acre mine is constructed and operated as proposed, in the 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. Seven federally listed endangered or threatened species occur within or adjacent to the project area to which adverse impacts are reasonably foreseeable.[ii]

Corps regulations prohibit issuance of a 404 permit if it would jeopardize the continued existence of listed species, or result in violation of water quality or toxic effluent standard (40 CFR 230.10(b)). In addition, pursuant to Section 303 of the Clean Water Act (CWA) and regulations at 40 CFR 131.12, the state's "Outstanding Water" designation means both Davidson Canyon Wash and Cienega Creek must be afforded the highest level of protection, and that no degradation of water quality is allowable.

Only discharges meeting all of EPA's 404(b)(1) Guidelines – a series of independent tests at 40 CFR 230 including the analysis of practicable offsite and onsite alternatives – can be permitted by the Corps. The 404 program contributes to the CWA goals to restore and maintain the chemical, physical and biological integrity of the nation's waters by prohibiting discharges of dredged or fill material that would result in avoidable adverse impacts to the aquatic ecosystem (40 CFR 230.10(a)), or the

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significant degradation of waters or human health and welfare (e.g., due to groundwater depletion and loss of cultural resources; 40 CFR 230.10(c)). Based on our review of the PN and the alternatives analysis submitted by the applicant, compliance with the 404(b)(1) Guidelines has not been demonstrated. There is presently insufficient information to conclude that the proposed project is the "Least Environmentally Damaging Practicable Alternative" (LEDPA), or meets any of the other restrictions on discharges, including the need to ensure appropriate compensatory mitigation for unavoidable impacts.

As additional information on this project becomes available, please ask your staff to contact Elizabeth Goldmann at (415) 972-3398 to continue our partnership in ensuring CWA compliance. If you would like to discuss this project personally, please call me at (415) 972-3572 or have your Regulatory Division Chief contact Jason Brush, Supervisor of our Wetlands Office, at (415) 972-3483.

Sincerely,

Alexis Strauss 5 Jan. 2012

Alexis Strauss
Director
Water Division

cc: Rosemont Copper Company
USFWS, Phoenix
USFWS, Tucson
M. Fulton, ADEQ
ADGF, Phoenix

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[i] This letter follows field level procedures outlined in the 1992 Memorandum of Agreement between EPA and the Department of the Army, Part IV, paragraph 3(a) regarding section 404(q) of the CWA. EPA Region 9 believes the project as proposed "may result in substantial and unacceptable impacts to aquatic resources of national importance."

[ii] This includes species known to occur in aquatic habitat or use these waters for forage or resting: Chiricahua leopard frog (*Lithobates chiricahuensis*), Mexican spotted owl (*Strix occidentalis lucida*), Southerwester willow flycatcher (*Empidonax traillii extimus*), Lesser long-nosed bat (*Leptonycteris yerbabuenae*), Ocelot (*Leopardus pardalis*), Gila chub (*Gila intermedia*), Gila topminnow (*Poeciliopsis occidentialis occidentalis*), and Jacquar (*Panthera onca*).

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Table 2. Rosemont Project Feature Direct Impacts and Volume of Fill

Project Feature	Impact Type/Fill Type	Fill Amount (cubic yards)	Permanent Impact to Waters (acres)	Temporary Impacts to Waters (acres)
MINE PIT	Blasting and Excavation/None	0	4.40	0
LEACH PAD	Grading/Native Material	1,839	0.76	0
Stormwater and PLS Pond	Grading/Native Material	774	0.32	0
WASTE ROCK	Excavated Waste Rock/ ROM Rock	19,941	8.24	0
DRY STACK TAILINGS	Excavated Waste Rock/Selected ROM Rock	66,792	20.70	0
SURFACE WATER MANAGEMENT				
Pit Diversion Channel	Construction Fill /Native Material and Rock Fill	210	0.13	0
Compliance Point Dam	Minor dam construction / Native Material and Rock Fill	581	0.18	0
PLANT SITE				
PWTS Pond and Settling Basin	Grading, Pond Preparation/Native Material and Rock Fill	613	0.38	0
Crusher Stormwater Pond	Grading, Pond Preparation/Native Material and Rock Fill	532	0.22	0
Regrading and Pad Construction	Grading/Native Material	4,040	1.76	0
HAUL ROAD CROSSINGS				
Pit Diversion Channel Haul Road	Road Construction/ROM Waste Rock	226	0.14	0
Leach Pad Haul Road	Road Construction/ROM Waste Rock	726	0.30	0
Crusher Haul Road	Road Construction/ROM Waste Rock	363	0.15	0
ACCESS ROAD CROSSINGS				
Culvert C1	Triple Con-Arch/Native Material and Rock Fill	532	0.22	0
Culvert C2	Culvert/Native Material and Rock Fill	452	0.28	0
Culvert C3	Culvert/Native Material and Rock Fill	282	0.07	0
Culvert C4	Culvert/Native Material and Rock Fill	323	0.08	0
Culvert C5	Culvert/Native Material and Rock Fill	242	0.06	0
OFFSITE WATER LINE				
Water Line Crossings	Trenching, sidecast, temporary road access/ Native Material, Riprap, Pipe Bedding	320	0.10	0.50
Bedrock Crossings	General Grading/Native Rock and Fill and Concrete	480	0.10	0
OFFSITE TRANSMISSION LINE				
Utility Pole Construction	Utility Pole Installation/Native Material and Concrete	75	0.05	0
Road Access for Utility Pole Construction	Ramp Access/Native Material	0	0	0.25
	TOTAL	**99,343**	**38.6**	**0.75**

Additional Project Information

For purposes of the Section 404(b)(1) alternatives analysis, the basic project purpose of the proposed Rosemont Copper Project is copper mining, which is not water dependent. The overall project purpose of the proposed Rosemont Copper Project is to develop the mineral resources associated with an ore deposit in southeastern

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To: Rader, Cliff[Rader.Cliff@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]
From: Kaiser, Russell
Sent: Tue 12/3/2013 3:44:30 PM
Subject: RE: Rosemont: Forest Service posted FEIS on website

Thanks Cliff

Russell L. Kaiser

Chief, Wetlands & Aquatic Resources Regulatory Branch

1301 Constitution Ave., N.W.

Room 7217M West Bldg.

Washington, DC 20004

P: 202.566.0963

From: Rader, Cliff
Sent: Monday, December 02, 2013 1:58 PM
To: Miller, Clay; Kaiser, Russell
Subject: FW: Rosemont: Forest Service posted FEIS on website

From: Goforth, Kathleen
Sent: Monday, December 02, 2013 1:23 PM
To: Scott, Jeff; Rader, Cliff; Herrera, Angeles; Diamond, Jane; McKaughan, Colleen
Cc: Brush, Jason; Maier, Brent; Stollman, Scott
Subject: Rosemont: Forest Service posted FEIS on website

Carter checked the Forest Service's website this morning and found that they posted the Rosemont FEIS on Friday. We knew they had been targeting the end of November for website posting, but recent

discussions had raised the possibility that that might not occur. Forest Service did not contact us in advance. The website says that the official objections period will not begin until the FEIS notice appears in the Federal Register, but it gives no indication of when that notice is expected to be published. Carter is in the process of reviewing the news articles linked below. **Ex. 5 - Deliberative Process**

Ex. 5 - Deliberative Process

-Kathy

Kathleen Martyn Goforth, Manager

Environmental Review Office (CED-2)

U.S. EPA, Region IX

75 Hawthorne Street

San Francisco, CA 94105

415-972-3521

From: Leidy, Robert
Sent: Monday, December 02, 2013 9:04 AM
To: Goldmann, Elizabeth; Brush, Jason; Jessop, Carter; Goforth, Kathleen; Herrera, Angeles
Subject: FW: Rosemont Mine Final EIS articles

From: Drobka, Diane [mailto:ddrobka@blm.gov]
Sent: Sunday, December 01, 2013 3:01 PM
To: Viola Hillman; Daniel Moore; Timothy Shannon; Dennis Sylvia; Karen Simms; Jeffrey Simms; Ben Lomeli; Colleen Hickman; Julie Decker
Subject: Rosemont Mine Final EIS articles

Arizona Daily Star November 30

http://azstarnet.com/news/local/govt-and-politics/move-afoot-to-move-green-valley-rosemont-mine-to-santa/article_c0cbef8f-f635-52e5-b238-2cd181e150f9.html

Arizona Daily Star November 29

http://azstarnet.com/news/local/latest-rosemont-mine-report-is-out/article_85653c44-592e-11e3-b6c4-0019bb2963f4.html

Arizona Daily Star November 29

http://azstarnet.com/business/national-and-international/rosemont-meets-almost-all-environmental-laws-final-federal-report-says/article_6b51204c-49d8-55df-a78b-bae973f2e03c.html

Green Valley News and Sun November 30

http://www.gvnews.com/news/local/forest-service-report-points-to-likely-approval-for-rosemont-mine/article_4fc5d680-59eb-11e3-bb20-001a4bcf887a.html

KPHO, Phoenix

http://www.kpho.com/story/24102098/us-forest-services-releases-report-on-arizona-mine

Inside Tucson Business November 29

http://www.insidetucsonbusiness.com/blogs/forest-services-publishes-final-rosemont-environmental-impact-statement/article_08925ab2-592e-11e3-9469-0019bb2963f4.html

San Francisco Chronicle November 30

http://www.sfgate.com/news/science/article/US-Forest-Services-releases-report-on-Arizona-mine-5024218.php

The Republic (Ohio) November 30

http://www.therepublic.com/view/story/c832b6ad53ec4e1fbb01866e
Rosemont-Mine

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Diane Drobka

Public Affairs Specialist

BLM Gila District - Safford/Tucson

928-348-4403

To: Miller, Clay[Miller.Clay@epa.gov]
From: Rader, Cliff
Sent: Mon 12/2/2013 7:39:47 PM
Subject: FW: ROSEMONT: USFS press release re: ROD and Objection period timing for Rosemont (from USFS website)

From: Goforth, Kathleen
Sent: Monday, December 02, 2013 2:37 PM
To: Herrera, Angeles; Rader, Cliff; Hessert, Aimee; Suriano, Elaine; Brush, Jason; McKaughan, Colleen; Bose, Laura; Scott, Jeff
Subject: ROSEMONT: USFS press release re: ROD and Objection period timing for Rosemont (from USFS website)

FYI.

From: Jessop, Carter
Sent: Monday, December 02, 2013 11:24 AM
To: Goforth, Kathleen
Subject: UPDATE- earlier info incorrect -- RE: Specific language re: ROD and Objection period timing for Rosemont (from USFS website)

Hi Kathy,

It appears I wasn't looking at the right spot on the FS website. The summary of the press release does not mention the official opening of the objection period, but the full press release that you are directed to by clicking a link does. The full press release is below (emphasis added). I apologize for the confusion/incomplete information earlier.

-Carter

"Rosemont Copper Project Environmental Analysis Available on Web for Informational Purposes

Date: Wednesday, November 27, 2013

Pre-decisional objection process does not begin until draft Record of Decision released, and legal notice of opportunity to object published in newspaper of record

Tucson, AZ (November 27, 2013) – The Coronado National Forest has announced the completion of the Rosemont Copper Project Final Environmental Impact Statement (FEIS). An informational copy of the FEIS will be posted on the project website, www.RosemontEIS.us, beginning November 29, 2013.

The FEIS is being posted on the Web for informational purposes only--the pre-decisional objection period does NOT begin at this time. Coronado National Forest Supervisor Jim Upchurch requested the FEIS be posted on the Web to allow the public ample time to review the document. As part of the FEIS appendices, the project website links will include the Biological Opinion, the Memorandum of Agreement regarding the adverse effects on historic properties, and the response to comments from the draft EIS public comment period.

The Forest anticipates that on December 13 the Notice of Availability for the FEIS will be published in the Federal Register, which will be the official release of the FEIS. Then, on December 15 a legal notice of the opportunity to object to the proposed project will be published in the newspaper of record (Arizona Daily Star). Publication of the legal notice anticipated on December 15 officially initiates the 45-day objection period to begin on the day after publication. All documents including the draft Record of Decision will be available at that time on the project website, www.RosemontEIS.us.

Information on the objection process is posted on the project website and will be noticed in a future news release."

http://www.rosemonteis.us/announcements/112713

Carter W. Jessop

U.S. EPA, Region 9

Environmental Review Office (CED-2)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3815

jessop.carter@epa.gov

From: Jessop, Carter
Sent: Monday, December 02, 2013 10:45 AM
To: Goforth, Kathleen
Subject: Specific language re: ROD and Objection period timing for Rosemont (from Green Valley News)

I have not seen the press release that this article refers to. None of the other articles mention this press release, but the timing described does sound about right for what we have been led to expect by the FS.

"The Coronado National Forest said in a press release Tuesday that it anticipates that it would publish a notice of availability of the FEIS in the Federal Register on Dec. 13, marking the official release of the FEIS. The Record of Decision will be posted online at that time. On Dec. 15 the agency plans to publish a legal notice of the opportunity to object. Information on the objection process is posted on the website and will be announced in a future news release."

http://www.gvnews.com/news/local/forest-service-report-points-to-likely-approval-for-rosemont-mine/article_4fc5d680-59eb-11e3-bb20-001a4bcf887a.html

Carter W. Jessop

U.S. EPA, Region 9

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75 Hawthorne Street

San Francisco, CA 94105

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jessop.carter@epa.gov

To: Miller, Clay[Miller.Clay@epa.gov]
From: Fertik, Rachel
Sent: Mon 12/2/2013 7:06:05 PM
Subject: RE: Rosemont: Forest Service posted FEIS on website

Thanks. So much for cooperation and coordination.

From: Miller, Clay
Sent: Monday, December 02, 2013 2:04 PM
To: Fertik, Rachel; Evans, David; Best-Wong, Benita; Kaiser, Russell; Pendergast, Jim
Subject: FW: Rosemont: Forest Service posted FEIS on website

Fyi.....

From: Rader, Cliff
Sent: Monday, December 02, 2013 1:58 PM
To: Miller, Clay; Kaiser, Russell
Subject: FW: Rosemont: Forest Service posted FEIS on website

From: Goforth, Kathleen
Sent: Monday, December 02, 2013 1:23 PM
To: Scott, Jeff; Rader, Cliff; Herrera, Angeles; Diamond, Jane; McKaughan, Colleen
Cc: Brush, Jason; Maier, Brent; Stollman, Scott
Subject: Rosemont: Forest Service posted FEIS on website

Carter checked the Forest Service's website this morning and found that they posted the Rosemont FEIS on Friday. We knew they had been targeting the end of November for website posting, but recent discussions had raised the possibility that that might not occur. Forest Service did not contact us in advance. The website says that the official objections period will not begin until the FEIS notice appears in the Federal Register, but it gives no indication of when that notice is expected to be published. Carter is in the process of reviewing the news articles linked below. **Ex. 5 - Deliberative Process**

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

-Kathy

Kathleen Martyn Goforth, Manager

Environmental Review Office (CED-2)

U.S. EPA, Region IX

75 Hawthorne Street

San Francisco, CA 94105

415-972-3521

From: Leidy, Robert
Sent: Monday, December 02, 2013 9:04 AM
To: Goldmann, Elizabeth; Brush, Jason; Jessop, Carter; Goforth, Kathleen; Herrera, Angeles
Subject: FW: Rosemont Mine Final EIS articles

From: Drobka, Diane [mailto:ddrobka@blm.gov]
Sent: Sunday, December 01, 2013 3:01 PM
To: Viola Hillman; Daniel Moore; Timothy Shannon; Dennis Sylvia; Karen Simms; Jeffrey Simms; Ben Lomeli; Colleen Hickman; Julie Decker
Subject: Rosemont Mine Final EIS articles

Arizona Daily Star November 30

http://azstarnet.com/news/local/govt-and-politics/move-afoot-to-move-green-valley-rosemont-mine-to-santa/article_c0cbef8f-f635-52e5-b238-2cd181e150f9.html

Arizona Daily Star November 29

http://azstarnet.com/news/local/latest-rosemont-mine-report-is-out/article_85653c44-592e-11e3-b6c4-0019bb2963f4.html

Arizona Daily Star November 29

http://azstarnet.com/business/national-and-international/rosemont-meets-almost-all-environmental-laws-final-federal-report-says/article_6b51204c-49d8-55df-a78b-bae973f2e03c.html

Green Valley News and Sun November 30

http://www.gvnews.com/news/local/forest-service-report-points-to-likely-approval-for-rosemont-mine/article_4fc5d680-59eb-11e3-bb20-001a4bcf887a.html

KPHO, Phoenix

http://www.kpho.com/story/24102098/us-forest-services-releases-report-on-arizona-mine

Inside Tucson Business November 29

http://www.insidetucsonbusiness.com/blogs/forest-services-publishes-final-rosemont-environmental-impact-statement/article_08925ab2-592e-11e3-9469-0019bb2963f4.html

San Francisco Chronicle November 30

http://www.sfgate.com/news/science/article/US-Forest-Services-releases-report-on-Arizona-mine-5024218.php

The Republic (Ohio) November 30

http://www.therepublic.com/view/story/c832b6ad53ec4e1fbb01866e
Rosemont-Mine

--

Diane Drobka

Public Affairs Specialist

BLM Gila District - Safford/Tucson

928-348-4403

To: Miller, Clay[Miller.Clay@epa.gov]
From: Goldmann, Elizabeth
Sent: Tue 3/15/2016 9:02:06 PM
Subject: groundwater recharge -RM

Groundwater Recharge. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Elizabeth Goldmann

Physical Scientist

U.S. Environmental Protection Agency

75 Hawthorne St. (WTR-2-4)

San Francisco, CA 94105

(415) 972-3398

Goldmann.elizabeth@epa.gov

Ex. 5 - Deliberative Process

To: Gilinsky, Ellen[Gilinsky.Ellen@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]
Cc: Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Dunning, Connell[Dunning.Connell@epa.gov]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]
From: Brush, Jason
Sent: Fri 7/10/2015 5:07:32 PM
Subject: FW: Rosemont DEIS letter
USEPARosemontDEISCommentLetter.pdf

Hi Ellen – In addition to the 3(a)/(b) letters you got from Clay, I'm attaching Jared's 2012 DEIS comment letter, which rates the action EU-3. -Jason

Jason A. Brush
Supervisor, Wetlands Section
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-2-4)
San Francisco, CA 94105
~~~~~~~~~~~~~~~~~~~~~~~~~~
desk: 415.972.3483
~~~~~~~~~~~~~~~~~~~~~~~~~~

From: Connell Dunning [mailto:Dunning.Connell@epamail.epa.gov]
Sent: Friday, July 10, 2015 10:00 AM
To: Brush, Jason; Dunning, Connell
Subject: rosemont DEIS letter

Connell Dunning, U.S. EPA Region IX
Environmental Review Office/Transportation Lead
75 Hawthorne Street, CED-2, San Francisco, CA 94105
415-947-4161
dunning.connell@epa.gov

Learn more about EPA's role in Sustainability:
http://www.epa.gov/Sustainability/
----- Forwarded by Connell Dunning/R9/USEPA/US on 07/10/2015 09:59 AM -----

U.S. EPA Region 9 Environmental Impact Statement System
Project Screen

* Indicates required field. Updated: 10/04/2012 Created: 10/14/2011

Date to Display	Comments to display in the Due Date Calendar

Main ID: 005150
*Type: DEIS
Transportation:
*Project: ROSEMONT COPPER PROJECT, CORONADO NATIONAL FOREST
ERPNO (D/DS/F): AFS-K65425-AZ
County: PIMA
*State: AZ

Priority:
ARRA: (Stimulus Bill)
Lead Agency: AFS

Project Issues:
Miscellaneous: Lead Agency Contact: Bev Everson, 520-388-8300
C Sachs left message 10/27/2011
extention from 1/18 to 2/1/2012 granted 11/22/11
public comment period extend to 2/1/12, EPA-specific extention to 2/22/12 granted 1/23/12
Description:

CEQ#: 20110350
Date Received: 11/03/2011
Letter Date: 02/21/2012

*Reviewer: JESSO
Due Date: 02/22/2012
Status: LTR

Concurred / Non-Concurred Date:

404 History:
Description:
Public Rating: EU3
Archival Storage:
Storage Information:

Date:

Milestone	Date
Input due from Associate Reviewers:	
Draft letter due to ERO Mgr / Team Leader:	
Brief AD:	
Draft letter due to AD:	
Brief DD:	
Draft letter due to DD:	
Brief RA:	
Draft letter due to OFA:	
OFA comments due to ERO:	

Final letter due to RA:	

Attach Comment Letters: *(See attached file: Rosemont Copper Mine DEIS Comment Letter CC List.docx) (See attached file: USEPARosemontDEISCommentLetter.pdf)(See attached file: USEPACommentsRosemontDEIS.docx)*

Attach 309 Measures Forms: *(See attached file: 5150_RosemontCopperDEIS_GPRA.xlsx)*

Attach Federal Register Note: *(See attached file: Rosemont CU.docx) (See attached file: Rosemont Copper Extension.docx)(See attached file: DOC013.pdf)*

Summary Paragraph:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

FEB 21 2012

OFFICE OF THE
REGIONAL ADMINISTRATOR

Jim Upchurch, Forest Supervisor
Coronado National Forest
300 W. Congress Street
Tucson, AZ 85701

Subject: Draft Environmental Impact Statement for the Rosemont Copper Project, Coronado National Forest, Pima County, Arizona [CEQ# 20110350]

Dear Mr. Upchurch:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (Draft EIS) for the Rosemont Copper Mine Project (Project). Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations (40 CFR Parts 1500-1508), and our review authority under Section 309 of the Clean Air Act (CAA). These comments were also prepared under the authority of, and in accordance with, the provisions of the Federal Guidelines (Guidelines) promulgated at 40 CFR 230 under Section 404(b)(1) of the Clean Water Act (CWA). We appreciate the additional time that the Forest Service granted us to complete our review of this complex proposal.

The proposed action would authorize the construction, operation and closure of the Rosemont Copper Mine (Project) on approximately 3,670 acres of National Forest System land, 995 acres of private land owned by Rosemont Copper, 15 acres of Bureau of Land Management administered land, and 75 acres of Arizona State Land Department land. According to the Draft EIS, the Proposed Project and its alternatives (including the preferred alternative) will violate some of the National Ambient Air Quality Standards (NAAQS) for particulate matter of 10 microns or less (PM_{10}), particulate matter of 2.5 microns or less ($PM_{2.5}$), nitrogen dioxide (NO_2), and ozone (O_3). Despite the inclusion of all proposed mitigation into the air quality modeling for the Project, these impacts are projected to remain at levels that are unacceptable in their risk to human health and the environment. Numerous scientific studies have linked particulate pollution exposure to a range of health problems, including premature death, increased hospital and emergency room visits for cardiovascular and respiratory effects, and development of chronic respiratory disease. Likewise, exposure to NO_2 and ozone has been correlated with increased visits to emergency rooms and hospital admissions for respiratory issues, especially asthma. Furthermore, without additional mitigation, these emissions could cause or contribute to non-attainment designations for Pima County. Such a designation would require Pima County to impose air pollution control requirements on other businesses in the County to meet the air quality standard as quickly as possible.

EPA believes that the Proposed Project also represents a threat to the water quality of Davidson Canyon Wash and Cienega Creek. These water bodies are designated as "Outstanding Arizona Waters" by the State of Arizona under Arizona Administrative Code R18-11-112 and must be afforded the highest level of protection, per Section 303 of the Clean Water Act (CWA) and regulations at 40 CFR 131.12. In response to the Army Corps of Engineers (Corps) Public Notice 2008-00816-MB for the proposed Rosemont Copper Mine Project, EPA issued letters on January 5, 2012 and February 13, 2012, identifying these resources as "Aquatic Resources of National Importance" and identifying this permit action as a candidate for EPA and Corps headquarters review on the basis that permit approval will have substantial and unacceptable impacts on aquatic resources of national importance. This parallel process is occurring pursuant to the EPA-Corps Memorandum of Agreement (MOA) for implementing CWA Section 404(q). The Project would include filling between 26.5 and 50.5 acres of jurisdictional Waters that contribute to these Outstanding Waters. According to the DEIS, this would have direct and indirect consequences on water quantity, quality, and habitat. EPA also believes that the water quality analysis presented in the DEIS may underestimate the project's potential to release contaminated drainage into Waters of the US. In addition to these impacts, the proposed project has the potential to result in adverse environmental impacts to tribal and cultural resources, biological resources, and human health and safety.

The Draft EIS does not adequately assess the potentially significant environmental impacts of the proposed Project. The Draft EIS does not support the conclusion that the Project would not result in exceedance of NAAQS and a potential non-attainment designation for the Tucson area. The Draft EIS makes reference to a number of additional mitigation measures that could be applied to reduce air quality impacts; however, in the absence of modeling and quantification of the effectiveness of these measures, EPA cannot determine that they will sufficiently reduce the projected pollutant emissions to meet standards. The Draft EIS also does not support the conclusion that the operation will not violate State or federal water quality standards. We recommend that the discussion regarding potential impacts to surface and ground water quality be expanded and that the full range of reasonably foreseeable scenarios be analyzed. In addition, the Draft EIS states that the Project will result in the loss of multiple tribal sacred sites and historical sites of national importance, including 111 National Register of Historic Places (many of which contain human remains) and an additional 63 sites of tribal significance. Given the impacts to tribal and historical sites, and the significant objections to the project by the Tohono O'odham Nation and other tribes, we recommend further means to mitigate these impacts. Furthermore, EPA believes that the level of detail contained in the Draft EIS in regards to reclamation/closure and long term, post-closure financial assurance is inadequate to meet the requirements of NEPA. These aspects of mine design are essential to determining long term environmental consequences and should, therefore, be considered in detail in the EIS. Finally, the discussion of mitigation and monitoring in the Draft EIS is inadequate and does not support the conclusion that mitigation measures will protect air and water quality.

Further discussion and recommendations regarding the issues that we have identified are provided in the enclosed "Detailed Comments" and the enclosed copy of our February 13, 2012 letter to the Corps of Engineers, which we are hereby incorporating into our comments on the Draft EIS.

Based on the magnitude of the environmental impacts described in the Draft EIS and the significant inadequacies of the document, EPA believes the project should not proceed as proposed, and the information provided in the Draft EIS is inadequate to meet the purposes of NEPA. Accordingly, EPA has rated this Draft EIS as EU-3 – Environmentally Unsatisfactory – Inadequate Information (see

enclosed "Summary of Rating Definitions and Follow-Up Action"). Improved analyses are necessary to ensure that the information in the Draft EIS is adequate to fully inform decision-makers and the public. EPA believes that that the information needed to address the aforementioned inadequacies should be circulated for full public review in a revised or supplemental Draft EIS prior to the issuance of any decision regarding the project. EPA remains available to work with the Forest Service and project proponents to resolve the issues that we have identified. If we cannot resolve these issues in the Final EIS, this matter may be a candidate for referral to the Council on Environmental Quality.

We are available to further discuss all recommendations provided. Please send one hard copy of the Revised or Supplemental EIS and two CD ROM copies to this office at the same time it is officially filed with our Washington D.C. Office. If you have any questions, please contact me at 415-947-8702, or contact Carter Jessop, the lead reviewer for this Project. Carter can be reached at 415-972-3815 or jessop.carter@epa.gov.

Sincerely,

Jared Blumenfeld
Regional Administrator

Enclosures: Summary of EPA Rating Definitions
Detailed Comments
US EPA response to Army Corps of Engineers Public Notice 2008-00816-MB the Proposed Rosemont Mine Project, dated 2/13/2012

Cc:
Colonel R. Mark Toy, District Engineer, Los Angeles District, U.S. Army Corps of Engineers
Steven Spangle, Field Supervisor, Tucson Field Office, United States Fish and Wildlife Service
Brian Bellew, Field Manager, Tucson Field Office, United States Bureau of Land Management
Ned Norris, Jr., Chairman, Tohono O'odham Nation
C.H. Huckelberry, County Administrator, Pima County
Henry R. Darwin, Director, Arizona Department of Environmental Quality
Maria Baier, Land Commissioner, Arizona State Land Department
Josh Avey, Habitat Branch Chief, Arizona Department of Game and Fish

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SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE ROSEMONT COPPER PROJECT, CORONADO NATIONAL FOREST, PIMA COUNTY, AZ, FEBRUARY 22, 2012

Air Quality

Impact on National Ambient Air Quality Standards

The Preferred Action (Alternative 4) and all action alternatives will violate, or risk violation of, the National Ambient Air Quality Standards (NAAQS) for particulate matter of 10 microns or less (PM_{10}), particulate matter of 2.5 microns or less ($PM_{2.5}$), and nitrogen dioxide (NO_2). The Draft EIS states that modeling of the Forest Service's Preferred Alternative (Alternative 4) indicates that maximum predicted ambient concentrations for NO_2 (1-hour), PM_{10} (24-hour) and $PM_{2.5}$ (24-hour) are in violation of the corresponding NAAQS at the project site (p. 187). As described in more detail below, we have also identified issues with the modeling performed for the Proposed Action that may affect these values. With respect to Tucson area air quality, the Draft EIS states, "the higher end of the modeled impacts, compared with the maximum PM_{10} level for the Tucson area in 2008, is consistently within 98 percent of the NAAQS," and one modeled result showed an exceedance of the PM_{10} NAAQS (p. 186-87). In addition, the maximum background ozone levels for the Tucson area are already elevated at 0.074 parts per million, or 99% of the NAAQS. (p.186) The Draft EIS states that any of the action alternatives could increase Pima County NO_x concentrations by approximately 5 percent. This pollutant, acting as a key ozone precursor, could increase ozone concentrations in the region. Thus, the project may contribute to potential NAAQS violations in the Tucson area for these pollutants.[1] According to the Draft EIS at p. 200, all modeled air quality impacts account for the application of mitigation measures identified on pages 196-200. Considering the above discussion, it is therefore apparent that these mitigation measures are inadequate to prevent NAAQS violation. For each action alternative, the Draft EIS states that compliance with the NAAQS may be achieved with additional mitigation in the form of changes to the perimeter fencing, the project boundary or additional control measures for haul roads; however the Draft EIS does not provide any commitments to such measures nor any details to allow assessment of their likely impacts or effectiveness.

Recommendations:

- Analyze additional mitigation measures, including, but not limited to those referenced in the Draft EIS as "currently being evaluated," to reduce air pollutant emissions to levels below the NAAQS. Fully describe and discuss these measures in the Revised or Supplemental DEIS, and include the modeling results to support the emissions projections.
- The Revised or Supplemental Draft EIS should discuss the adequacy and practical applications of the mitigation measures, and disclose the requirements of the Air Permit for this project. For example, the original air permit application suggested that control equipment such as a baghouse, and control technologies such as electrostatic precipitation and dust collector could be used. However, these were not identified as committed measures in the Draft EIS.

[1] A more in depth analysis would be necessary to determine the exact expected NOx increase (for this and other cases) and if that impact would indeed violate the ozone NAAQS. (Note: the magnitude and location of the project's NOx emissions relative to other precursors and meteorology would need to be considered. We also cannot assume that the project's greatest contributions to ozone levels will occur at the site of the highest monitor on the highest monitored days.)

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- The Revised or Supplemental DEIS should disclose any impacts of the air quality mitigation measures on other resources. For example, if changes to the project boundary could alter the project's impacts on water resources, such impacts should be discussed.

EPA notes that Pima County denied the proponent's application for a permit under the Clean Air Act on September 28, 2011. The Draft EIS makes frequent reference to the Air Quality Permit that Pima County, Department of Environmental Protection (Pima County DEQ) would issue for the Rosemont Project. The Draft EIS relies upon the Air Permit application (and Mine Plan of Operations) as the reference from which the proposed air quality mitigation measures have been determined.

> **Recommendations:** The Revised or Supplemental Draft EIS should discuss the status of the Air Permit application, the reasons for its denial by Pima County DEQ, and the implications of that denial for the Project. The Forest Service should consider incorporating additional mitigation measures directly into the Revised or Supplemental Draft EIS rather than relying on references to the Air Permit application.

The Draft EIS does not consider the ramifications of a possible NAAQS violation and non-attainment designation to Pima County. If the area violates a NAAQS, Pima County, or a portion thereof, could be designated as nonattainment for that pollutant. Such a designation would trigger Clean Air Act requirements for a State Implementation Plan for the nonattainment area, with controls on all significant sources of that pollutant. This would result in widespread effects on actions to be taken in the region, not just the Rosemont Mine. Nonattainment designations for NAAQS would lead to requirements for County and State NAAQS attainment plans; higher costs for communities, industries and businesses; and more stringent regulations.

> **Recommendations**: The Revised or Supplemental Draft EIS should include a detailed discussion of the potential for and ramifications of putting Pima County, or a portion thereof, into non-attainment for any criteria pollutant. The social and economic implications of such action should be considered and discussed, including the implications of what PM_{10}, $PM_{2.5}$, NO_2, and ozone nonattainment designations would have on the Tucson and Saguaro National Park East areas.

The Draft EIS does not provide sufficient justification for the use of 33.0 $\mu g/m^3$ as the background 24-hour PM_{10} concentration. In determining the 24-hour PM_{10} background concentration, EPA believes that while it may be appropriate to exclude the 71 µg/m3 value on the basis that it appears to be a statistical outlier, additional justification should be provided in the EIS for doing so. In addition, the Draft EIS relies on the average of concentration values from multiple years (33.0 µg/m3).The 40.3 µg/m3 value would seem a more reasonable concentration to use as it is an actual observed value and represents a more appropriately conservative approach. We also note that EPA guidance also allows for the use of different concentrations for different categories of meteorological conditions, such as stability and wind direction, so that the single high background value is not applied for all hours (40 CFR Part 51 Appendix W, "Guideline on Air Quality Models", section 8.2).

> **Recommendations**: The Revised or Supplemental Draft EIS should discuss the rationale for using the 33.0 $\mu g/m^3$ average value as the background concentration level. Unless a sufficient justification can be identified for the use of this value, EPA believes that the Draft EIS should revert to the 40.3 µg/m3 concentration in order to reflect a conservative, real world condition.

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No rationale is provided for the scenario used for the NO_2 modeling. According to the Draft EIS, the modeled NO_2 emissions projections rely upon modeling scenarios that utilize an NO_2 to NO_x ratio of 0.1 and 0.05. These ratios are much lower than the generally accepted NO_2 to NO_x default value of 0.50. The Draft EIS states that the NO_2 impacts under scenario 2, which utilized the generally accepted default ratio of 0.50 for NO_2:NO_x were not analyzed. EPA's AERMOD guidance recommends the use of a 0.50 ratio in the absence of more appropriate source-specific information.[2] In addition, modeling results for scenario 3 indicate that the 1-hour NO_2 NAAQS would be exceeded at the project site, whereas results from scenario 4 indicate compliance with the 1-hour NO_2 NAAQS. The Draft EIS fails to explain why it considers one scenario to be more representative than the other in predicting accurate NO_x emissions.

> **Recommendations**: In the absence of more source-specific NO_2:NO_x ratios, scenario 2 should be the primary modeling scenario because it uses the accepted default value. Modeling reflecting scenario 2 should be performed and the results made available and analyzed in the Revised or Supplemental Draft EIS.

Impacts on Class 1 Areas

The Draft EIS indicates that the Proposed Action and the action alternatives would have significant visibility impacts on six Class I areas, including: Saguaro National Park East, Saguaro National Park West, Chiricahua Wilderness Area, Chiricahua National Monument, Galiuro Wilderness Area, and Superstition Wilderness Area. According to the Draft EIS (p. 200), the modeling and analysis contained in the Draft EIS already incorporate all proposed mitigations; therefore, the mitigation efforts proposed thus far for the protection of Class 1 areas are not adequate. To date, EPA believes that the actions taken by the State of Arizona to protect visibility in Class I areas have not been as successful as is needed to achieve long-term visibility maintenance. Additional contributions by the Rosemont project would exacerbate this issue. The Draft EIS also states that the maximum annual average deposition for nitrogen exceeds the Deposition Analysis Threshold at Saguaro National Park West and Galiuro Wilderness Area that would trigger management concerns, but does not identify what would constitute applicable adverse impact thresholds (p.195). Lastly, the EPA notes that the Draft EIS omits mention of two existing sources that impact visibility in Class I areas: Arizona Portland Cement in Rillito and the H. Wilson Sundt Generation Station in Tucson. This project represents a source of cumulative impacts to visibility and should be considered as such.

> **Recommendations**:
> - The Revised or Supplemental Draft EIS should include and discuss far-field CALPUFF modeling results for each action alternative. We recommend presenting this information in a format similar to that of Table 45 on page 194.
> - The Revised or Supplemental Draft EIS should discuss the thresholds for adverse impacts (above which it would be implied that the impacts were adverse) for nitrogen deposition at Saguaro National Part West and Galiuro Wilderness Area, and the implications of exceeding those thresholds. It should also discuss whether further mitigation measures could be applied to address these impacts.

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[2] For both the OLM and PVMRM NO-to-NO2 conversion methods in AERMOD, EPA recommends: "General acceptance of 0.50 as a default in-stack ratio of NO2/NOx for input to the PVMRM and OLM options within AERMOD, in the absence of more appropriate source-specific information on in-stack ratios." ("Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard", Memorandum from Tyler Fox, EPA Air Quality Modeling Group to EPA Regional Air Division Directors, March 1, 2011, p.5).

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- The Revised or Supplemental Draft EIS should consider Arizona Portland Cement in Rillito and H. Wilson Sundt Generation Station as contributors to the cumulative deterioration of visibility in Class I areas.

Effectiveness of Proposed Air Quality Mitigation Measures

In regards to particulate emissions, the Draft EIS relies upon the implementation of the minimum statutory requirements, rather than the maximum practicable applications.

Recommendations:

- The level of effectiveness of the proposed mitigation measures should be evaluated individually to allow an understanding of each alternative's effectiveness in controlling fugitive particulate matter emissions that might not be addressed by the air permitting process (e.g., from the tailings area).
- A monitoring and enforcement program should be identified and adopted, where applicable, for each mitigation measure.
- The Revised or Supplemental Draft EIS should explain whether all practicable means to avoid or minimize environmental harm from the alternatives have been adopted, and if not, why they were not.
- In the mitigation measures applicable to the particulate emissions from dry stack tailings, the Revised or Supplemental Draft EIS should identify procedures and criteria by which the plans would be approved or evaluated to ensure that the design of the buttresses at the tailings area would be practicable and adequate in order to "break up air flow" to mitigate or avoid "exposure of the area to windy conditions." Also, please clarify the proper moisture content to ensure that dust generation would be abated; the methods by which binder material and agglomeration chemicals would be applied to the surface of tailings to minimize particulate emissions; and the adequacy of the amounts of such materials and chemicals that would be applied.
- Consider whether Tier 4 cleaner-burning diesel engines would be a proper mitigation measure to reduce engine emissions, e.g. emissions from haul trucks, as Tier 4 engines are commercially available.

Public Health and Safety

The modeling data contained in the Draft EIS suggests that the Project represents a risk to human health as a consequence of exceedance of NAAQS standards. Any modeled concentration exceeding the level of the NAAQS represents a risk to human health and welfare. The Draft EIS states, however, that air quality impacts resulting from the project do not represent a public health threat (p. xxvi). As cited on page 173 of the DEIS, numerous scientific studies have identified a link between particulate pollution exposure and a range of health problems, including decreased lung function, aggravated asthma, heart attack, and premature death in individuals with heart or lung disease. Likewise, exposure to NO_2 has been correlated with increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma. Please refer to EPA's website for additional information on the human health impacts associated with exposure to adverse air quality conditions (http://www.epa.gov/airquality/urbanair/).

Finally, according to U.S. Department of Health and Human Services, Health Resources and Services Administration at http://www.hrsa.gov/, many of the regions within Pima County are designated as

Health Professional Shortage Areas (HPSA). Consequently, some of those individuals impacted by the air emissions associated with this project will not have access to the medical care they require in order to adequately manage their health.

Recommendations: The Revised or Supplemental DEIS should:

- Be revised to reflect the potential health hazards posed by exceedance or near exceedance of the NAAQS.
- Include an assessment of the potential human health risks associated with the incremental contribution of the Rosemont Copper project to regional air quality.
- Address and discuss mortality and morbidity levels that may be associated with that incremental increase and the adverse economic impact of the healthcare costs associated.
- Discuss whether the project occurs in an HPSA or Medically Underserved Area (MUA) and the extent to which a lack of access to medical care may further exacerbate potential health impacts.
- Identify mitigation measures to minimize the Project's impacts on public health and safety due to air pollutant emissions.

Geochemistry and Water Quality

Potential to produce seepage

Based upon the information contained in the Draft EIS, EPA believes that the project may pose a risk to both ground and surface water quality as a consequence of possible seepage from mine facilities. Although the Draft EIS states that none of the alternatives are expected to result in any seepage that exceeds Arizona Water Quality standards, this determination is not adequately supported in the Draft EIS. The analysis, as described in the DEIS, is not based upon a reasonable assumption in its determination of the project's potential to produce leachate, both in terms of the quantity and the contaminant load of possible seepage. As a result, EPA believes that the analysis employed for this project underestimates the risk to water resources.

The Draft EIS does not support the assumption that meteoric water infiltration and seepage will be negligible. According to the Draft EIS, "Overall, infiltration from precipitation over tailings, waste rock, or the heap leach facility is expected to be negligible. Near-surface storage is expected to be such that any precipitation that does not immediately run off will be stored in the near surface and lost to evaporation or transpiration by vegetation" (p. 287). Given extensive evidence of water infiltration through mine features resulting in seepage at Arizona and New Mexico mine sites that have climatic conditions similar to the Rosemont site, we would expect a similar outcome at Rosemont. EPA has identified the following key issues related to modeling of water infiltration through the mine features:

- In a technical memorandum issued by SRK Consulting on April 30, 2010, entitled "Technical Review of *Infiltration, Seepage, Fate and Transport Modeling Report,* Tetra Tech, 2010, Prepared for Rosemont Copper Company," SRK states, "The transient simulations reported… are one year in duration using average climatic conditions. However, movement of moisture through such materials often takes many years, a reasonable approach would be to conduct the 50-year transient simulations utilizing the entire 50-year climatic data set..." (p. 19) In the November 23, 2010 response to this document prepared by Tetra Tech for the Rosemont Copper Company, EPA was unable to identify where this particular matter was addressed. We concur

with SRK Consulting in their assessment of this issue and believe that the model should be run utilizing the entire 50-year climatic data set without averaging.

- The original *Infiltration, Seepage, Fate and Transport Modeling Report,* Tetra Tech, 2010, prepared for Rosemont Copper Company, states that the average conditions "dataset has small amounts of precipitation everyday because of the averaging of many years of data." (P. 21) Tetra Tech goes on to refer to this approach as "conservative". SRK Consulting subsequently questioned this approach in their April 30, 2010 review memorandum. Tetra Tech (2011) responded that "[t]he average conditions dataset...has precipitation nearly every day of the year. This is not likely to occur in Arizona, but would be a worst case scenario. Water is more likely to readily infiltrate into a facility if the upper surface is wet, so considering a climate conditions with a small amount of precipitation each day would produce such a condition and provide a result of the worst case infiltration" (p. 2). EPA believes that Tetra Tech's observation supports just the opposite of its conclusion. By modeling a small amount of precipitation each day, any excess moisture is rapidly removed by evaporation. However, in reality, precipitation tends to fall in periodic events wherein large volumes of water accumulate and are not always subject to sufficient evaporation before moving through the soil profile. This effect has been demonstrated at various mine sites in the western U.S. and has resulted in a general understanding, not applied in the Rosemont modeling effort, that actual rather than averaged data is critical to accurate assessment of potential for seepage to occur from mine features.
- The modeling employed to predict possible seepage does not address the potential for preferential flow paths to develop through mine features. Preferential flow pathways are typically more likely to be responsible for seepage moving through mine features than the homogenous conditions assumed by the model. Experience at other sites has shown that preferential pathways occur to varying degrees, but are particularly prevalent in waste rock dumps, which are highly heterogeneous. This effect may also occur to varying degrees in tailings and leach piles where the nature of their construction can promote formation of preferential flow even through relatively homogenous material.

Recommendations: The Revised or Supplemental Draft EIS should:

- Explain how predictions of water infiltration at the Rosemont site are determined, including what assumptions were used and how they address the range of climactic conditions that might be expected to occur.
- The hydrological modeling performed for the project should be further conducted to resolve the issues identified above (e.g. climate data for period of record, averaging of data, artificial boundary conditions for water penetration).
- A sensitivity analysis should be performed which allows for variance of key assumptions. The revised or supplemental Draft EIS should incorporate the additional findings and be based upon supportable results from the sensitivity analysis. Any assumption of the presence of seepage should be supported by a 95% confidence level or higher within the sensitivity analysis.

Geochemical Characterization

The Draft EIS does not adequately describe the procedures used and assumptions made in regards to geochemical characterization; nor does it adequately consider the real world implications of laboratory test results. The Draft EIS contains a relatively brief discussion of geochemistry and the geochemical analysis performed for the Rosemont project (intermixed through pages 287-293 and 339-345). In our 7/28/11 comments on the Deliberative Draft EIS, we recommended

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that this discussion be expanded significantly and consolidated into a single section in order to better describe the tests performed and assumptions made in order to reach the conclusions contained in the EIS. EPA finds that the discussion of geochemistry in the Draft EIS is still inadequate.

The geochemical analysis in the Draft EIS relies heavily upon the synthetic precipitation leaching procedure (SPLP). The SPLP (USEPA Method 1312) was developed to evaluate the fate and transport of metals in an engineered land disposal facility from which municipal solid waste is excluded. USGS modified the procedure to be used to measure fraction that controls rapid leaching. SPLP, like all short-term leach tests provides an indication of extent of leaching of salts and readily dissolvable constituents from dried mine materials. Static tests of this nature provide a preliminary simulation of short-term interaction with rain/snowmelt. These tests do not, however, provide any data regarding when acidification may occur or the rates at which acid generation and neutralization reactions will proceed. As such, they are useful only for screening samples for their potential behavior.

Furthermore, the high liquid:solid ratio (20:1) that is used in this method may dramatically underestimate leachability and the contaminant load of potential leachate. In a November 23, 2010 technical memorandum issued by Tetra Tech entitled, "Rosemont Infiltration, Seepage, Fate and Transport Response to Comments", Tetra Tech indicates that "No adjustments were made to the Synthetic Precipitation Leaching Procedure (SPLP) and Meteoric Water Mobility Procedure (MWMP) data prior to using the information in the modeling. There is much debate about the proper scale up methods applied to this type of data, and there is currently not enough information to implement any type of adjustment." (p. 12) Under real world conditions, it is reasonable to anticipate that seepage may occur with far less dilution than employed in the SPLP test, in which case, expected concentrations of constituents such as arsenic and selenium could be many times those predicted by this method.

Recommendations: The Revised or Supplemental Draft EIS should:

- Further describe the SPLP procedure performed. It should be supplemented with a detailed discussion of the results of the kinetic testing performed for the project.
- Include an explanation of how static testing methods like SPLP meet the Arizona Department of Environmental Quality's Best Available Demonstrable Control Technology requirements for characterization of mining waste when it is a generally agreed that kinetic testing is the best method upon which to base any long-term water quality predictions.
- Clearly state that the SPLP test method is intended to predict short-term water quality only, and is not a good predictor of long-term leachate quality unless samples have been aged to allow salt formation to occur prior to testing.
- Examine whether SPLP is the most appropriate geochemical test for determining the mine's potential to produce long term water quality impacts. EPA recommends that the Coronado NF closely consider whether the kinetic test results might form stronger basis for this analysis in the Draft EIS. A more conservative approach for the Rosemont mine should recognize the potential for significant seepage and address mitigation in a pro-active manner.
- Include and evaluate additional tests using methods with a more appropriate liquid:solid ratio, such as bottle roll leach tests using a 2:1 liquid to solid ratio, This is more reflective of limited infiltration rates should be included and evaluated in the Revised or Supplemental EIS in addition to the kinetic test results.

While the Draft EIS contains a lengthy discussion on the geology and mineralogy of deposit (p. 109-136) it provides no mention of comparison to other regional copper deposits to provide for site analogs. Site analogs are an important consideration in the evaluation of acid rock drainage and contaminant

leaching potential. Site analogs are often times are much more predictive of future site conditions at new mines than baseline geochemical characterization methods presently allow.

> **Recommendations**: The Revised or Supplemental Draft EIS should discuss other regional copper deposits as site analogs from the standpoint of geology and geochemistry. The document should also discuss why it expects the Rosemont project to have different results from regional copper porphyry mines (e.g. Sierrita, Mission, etc) where water quality impacts have been observed that likewise were not predicted.

Waste Rock Seepage

The analysis of possible waste rock seepage in the Draft EIS appears to underestimate both seepage volume and the potential water quality impacts that could result. According to the Draft EIS, "No seepage is expected from the waste rock storage areas, although stormwater control basins along the periphery and benches may result in infiltration that may contact waste rock, and very large precipitation events could result in infiltration and seepage" (p. 287). As EPA noted in our 7/28/11 comments on the Deliberative Draft EIS, the use of stormwater retention/detention basins of any sort on top of tailings or waste rock facilities seems directly contradictory to the goal of avoiding water infiltration into these facilities. Such a design feature would seemingly serve to ensure infiltration by accumulating any appreciable precipitation into one location where the overall rate of evaporative loss would be slowed. Even if these basins are to be lined, this design feature would create an unnecessary long term maintenance issue that would need to be addressed and paid for post closure.

> **Recommendations**: EPA recommends that stormwater control structures on and adjacent to waste rock or tailings impoundments be designed in a manner consistent with the stated goal of reducing infiltration into these facilities. The construction of stormwater retention basins of any nature on top of waste rock piles seems imprudent, at best, and should be carefully reconsidered and thoroughly justified if such features are to remain in the project design.

SPLP test results may significantly understate the potential for seepage waters to exceed Arizona Aquifer Water Quality Standards. Based on SPLP testing methods, the Draft EIS concludes that "None of the constituents predicted in the waste rock seepage exceed current Arizona Aquifer Water Quality Standards (AWQS). Arsenic (As) is predicted to exceed the proposed lower arsenic standard of 0.010 milligram per liter" (p. 288). In EPA's experience, and based on information at other sites, it is highly likely that the approximately 2,000 acre waste rock pile will produce seepage in an intermittent manner, highly dependent on annual and/or seasonal precipitation cycles. This will result in relatively small amounts of seepage being exposed to large amounts of potential contaminants, leading to leachates of much higher concentration than predicted by SPLP testing methods. Arsenic is present as a contaminant at numerous hardrock sites in the western US and is likely associated with copper mineralization. Because of its relatively high solubility at neutral pH it is often overlooked when focusing on acid rock drainage, and has frequently resulted in concentrations greater than predicted by SPLP tests at other sites.

It should also be noted that selenium is predicted to be 0.036 milligram per liter, versus the AWQS of 0.05 milligram per liter. Less than doubling of predicted concentration would result in an exceedance of water quality standards for selenium. Given the high liquid:solid dilution ratio employed in the SPLP tests performed for the geochemical characterization, EPA believes that it is highly likely that any seepage produced from waste rock storage facilities would exceed the Arizona Aquifer Water Quality

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Standard of 0.05 mg/L for selenium. Selenium has been a contaminant of concern at other hardrock mine sites in the U.S., is mobilized under neutral conditions similar to arsenic, and can result in significant additional reclamation and groundwater remediation costs.

> **Recommendations**: As previously stated, the analysis in regards to the potential for waste rock seepage should be more conservatively considered. EPA believes that it is appropriate for the Forest Service to require the project proponent to develop a contingency/adaptive management plan that recognizes the potential for various adverse impacts to occur, including release of arsenic to groundwater at concentrations exceeding applicable standards. EPA recommends that a means of mitigating those events be considered as part of the original Plan of Operations. By considering what might be necessary as a contingency measure, it is possible to affect initial designs to more readily, efficiently, and cost effectively mitigate potential future problems.

The Draft EIS does not address actual fate and transport of contaminants from the waste rock pile. The Draft EIS assumes that "Seepage from the waste rock facility is not expected to occur, but in the event it does because of large precipitation events, it is not expected to exceed any numeric Arizona Aquifer Water Quality Standards" (p. 290). As previously stated, EPA does not agree with this conclusion and believes it is based upon an analysis that is not appropriately conservative in its assumptions and conclusions.

> **Recommendations**: The Revised or Supplemental Draft EIS should recognize that this seepage has to potential to exceed selenium, arsenic and other water quality standards. Accordingly, the document should discuss the fate and transport of these contaminants, their potential downstream effects, how these effects would be mitigated, and the expected effectiveness of any such mitigation.

Tailings Predicted Seepage

The analysis of tailings seepage in the Draft EIS appears to underestimate both seepage volume and the potential water quality impacts that could result. According to the Draft EIS, "Seepage from the tailings stack will develop as a result of the loss of the pore water present during stacking. Seepage from the tailings facility is estimated to rise to 8.4 gallons per minute (gpm) over the active life of the mine, ...reaching zero seepage approximately 500 years after closure." The Draft EIS also indicates that, based on synthetic precipitation leaching procedure (SPLP) tests, the predicted water quality for seepage from tailings is not expected to exceed applicable standards (p. 287). EPA disagrees with these conclusions. Firstly, the Draft EIS appears to again understate the project's potential to produce seepage. For example, if it is assumed that overall infiltration of precipitation equals 0.25 inches on an annual basis, then for an 870 acre tailings facility footprint such as described in the document, this would equate to 11.2 gpm, rather than the 8.4 gpm referenced in the Draft EIS.[3] Secondly, as discussed above, SPLP measures readily soluble components of mine wastes. SPLP does not provide the type of long-term leach rate data necessary to conservatively make this determination.

> **Recommendations**: The Revised or Supplemental Draft EIS should:
> - Further evaluate infiltration/seepage rates and include conservatively predicted values. A more conservative approach would recognize the potential for significant seepage and addresses mitigation in a pro-active manner.

[3] (0.25 inch/yr x ft/12 inch x 870 acres x 43560 ft2/acre x 7.48 gallons/ft3 x yr/365 days x day/24 hr x hr/60 min)

- Include and evaluate kinetic testing and additional tests using methods with a more appropriate liquid:solid ratio, such as bottle roll leach tests using a 2:1 liquid to solid ratio that is more reflective of limited infiltration rates.
- Include kinetic testing for the project and provide a more detailed discussion of the results.

Heap Leach

The analysis of heap leach seepage in the Draft EIS does not include an adequate discussion of the risks of employing an essentially untested design strategy (complete encapsulation in waste rock), nor does it adequately disclose the design or effectiveness of drain-down control methods. According to the Draft EIS, "Seepage from the heap leach facility will be present and collected during the leaching process, which is expected to take approximately 6 years. Seepage will also be present and collected approximately 3 years after cessation of leaching, at which time the heap leach facility will be closed and encapsulated with waste rock. At the time of closure, seepage from the heap leach facility is estimated to be approximately 10 gallons per minute. Modeling indicates that heap leach seepage will decrease to 5 gallons per minute 5 years after closure and to 1 gallon per minute 45 years after closure and that seepage will cease approximately 115 years after closure (Tetra Tech 2010e)" (p. 287).

The Draft EIS also states that "Encapsulation of a heap leach facility with waste rock is not typical with open-pit mines, as usually heap leach activities continue throughout the life of the mine… Waste rock encapsulation is expected to be beneficial for two reasons: prevention of infiltration through the heap leach, and the presence of large volumes of acid-neutralizing waste rock. However, access to collect and treat the heap leach seepage after encapsulation has not yet been determined; this will be determined as part of the aquifer protection permit" (p. 287). EPA is not aware of any previous examples in the U.S. where a heap leach has been encapsulated within a waste rock pile, much less an acid-based copper heap leach pile. As discussed above, EPA questions the assumption that meteoric water will not infiltrate the waste rock pile and produce seepage and believes that encapsulation of the heap leach facility in waste rock will not necessarily prevent infiltration. In addition, the presence of large volumes of acid-neutralizing waste rock, as mentioned in the text of the Draft EIS, would only be beneficial to the extent that such material is to be located below or downgradient of any heap leach seepage. Furthermore, EPA believes that the omission of detailed information with regard to how heap leach drain down will be accessed and treated after closure of this facility is not appropriate for the purposes of NEPA compliance. This is a significant design component that could have substantial bearing on the environmental impacts of the project.

Recommendations: The Revised or Supplemental Draft EIS should:

- Address whether the cited heap leach drain down rates are adequately conservative. It should discuss how Rosemont would proceed should seepage rates exceed their expectations at the time that they intend to begin encapsulation with waste rock.
- Further elaborate on the proposal to encapsulate the heap leach pile with waste rock and provide information from any analog sites where this method has been utilized. It should better support the assertion that encapsulation would prevent infiltration, given the above comments and the history of copper mining in the region.
- If neutralizing waste rock is expected to act as a buffer against acidic drainage, the Revised or Supplemental Draft EIS should cite the analysis performed to indicate that this strategy would be successful and why the resulting neutral drainage would also meet standards.
- Include the specific design to be utilized to capture and treat all heap leach drain down and possible seepage to ensure water quality protections. In addition to a more detailed discussion

of the method whereby any potential seepage will be collected, EPA believes that the Revised or Supplemental Draft EIS should consider a heap leach closure plan that incorporates an engineered, sloped, low permeability cap to more effectively preclude meteoric water infiltration. In EPA's opinion, such measures may represent the difference between a facility with low risk of environmental contamination and one that represents a substantial risk to the environment.

Predicted heap leach drain down will exceed standards if it is not adequately treated. Data provided in the Draft EIS show that modeled water quality for untreated seepage from heap leach exceeds standards for cadmium, fluoride, nickel, and selenium. The modeling also shows that after treatment with an engineered biological system, this seepage would be expected to meets standards. According to the Draft EIS, "While modeling demonstrates the ability to meet groundwater standards with treatment, the actual requirements for treatment, discharge, and monitoring of seepage following closure of the heap leach facility and burial in waste rock will be determined by the Arizona Department of Environmental Quality. A long-term maintenance plan to ensure continuation of treatment, if needed, has not yet been developed and is expected to be included under the Aquifer Protection Permit program administered by the Arizona Department of Environmental Quality" (p. 289-290). The effectiveness of the seepage treatment system is a critical factor in determining the environmental impacts of the project. The results presented suggest extremely low concentrations of nickel and selenium would be achieved (8.89E-07 and 7.6E-13 respectively). These values are well below known instrument detection levels or reduction efficiencies (+99.9999%). EPA is skeptical that the reported efficiencies are scientifically supportable. We have significant concerns that this treatment scheme may never perform at the levels necessary to ensure that heap leach drain down does not exceed Arizona Aquifer Water Quality Standards.

Recommendations: The Revised or Supplemental DEIS should provide more information on the engineered biological system that was utilized to model compliance with water quality standards. EPA believes that the Aquifer Protection Permit or the provisions therein should be summarized or attached to the Revised or Supplemental Draft EIS in order to better inform the public and decision makers of the environmental protection measures that will be applied.

Groundwater Impacts

The Draft EIS does not include sufficient discussion of how Best Available Demonstrated Control Technology will be implemented for groundwater protection. According to the Draft EIS, the analysis of the project's potential impacts on water quality is based on two factors: 1) Ability to meet Arizona Water Quality Standards and 2) Ability to demonstrate best available demonstrated control technology (BADCT) (p. 279). The Draft EIS defines BADCT to mean "the use of the most applicable and effective techniques available to prevent groundwater contamination." (p. 281). According to the Draft EIS, the project demonstrates BADCT based on: (1) geochemical modeling of potential seepage from the tailings and waste rock facility, which demonstrates that the design is capable of preventing discharge of contaminants to groundwater, and (2) geochemical modeling of the heap leach, which indicates that one type of passive treatment system is *conceptually* capable of preventing discharge of contaminants (p. 295-296). No further information is provided on how BADCT is applied to potential water quality issues and no further technical details are provided to describe how post operation heap leach drain down will be treated. The Draft EIS does not consider the possibility that real world conditions may not replicate modeling results, or that modeling results underestimated the potential risks

posed by the project. As previously stated, based upon our experience with other mine sites, EPA believes that a greater level of conservatism should be applied to the modeling and analysis at this site in order to adequately ensure water resources are protected.

> **Recommendations:** The Revised or Supplemental Draft EIS should include a more detailed discussion of how ADEQ's BADCT requirements will be applied at the site should seepage or other water quality impacts be identified.

The provisions and requirements of the Arizona Aquifer Protection Permit should be included, at least in draft form, in the Revised or Supplemental Draft EIS. Much of the discussion of engineering design and performance, seepage and leakage monitoring and recovery, and potential groundwater impacts in general hinges on the regulatory requirements of the Arizona Department of Environmental Quality's (ADEQ) Aquifer Protection Permit (APP). In our July 28th, 2011 comments on the Deliberative Draft EIS for this project, EPA recommended that the provisions of this Permit be discussed to the extent possible in the Draft EIS. We have not been able to identify any additional substantive details of this Permit in the Draft EIS. The APP would include everything from monitoring frequency, mitigation action thresholds, and provisions whereby ADEQ could mandate post-closure financial assurance. The APP, therefore, is expected to contain information that EPA believes to be critical to the determination of the project's potential impacts upon the environment and, as such, necessary for the Draft EIS to meet the requirements of NEPA. EPA understands that as of December 20, 2011, the ADEQ Draft APP based upon the original Mine Plan of Operations for the Rosemont Copper Project is available for public review and comment.

> **Recommendations**: The Revised or Supplemental Draft EIS should:
> - Include a summary of the details and requirements of the Arizona Aquifer Protection Plan, in at least its draft form.
> - Describe how BADCT would be applied to prevent potential water quality issues.
> - Address the potential that future water quality monitoring at the Rosemont mine may show contaminated discharge issues and address how mitigation and financial assurance requirements would be determined.

Background arsenic concentrations in groundwater may exceed the new proposed standard. According to the Draft EIS "Arsenic is a common naturally occurring metal contaminant in Arizona groundwater, and concentrations in project area groundwater samples ranged from below detection limits to 0.026 milligram per liter, well below the Arizona Aquifer Water Quality Standard of 0.05 milligram per liter. However, it should be noted that the standard for arsenic is proposed to decrease to 0.01 milligram per liter." (p. 285)

> **Recommendations**: The Revised or Supplemental Draft EIS should clearly state that existing concentrations of arsenic range to as high as half the existing standard of 0.05 milligram per liter, and in some cases exceed the proposed standard of 0.01 milligram per liter. Half the existing standard should not be characterized as "well below the…standard", particularly where the standard is likely to be lowered, resulting in those concentrations being greater than the standard.

Financial Assurance Bonding

The Draft EIS does not contain an adequate discussion of the project's potential need for long term post-closure treatment and corresponding financial assurance bonding. The Draft EIS states

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that "As part of the approval of an MPO [Mine Plan of Operations] for the Rosemont Copper Mine, the Forest Service would require Rosemont Copper to post financial assurance, or reclamation bond, that would provide adequate funding to allow the Forest Service to complete reclamation and postclosure operation... for as long as required to return the site to a stable and acceptable condition." (p. 80). However, the Draft EIS does not contain any information in regards to the nature of the post-closure activities that the site may require, nor the projected costs associated with these activities. EPA is, therefore, unable to determine the extent to which the project may represent a long term financial liability. While the APP program is referenced in regards to providing an alternate mechanism for ensuring adequate long term financial bonding, EPA's understanding of the APP system is that it operates in a reactive way, requiring financial obligations for mitigation once monitoring identifies such a need. It should be noted, however, that at a number of existing copper mines in Arizona, it appears that after several years of monitoring of pit lakes, tailings and leach piles, the APP for these sites has resulted in the determination of requirements for significant activities and financial assurance to address contaminated water discharge issues. This includes APP BADCT requirements related to tailings and the open pit at the Bagdad copper mine with a financial assurance cost estimate of $50.3 million, and the Morenci copper mine open pit with a financial assurance cost estimate of $120.6 million. These large financial assurance requirements are illustrative of the scale of the liability an under bonded or unbonded project could present.

> **Recommendations:** The Revised or Supplemental DEIS should further discuss the project's need for long term financial assurance. It should summarize all post-closure activities that the Forest Service anticipates and their associated costs. It should contain, in a draft form, a financial assurance cost estimate. Furthermore, it should address how financial assurance requirements would be obtained based on future monitoring through the APP program if the project proponent were no longer financially viable following the unplanned cessation or planned conclusion of operations.

Aquatic Resources

The information presented in the Draft EIS does not adequately support the conclusion that the significant direct and indirect impacts of the project upon Waters of the US and Outstanding Arizona Waters can be reduced or mitigated to the extent necessary to meet State and Federal statutory requirements. Army Corps of Engineers regulations prohibit issuance of a CWA Section 404 permit if it would jeopardize the continued existence of listed species, result in violation of water quality or toxic effluent standards (40 CFR 230.10(b)), or cause or contribute to significant degradation of waters (40 CFR 230.10(c). In addition, pursuant to section 303 of the Clean Water Act (CWA) and regulations at 40 CFR 131.12, the state's "Outstanding Water" designation means both Davidson Canyon Wash and Cienega Creek must be afforded the highest level of protection, and that no degradation of water quality is allowable.

Impacts to Davidson Canyon Wash and Cienega Creek

EPA believes that the Draft EIS understates the environmental impacts that will result from the loss of upstream contributions of surface water to Davidson Canyon wash and Cienega Creek. According to the Draft EIS, the Project would result in the permanent loss of 26.5 to 50.5 acres of waters of Waters of the United States (depending upon which alternative is selected). The Barrel Alternative, the preferred alternative, would result in the loss of 39.9 acres of Waters, including the Scholefield and Fig Tree Springs wetlands. EPA notes that, according to the Draft EIS, the direct and indirect loss of

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riparian habitat supported by ephemeral and intermittent waters totals 1,364 acres (Table 98, p. 358), representing ~29% of the total riparian habitat found within the 145,000-acre project area. Additional indirect effects include: 1) change in hydrology of the waters; 2) decrease in water quality from the impairment of floodplain and ecosystem services, including water filtration, groundwater recharge, and flood attenuation; 3) disruption of hydrological and ecological connectivity; and 4) decrease in biodiversity and ecosystem stability.

All of the proposed alternatives will result in alteration of the natural surface hydrology by way of either direct loss of watershed area (i.e. the pit itself) or modification of natural flow in the form of stormwater basins and diversions designed to slow or convey storm water around mine areas. Impacts related to surface water quantity include the modification of stormwater peak flows, modification to overall runoff volume from the watershed, and the direct loss of stock tanks. Reductions in runoff are primarily important because they indirectly impact the water availability for downstream use. The preferred action will reduce stormwater runoff from the project area by 33.8%; other alternatives reduce runoff between 22.8% - 45.8% (p. 314, Table 80). The Draft EIS estimates stormwater flow in the Davidson Canyon watershed will be reduced 3.6 -7.1% (p. 315). Reductions in surface water availability in Davidson Canyon will result in adverse effects to riparian vegetation and wildlife use, including by endangered, threatened or sensitive aquatic species.

From a modeling perspective, the Draft EIS mistakenly evaluates flow conditions based on average annual flow volumes and peak flow volumes. This analysis overlooks the importance of downstream ecological resources, specifically, the perennial flow of a stream located in southern Arizona. The continued existence of perennial flow in these stream reaches is based on critical (e.g., low flow) conditions, not average or peak flow conditions. It is unclear from the Draft EIS the extent to which the perennial stream flow is dependent upon upstream surface flows and subsurface alluvial waters contributed from the project site and, therefore, the full extent of impacts the project will have on critical conditions at downstream Outstanding Waters. Based upon the DEIS, the project will adversely affect portions of Davidson Canyon Wash and Cienega Creek that are designated by the State of Arizona as *Outstanding Arizona Waters*.

Additionally, the Draft EIS states the proposed project will reduce sediment delivery by 51% from the project site, and by 5% at the mouth to Davidson Canyon (page xxvii). The reduction in the delivery of sediment to Davidson Canyon Wash and Cienaga Creek will adversely affectwater quality by increasing total suspended sediment in surface water flows and geomorphologically altering the stream bed, causing problems with soil scour or aggradation. Aggradation and scour can result in the filling and scouring of pools and riffles used by fish and other aquatic organisms. These changes in channel morphology can also include bank erosion and the loss of riparian vegetation as the channel adjusts to a new sediment, water, and energy equilibrium.

Increased scour will likely result in significant changes to water quality by increasing total suspended sediment in surface water flows. Elevated levels of suspended sediment or moderate-to-high turbidity will likely have significant adverse effects on aquatic organisms in Davidson Canyon Wash and Cienega Creek. Beyond recognizing that changes in sediment delivery "have the potential to cause aggradation or scour, including riparian areas in the reaches designated Outstanding Waters", the Draft EIS does not further analyze or quantify this potentially significant impact.

Recommendations:

- EPA believes the impacts of flow volume reduction from the proposed project to downstream Arizona Outstanding Waters should be classified as a "direct" impact, not "indirect."
- Given what appear to be inconsistencies in the data presented on pages 308 and 315, the Revised or Supplemental Draft EIS should clarify all calculations used to determine projected flow regimes.
- The Revised or Supplemental Draft EIS should provide a detailed evaluation of the existing hydrologic and geomorphic flow regimes from the project site along Davidson Canyon to its confluence with Cienega Creek, as well as a detailed evaluation of the projected hydrologic and geomorphic impacts of the project to this same area. The potential impacts to downstream areas, especially perennial waters, should be described in detail. Specifically, the impacts to perennial waters should be evaluated based on low-flow, critical periods in addition to the evaluation of average annual and peak flows.

Cienega Creek should be included in the analysis area for impacts to surface water quantity resulting from the project. The Draft EIS evaluated the direct modification of the topography and alteration of the surface water regime on the project area as a result of mining and associated infrastructure, as well as the indirect effects of the mining activities on downgradient surface water drainages. The analysis area included the immediate sub-watershed and the portion of Davidson Canyon that receives discharges from the project area and is tributary to lower Cienega Creek. The Draft EIS did not include Cienega Creek within the analysis area for surface water quantity (p. 297). The applicant did not analyze Cienega Creek because they concluded that the affected drainages represent approximately 2 percent of the Cienega Creek watershed and expect reductions in flow to be negligible. According to Zeller (2011), a regression equation estimated a reduction in annual runoff for Cienega Creek at Pantano Wash at 1 percent due to the proposed project (p. 297).

The Pima Association of Governments (PIMA AG) has conducted 20 years of hydrologic monitoring along Cienega Creek, including documentation of the relative contribution of surface and groundwater flows from Davidson Canyon Wash to base flows in Cienega Creek. (PIMA AG 2003)[4]. Davidson Canyon Wash, an intermittent stream upstream of its confluence with Cienega Creek, contributes significant flood flows to Cienega Creek during runoff events. Through analysis of water chemistry and stable isotopes, PAG also found that between 8 and 24% of Cienega's perennial base flows are attributable Davidson Canyon Wash's underflow contributions. Any decreases in the surface flows of Davidson Canyon resulting from the mine are therefore likely to significantly reduce contributing base flows to Cienega Creek. In addition, base flows in Davidson Canyon Wash are lower in dissolved solids than Cienega Creek, which could dilute Cienega Creek and provide beneficial effects to some aquatic species (PIMA AG 2003).

While the Draft EIS did not analyze adverse effects to Cienega Creek through surface water modifications of its contributing tributaries, the Biological Resources section of Chapter 3 identifies several adverse environmental effects to Cienega Creek as a result of mining. These include expected drawdown in Cienega Creek of 1% to 3% of annual flow after 1,000 years and the potential to result in perennial sections of Cienega Creek to stop flowing during critical times. Although the Draft EIS states the decrease in groundwater would occur over a long period of time, the reduction in stream flow could impact aquatic species needing standing or flowing water (p. 387). Monitoring has indicated the region is in the midst of the long term drought (PIMA AG webpage). Any changes in the hydrological regime of Cienega Creek would serve to further exacerbate the deleterious effects brought on by drought.

[4] Pima Association of Governments .2003. *Contribution of Davidson Canyon to Base Flows in Cienega Creek*, 40pp.

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Additionally, approximately 490.0 acres of hydroriparian and mesoriparian habitat along Cienega Creek will most likely be impacted by potential changes in groundwater level.

As stated in the Draft EIS (p. 322), all action alternatives would result in some variation of irreversible and irretrievable commitment of surface water resources, with each alternative resulting in varying amounts of indirect loss to ephemeral flow in downstream drainages. EPA believes these losses are not restricted to reductions in ephemeral flow, but will adversely affect intermittent and perennial flows in downstream drainages, namely Cienega Creek. Therefore, based upon the information contained in the Draft EIS, surface water modifications of its contributing tributaries will have significant impacts upon Cienega Creek.

> **Recommendations**: Cienega Creek should be evaluated in the Revised or Supplemental DraftEIS to fully disclose the direct and indirect impacts as a result of the proposed project, a complete functional assessment of all waters of the U.S. on the project site, and additional analysis of the project's indirect effects to waters of the U.S.

Impacts to Springs and Seeps

The Draft EIS should include a functional assessment of seeps and springs on the project site and a more quantitative analysis of the project's predicted impact upon the ecosystem services provided by these water sources. According to the Draft EIS, 63 springs are expected to be lost from direct disturbance or lowering of the groundwater table during construction and operation (table 108, p. 436). Impacts to Scholefield No. 1 and Fig Tree springs are likely to occur within the active life of the mine as a result of drawdown in the regional aquifer. Riparian vegetation associated with these springs likely would be lost completely; WestLand Resources estimates approximately 0.8 acre of riparian habitat are associated with these springs (WestLand Resources Inc. 2010d)." (page 388).

Wetlands are special aquatic sites under EPA's Guidelines at 40 CFR 230.41. Special aquatic sites are given special recognition under CWA regulation because of their importance in maintaining the health of the aquatic ecosystems. The special aquatic sites impacted by the proposed project possess special ecological characteristics of high food-web productivity, physical habitat for aquatic life, water quality functions, and other important and easily disrupted ecological functions. The wetlands contribute to the general overall environmental health and functional capacity of the entire ecosystem of the region.

Desert springs, often the sole sources of water for wildlife, support wetland ecosystems including rare and endemic species (Patten et al 2007)[5]. Anthropogenic alteration of groundwater resources is considered one of the greatest threats to long-term sustainability of groundwater dependent ecosystems in arid and semi-arid regions (Patten et al 2007). Direct and indirect impacts to these seeps and springs as a result of the preferred alternative will affect the aquatic biota dependent on the range of spring-associated water sources. Following groundwater withdrawal, should the spring continue to flow, the wetlands supported by the outflow would be truncated. The amount of area suitable to support wetland species would be greatly reduced and the species least tolerant of drying conditions would be extirpated first and eventually replaced by transition upland species (Patten et al 2007).

[5] Patten, P.T., L. Rouse and J.C. Stromberg. 2007. *Isolated Spring Wetlands in the Great Basin and Mojave Deserts, USA: Potential Response of Vegetation to Groundwater Withdrawal.* Environmental Management DOI 10.1007/s00267-007-9035-9. 16pp.

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Recommendations: The Revised or Supplemental Draft EIS should provide a functional assessment of all waters on the project site, including seeps and springs, as well as an additional analysis on the indirect effects of groundwater drawdown on habitat and wildlife use of seeps and springs.

Compliance with Clean Water Act Section 404(b)(1) Guidelines

The proposed discharge does not appear to comply with the substantive requirements in the regulations at 40 CFR 230.10 (a)-(d). The purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of waters of the United States. These goals are achieved, in part, by prohibiting discharges of dredged or fill material that would result in avoidable or significant adverse impacts on the aquatic environment pursuant to EPA's *Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials* (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA (Guidelines). The burden to demonstrate compliance with the Guidelines rests with the permit applicant.

The Guidelines contain four main, independent requirements that must be met to obtain a permit.

1. Section 230.10(a) prohibits a discharge if there is a less environmentally damaging practicable alternative to the proposed project.
2. Section 230.10(b) prohibits discharges that will result in a violation of water quality standards or toxic effluent standards, jeopardize a threatened or endangered species, or violate requirements imposed to protect a marine sanctuary.
3. Section 230.10(c) prohibits discharges that will cause or contribute to significant degradation of waters. Significant degradation may include individual or cumulative impacts to human health and welfare; fish and wildlife; ecosystem diversity, productivity and stability; and recreational, aesthetic or economic values.
4. Section 230.10(d) prohibits discharges unless all appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

EPA's response to the Corps Public Notice for the Proposed Rosemont Mine Project, dated February 13, 2012, provides detailed comments regarding the specific deficiencies related to each of the regulatory restrictions on 404 discharges described above. Based on the information currently available to EPA, the proposed discharge does not appear to comply with the substantive requirements in the regulations at 40 CFR 230.10 (a)-(d), and will result in substantial and unacceptable impacts to aquatic resources of national importance. This document has been included as an attachment to this letter, and is thereby incorporated by reference and should be considered as the EPA's comments on CWA 404 compliance for the purpose of the Draft EIS.

Groundwater

Baseline Groundwater Quality

The Draft EIS provides insufficient justification for the determination of baseline groundwater quality conditions in regards to volatile organic compounds and radiochemical constituents. Volume 3, Page 285 presents the results of the analysis of groundwater samples taken from 38 wells and 6 springs in the project area. The samples were analyzed for volatile organic and semi-volatile organic compounds. Although these compounds were detected in 104 samples, the Draft EIS dismisses their

presence as either laboratory contamination, interference, or a result of the ubiquitous presence of gasoline or its breakdown products in the environment. Based on these findings the DEIS concludes on page 286 "no existing contamination by volatile organic compounds or semi-volatile organic compounds is believed to exist in the area. " It would seem reasonable for further sampling and analysis to be conducted to support such a conclusion. Radiochemical constituents were also found to be present in the groundwater and these have been determined as attributable to naturally occurring radiation sources in the bedrock. It is important for the applicant to establish the current groundwater conditions for the project area in order to assess the effects of the proposed project, if any.

> **Recommendations**: EPA recommends that additional collection and analysis of groundwater samples be performed and discussed in the Revised or Supplemental Draft EIS. Potential sources of any contamination should be assessed before the Project is implemented. The EIS should also include any on-going groundwater monitoring as a groundwater mitigation measure.

Irretrievable commitment of resources

The proposed action and all action alternatives would result in the same commitment of groundwater resources. Estimates of the amount of water lost in perpetuity from evaporation ranges from 170 acre-feet per year to 370 acre-feet per year, depending on which groundwater model is used as the basis. This water loss could also affect the drawdown of the approximately 500-550 domestic or other production wells registered with the Arizona Department of Water Resources in the project vicinity. During mine operation, the estimated loss of groundwater would increase from 9 to 75 percent. After mine closure, when the aquifer reaches equilibrium, the estimated loss of groundwater would be equivalent to a 2 to 5 percent reduction in recharge, and an increase in evaporative water loss from the aquifer from 3 to 31 percent. This loss will also include impacts to 63 of 132 springs, of which 18 are expected to have major impacts (disturbed, covered, or otherwise removed and no longer functioning as a natural spring). A number of mitigation measures are proposed to mitigate some of the effects of the project, such as water treatment, storage and recharge, a well owner protection program, repair of water supply structures, well deepening, and storm water diversion. EPA also notes that the use of Central Arizona Project (CAP) water for recharge and storage to mitigate groundwater extraction is only an applicable mitigation measure so long as excess CAP water remains available for purchase.

> **Recommendations**:
> - The Revised or Supplemental Draft EIS should incorporate water use efficiency, conservation and reuse management measures into the project design and management to maximize efficient use of scarce water supplies. EPA understands the water savings that will be accomplished by use of the "dry stack" tailings design, but believe that this discussion should be expanded to include all aspects of project design. Efficient water use can be enhanced through design, infrastructure, and drinking water policies. We recommend the Revised or Supplemental Draft EIS describe potential mechanisms to support water use efficiencies in order to reduce the estimated long term groundwater resource loss.
> - The Revised or Supplemental Draft EIS should discuss the extent to which excess CAP water is expected to remain available for purchase and infiltration as groundwater quantity mitigation.

Groundwater Monitoring

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The Draft EIS states that Rosemont Copper will annually fund the U.S. Geological Survey's (USGS) costs to operate and maintain an existing surface water flow measurement gauge " for at least 5 years following completion of mining operations" at Barrel Canyon as an element of the overall groundwater quantity mitigation measures proposed for the project (p. 277). The impacts from active pumping at the project are not expected to recover until 100 to 140 years following pumping (although the project is anticipated to have irretrievable losses of groundwater resources overall), therefore, a 5-year period following the completion of mining operations seems unacceptably brief for the implementation of this groundwater mitigation measure.

> **Recommendations**: EPA recommends that the Forest Service require the mine operator to fund groundwater monitoring efforts until such time that the Forest has deemed that these funds are no longer necessary to ensure adequate groundwater protections. Considering the scale of the potential impacts to groundwater resources, it would be appropriate to require adequate funding remain available for the entirety of the 100-140 year period during which impacts from active pumping are expected to continue.

Tribal Resources

The proposed project and its alternatives would have severe, irretrievable and largely unmitigated impacts upon tribal and cultural resources, in particular those of the Tohono O'odham Nation. The Barrel Alternative (preferred alternative) would result in the loss of 111 National Register of Historic Places eligible historic properties. Approximately one third of these sites are known or likely to have human remains. In addition, because seeps and springs are considered spiritual sites by regional tribal nations, the total impact upon sites of tribal significance is another 63 sites greater. EPA is aware that the Tohono O'odham Nation has informed the USFS that they are formally opposed to the proposed development. The Nation has indicated that the proposed mitigation for adverse effects on historic, cultural and spiritual sites is not adequate and the impacts remain unacceptable. The Draft EIS indicates that the Forest Service intends to enter into a memorandum of agreement (MOA) with the Arizona State Historic Preservation Office, the tribes and other cooperating agencies in order to establish a historic properties treatment plan that will outline the extent of mitigation for the project's adverse effect on historic places and cultural sites (p.698).

> **Recommendation**: EPA recommends that the details of the above mentioned MOA be included in the Revised or Supplemental DEIS. EPA also recommends that the Revised or Supplemental Draft EIS recognize and discuss the position of the Tohono O'odham Nation in regards to their direct opposition to the proposed development in greater detail and consider further means to mitigate this significant adverse impact.

Reclamation and Closure

The Draft EIS indicates that the Reclamation and Closure plan would be completed "prior to the publication of the FEIS". As we stated in our 7/28/11 comments on the Deliberative DEIS, EPA does not believe that this is an appropriate approach to Reclamation and Closure or NEPA. NEPA is intended to consider the entire life and potential impacts of a proposed action. Improper or poorly executed Reclamation and Closure can and has led to severe and irretrievable environmental impacts at other mine sites, including those in the state of Arizona. EPA therefore considers Reclamation and Closure to be a critical component of the Draft EIS. EPA has noted that Rosemont has published a Reclamation and Closure Plan (Tetra Tech Project No. 320614-400 July 2007) for the original proposed project as

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identified in the MPO. Many investigations were in progress at the time that this plan was produced it is therefore considered an incomplete document for specific comment purposes.

> **Recommendations**: The Revised or Supplemental Draft EIS should contain a detailed discussion and summary of the Reclamation and Closure Plan and the ways in which the Plan will address and prevent potential post-closure contamination (including issue specific measures to the extent feasible). As a key part of the alternatives analysis, the reclamation and closure plan should be altered for each alternative, or reclamation measures can be considered themselves as an alternative. Some reclamation and closure measures may be common to all alternatives, but some measures may be specific to a given alternative. A given alternative likewise might better accomplish reclamation and closure objectives. We also recommend that the Reclamation and Closure Plan be included as an appendix to the Revised or Supplemental Draft EIS (perhaps in an electronic format).

Project Design

The Proposed Project provides details of a Central Drain system which will direct surface stormwater runoff under and through the waste rock and tailings facilities. The Draft EIS states that discharges from the central drain would consist of seepage through waste rock and tailings facilities and would drain for up to 30 days to convey stormwater from a 100 year, 24 hour event (page 51). EPA notes that the discharge from the Central Drain as described in the Draft EIS would be classified as mine drainage due to commingling with seepage and would not be eligible for coverage under Arizona's Mining MSGP 2010 General Permit. (see Section 8.G.2.2 , *Prohibition of Non-Stormwater Discharges* of the MSGP. "The following discharges are not authorized by this permit: adit drainage, and contaminated springs or seeps discharging from waste rock dumps that do not directly result from precipitation events (see also the standard Limitations on Coverage in Part 1.1.4).")

> **Recommendations:** The Revised or Supplemental EIS should describe how the owner or operator of the mine will obtain an individual permit for non-stormwater discharges from the Central Drain, and describe how the facility will meet effluent limitations and standards for the discharge of mine drainage. Alternatively the facility can be constructed to avoid all under drain components, thereby preventing the potential contamination issues associated with an under drain system.

Biological Resources

According to the DEIS, thirteen federally listed endangered, threatened, or candidate species are known to occur within or adjacent to the analysis area for which impacts are reasonably foreseeable (Ch. 3, p. 376). This includes Chiricahua leopard frog, Gila chub, Gila topminnow, Huachuca water umbel, jaguar, lesser long-nosed bat, ocelot, Pima pineapple cactus, and Southwestern willow flycatcher, desert tortoise, northern Mexican gartersnake, Rosemont talussnail, and western yellow-billed cuckoo. Although it is unclear from the text of the Draft EIS, EPA understands that the Forest Service has not yet begun formal consultation with the U.S. Fish and Wildlife Service (USFWS) for this project. As stated in the Draft EIS, the Endangered Species Act of 1973 requires Federal agencies to consult with the USFWS to ensure that their actions will not jeopardize the continued existence of any listed species.

> **Recommendations**: Formal consultation between USFWS and the USFS may reveal additional avoidance, minimization or mitigation measures that could be employed to further reduce

impacts to the numerous sensitive, threatened or endangered species that may be affected by this project. EPA recommends that the Revised or Supplemental Draft EIS include the details and outcome of that consultation as well as including the Biological Opinion as an appendix to the Draft EIS.

Traffic and Public Safety

EPA notes that according to the Draft EIS, the proposed project and its alternatives are anticipated to result in an increase in traffic on State Route 83 of up to 356% by year 20. This corresponds to a decrease in traffic safety, which is anticipated to result in approximately one to two fatalities per year along this corridor (as compared to a current fatality rate of approximate one death every three years). Although the Draft EIS proposes carpooling as a mitigation measure and suggests that Rosemont could contribute to roadway improvement efforts, such as additional highway pullouts, the Draft EIS does not state that Rosemont would be required to do so. In addition, EPA understands that the Arizona Department of Transportation has added plans to expand and improve SR 83 to its long range plans for the region. Such activities may have the potential to impact Davidson Canyon Wash and Cienega Creek.

Recommendations: The Revised or Supplemental Draft EIS should:

- Quantify the extent to which additional highway pull outs, scheduling of haul trips to avoid peak hours and the other traffic-related mitigation measures mentioned could be expected to reduce overall risk to human health.
- Discuss long range plans to expand/improve SR 83, if and to what extent these plans might be a consequence of the Rosemont Project, and how these plans may contribute to any cumulative impacts to the waters of Davidson Wash and Cienega Creek.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
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FEB 13 2012

OFFICE OF THE
REGIONAL ADMINISTRATOR

Colonel R. Mark Toy
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
PO Box 532711
Los Angeles, California 90053-2325

Subject: Permit Application No. 2008-00816-MB for the proposed Rosemont Copper Mine Project, Rosemont Copper Company, Pima County, Arizona

Dear Colonel Toy:

On January 5, 2012, the US Environmental Protection Agency (EPA) provided comments in response to your District's Public Notice for a Clean Water Act (CWA) Section 404 permit for the proposed Rosemont Copper Mine (enclosed). The 4,750 acre mine, proposed primarily on Coronado National Forest lands southeast of Tucson, would eliminate and/or significantly degrade hundreds of acres of aquatic and riparian resources including waters of the United States (waters), such as wetlands, springs, seeps and riffle-pool complexes. The significance of these impacts to sensitive and protected aquatic resources, and concerns regarding compliance with federal regulations (40 CFR 230), led us to identify the permit action as a candidate for the US Department of the Army and the EPA headquarters review pursuant to our agencies' Memorandum of Agreement implementing CWA Section 404(q).

In coordination with your staff in Tucson, as well as other federal and state agency regulatory authorities, we have been working to identify data gaps and clarify issues related to the many environmental uncertainties this project raises (please see our enclosed detailed comments). However, given the complexity of the project and the lack of any new substantive information provided since our January 5, 2012 letter, the EPA is now moving to preserve the option to seek higher level review of your pending permit decision. At this time, we respectfully reaffirm our objections on the basis that permit approval will have substantial and unacceptable impacts to "aquatic resources of national importance" (ARNI), including Cienega Creek and Davidson Canyon.

In summary, our enclosed comments detail specific deficiencies in the application related to each of the regulatory restrictions on 404 discharges. Of particular concern, the current proposal:

1. includes an inadequate analysis of off-site and on-site alternatives to demonstrate that the proposal is the least environmentally damaging practicable alternative (LEDPA);
2. provides questionable hydrological assessments concluding that impacts to downstream flows, sediment balance, and chemical contamination will not be significantly adverse or violate state standards;
3. provides no biological assessment (BA) to guide a determination whether the permit action would jeopardize the continued existence of any of ten federally listed threatened or endangered species;

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4. would contribute to the significant degradation of Arizona's rare and fragile wetland resources, reduced by one third over the last century alone;
5. provides no plan to compensate for unavoidable impacts to waters of the United States; and
6. could negatively impact recreation, aesthetics, and ecotourism, a $2.95 billion regional economy.

The above considerations, if unresolved, could provide an adequate basis for permit denial under the regulations in any environmental setting impacting waters of the U.S. In this setting, where virtually pristine ecological and recreational public resources—including state designated "Outstanding Waters"—thrive in a desert environment, it is vital that CWA protections are rigorously applied. Based on the information currently available, the EPA finds this project will result in the significant degradation of waters of the U.S., including substantial and unacceptable impacts to ARNI. This letter follows the field level procedures outlined in the August 1992 Memorandum of Agreement between the EPA and the Department of the Army, Part IV, paragraph 3(b) regarding Section 404(q) of the Clean Water Act.

Thank you for your ongoing partnership implementing the programs of the CWA and protecting human health and the environment. Please call me at (415) 972-3572 with any questions, or have your Regulatory Division Chief contact Jason Brush, our Wetlands Office Supervisor, at (415) 972-3483.

Sincerely,

Jared Blumenfeld

Enclosures:
EPA's Detailed Comments on the Proposed Rosemont Copper Mine 404 Permit Application
EPA letter dated January 5, 2012

cc: US Fish and Wildlife Service, Phoenix
US Fish and Wildlife Service, Tucson
US Forest Service, Coronado National Forest, Tucson
Bureau of Land Management, Tucson
Tohono O'odham Nation, Office of the Chairman and Vice Chairwoman
Arizona Department of Environmental Quality, Phoenix
Arizona Department of Environmental Quality, Tucson
Arizona Department of Game and Fish, Phoenix
Pima County Administrator's Office, Tucson
Rosemont Copper Company

DETAILED COMMENTS ON THE PROPOSED ROSEMONT COPPER MINE 404 PERMIT APPLICATION # 2008-00816-MB

I. Project Description

The Rosemont Copper Company (subsidiary of Canadian Augusta Corporation) proposes to develop the Rosemont Copper Mine Project in Pima County, AZ, approximately 30 miles south of the city of Tucson. The mine would occupy ~4,750 acres of National Forest Service, Bureau of Land Management and some privately owned lands, with the primary land holding being Coronado National Forest. The mine is projected to produce ~4.7 billion pounds of copper, 90 million pounds of molybdenum and 54 million pounds of silver over the proposed 25 year mine life.

Mining will be conducted using conventional open-pit techniques. Waste rock will be blasted and transported by haul truck to a storage area. Ore will be blasted and either transported by haul truck to a leach pad and processed by leaching (oxide ore), or crushed and loaded onto a conveyor for conventional sulfide milling (sulfide ore). Tailings will be stored using a dry stack tailings technique. The placement of waste rock will include perimeter buttresses, with placement of the perimeter of the dry stack tailings storage areas to provide structural and erosional stability of the tailings pile.

The copper concentrate from the milling operations will be shipped off site to a smelter. Leach ore will be placed on the heap leach pad. Solutions from the pad will be collected in a solution pond and then processed through the solvent extraction-electrowinning plant. Copper cathodes generated from the plant will be transported off site for further processing.

The proposed project includes a 950 acre mine pit, 1,460 acre waste rock storage areas, 126 acre heap leach area, 987 acre dry-stack tailings facility, ancillary facilities and structures, access and haul roads, and off site water and power and transmission lines.

II. Environmental Setting

The project site elevation ranges from 4,500 feet to 6,824 feet above mean sea level located in the Semidesert Grasslands biotic community that transition into Madrean Evergreen Woodland association on the higher slopes of the Santa Rita Mountains. The site supports a complex network of ephemeral and intermittent streams that provide critical surface and groundwater flow into perennial Cienega Creek.

The aquatic resources of the Cienega Creek watershed are located in a near pristine landscape rich in biodiversity. Four major drainages occur in the project area: Wasp, McCleary, Scholefield, and Barrel Canyons. Scholefield, Wasp and McLeary Canyons drain to Barrel Canyon which joins Davidson Canyon approximately 4 miles east of the project area. Davidson Canyon is a tributary to perennial Cienega Creek. Barrel Canyon is the largest of the four major drainages with an average channel width of 51 feet. The project site also supports sixty-three seeps and springs. The waters of the U.S. on the project site, in most instances, have riparian habitats associated with them.[1]

[1] Onsite Riparian habitat Assessment and Impact Analysis – Rosemont Project. Prepared for Rosemont Copper Company by WestLand Resources, Inc.. April 2010 (page 15).

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III. Project Impacts

The proposed project will have a variety of impacts to the aquatic environment including direct fill, secondary impacts resulting in functional degradation, and habitat conversion over a large geographic area. The project will result in the loss or conversion of approximately 7,000 acres including semi-desert grassland, Madrean evergreen woodland, riparian, and Sonoran desert scrub communities that form a vast, largely unfragmented, natural landscape.[2]

The proposed permit will authorize the direct fill of at least 38.6 acres of waters (18 linear miles of stream comprised of up to 154 individual drainages), including some direct impact to aquatic habitats associated with several springs.[3] Secondary (indirect) effects on the aquatic environment include dramatic and persistent changes to hydrologic and hydraulic regimes within the project and adjoining watersheds, adversely affecting the functioning of sensitive and regionally significant downstream receiving waters, including wetlands. For example, the Forest Service estimates 1,364 acres of riparian habitat (including a likely significant amount of jurisdictional riparian wetlands[4]) would be degraded or lost from changes to ground and surface water hydrology from the project. Water quality downstream of the project site will be degraded from changes in sediment loads, increasing suspended solids in some areas and altering channel morphology through aggradation and scour. Throughout the Cienega Creek watershed, impairment of floodplain and ecosystem services including water filtration, groundwater recharge, and flood attenuation are probable, as is the disruption of landscape-scale hydrological and ecological connectivity, decreases in regional biodiversity, and a loss of ecosystem stability.

The project will adversely affect three types of "Special Aquatic Sites" identified in the 404(b)(1) Guidelines (wetlands, sanctuaries and refuges, and riffle and pool complexes (40 CFR 230.40 – 45)), as well as Tier 3 "unique" waters (portions of Davidson Canyon and Cienega Creek that are designated by the State of Arizona as "Outstanding Arizona Waters"). These aquatic resources and adjoining habitat support ten federally listed endangered or threatened species for which project impacts are reasonably foreseeable (for example, filling streams will fragment currently continuous wildlife migration corridors).

Impacts to Special Aquatic Sites. Three of the six Special Aquatic Site types described in Subpart E of the Guidelines occur on or adjacent to the proposed project and would be adversely affected by the copper mine. Because of their special ecological characteristics of high food-web productivity, physical habitat critical for all life stages of aquatic life, water quality functions, and other important and easily disrupted ecological functions, these aquatic resources are given special recognition under CWA regulations.[5] Collectively, the Special Aquatic Sites in the project area play a regionally significant role in maintaining the existing, high quality functions and services in this watershed.

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[2] This acreage figure includes impacts associated with the mine site, transmission lines, and other project infrastructure. See DEIS, Ch. 3, Table 98.

[3] Pima County has conducted an independent GIS analysis of the linear and lateral extent of stream channels within the area affected by the Mine Plan of Operations. Pima County estimates that over 100 miles of streams and 116 acres of stream channel and floodplain (< 10-yr. floodplain) will be affected by the proposed project (Letter from Pima County to U.S. Army Corps of Engineers, dated 19 January 2012). Given this data, and the fact that the waters of the U.S. jurisdictional determination is unverified by the Corps, numbers in the PN may underestimate actual impacts to jurisdictional waters authorized by the proposed permit.

[4] DEIS for the Rosemont Copper Project (11 December 2011), Chapter 3, Table 98.

[5] 40 CFR § 230, Subpart E.

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Sanctuaries and refuges are areas designated under state and federal laws or local ordinances to be managed principally for the preservation and use of fish and wildlife resources.[6] Portions of lower Davison Canyon and Cienega Creek are designated by the State of Arizona as "Outstanding Waters" (see discussion, below) and are within the Cienega Creek Natural Preserve (CCNP), a 4,000 acre sanctuary along 12 stream miles noted for its ecological significance and natural beauty as a desert riparian oasis.[7] In addition, portions of Empire Gulch lie within the Las Cienegas National Conservation Area (LCNCA), administered by BLM, a 45,000 acre preserve set aside in large part to protect riparian wetlands and native aquatic organisms including endangered fish and amphibians.

The proposed project is likely to have significant impacts to the downstream reaches of Davidson Canyon, Empire Gulch and Cienega Creek. The state designation of Davidson Canyon and Cienega Creek as "Outstanding Waters" affords them special protection, prohibiting any lowering of water quality. Federal regulations for state-designated outstanding waters similarly state "Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected" (40 CFR 131.12(a)(3)). At this time, the applicant has not provided information demonstrating that modification to surface and groundwater hydrology, sediment transport and pollutant discharges to Davidson Canyon and Cienega Creek as a result of the proposed project will not result in any lowering of water quality, or other unacceptable impacts to onsite and downstream waters.

Wetlands and riffle-pool complexes are also Special Aquatic Sites that will be affected by the secondary effects of groundwater drawdown from the proposed project.[8] Although these resources have not been delineated, a significant proportion of streams and riparian areas are likely to include these special aquatic sites. Riffle and pool complexes are especially valuable as habitat for fish and wildlife, supporting important feeding, spawning, rearing, and refuge functions for aquatic and terrestrial species.

The proposed project will likely significantly change the balance of water along portions of Davidson Canyon and Cienega Creek within the CCNP, and Empire Gulch Creek within the LCNCA adversely impacting special aquatic sites. Specifically, secondary impacts from project-related groundwater drawdown are likely to change and disrupt breeding, spawning, rearing, and migratory movements, or other critical life history requirements of fish and wildlife resources. For example, pools and riffles used by Gila chub, Gila topminnow, and longfin dace would likely shrink or disappear within the CCNP and LCNCA as a result of mine-related groundwater drawdown. Pools and riffles would be especially vulnerable to desiccation during the typically driest months of May and June, and/or during droughts when intermittent pools characterize Cienega Creek embedded within long reaches of dry streambed. Seemingly small reductions in streamflow caused by groundwater drawdown during critically dry months could cause portions of Cienega Creek to stop flowing.[9] Similarly, groundwater drawdown could be expected to result in the loss of springs, and stress and mortality to riparian habitat, including wetlands.

Desert springs, often the sole sources of water for wildlife, support wetland ecosystems including rare and endemic species.[10] Human changes to groundwater are one of the greatest threats to long-term

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[6] 40 CFR § 230.40.
[7] http://rfcd.pima.gov/wrd/landmgt/cienegapreserve/
[8] Wetlands are defined at 40 CFR § 230.41. Riffle-pool complexes are defined at 40 CFR § 230.45.
[9] DEIS for the Rosemont Copper Project (11 December 2011), Chapter 3, Page 387.
[10] Patten, P.T., L. Rouse and J.C. Stromberg. 2007. *Isolated Spring Wetlands in the Great Basin and Mojave Deserts, USA: Potential Response of Vegetation to Groundwater Withdrawal.* Environmental Management DOI 10.1007/s00267-007-9035-9. 16pp.

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sustainability of groundwater dependent ecosystems in arid and semi-arid regions.[11] Direct and indirect impacts to these seeps and springs as a result of the preferred alternative will affect the aquatic biota dependent on the range of spring-associated water sources. Following groundwater withdrawal, should the spring continue to flow, the wetlands supported by the outflow would be truncated. The amount of area suitable to support wetland species would be greatly reduced and the species least tolerant of drying conditions would be extirpated first and eventually replaced by transition upland species.[12] Sixty-three springs are expected to be lost from direct disturbance or lowering of the groundwater table during construction and operation.[13] Impacts to Scholefield No. 1 and Fig Tree springs are likely to occur within the active life of the mine as a result of drawdown in the regional aquifer.

Impacts to Surface Water Quantity. Ephemeral stream channel stormwater flows contribute significantly to groundwater recharge in arid regions.[14] Stormwater flows also provide seasonally significant surface water contributions to downstream waters. Collectively, in unaltered watersheds, storm flows are a significant source of water contributing to the base flow of downstream receiving waters.[15] The proposed project will result in alteration of the natural surface hydrology through construction of stormwater basins and diversions around the facility to convey and store stormwater originating upgradient of the mine areas. Impacts related to surface water quantity include the modification of stormwater peak flows, modification to overall runoff volume from the watershed, and the direct loss of stock tanks. Runoff reductions will adversely impact water availability for downstream uses. According to the Forest Service, the proposed project will result in a 33.8% reduction in runoff from the project area, reducing surface flow in Davidson Canyon by 5.4%.[16] Reductions in surface water availability in Davidson Canyon will result in adverse effects to riparian vegetation and wildlife use, including endangered, threatened or sensitive aquatic species (e.g., Huachuca water umbel, Gila chub, Gila topminnow, longfin dace, Chiricahua leopard frog, and lowland leopard frog).

The Pima Association of Governments (PAG) has conducted 20 years of hydrologic monitoring along Cienega Creek, including documentation of the relative contribution of surface and groundwater flows from Davidson Canyon to base flows in Cienega Creek.[17] Davidson Canyon, an intermittent stream upstream of its confluence with Cienega Creek, contributes significant flood flows to Cienega Creek during runoff events. Through analysis of water chemistry and stable isotopes, PAG also found that between 8 and 24% of Cienega's perennial base flows are attributable Davidson Canyon's underflow contributions.[18] Any decreases in the surface flows of Davidson Canyon resulting from the mine are therefore likely to significantly reduce contributing base flows to Cienega Creek.

Impacts to Surface Water Quality. Waters within the Cienega Creek watershed support riparian areas and provide natural erosion and sediment control. These waters carry or reduce pollutants and nutrients; therefore the loss of waters can affect water quality. The proposed project will directly affect sediment yield to downstream waters. The project will have permanent surface water quality impacts to 2.5 miles of Barrel Canyon Wash (23 acres) and 14 miles of Davidson Canyon Wash (234 acres), including a

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[11] Ibid.
[12] Ibid.
[13] DEIS, Ch. 3, Table 108.
[14] Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy, M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest.* U.S. EPA and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.
[15] Ibid.
[16] DEIS, Ch. 3, Tables 69 and 80.
[17] Pima Association of Governments .2003. *Contribution of Davidson Canyon to Base Flows in Cienega Creek*, 40pp.
[18] Ibid.

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reduction of sediment to the downstream reaches of Davidson Canyon Wash of 51.3 percent.[19] The reduction in the delivery of sediment to Davidson Canyon Wash and Cienega Creek have the potential to cause significant geomorphologic changes to downstream washes, resulting in increased channel scour and aggradation, including riparian areas in stream reaches designated as "Outstanding Waters" and CCNP. Aggradation and scour can result in the filling and scouring of pools and riffles used by fish and other aquatic organisms. These changes in channel morphology can also include bank erosion and the loss of riparian vegetation as the channel adjusts to a new sediment, water, and energy equilibrium.

Increased scour will likely result in significant changes to water quality by increasing total suspended sediment in surface water flows. Elevated levels of suspended sediment or moderate-to-high turbidity will likely have significant adverse effects on aquatic organisms in Davidson Canyon Wash and Cienega Creek. Increased suspended sediment and turbidity will have the potential to smother aquatic organisms as sediments settle out. Increases in turbidity can disrupt the feeding, movement, spawning, and rearing of aquatic organisms such as native fish and amphibians; federally listed aquatic species are particularly susceptible to these impacts (*e.g.*, Davidson Canyon's Huachuca water umbel, Gila chub, Gila topminnow, longfin dace, Chiricahua leopard frog, and lowland leopard frog).

Surface water quality may also be adversely impacted by a combination of projected project reductions in surface water quantity and groundwater drawdown. The PAG estimated that Davidson Canyon's relative contribution of base flows in Cienega Creek at Marsh Road between June 2002 and May 2003 ranged from 8-24 percent.[20] Because base flows in Davidson Canyon Wash are lower in dissolved solids, its contribution to Cienega Creek may effectively dilute concentrations of dissolved solids downstream and provide water quality benefits to aquatic species. Significant project related groundwater drawdown is expected to occur in Davidson Canyon, Cienega Creek, Empire Gulch, and Gardner Canyon.[21]

Groundwater drawdown will reduce streamflow, and the surface extent and persistence duration of pools and riffles. Water quality typically decreases as the volume of pools and riffles decrease, including increases in temperature and dissolved solid concentrations, and decrease in dissolved oxygen. These changes can result in increased algal blooms that further reduce the availability of dissolved oxygen. Water quality changes in desiccating pools and riffles can be expected to adversely affect aquatic organisms dependent on these habitats. Native fishes and amphibians such as Gila chub, Gila topminnow, longfin dace, and Chiricahua leopard frog could be expected to see their populations reduced or disappear from declines in water quality where they are known to occur in Davidson Canyon Wash, Cienega Creek, and Empire Gulch.

Impacts Resulting from Groundwater Drawdown. Ephemeral stream channel recharge from stormwater flows contributes significantly to groundwater recharge in arid regions.[22] The projected loss of an estimated 18 miles of stream channel attributable to the proposed project will significantly reduce the groundwater recharge functions within Davidson Canyon. In addition, significant groundwater drawdown will result from excavation of the mining pit.

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[19] DEIS, Ch. 3, Table 87.
[20] Ibid.
[21] DEIS, Ch. 3, Table 100.
[22] Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy,M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest*. U.S. EPA and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.

The applicant did not analyze adverse effects to Cienega Creek through surface water modifications of its contributing tributaries. However, the applicant did identify several adverse environmental effects to Cienega Creek as a result of the proposed project. Cienega Creek is expected to experience drawdown of 1% to 3% of annual flow after 1,000 years; however, impacts could be much greater during critical periods of low flow (*e.g.*, May-June). During critical times of year, even small flow reductions could cause some portions of Cienega Creek to stop flowing. Although the DEIS states the decrease in groundwater would occur over a long period of time, the reduction in stream flow could impacts aquatic species needing standing or flowing water.[23]

Project groundwater drawdown is also expected to adversely impact 1,364 acres of riparian habitat, representing 29% of the total riparian habitat found within the 145,000-acre project analysis area.[24] This includes secondary impacts to riparian vegetation and wetlands along Cienega Creek (490.4 acres), Davidson Canyon (471.2 acres), Empire Gulch (58.3 acres), and Gardner Canyon (139.6 acres). An unknown, but potentially significant, amount of the total affected riparian acreage is jurisdictional wetlands.[25] Jurisdictional wetlands will most likely occur within areas mapped as hydroriparian and mesoriparian community types. Similarly, groundwater drawdown could be expected to result in the loss of up to 63 springs and associated riparian habitat and wetlands.[26]

Impacts to Reach and Extent of Jurisdictional Waters. Estimates of the extent of waters vary considerably between and within the PN and DEIS. A November 2010 Preliminary Jurisdictional Determination accepted by the Corps states that the entire project area supports 101.6 acres of waters, and the PN suggests 38.6 of these will be filled. However, the reach and extent of jurisdictional waters of the United States have not been formally delineated and may have been underestimated. Pima County has conducted a GIS analysis of the linear and lateral extent of stream channels within the area affected by the Mine Plan of Operations and estimated that over 100 miles of streams and 116 acres of stream channel and floodplain (*i.e.*, <10-yr floodplain) will be affected by the proposed project. The Bureau of Land Management has also expressed concern that riparian wetlands, seeps and springs within Empire Gulch may have been underestimated.[27]

Wetlands and other waters downstream of the project site have also not been delineated (e.g., along Davidson Canyon, Cienega Creek, Empire Gulch, and Gardner Canyon). This is a significant information deficiency because the Forest Service's estimate for secondary impacts to riparian communities along these streams, not including Davidson Canyon Wash, totals approximately 690 acres.[28] Presumably a significant portion of these riparian communities are jurisdictional wetlands, in addition to an unknown acreage of jurisdictional waters that lie below the ordinary high water mark. We are unable to determine the full extent and significance of direct and secondary project impacts in the absence of a complete jurisdictional delineation of all waters potentially impacted by the proposed project.

Other Environmental Considerations. The adverse affects of the project's changes to the regional hydrological regime would be further exacerbated by drought and projected climate change. Long-term ground and surface water monitoring within the Cienega Creek watershed indicates that the duration and extent of streamflow is very susceptible to drought; the length of stream segments that support perennial

[23] DEIS, Ch. 3, p. 387.
[24] DEIS for the Rosemont Copper Project (11 December 2011), Chapter 3, Tables 98 and 99.
[25] Neither the applicant nor Corps has provided an assessment of jurisdictional wetlands potentially affected by secondary impacts.
[26] DEIS, Ch. 3, Table 108.
[27] U.S. Forest Service, Coronado National Forest, Personal Communication, 2 February 2012.
[28] DEIS, Ch. 3, Table 100.

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flow have been reduced beginning with the droughts of the 1980s.[29] In addition, climate change research and modeling predict a 10-20 percent reduction in precipitation in the desert southwest within the next 75 years, resulting in more arid conditions.[30] The potential cumulative effects of drought, aridity from climate change, and projections of reductions in surface water flows and groundwater drawdown attributable to the proposed project will likely result in significant adverse impacts to the aquatic environment.

IV. Aquatic Resources of National Importance

The EPA has determined that Cienega Creek and its major tributary, Davidson Canyon , are aquatic resources of national importance for the purposes of Part IV of the August 1992 Memorandum of Agreement between the EPA and the Department of the Army regarding Section 404(q) of the Clean Water Act. These aquatic resources are extraordinary, rare and intact ecosystems in a desert environment, and their protection is an explicit priority of local, state and federal agencies, environmental organizations, and the public.

The state of Arizona has designated reaches of both Davidson Canyon and Cienega Creek as Outstanding Arizona Waters (OAW) due to, among other factors, their exceptional ecological and recreational significance and the presence of federally threatened or endangered species. As OAW, their water quality meets or exceeds applicable water quality standards. Davidson Canyon Wash is a rare, spring-fed, low elevation desert stream, supporting a variety of uncommon flora and fauna. It flows to Cienega Creek, is the main surface water in a basin flowing in intermittent and perennial reaches to the northwest through the Las Cienegas National Conservation Area and into the Tucson groundwater Active Management Area.[31] Cienega Creek contributes flows to the Santa Cruz River via Pantano Wash, and contains remnants of a historically extensive cienega system, defined by springs and marsh areas supporting habitat for wildlife and plant species, included threatened and endangered species.

In December 2001, Pima County incorporated the Sonoran Desert Conservation Plan into its comprehensive land use plan by establishing the Conservation Lands System as the regional environmental vision. This system classifies lands into a variety of designations to reflect their relative value and importance in maintaining the biological diversity of Pima County. Davidson Canyon is identified under the plan as Biological Core area, and, along with Cienega Creek, an Important Riparian Area. By connecting the Empire, Santa Rita, and Rincon Mountain ranges—a network identified by the Arizona Department of Game and Fish, BLM and Pima County as critical wildlife movement corridor—Davidson Canyon, Cienega Creek and other riparian areas provide a natural habitat mosaic for the wide dispersal and migration of many species (*e.g.*, black bear, mountain lions, bobcats, coyotes).[32]

The upstream tributaries of Cienega Creek, including Davidson Canyon, Empire Gulch and its headwaters, provide a wide range of functions critical to aquatic ecosystem health and stability. These tributaries provide hydrologic connectivity within the watershed, facilitating the movement of water, sediment, nutrients, wildlife, and plant propagules. Ephemeral and intermittent streams are responsible for a large portion of basin ground-water recharge in arid and semi-arid regions through channel

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[29] http://www.pagnet.org/tabid/912/default.aspx
[30] Letter from Pima County to US Army Corps of Engineers, RE: SPL-2008-00816 Rosemont Mine, dated 19 January 2012.
[31] The Tucson Active Management Area was establishment pursuant to the 1980 Groundwater Management Act and is administered by the Arizona Department of Water Resources. The Tucson AMA has a statutory goal of achieving safe-yield by 2025 in order to address long-term implications of groundwater overdraft.
[32] DEIS, Chapter 3, page 370.

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infiltration. These ephemeral systems contribute to the biogeochemical functions of waters within their watershed by storing, cycling, transforming, and transporting elements and compounds, while facilitating the movement of sediment and debris and dissipating energy as part of natural fluvial adjustment.[33]

Finally, the national importance of these aquatic resources is underscored by the presence of ten federally-listed threatened or endangered species. These species rely, in whole or in part, on the health and extent of these aquatic resources to ensure their continued existence is not jeopardized. For example, listed fish such as the Gila chub (*Gila intermedia*) is primarily found in deep pools in Cienega Creek and Empire Gulch. Gila topminnow (*Poeciliopsis occidentalis occidentalis*), located in Cienega Creek and Davidson Canyon Wash only tolerates a narrow range of conditions and uses runs, riffles and pools for survival. Avian species such as the Southwestern willow flycatcher (*Empidonax traillii extimus*) nest and forage in associated riparian habitat, while the Mexican spotted owl (*Strix occidentalis lucida*) use these aquatic sites for foraging across its range of isolated mountains and canyons with mixed-conifer, pine-oak and riparian forests. Large mammalian predators, such as the ocelot (*Leopardus pardalis)* and jaguar (*Panthera onca*), depend on these stream corridors as critical movement corridors.

V. Clean Water Act 404(b)(1) Guidelines

The purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of waters of the United States. These goals are achieved, in part, by prohibiting discharges of dredged or fill material that would result in avoidable or significant adverse impacts on the aquatic environment pursuant to EPA's *Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials* (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA (Guidelines). The burden to demonstrate compliance with the Guidelines rests with applicant for a 404 permit. The Guidelines contain four main, independent requirements that must be met to obtain a permit.

1. Section 230.10(a) prohibits a discharge if there is a less environmentally damaging practicable alternative to the proposed project.
2. Section 230.10(b) prohibits discharges that will result in a violation of water quality standards or toxic effluent standards, jeopardize a threatened or endangered species, or violate requirements imposed to protect a marine sanctuary.
3. Section 230.10(c) prohibits discharges that will cause or contribute to significant degradation of waters. Significant degradation may include individual or cumulative impacts to human health and welfare; fish and wildlife; ecosystem diversity, productivity and stability; and recreational, aesthetic or economic values.
4. Section 230.10(d) prohibits discharges unless all appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

[33] See Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy,M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest*. U.S. EPA and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.

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Alternatives Analysis – 40 CFR 230.10(a)

Offsite Alternatives

In evaluating the practicability of offsite alternatives, the Corps directed the applicant to determine availability as the date of acquisition of the Rosemont Project in 2005. Based on a 2005 market entry year, the applicant presented an analysis of copper mining projects that were either underway or in the planning stage at that time. Although eleven offsite alternatives are listed in the AA, insufficient information has been provided in the analysis to eliminate some of the alternatives from further consideration.[34] Information regarding the aquatic resources at the eleven offsite alternatives was not provided. In order to remove offsite alternatives from consideration, additional information, including but not necessarily limited to the following, is needed:

> *Availability* - Several of the offsite alternatives (*e.g.*, Safford, Lone Star, Johnson Camp, Monitor and Markham Wash) were eliminated based on the applicant's following statement, "There was no indication that this facility was for sale in 2005, and it was therefore not available for purchase by Augusta." This statement alone does not substantiate whether these sites may or may not have been "available" under the Guidelines. Additional information is necessary in order to determine whether these alternatives were available at market entry.
>
> *Practicability* – The applicant states: "If an offsite alternative consists solely of Mineral Resources, by definition there is insufficient information to determine if extraction is feasible (the industry's term) or practicable (the 404(b)(1) Guidelines' term). It is not until the feasibility study is complete, and the Mineral Reserve identified, that it can be determined whether or not a given project is "capable of being" in light of cost, technology, and logistics." (page 8).

A letter to Westland Resources from Augusta dated August 30, 2010 discussed the history of the Rosemont Deposit. The letter describes the advancement of the Rosemont Project following its purchase in 2005. In particular, when describing the exploration drilling, it states,

> *"At the time of this initial work in 2005 and 2006, it was only appropriate to report on Mineral Resources of the Rosemont Deposit. The estimation of the Mineral Resources and assessment of the reasonable prospects for economic extraction required the judgment of a consulting engineer to serve as the official Qualified Person. In early 2007, the positive results from preliminary assessments of the Rosemont Deposit, allowed for the corporate decision to proceed to the next stage." (page 2)*

In August, 2007, Rosemont Copper Company completed an economic feasibility study for the Rosemont Deposit. Based on this information, it is unclear why other offsite alternatives were eliminated from further consideration for lack of a completed feasibility study by 2005 (market entry). Similar to the Rosemont Deposit, alternatives such as Lone Star, Copper Creek, Monitor, Broad Top Butte, and Peach-Elgin were identified as having mineral resources or were in the exploration phase during 2005. Therefore, these alternatives cannot be removed from further consideration under the Guidelines at this time.[35]

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[34] DEIS Appendix B: *CWA 404(B)(1) Alternatives Analysis Rosemont Copper Project*, September 2011

[35] The AA did not provide information regarding the aquatic resources on each offsite alternative in order to assess the potential environmental impacts associated with constructing a copper mine at these locations.

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Onsite Alternatives

The applicant evaluated six onsite alternatives for construction of the proposed copper mine. Several elements of the project are common to all alternatives: production rates, processing facility output, types of equipment, mineral processing operations and techniques, general plant site location, surface water management approach, reclamation and closure and access and utility alignments. With regard to the development of the onsite alternatives, the applicant considered various configurations of the largest project structural elements.

The onsite alternatives are listed in the AA as:

- Alternative 1 – Mine Plan of Operations
- Alternative 2 – Alternative Tailings Sequence
- Alternative 3 – Barrel Canyon Only
- Alternative 4 – Barrel Canyon Only, Landforming
- Alternative 5 – Scholefield Tailings
- Alternative 6 – Modified Pit Configuration.

The PN identifies Alternative 3 (Barrel Canyon Only) as the applicant's proposed project, and all on-site alternatives as practicable except for Alternative 6. The AA lists the Alternative 3 direct impacts at 37.7 acres of waters and ~207 acres of associated riparian habitat. The PN states the proposed project would impact 38.6 acres of waters. Average annual stormwater flows in Barrel Canyon will be reduced by 33.8 percent with 100-years flows reduced by 34.9 percent.

Comparing other alternatives presented in the AA, direct impacts to waters vary from 26.5 acres (Alternative 5 - Scholefield Tailings) to 50.5 acres (Alternative 4 - Barrel Canyon Only, Landforming). Average annual stormwater flow reductions to Davidson Canyon vary among the alternatives from 18.4% (Alternative 5 - Scholefield Tailings) to 45.8 % (Alternative 1 - Mine Plan of Operations). On both metrics, Alternative 5 - Scholefield Tailings has the fewest impacts to aquatic resources, although the AA dismisses it due to the loss of Scholefield Spring, one of the only wetlands identified within the project site. Yet, the Biological Resources section of the DEIS under *Impacts Common To All Action Alternatives* states:

> "Springs would be impacted by surface disturbance and by drawdown in the regional aquifer. Specifically, impacts to Scholefield No. 1 and Fig Tree springs are likely to occur within the active life of the mine as a result of drawdown in the regional aquifer. Riparian vegetation associated with these springs likely would be lost completely; WestLand Resources estimates approximately 0.8 acre of riparian habitat are associated with these springs (WestLand Resources Inc. 2010d)." (DEIS page 388).

The AA goes on to state that under Alternative 5 - Scholefield Tailings, major drainages remaining open would degrade due to adjacent upland mine operations, yet a functional assessment was not conducted on the project site nor qualitatively or quantitatively presented in the AA or DEIS.

The AA also describes power and water utility alignments impacting up to 0.98 acre of waters, dismissing jack-and-bore technology due to cost and potential for greater environmental impacts to vegetated uplands at the staging area. Based on the information provided to date, the applicant has not demonstrated jack-and-bore technology is more environmentally damaging, or that increased costs render the alternative methods impracticable.

To reduce impacts to waters, additional analysis of onsite alternatives should be conducted. This includes, but is not limited to, the construction of higher waste rock piles, and the potential for partial backfill of the mining pit. Impacts to waters from elements common to onsite alternatives have not been broken down. The EPA recommends a delineation of impacts for each element and a description of avoidance and minimization for these elements (*e.g.*, movement of general plant site location, design of surface water management facilities, primary and secondary access).

Compliance with Other Environmental Standards – 40 CFR 230.10(b)

The Guidelines prohibit any discharge of dredged or fill material if it causes or contributes to violations of an applicable state water quality standard. Based on the information currently available, secondary impacts of the proposed fill discharges would result in significant degradation to outstanding natural resource waters in violation of applicable water quality standards (including anti-degradation policies). Reductions in streamflow, alterations in sediment transport, chemical leaching and groundwater drawdown will degrade water quality (*e.g.*, aquatic wildlife (warmwater) designated uses) and the aquatic ecosystem.

Data provided in the Draft EIS show that modeled water quality for untreated seepage from heap leach exceeds standards for cadmium, fluoride, nickel, and selenium. The modeling also shows that after treatment with an engineered biological system, this seepage would be expected to meets standards. Since the effectiveness of the seepage treatment system is a critical factor in determining whether state standards may be violated by the project, the applicant should provide more information on the engineered biological system that was utilized to model compliance. The modeled results in the EIS suggest concentrations of nickel and selenium well below known instrument detection levels or reduction efficiencies, and thus the EPA is skeptical that the reported efficiencies are scientifically supportable, and concerned that proposed treatments may never perform at the levels necessary to ensure that heap leach drain down does not exceed Arizona Aquifer Water Quality Standards.

Placing detention/retention basins on top of tailings or waste rock also represents a threat to water quality. Contrary to the applicant's stated goal of avoiding infiltration from these basins, such placement would promote infiltration by accumulating any appreciable precipitation into one location where overall evaporation rate is slowed. Even lined basins would create an unnecessary long term maintenance issue that would need to be addressed and paid for post closure.

In addition, the EPA is concerned the synthetic precipitation leaching procedure (SPLP)[36] test results presented in the DEIS may significantly understate the potential for seepage waters to exceed Arizona Aquifer Water Quality Standards. Based on SPLP testing methods, the DEIS concludes that

> "None of the constituents predicted in the waste rock seepage exceed current Arizona Aquifer Water Quality Standards. Arsenic is predicted to exceed the proposed lower arsenic standard of 0.010 milligram per liter" (p. 288).

[36] The SPLP (USEPA Method 1312) was developed to evaluate the fate and transport of metals in an engineered land disposal facility from which municipal solid waste is excluded. USGS modified the procedure to be used to measure fraction that controls rapid leaching. This test provides an indication of extent of leaching of salts and readily dissolvable constituents from dried mine materials. Static tests of this nature provided a preliminary simulation of short-term interaction with rain/snowmelt. These tests do not provide any data regarding when acidification may occur or the rates at which acid generation and neutralization reactions will proceed. As such, they are useful only for screening samples for their potential behavior.

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In EPA's experience, and based on information at other sites, it is highly likely that the ~2,000 acre waste rock pile will produce seepage in an intermittent manner, highly dependent on annual and/or seasonal precipitation cycles. This will result in relatively small amounts of seepage being exposed to large amounts of potential contaminants, leading to leachates of much higher concentration than predicted by SPLP testing methods. Arsenic is present as a contaminant at numerous hardrock sites in the western US and is likely associated with copper mineralization. Because of its relatively high solubility at neutral pH it is often overlooked when focusing on acid rock drainage, and has frequently resulted in concentrations greater than predicted by SPLP tests at other sites.

With regard to selenium, we note that less than doubling of the predicted concentrations (0.036 mg/L) would result in an exceedance of water quality standards (0.05 mg/L). Given the high liquid:solid dilution ratio employed in the SPLP tests performed for the geochemical characterization, the EPA believes that it is highly likely that any seepage produced from waste rock storage facilities would exceed the Arizona Aquifer Water Quality Standard of 0.05 mg/L for selenium. Selenium has been a particular contaminant of concern at other hardrock mine sites in the U.S., is mobilized under neutral conditions similar to arsenic and can result in significant additional reclamation and groundwater remediation costs.

The EPA recommends the applicant explain how static testing methods like SPLP meet the Arizona Department of Environmental Quality's Best Available Demonstrable Control Technology requirements for characterization of mining waste, when it is generally agreed that kinetic testing is the best predictor of long-term water quality. Kinetic test results might form a stronger basis for this analysis, along with methods such as bottle roll leach tests which use a more appropriate 2:1 liquid-to-solid ratio.

At other regional copper porphyry mines (e.g. Sierrita, Mission), adverse water quality impacts have been observed that were not predicted. In addition to baseline site geochemical characterization, we recommend the applicant evaluate regional geochemical site analogs and explain their expectation that the Rosemont mine will have different acid rock drainage and contaminant leaching potential than similar area copper mines.

In addition to considerations related to sediment discussed earlier, even a potential degradation of water quality from arsenic and selenium not exceeding standards could nevertheless be significant. Davidson Canyon and Cienega Creek are OAW (also referred to as Tier III waters under federal anti degradation policy), a status that prohibits any degradation under the law. Arizona's anti degradation rules reinforce this prohibition.[37] Federal anti degradation requirements provide that "water quality shall be maintained and protected" in Tier III waters, and that the water quality in Tier III waters may not be lowered to accommodate economic or social development in the area where the waters are located.[38]

Permitting the proposed project's reduction in stream flows to Davidson Canyon and Cienega Creek, its alteration of sediment transport, groundwater drawdown, and potential contamination of arsenic and selenium would be inconsistent with applicable anti degradation policy because regulatory authorities would have failed to maintain and protect existing water quality in those OAWs. In addition, such significant degradation of the aquatic ecosystem in Outstanding Natural Resource Waters is prohibited by the Guidelines at 40 CFR 230.10(b)(1) and 40 CFR 230.10(c).

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[37] "[d]egradation of an OAW ... is prohibited." ACC R18-11-107

[38] 40 CFR 131.12(a)

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Consistent with Corps regulations and the October 29, 2009 Department of the Army Memorandum regarding Water Quality, the EPA believes the likely impacts to water quality detailed above constitute "other water quality aspects" under 33 CFR 320.4(d) that should be specifically evaluated by the Corps during review of the application. This is particularly important given the potential impacts to OAW, which must be protected from any degradation in water quality.

The Guidelines also state no discharge of dredged or fill material shall be permitted if it jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973. Currently, there is insufficient information to assess the effect of the proposed project on ten federally listed species known to occur within or adjacent to the project site, but potentially significant adverse impacts are reasonably foreseeable. The applicant has not prepared a BA, and thus the USFWS has not yet initiated formal consultation with the USFS to determine the affects of the proposed project on listed species. Therefore, a determination cannot be made whether the project complies with this restriction under the Guidelines.

Significant Degradation – 40 CFR 230.10(c)

Pursuant to the Guidelines, no discharge of dredged or fill material can be permitted which will cause or contribute to significant degradation of waters of the United States. Based on the information currently available and detailed in Section III of this letter, the EPA believes the project, as proposed, will result in significant degradation under the following criteria outlined in regulation:

- Significant adverse effects to water circulation and fluctuation;
- Significant adverse effects to aquatic organisms due to suspended sediments and turbidity;
- Potential arsenic and selenium contamination from seepage waters to downstream waters;
- Significant direct and secondary effects on the structure and function of the aquatic ecosystem and organisms;
- Significant cumulative effects on waters within the 145,000- acre project analysis area;
- Significant secondary effects on the aquatic ecosystem.

Avoidance, Minimization, and Compensation-- 40 CFR 230.10(d)

No discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. For unavoidable impacts that remain, the applicant is required to comply with "Final Rule for Compensatory Mitigation for Losses of Aquatic Resources" (40 CFR Part 230 Subpart J).

Currently, there are no mitigation banks or in-lieu fee programs available to the applicant as compensation for unavoidable impacts to waters. According to the PN, the applicant is evaluating the potential for contiguous offsite Rosemont-owned parcels to offer compensatory mitigation, but no mitigation plan has been submitted. Rosemont anticipates mitigation credit for these parcels will be available through preservation with either a restrictive covenant or conservation easement placed over the mitigation lands. Rosemont is also evaluating offsite parcels within the Santa Cruz River watershed for preservation or restoration of surface water resources. Information provided to date by the applicant is insufficient to demonstrate their mitigation proposal meets the restrictions on discharge required by the guidelines at 40 CFR 230.10(d) and 40 CFR 230.12(a)(3)(iv).

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VI. Conclusion

When considered together, the direct and secondary impacts from discharges of dredged or fill material from the proposed project likely will cause or contribute to significant degradation of waters of the United States. The EPA has reached this conclusion based on the information currently available to us from the Corps PN and the Forest Service's DEIS, assessing the factual determinations required under the Guidelines by Subparts B and G, and consideration of Subparts C-F, with special emphasis on the persistence and permanence of the direct and secondary effects outlined in these subparts. Under these Guidelines we have considered individually and collectively the direct and secondary effects from discharges associated with the proposed project to waters of the United States contributing to significant degradation.

The proposed project will likely result in significant adverse effects: (1) to fish, wildlife and special aquatic sites; (2) on life history stages of aquatic life and other wildlife dependent on aquatic ecosystems; and (3) on aquatic ecosystem diversity, productivity, and stability, through the loss of fish and wildlife habitat.[39] This includes significant adverse effects on the physical, chemical, and biological components of the aquatic environment, including the following factual determinations as required under EPA's 404(b)(1) Guidelines.[40]

- *Water circulation and fluctuation determinations.* The proposed project will have significant adverse effects on downstream flows and normal surface and groundwater fluctuations through the direct discharge of fill material and through secondary impacts resulting from groundwater drawdown. The discharge of fill material will divert and obstruct the natural flow patterns of at least 18 miles of stream channel. The discharge of fill material will alter the bottom contours of these 38.6 acres of waters, resulting in significant downstream changes in the hydrology and hydraulics of high functioning receiving waters.

- *Suspended particulate/turbidity determinations.* Secondary effects from increased scour will likely result in significant changes to water quality by increasing total suspended sediment and turbidity in surface water flows. Elevated levels of suspended sediment or moderate-to-high turbidity will likely have significant adverse effects on aquatic organisms in Davidson Canyon and Cienega Creek. Increased suspended sediment and turbidity will have the potential to smother aquatic organisms as sediments settle out. Increases in turbidity can be expected to disrupt the feeding, movement, spawning, and rearing of aquatic organisms such as native fish and amphibians.

- *Contaminant determinations.* Based on our evaluation of the SPLP test results, the EPA believes the proposed project has a high likelihood of potential arsenic and selenium contamination from seepage waters to downstream waters.

- *Aquatic ecosystem and organism determinations.* The proposed discharge will have significant direct and secondary effects on the structure and function of the aquatic ecosystem and organisms. Adverse effects to the life stages of aquatic life and other wildlife dependent on aquatic ecosystems will occur largely through changes associated with the direct fill of 38.6 acres of waters and the potential adverse secondary effects to 1,364 acres of riparian habitat, including jurisdictional wetlands and other aquatic habitats. Secondary effects to high

[39] 40 CFR §230.10(c)(1-3).
[40] 40 CFR §230.11(a-h).

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functioning downstream waters will accrue primarily from reductions in surface water flows and the drawdown of groundwater related to excavation of a large mining pit and from the burying of 18 miles of stream channel that normally functions to deliver surface water and recharge groundwater. Groundwater drawdown will result in changes to the downstream water table, thereby negatively affecting water currents, circulation, and fluctuation with negative effects on aquatic organisms such as indigenous fish, amphibians, and riparian wetland species.

- *Determination of cumulative effects on the aquatic ecosystem.* Less than 1 percent of Arizona's landscape is wetland. Since the late 1800's, streams and wetlands throughout Arizona have been modified or drained, resulting in the loss of more than one-third of the State's original wetlands.[41] This project will exacerbate the reasonably foreseeable impacts on aquatic resources contributing to the significant cumulative loss of wetlands in Arizona.

- *Determination of secondary effects on the aquatic ecosystem.* Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of fill material, but do not result from the actual placement of the fill material. The proposed project will have significant adverse secondary impacts primarily to receiving waters. These impacts are related primarily to the reductions in surface flows and groundwater drawdown that result in significant adverse impacts to fish and wildlife dependent on healthy wetlands, streams (including pools and riffle sequences) with sufficient flows, and sanctuaries and refuges, for their survival.

- *Water-related recreation and aesthetics.* The proposed project will impair activities undertaken for amusement and relaxation such as canoeing, sightseeing and hiking, and these impacts will persist for at least a quarter century. The loss of values for consideration includes impairment of natural resources which support recreation activities (*e.g,* degradation of habitat). Aesthetics of the aquatic ecosystem apply to the quality of life enjoyed by the general public and property owners. Loss of value to consider includes creating distracting disposal sites and destroying vital elements that contribute to the compositional harmony or unity, visual distinctiveness, or diversity of an area. The project area is an important location for outdoor recreation. A study conducted by the Sonoran Institute shows that approximately $2.95 billion is spent annually for tourism and outdoor recreational activities in Pima and Santa Cruz Counties. Their analysis states that if the proposed project displaces only one percent of travel and tourism-related spending in the region, the economic loss would be greater than the entire annual payroll of the mine.[42]

Based on the information currently available to the EPA, the proposed discharge does not appear to comply with the substantive requirements in the regulations at 40 CFR 230.10 (a) – (d). The EPA believes that the proposed project will result in significant degradation to waters of the U.S. which constitutes substantial and unacceptable impacts to aquatic resources of national importance, including the "Outstanding Waters" of Davidson Canyon and Cienega Creek.

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[41] http://pubs.usgs.gov/wsp2425/state_highlights_summary.html

[42] J.E. Marlow. 2007. Mining's Potential Economic Impacts in the Santa Rita and Patagonia Mountains Region of Southeastern Arizona. Sonoran Institute Study.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JAN 05 2012

Colonel R. Mark Toy
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
Attn: Regulatory Branch (SPL-2004-01399-MB)
5205 E. Comanche Street
Tucson, Arizona 85707

Subject: Public Notice (PN) 2008-00816-MB for the proposed Rosemont Copper Mine Project, Rosemont Copper Company, Pima County, Arizona

Dear Colonel Toy:

We have reviewed the December 6, 2011 PN describing the proposed Rosemont Copper Mine Project (Rosemont) located 30 miles southeast of Tucson in Pima County, Arizona. According to the PN, the project would eliminate 38.6 acres of waters of the U.S. (waters) tributary to Davidson Canyon and Cienega creek, both designated as "Outstanding Waters" by the state of Arizona. In 2009, EPA worked closely with your staff regarding the ecosystem functions and services in this watershed, and we identified these waters as "aquatic resources of national importance." With the following comments, we reaffirm this resource designation and respectfully identify the Rosemont permit action as a candidate for review by EPA and Corps headquarters.[i]

EPA is concerned that substantial loss and/or degradation of water quality and other aquatic ecosystem functions is likely if this 4,200-acre mine is constructed and operated as proposed, in the 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. Seven federally listed endangered or threatened species occur within or adjacent to the project area to which adverse impacts are reasonably foreseeable.[ii]

Corps regulations prohibit issuance of a 404 permit if it would jeopardize the continued existence of listed species, or result in violation of water quality or toxic effluent standard (40 CFR 230.10(b)). In addition, pursuant to Section 303 of the Clean Water Act (CWA) and regulations at 40 CFR 131.12, the state's "Outstanding Water" designation means both Davidson Canyon Wash and Cienega Creek must be afforded the highest level of protection, and that no degradation of water quality is allowable.

Only discharges meeting all of EPA's 404(b)(1) Guidelines – a series of independent tests at 40 CFR 230 including the analysis of practicable offsite and onsite alternatives – can be permitted by the Corps. The 404 program contributes to the CWA goals to restore and maintain the chemical, physical and biological integrity of the nation's waters by prohibiting discharges of dredged or fill material that would result in avoidable adverse impacts to the aquatic ecosystem (40 CFR 230.10(a)), or the

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significant degradation of waters or human health and welfare (e.g., due to groundwater depletion and loss of cultural resources; 40 CFR 230.10(c)). Based on our review of the PN and the alternatives analysis submitted by the applicant, compliance with the 404(b)(1) Guidelines has not been demonstrated. There is presently insufficient information to conclude that the proposed project is the "Least Environmentally Damaging Practicable Alternative" (LEDPA), or meets any of the other restrictions on discharges, including the need to ensure appropriate compensatory mitigation for unavoidable impacts.

As additional information on this project becomes available, please ask your staff to contact Elizabeth Goldmann at (415) 972-3398 to continue our partnership in ensuring CWA compliance. If you would like to discuss this project personally, please call me at (415) 972-3572 or have your Regulatory Division Chief contact Jason Brush, Supervisor of our Wetlands Office, at (415) 972-3483.

Sincerely,

Alexis Strauss 5 Jan. 2012

Alexis Strauss
Director
Water Division

cc: Rosemont Copper Company
USFWS, Phoenix
USFWS, Tucson
M. Fulton, ADEQ
ADGF, Phoenix

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[i] This letter follows field level procedures outlined in the 1992 Memorandum of Agreement between EPA and the Department of the Army, Part IV, paragraph 3(a) regarding section 404(q) of the CWA. EPA Region 9 believes the project as proposed "may result in substantial and unacceptable impacts to aquatic resources of national importance."

[ii] This includes species known to occur in aquatic habitat or use these waters for forage or resting: Chiricahua leopard frog (*Lithobates chiricahuensis*), Mexican spotted owl (*Strix occidentalis lucida*), Southerwester willow flycatcher (*Empidonax traillii extimus*). Lesser long-nosed bat (*Leptonycteris yerbabuenae*), Ocelot (*Leopardus pardalis*), Gila chub (*Gila intermedia*), Gila topminnow (*Poeciliopsis occidentialis occidentalis*), and Jacquar (*Panthera onca*).

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

APR 14 2015

OFFICE OF THE
REGIONAL ADMINISTRATOR

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

Subject: "Other Water Quality Aspects" of permit issuance for the Rosemont Mine in light of state actions under §401 of the Clean Water Act

Dear Colonel Colloton:

On February 3, 2015, the Arizona Department of Environmental Quality (ADEQ) issued the Clean Water Act (CWA) §401 Water Quality Certification (certification) for the proposed Rosemont Copper Project (Rosemont mine) in Pima County, Arizona. After careful review and consultation with the state, EPA has determined that the impacts of the project include substantial water quality aspects which may be outside the scope of the state's §401 certification review. Thus, EPA believes the certification alone is unlikely to provide sufficient measures to safeguard the water quality of the Cienega Creek watershed, including stream reaches meeting or exceeding existing water quality standards under CWA §303 (these CWA "Tier 3" waters in Arizona are designated "Outstanding Arizona Waters" or OAW).[1] As prescribed under Corps regulations at 33 CFR 320.4(d), I am requesting your consideration of these "other water quality aspects" when making your §404 CWA permit decision.[2]

The Rosemont Copper Project Final Environmental Impact Statement (FEIS) and other documentation concluded the Rosemont mine, if constructed, would adversely modify surface and groundwater hydrology, sediment transport, and pollutant loadings in the watershed. The state CWA §401 certification lacks sufficient, specific preventative actions to avoid these adverse impacts to water quality, creating a substantial risk to designated beneficial use standards set by the state for Davidson Canyon and Cienega Creek. In general, the certification relies upon limited, voluntary (i.e., non-enforceable) post-discharge monitoring that may detect water quality degradation after it occurs, and includes insubstantial corrective actions to be developed at a later time. Many of EPA's concerns identified in comments on the state's February 21, 2014 draft certification (letter attached) remain unaddressed by the final certification. Among the most critical water quality aspects that remain outstanding are:

1. **Water quality impact avoidance:** Without reasonable assurance of impact avoidance, the available information suggests Tier 3 antidegradation standards are very likely to be violated.

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[1] Federal antidegradation policy prohibits any degradation of Tier 3 waters, regardless of economic or social development needs (40 CFR 131.2(a)). Arizona's anti degradation rules reinforce this prohibition (ACC R18-11-107).
[2] Corps Regulatory Guidance Letter 90-04 and the Memorandum for *Major Subordinate Commands and District Commands* dated October 29, 2009

2. **Water quality impact minimization:** A specific and complete monitoring program is necessary at the outset ensure rapid detection of impacts should a robust preventative program fail, and provide for the ability to deploy corrective measures;
3. **Water quality impact mitigation:** Specification of, and enforceable commitment to, available and sufficient corrective measures are needed to offset mine-related reduction of assimilative capacity, changes in downstream sediment yield, and other potential diminutions of water quality that may be detected. Presently, the corrective measures proposed in a "Surface Water Mitigation Plan" lack specificity regarding their ability to arrest and reverse water quality problems once water quality degradation of OAWs or other waters has been detected. [3]

We believe these water quality aspects are directly relevant to several of the Corps' findings necessary for a permit decision, under both the 404(b)(1) Guidelines and Public Interest Review. The state's inclusion of general and specific conditions in the certification are highly unlikely to avoid potential water quality degradation, detect anticipated or unanticipated degradation, or mitigate for those impacts. The project's projected groundwater drawdown and flow and sediment reductions in Davidson Canyon and Cienega Creek have yet to be adequately addressed. These outcomes would represent a failure to maintain and protect existing water quality in those OAWs in violation of the CWA antidegradation policy. The certified discharges of fill material would thus contribute to violation of applicable water quality standards, in conflict with the Guidelines at 40 CFR 230.10(b).

The Corps' permit decision also includes an evaluation of the impacts of the proposed project on water supply and conservation (33 CFR 320.4). Within the Tucson Active Management Area (AMA), a population of over 811,000 obtains 69% of its municipal water supplies from groundwater. Agriculture relies on subsurface supply to provide 70% if its water.[4] The Upper Santa Cruz subbasin, where Rosemont is sited, provides 20% of the groundwater recharge in the Tucson AMA.[5] The mine's water needs would represent a new demand that increases pumping by 6-7% during an overall drying trend.[6] Drought, climate change, and the significant uncertainty regarding the potential to successfully recharge subsurface supplies, only heighten EPA's concerns over Rosemont mine's projected water use in an aquifer already subject to groundwater overdraft.[7]

According to the FEIS, groundwater pumping for the mining operation and drawdown from the open pit will adversely impact public and private water supplies.[8] As a result of pumping groundwater for the mine, an estimated 500-550 private and municipal wells would be impacted by drawdown in groundwater levels over ten feet.[9] Groundwater drawdown from the mine's pit within the Davidson Canyon/Cienega Basin, would impact an additional estimated 360-370 well owners with water level

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[3]The SWMP developed under the certification does not meet its stated objective of describing mitigation commitments to offset predicted reductions in surface water flows and sediment yield. For example, it proposes a conceptual mitigation water supply of insufficient quantity to offset flow reductions predicted by the FEIS, and provides no assurance of that water's future availability.

[4] www.azwater.gov/azdwr/StatewidePlanning/WaterAtlas/ActiveManagementAreas/Volume_8/final.pdf.

[5]Letter to Jared Blumenfeld, EPA Regional Administrator, and Colonel Kim Colloton, Corps District Engineer, from Ray Carol, Pima County Supervisor dated November 18, 2014.

[6] FEIS, p. 338.

[7] FEIS, p. 322 and p. 328.

[8] FEIS, pp. 328-329.

[9] FEIS, p. 330 and Table 58, p. 337. Groundwater drawdown is estimated at up to 90 feet adjacent mine site pumping, and up to 10 feet within an approximately 3-4 mile radius (42 square miles).

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declines ranging from 15-85 feet.[10] Private and public well owners and suppliers have expressed concern regarding the impact on the quality and quantity of their water supply, as well as the increased costs associated with pumping from a deeper aquifer if the mine is constructed.[11] Rosemont mine proposes to conduct groundwater recharge as a voluntary measure, but the location and effectiveness of recharge is unknown and, therefore, may not benefit the Upper Santa Cruz subbasin.[12]

Finally, the Cienega Creek watershed is located in a near pristine landscape rich in biodiversity. As such, it is an important location for outdoor recreation. The State of Arizona has designated reaches of both Davidson Canyon and Cienega Creek as OAWs due to, among other factors, their exceptional ecological and recreational significance and the presence of federally endangered and threatened species. Water quality in these reaches currently meets or exceeds applicable water quality standards, and any lowering of water quality in OAWs is prohibited. Public and private utilization of this habitat contributes to a robust recreation and tourism industry in the region.[13] Loss of recreational and aesthetic value stemming from the mine's various adverse impacts to water quality are an important additional consideration in permit authorization (33 CFR 320.4).

In summary, sufficient evidence exists to conclude that several water quality aspects that may be beyond the scope of the state's §401 water quality certification remain outstanding, which EPA recommends be considered in your findings under the §404(b)(1) Guidelines and Public Interest Review. Please do not hesitate to contact me with any questions, or have your Regulatory Division Chief contact Jason Brush, our Wetlands Section Supervisor, at (415) 972-3483.

Sincerely,

Jared Blumenfeld

Enclosure: EPA letter to ADEQ dated April 7, 2014
cc: Jim Upchurch, U.S. Forest Service
Steve Spangle, U.S. Fish and Wildlife Service
Ray Suazo, Bureau of Land Management
Trevor Baggiore, Arizona Department of Environmental Quality

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[10] FEIS, p. 350.
[11] Letter to Jared Blumenfeld, EPA Regional Administrator and Colonel Kim Colloton, Corps District Engineer dated November 12, 2014 signed by 76 private well owners and public water suppliers and users.
[12] FEIS, pp. 360-361. In addition, Rosemont Mine offered a legally binding residential well protection plan valid during the operation of the mine, but not all well owners have agreed to sign the agreement.
[13] $2.95 billion is spent annually for tourism and outdoor recreational activities in Pima and Santa Cruz Counties. An analysis by Sonoran Institute estimates a one percent reduction of travel and tourism-related spending in the region would result in an economic loss greater than the entire annual payroll of the mine. J.E. Marlow. 2007. *Mining's Potential Economic Impacts in the Santa Rita and Patagonia Mountains Region of Southeastern Arizona*. Sonoran Institute Study.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

APR 07 2014

Michael Fulton, Water Quality Division Director
Arizona Department of Environmental Quality
Surface Water Section/State 401 Certification/MS 5415A-1
1110 West Washington Street
Phoenix, Arizona 85007

Subject: State of Arizona Clean Water Act (CWA) Draft Section 401 Water Quality Certification for the Rosemont Copper Project, Pima County, Arizona

Dear Mr. Fulton:

Thank you for the extended opportunity to review the draft CWA Section 401 water quality certification (certification) and supporting information for discharges associated with the proposed Rosemont Copper Project. With Arizona's designation of portions of the Cienega Creek watershed as "Outstanding Arizona Waters" (OAWs), the EPA supports the state's broadest exercise of legal discretion to protect these remarkable resources. We are submitting the enclosed comments as a continuation of our interagency coordination on the mine's potential water quality consequences to the OAWs of the Cienega Creek watershed.

After careful consideration, EPA believes the draft certification and supporting information provide an insufficient basis from which to conclude existing water quality will be maintained (*e.g.*, ongoing attainment of designated beneficial uses). In general, the draft certification relies on lagging indicators (post-discharge monitoring) to trigger corrective actions, rather than a preventative approach to ensure the protection of water quality in the OAWs. Those corrective actions also lack critical specificity with regard to water supply, the ability to arrest and reverse water quality problems should they be detected, and the enforceability of conditions given varying jurisdiction over proposed monitoring areas.

The U.S. Forest Service's Final Environmental Impact Statement (FEIS) and supporting documentation conclude that the Rosemont Copper Project will adversely modify surface and groundwater hydrology, sediment transport, and pollutant loadings in the watershed. EPA believes the available evidence indicates a substantial risk to designated beneficial use standards (*e.g.*, fish, wildlife and habitat) set by the state for Davidson Canyon and Cienega Creek. The EPA recommends that no 401 certification be issued unless the discharger can implement specific preventative actions that provide a high degree of confidence that designated uses will be maintained.

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Please do not hesitate to contact me with any questions or concerns you may have regarding the enclosed comments at (415) 947-8707.

Sincerely,

Jane Diamond
Director
Water Division

cc: Jim Upchurch, U.S. Forest Service
Colonel Kimberly Colloton, U.S. Army Corps of Engineers
Jean Calhoun, U.S. Fish and Wildlife Service
Ray Suazo, Bureau of Land Management
Chuck Huckelberry, Pima County

EPA Region 9 comments on the *Draft Section 401 Water Quality Certification for the Rosemont Copper Project* dated February 21, 2014 (Draft 401 Certification), and the *Basis for State 401 Certification Decision Rosemont Copper Project ACOE Application No. SPL-2008-00816-MB* (Basis for Decision)

Protecting "Outstanding" Water Quality Downstream of the Rosemont Mine

The State of Arizona has designated reaches of both Davidson Canyon and Cienega Creek as OAWs due to, among other factors, their exceptional ecological and recreational significance and the presence of federally endangered and threatened species. Water quality in these reaches currently meets or exceeds applicable water quality standards, and any lowering of water quality in OAWs is prohibited.

ADEQ states in its Basis for Decision that, "In order to issue a State 401 water quality certification, ADEQ must be satisfied that any modifications to hydrology, sediment transport or water quality, as a result of the proposed activities under the § 404 permit, will not result in adverse water quality impacts to the downstream OAWs."[1]

Rosemont Mine proposes no direct discharges to OAWs. However, as ADEQ acknowledges in its Basis for Decision, "As part of its certification process, ADEQ may impose additional controls, conditions or mitigation measures, on indirect discharges that occur upstream of or to tributaries of an OAW to maintain and protect existing water quality in a downstream OAW."[2]

ADEQ has proposed the following additional measures in its Draft 401 Certification to maintain and protect existing water quality in Davidson Canyon and Cienega Creek:

5.2 Specific Conditions

1) Within 180 days of the effective date of the CWA 404 permit, the applicant shall submit to ADEQ, for review and approval, a surface water mitigation program designed to maintain aquatic and riparian resources at pre-project levels in Davidson Canyon and Lower Cienega Creek. The program shall include, but is not limited to, a description of measures that will be taken to offset predicted reductions in surface water flow, in response to the project, along with a proposed schedule for implementation. The Final Environmental Impact Statement (FEIS) predicts a 17.2% reduction in average annual post-closure stormwater runoff volume as a result of the proposed activities. The surface water mitigation program shall describe measures that will offset the reduced runoff volume should it occur. The draft mitigation program shall be submitted to the address and contact person in Section 4.0.

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[1] Basis for Decision at pg. 2.

[2] Basis for Decision at pg. 2; *see also* ADEQ Draft Antidegradation Implementation Procedures (April 2008) at pg. 4 ("ADEQ will impose whatever controls are necessary on indirect discharges that occur upstream of or to tributaries of an OAW to maintain and protect existing water quality in a downstream OAW.") Available at: http://www.azdeq.gov/environ/water/standards/download/draft_anti.pdf.

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> The mitigation program shall identify measures, as necessary, to ensure that any water used to mitigate a predicted reduction in stream flows, meets applicable Arizona surface water quality standards, including for Outstanding Arizona Waters, where applicable.
>
> Within 30 days of ADEQ approval of the program, the applicant shall implement the approved mitigation program in accordance with the schedule set forth in the approved program. Should the results of required monitoring and/or revised hydrologic modeling (FEIS Mitigation Measures FS-BR-22, FS-BR-27, FS-GW-02, FS-SR-05) indicate that water quality in Davidson Canyon or Lower Cienega Creek is adversely affected by the activities certified herein, ADEQ may request that the COE suspend the CWA 404 Permit and require additional mitigation.

ADEQ found that if Rosemont adheres to the conditions and mitigation in the 401 Certification (*i.e.*, Specific Conditions 5.2), and also to CWA § 404 permit conditions, the U.S. Forest Service's Final Environmental Impact Statement's (FEIS) mitigation measures, and the State's 2010 Mining AZPDES Multi Sector General Permit's requirements, then the Rosemont Copper Project should not cause or contribute to exceedences of surface water quality standards nor cause water quality degradation in the downstream receiving waters including Davidson Canyon Wash and Cienega Creek.[3] ADEQ based its finding on a consideration of the following 5 factors:

1. Change in ambient concentrations predicted at the appropriate critical flow conditions and the nature, persistence and potential effects of the parameter;
2. Changes in loadings and the nature, persistence and potential effects of the parameter;
3. Reduction in available assimilative capacity;
4. Degree of confidence in the various components of any modeling technique utilized; and
5. Potential for cumulative effects.

After a careful review of ADEQ's consideration of these five factors, EPA believes ADEQ's certification decision, and its finding that the current conditions and mitigation in the 401 certification (*i.e.*, Specific Conditions 5.2) will prevent water quality degradation in Davidson Wash and Cienega Creek, is not justified and the risk of water quality degradation remains high. EPA provides further consideration of the five factors, as discussed below:

Factors 1 and 2: Sediment is a critical and under-analyzed water quality parameter

As ADEQ correctly acknowledges in its Basis for Decision, changes to sediment transport in streams can adversely affect water quality by increasing total suspended sediment in surface water flows and altering the physical integrity of the system, thereby causing problems with scour or aggradation which have the potential to result in water quality degradation.[4] ADEQ also recognizes that potential impacts on surface water quality due to the proposed fill activities could include changes in downstream sediment yield and therefore changes in geomorphology caused by the loss of waters of the U.S.[5] Yet,

[3] Basis for Decision at pg. 3.
[4] Basis for Decision at pg. 8.
[5] Basis for Decision at pp. 6 and 8.

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ADEQ concludes that the proposed fill activities will not have a significant impact on the geomorphology of Barrel and Davidson Canyons.

To draw these conclusions of no significant impact, ADEQ relies on a very limited review of sediment transport effects. ADEQ uses the US Forest Service's (USFS) geomorphic assessment of Barrel Creek by Patterson and Annandale (2012), a 2-day survey using three variables: sediment availability, channel geometry, and water flow. Patterson and Annandale reason that since the Rosemont mine impacts 13% of the entire catchment area, there would not be significant impact to the fluvial geomorphology of the stream system.[6] This conclusion presumes a simple and direct proportionality of the Rosemont mine's sediment contribution to other parts of the watershed, and considers no temporal variability. In reality, the impacts of mining activities on sediment transport are likely to change over time during the active mine life and after closure, with potentially significant consequences to channel stability and aquatic and riparian habitat. Thus, suspended and bedload transport analyses are necessary to evaluate the impacts to OAWs from mine-driven sediment changes.

Without the benefit of these additional analyses, EPA believes that ADEQ would be premature to conclude that there will be little change to lower Davidson Canyon's geomorphology (and water quality) as a result of the fill.

Factor 3: Reduction in available assimilative capacity

According to the FEIS, natural stormwater runoff that currently feeds the OAWs will be diminished up to 40% over the 24.5 – 30 year life of the mine.[7] ADEQ acknowledges a post-closure reduction in runoff volume of 17.2%, and concludes that this reduction could result in a potential loss of assimilative capacity and therefore potential degradation of water quality and/or riparian areas.[8]

For 404 permitting purposes, the Corps of Engineers requested that Rosemont conduct an analysis of indirect impacts from stormwater diversion. Considering the attenuation of impacts as the contributing watershed becomes larger, Rosemont calculated a reduction in average annual volume of stormwater flow in the Davidson Canyon OAW of approximately 8%, resulting in indirect impacts to 2.2 acres of surface waters within the OAWs during Rosemont mine operation.[9] EPA maintains Rosemont's analysis is flawed and the reduction in stormwater flow will adversely affect the entire wetted channel of the OAW. Rosemont did not calculate the indirect impacts to Lower Cienega Creek.

To address predicted reductions in runoff volume, the draft certification proposes that Rosemont develop and implement a surface water mitigation program designed to maintain aquatic and riparian resources at pre-project levels in Davidson Canyon and Lower Cienega Creek. The program shall include measures to offset predicted reductions in surface water flow (17.2% at post-closure), and a proposed schedule for implementation.[10]

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[6] Basis for Decision at pg. 8.
[7] FEIS, Volume 2, Chapter 3, Table 66. Summary of effects
[8] Basis for Decision at pg. 10.
[9] Email from Brian Lindenlaub, Westlands Resources, to Elizabeth Goldmann, EPA dated January 15, 2014.
[10] Basis for Decision at p. 11, Draft 401 Certification, Specific Condition 5.2.1.

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EPA appreciates ADEQ's inclusion of this Special Condition. EPA, however, is concerned that there is inadequate detail or certainty about the prospective surface water mitigation program's ability to offset the reduction in available assimilative capacity. For instance, EPA believes that since the 401 certification's coverage extends over the entire active mine period, and since the natural stormwater runoff that currently feeds the OAWs will be diminished up to 40% over the 24.5 – 30 year life of the mine, the mitigation targets should be based on the 40% surface runoff reductions predicted during the life of the mine, as opposed to the 17.2% post-closure reductions estimated by ADEQ.

In addition, the potential strategies described in the draft 401 certification to offset loss (*e.g.,* purchasing, retiring, severing and transferring of water rights) depend on administrative actions that are not certain to occur. Without certainty of measurable water supply and delivery, and corresponding contingencies for failure to secure such water, EPA does not believe these activities may be reasonably relied upon to replace the loss of wet water in the OAWs and prevent their degradation. We therefore recommend that ADEQ have Rosemont submit its surface water mitigation program to ADEQ for approval *prior* to issuance of the 401 water quality certification to ensure that Rosemont has secured enough available "wet" water to maintain aquatic and riparian resources at pre-project levels in Davidson Canyon and Lower Cienega Creek.

Factor 4: Degree of Confidence in various components of any modeling technique utilized

In its Basis for Decision, ADEQ correctly notes the uncertainty of the USFS models in predicting impacts to downstream waters.[11] ADEQ concludes that based on modeling and observation (*e.g.,* models, Tetra Tech field observations, SRK Consulting review), Lower Davidson Canyon is not hydraulically connected to the regional aquifer that would be impacted by pit dewatering.[12] With regard to Lower Cienega Creek, ADEQ states the potential reduction in perennial stream flow would be driven by the reduction in contribution from both Davidson Canyon and Upper Cienega Creek, but this reduction in surface flows would be minimal.[13]

The EPA believes that the uncertainty associated with available modeling does not support the above conclusions. Uncertainty equates to greater risk, which argues for a more protective or precautionary application of standards.

As previously stated, changes in sediment loading and a reduction in assimilative capacity will adversely affect water quality in Davidson Canyon and Lower Cienega Creek OAWs. In addition, pit dewatering will adversely impact approximately 20 miles of the Upper Cienega Creek OAW. According to the FEIS, the best-fit models show that mine related groundwater drawdown will result in intermittent conditions in Upper Cienega Creek after 150 years. By 150 years after closure, the risk of dry or low-flow conditions occurring in Upper Cienega Creek would increase to 88-283 days per year. Another model estimate shows Cienega Creek becoming intermittent within 50-150 years.[14] As a contributing

[11] Basis for Decision at p. 11.
[12] Basis for Decision at p. 11.
[13] Basis for Decision at p. 13.
[14] FEIS, Chapter 3, Table 108.

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surface water source to Lower Cienega Creek, reductions in flow in Upper Cienega Creek will result in degradation of water quality in downstream OAW receiving waters.

Factor 5: Potential for Cumulative Impacts

EPA concludes from a careful read of the evaluation of cumulative impacts contained in the Basis for Decision that the scope and magnitude of impacts associated with the proposed Rosemont Copper Project, and the context in which these impacts will occur, have not been adequately presented.[15] The Rosemont mine represents an assemblage of impacts that are additive to the existing trend of declining water availability due to climate change, drought, and other factors. Insufficient information is provided in the draft certification and the Basis for Decision to demonstrate that the implementation of a surface water mitigation program will replace flows being captured or truncated from the proposed mine, either as a stand-alone impact or in the context of cumulative impacts to water quality such as drought and climate change.

Monitoring for sediment and flow changes

In general, impacts should be avoided wherever practicable prior to contemplating ways they can be minimized or mitigated. In the case of water quality in OAWs, impacts must be avoided by definition. The draft certification proposes corrective action should impacts to geomorphology occur, but it is unclear whether corrective measures can be put in place to prevent the degradation of OAWs should scour or aggradation be detected, or whether these measures can be effective given the potential lag time between detection and implementation of potential remedies.[16]

The USFS will require the Rosemont mine to monitor sediment between the mine and SR83 to identify areas of scour or aggradation (FEIS mitigation measure FS-SR-05), and Rosemont has agreed to share these data with ADEQ. However, these measures are only applicable on USFS lands; the USFS has no authority, obligation, or expertise to determine or enforce compliance with other agencies' laws or regulations.[17] In addition, based on the monitoring locations on USFS lands, it is questionable whether these monitoring measures and sites would capture changes to the beneficial uses associated with water quality standards at downstream OAWs.

EPA also believes Specific Condition 5.2.1 would benefit from a clearer description of the suspension procedures triggered if degradation is detected. Currently, the draft certification's proposed condition 5.2.1 states that ADEQ "may request" suspension of the CWA 404 permit if degradation is detected and require additional mitigation. However, the condition lacks specificity on implementation and timing of the suspension process and remedies, if any, should monitoring show degradation of an OAW. At minimum, adverse changes in water quality detected in OAWs should require immediate suspension of the 401 certification (and thus of the CWA 404 permit).

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[15] Basis for Decision at p. 13.
[16] Basis for Decision at p. 8.
[17] FEIS, Appendix B, Page B-3

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Other Water Quality Concerns

A Corps Memorandum dated October 29, 2009 addresses water quality certification as follows, "The state's certification of compliance with applicable effluent limitations and water quality standards will be considered conclusive with respect to water quality considerations, unless the Regional Administrator (RA) of the U.S. Environmental Protection Agency (U.S. EPA) notifies the district engineer of "other water quality aspects" that should be taken into consideration when making a decision on a permit application for an activity that results in a discharge of dredged or fill material into waters of the United States."[18]

EPA first notified the District Engineer of water quality concerns in a letter dated February 13, 2012. If the state's 401 water quality certification is not modified to adequately address the concerns regarding the protection of Davidson Canyon and Cienega Creek, EPA expects to request the District Engineer evaluate these particular water quality issues raised and documented by EPA both for purposes of the Corps public interest review at 33 CFR 320.4(d) and compliance with 40 CFR 230.10(b)(1) in the decision document for the §404 Clean Water Act permit action.

[18] Memorandum for Major Subordinate Commands and District Commands Subject: Water Quality Certification dated October 29. 2009 at p. 1.

ED_001077_00009147-00011

To: Miller, Clay[Miller.Clay@epa.gov]
From: Goldmann, Elizabeth
Sent: Fri 2/20/2015 11:48:59 PM
Subject: Rosemont Mine update

Rosemont Copper Mine

- **404 Permit Status -** Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Miller, Clay[Miller.Clay@epa.gov]; Syed, Sharmin[Syed.Sharmin@epa.gov]
From: Goldmann, Elizabeth
Sent: Tue 10/14/2014 10:21:27 PM
Subject: FW: Your meeting with HudBay tomorrow

-----Original Message-----
From: Goldmann, Elizabeth
Sent: Tuesday, October 14, 2014 1:22 PM
To: Kaiser, Russell
Cc: Nandi, Romell; Leidy, Robert
Subject: FW: Your meeting with HudBay tomorrow

Russ -

In addition Jane's email below, please note Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

E.

-----Original Message-----
From: Diamond, Jane
Sent: Tuesday, October 14, 2014 1:10 PM
To: Kopocis, Ken
Cc: Best-Wong, Benita; Kaiser, Russell; Brush, Jason; Goforth, Kathleen; Woo, Nancy; Blumenfeld, Jared; Bethel, Heidi; Goldmann, Elizabeth; Evans, David; Martynowicz, Trina
Subject: Your meeting with HudBay tomorrow

Hi Ken. I understand HudBay has time with you tomorrow, so here's a quick summary of recent Rosemont Mine activities.

Ex. 5 - Deliberative Process

Let me know if you need more info. We can also have someone from the region on the phone if that would be helpful.

Jane Diamond
Water Director
U.S. Environmental Protection Agency
Region 9, San Francisco
415-947-8707
415-972-3275

To: Miller, Clay[Miller.Clay@epa.gov]; Kaiser, Russell[Kaiser.Russell@epa.gov]; Pendergast, Jim[Pendergast.Jim@epa.gov]
Cc: Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Bose, Laura[Bose.Laura@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Goforth, Kathleen[Goforth.Kathleen@epa.gov]; Campbell, Rich[Campbell.Rich@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]
From: Brush, Jason
Sent: Thur 3/27/2014 6:31:43 PM
Subject: RM Update from Chip Smith---in lieu of biweekly call (now)

Clay, Russ, et al: Chip reports the latest below to Ken and OFA, so you may have already received. The report is accurate. Only addition to report is the 401 comment period is extended to 4/7, so our letter is still being drafted. Feel free to call me or Liz if you want to discuss, but we are otherwise not planning to do the biweekly WD update. -JB

-----Original Message-----
From: Goldmann, Elizabeth
Sent: Thursday, March 27, 2014 11:05 AM
To: Brush, Jason; Leidy, Robert
Cc: Bose, Laura; Campbell, Rich; Jessop, Carter
Subject: RE: RM Update, March 24th (UNCLASSIFIED)

I was not aware of the April 2nd meeting.

-----Original Message-----
From: Brush, Jason
Sent: Thursday, March 27, 2014 10:48 AM
To: Goldmann, Elizabeth; Leidy, Robert
Cc: Bose, Laura; Campbell, Rich; Jessop, Carter
Subject: FW: RM Update, March 24th (UNCLASSIFIED)

Liz - Only thing new here is April 2nd meeting. Do you know if we've been invited?

-----Original Message-----
From: Rader, Cliff
Sent: Thursday, March 27, 2014 10:21 AM
To: Blumenfeld, Jared; Diamond, Jane; Johnson, Kathleen; Brush, Jason; Goforth, Kathleen; Dunning, Connell
Cc: Bromm, Susan
Subject: FW: RM Update, March 24th (UNCLASSIFIED)

FYI; please share as appropriate

-----Original Message-----
From: Smith, Charles R CIV (US) [mailto:charles.r.smith567.civ@mail.mil]
Sent: Thursday, March 27, 2014 8:11 AM
To: Horst_Greczmiel@ceq.eop.gov; Kopocis, Ken
Cc: Rader, Cliff
Subject: RM Update, March 24th (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Horst and Ken:

SPL staff have been meeting and talking with RM staff and staff from other agencies to discuss the

Ex. 5 - Deliberative Process

Chip Smith
OASA(CW)

Classification: UNCLASSIFIED
Caveats: NONE

To: Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]
Cc: Brush, Jason[Brush.Jason@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Leidy, Robert[Leidy.Robert@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Kaiser, Russell
Sent: Wed 2/19/2014 4:20:42 PM
Subject: RE: Rosemont Mine

Liz – clay is out today – not sure what his schedule is for tomorrow. I will not be available from 4-5. I am available on Friday up until 3PM…

Ex. 5 - Deliberative Process

Russell L. Kaiser

Chief, Wetlands & Aquatic Resources Regulatory Branch

1301 Constitution Ave., N.W.

Room 7217M West Bldg.

Washington, DC 20004

P: 202.566.0963

From: Goldmann, Elizabeth
Sent: Tuesday, February 18, 2014 5:35 PM
To: Miller, Clay; Kaiser, Russell
Cc: Brush, Jason; Jessop, Carter; Leidy, Robert
Subject: Rosemont Mine

Hi Russ and Clay

Do you have any time on Thursday or Friday to discuss the proposed Rosemont Mine? We

Ex. 5 - Deliberative Process

Are you available on Thursday from 4-5 pm (ET)? If not, let me know what works best.

Thanks, Elizabeth

To: Brush, Jason[Brush.Jason@epa.gov]
Cc: Miller, Clay[Miller.Clay@epa.gov]
From: Flannery-Keith, Erin
Sent: Thur 2/13/2014 2:49:41 PM
Subject: RE: Bi-weekly Rosemont R9-WD update

Good morning, Jason,

We're all snowed in at home in DC today, and I'm not sure if folks are planning to call in this afternoon. I'm also sorry to say that I don't have the leader PIN number for the conference line written down in my notebook at home.

Would it be possible to postpone the call to tomorrow or to next week?

Best wishes,

Erin

From: Brush, Jason
Sent: Thursday, December 19, 2013 5:03 PM
To: Brush, Jason; Kaiser, Russell; Pendergast, Jim; Miller, Clay; Fertik, Rachel; Flannery, Erin; Leidy, Robert; Goldmann, Elizabeth; Campbell, Rich; Bose, Laura
Cc: Graves, Karin; Jessop, Carter; Geredien, Ross
Subject: Bi-weekly Rosemont R9-WD update
When: Thursday, February 13, 2014 2:30 PM-3:00 PM.
Where: R9-Room-1103-4-MamalaBay/Region-9 - Ex. 6 - Personal Privacy code Ex. 6 - Personal Privacy

Adding HQ's conference line (thanks!).

Hello all:

I would like to set a recurring, short update call between R9 and Wetlands Division, focused on issues

Ex. 5 - Deliberative Process

Goals of the meeting will be to Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

R9's Brush or Goldmann will lead the calls, and will send an agenda at least 24hrs prior.

To: Miller, Clay[Miller.Clay@epa.gov]
Cc: Brush, Jason[Brush.Jason@epa.gov]
From: Leidy, Robert
Sent: Wed 2/5/2014 11:31:11 PM
Subject: RE: Rosemont briefing materials
Rosemont EIS GWdrawdown.docx
RM mit sites 1 29 14.docx
Tier3 RM brief.docx
epa_tour_handout.pdf
Rosemont Copper Mine Briefing 1.29.2014.pdf

Clay,

Let me know if you have any questions.

Best,

Rob

Robert A. Leidy, Ph.D.

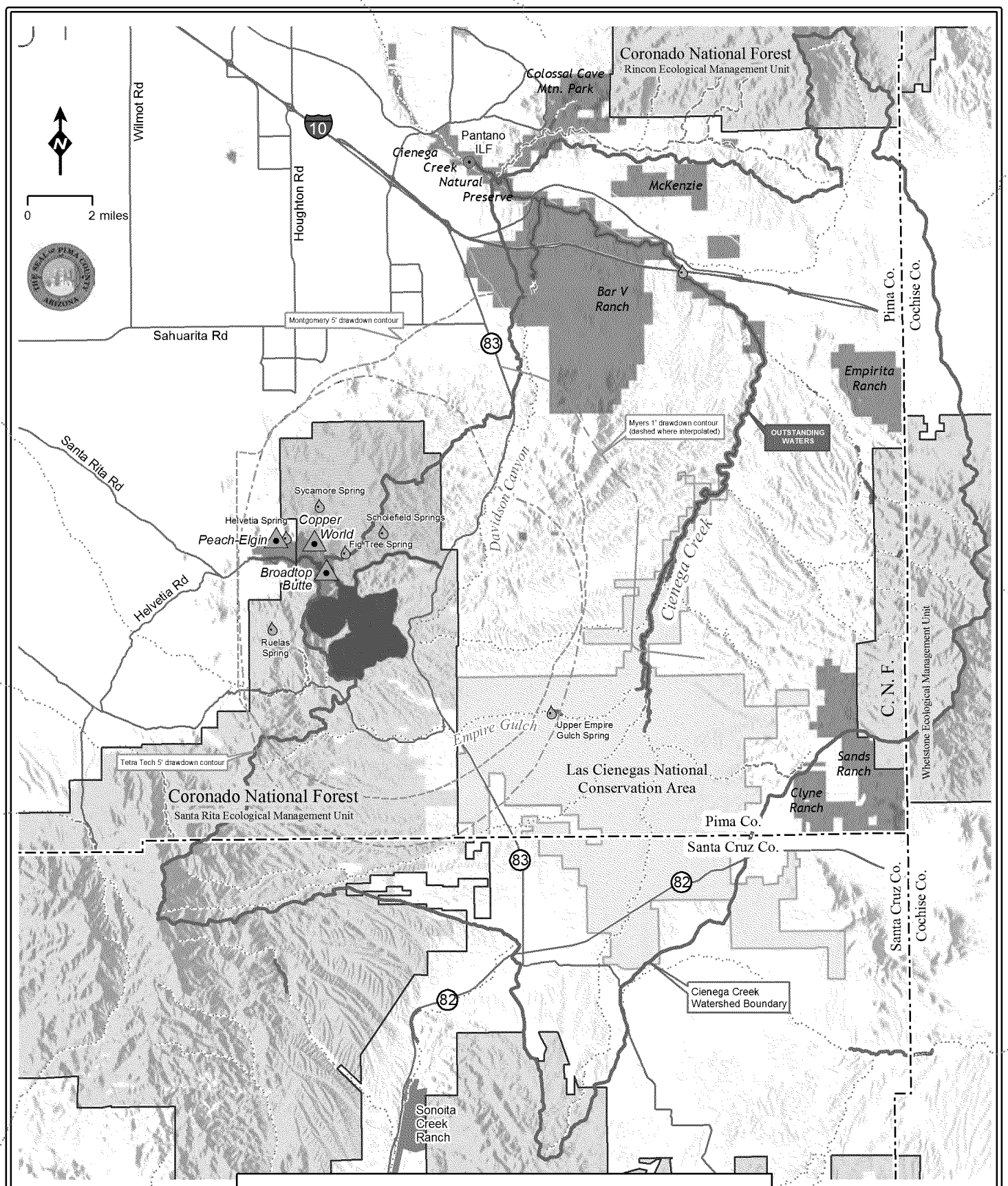
U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463



GROUNDWATER DRAWDOWNS, ROSEMONT MINE

- Barrel Alt. (Pit, Landform, Plant Site, Access Roads)
- Rosemont Patented Claims
- Additional Resource Deposits
- Coronado National Forest (White = Private Inholding)
- Portion of Forest Isolated (13,095 acres)
- Pima County Preserve Lands
- Perennial Flow
- Intermittent Flow
- Ephemeral Flow

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Rosemont Copper Mine – Project Summary

Ex. 5 - Deliberative Process

EPA Region 9 Briefing Materials for CEQ and EPA HQ Site Visit **January 29, 2014**

Background

Rosemont Mine is a proposed new open-pit copper and molybdenum mine on 4,750 acres of predominantly Coronado National Forest lands southeast of Tucson. The mineral deposit could reportedly produce up to 10% of the U.S. production

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Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Pendergast, Jim[Pendergast.Jim@epa.gov]; Fertik, Rachel[Fertik.Rachel@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]; Miller, Clay[Miller.Clay@epa.gov]; Campbell, Rich[Campbell.Rich@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Bose, Laura[Bose.Laura@epa.gov]
From: Goldmann, Elizabeth
Sent: Thur 1/30/2014 12:13:18 AM
Subject: RE: biweekly R9-OWOW mtg - Rosemont Mine

Jason and Russ are not able to participate on tomorrow's call. Therefore, we will go ahead and cancel.

Thanks, Elizabeth

From: Pendergast, Jim
Sent: Wednesday, January 29, 2014 10:15 AM
To: Goldmann, Elizabeth; Fertik, Rachel; Flannery-Keith, Erin; Miller, Clay; Campbell, Rich; Leidy, Robert; Bose, Laura
Subject: RE: biweekly R9-OWOW mtg - Rosemont Mine

Prefer cancel unless Russ and Jason can hook in.

From: Goldmann, Elizabeth
Sent: Wednesday, January 29, 2014 1:14 PM
To: Fertik, Rachel; Flannery-Keith, Erin; Miller, Clay; Pendergast, Jim; Campbell, Rich; Leidy, Robert; Bose, Laura
Subject: biweekly R9-OWOW mtg - Rosemont Mine

Hi Everyone

We are currently scheduled for a Rosemont bi-weekly call tomorrow at 2:30-3:30 ET. Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Jason Brush and Russ Kaiser are in Tucson. Please let me know if you would prefer to cancel. Here is the proposed agenda for tomorrow's call.

Agenda:

Ex. 5 - Deliberative Process

- □□□□□□□□ Update from OWOW

Thanks, Elizabeth

To: Miller, Clay[Miller.Clay@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
Cc: Brush, Jason[Brush.Jason@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]
From: Goldmann, Elizabeth
Sent: Thur 1/23/2014 12:11:56 AM
Subject: RM mitigation
Rosemont.404Mitigation.EPA.assessment.pdf

Hi Clay and Erin

My apologies for my long winded voice mail message. I understand you were able to talk with Jason Brush this morning. I am attaching our latest letter to the Corps regarding RM's proposed mitigation, as well as an earlier letter regarding mitigation at the 1200-acre Sonoita Creek Ranch (SCR).

Proposed mitigation for RM:

Ex. 5 - Deliberative Process

-Elizabeth

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

NOV 07 2013

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

Subject: Analysis of updated draft Clean Water Act §404 Compensatory Mitigation Proposals for Rosemont Mine, Pima County, Arizona

Dear Colonel Colloton:

On September 10, 2013, our regulatory managers and senior staff met to discuss impacts from the proposed Rosemont Mine and recent conceptual compensatory mitigation proposals. We subsequently received the 4-page *Rosemont Copper Project Conceptual Habitat Mitigation and Monitoring Plan Summary* (Summary) on September 25, 2013. As part of ongoing coordination under our agencies' Memorandum of Agreement, enclosed is our analysis of the Summary for consideration in your permit decision. Briefly, our review reaffirms conclusions from our January 25, 2013 letter (also enclosed) to the U.S. Army Corps of Engineers (Corps) on mitigation that currently proposed activities would be insufficient to avoid "significant degradation" of the aquatic ecosystem. Such degradation would be a substantial and unacceptable impact to aquatic resources of national importance, including the "Outstanding Waters" of Davidson Canyon and Cienega Creek.

The Summary discusses three regional sites where waters of the U.S. (waters) could be preserved and/or potentially enhanced for Clean Water Act (CWA) §404 mitigation credit. As discussed at our September 10th meeting and described in the attached analysis, we agree with your staff's assessment that two of the three sites would not provide appropriate compensatory mitigation for impacts to waters from the Rosemont Mine project. We also agree that one site, immediately below Pantano Dam, would benefit from enhancement activities if water supplies were available and design uncertainties could be overcome, and that those activities could then lend themselves to an In Lieu Fee (ILF) program arrangement for 404 impacts from small projects (*e.g.*, flood control and highway projects). However, the proposal at Pantano Dam is inadequate to compensate for impacts proposed to be permitted at Rosemont Mine.

The proposed copper mine lies within the Cienega Creek watershed, which contains regionally rare, largely intact mosaics of some of the highest quality stream and wetland ecosystems in Arizona. The construction of the mine would permanently fill approximately 18 miles of streams across an

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approximately 5,000-acre project footprint and result in the fragmentation of an intact natural hydrologic landscape unit composed of hundreds of streams stretching many linear miles. The mine pit would reverse groundwater flow direction well beyond the project, and cause permanent regional drawdown of groundwater that currently sustains hundreds of acres of springs, seeps, streams, and wetlands and their aquatic and wetland dependent fish, wildlife and plant species.[1] The persistence and health of aquatic resources associated with Cienega Creek and its major tributaries of Barrel Canyon, Davidson Canyon, Empire Gulch, Gardner Canyon and other waters are dependent on contributions of water from the site of the proposed mine.

These impacts would be a direct consequence of the CWA 404 permit action under consideration by the Corps, and represent a large and permanent change in the regional ecology of the Cienega Creek watershed to a significantly drier, less biologically diverse stream and riparian condition. The region in question includes vast areas of National Forest, federal land preserve, County preservation areas and state-designated "outstanding" resource waters, and is home to ten federally listed endangered or threatened species. In this context, the EPA finds the proposal to enhance the approximately 250-acre Pantano Dam site to be out of balance with the impacts to be permitted.

In our attached discussion, we describe the resource at risk, the current mitigation actions proposed, and key policy considerations related to use of ILF programs, criteria for setting and interpreting mitigation ratios under Corps procedures, and compliance with the CWA 404(b)(1) Guidelines. Based on the information currently available, the permit application does not appear to comply with The Guidelines at 40 CFR 230.10(b), (c) and (d) and should not be permitted as proposed. We hope you will find these comments useful in consideration of your pending permit decision, and we look forward to working closely with your staff on the Interagency Review Team (IRT) for mitigation projects under ILF programs in Arizona. We also remain available to assist the Corps and applicant with a risk-based assessment to determine the full extent of indirect (or "secondary") impacts to waters and an appropriate functional assessment model to scale compensatory mitigation activities under a watershed approach.

Thank you for your ongoing partnership implementing CWA programs. If you have any concerns or questions, please do not hesitate to contact me at (415) 947-8707, or have your Regulatory Division Chief contact Jason Brush at (415) 972-3483.

Sincerely,

Jane Diamond
Director
Water Division

[1] PAFEIS, July 3013, Chapter 3, *Seeps, Springs and Riparian Areas*

ED_001077_00009389-00003

cc: Marjorie Blaine, U.S. Army Corps of Engineers
Jim Upchurch, U.S. Forest Service
Mike Fulton, Arizona Department of Environmental Quality
David Baker, Bureau of Land Management
Steven Spangle, U.S. Fish and Wildlife Service
Chuck Huckelberry, Pima County
Suzanne Shields, Pima County Regional Flood Control District
Applicant

Attachments:

(1) EPA Evaluation of Impacts and to the Aquatic Ecosystem and Proposed CWA Compensatory Mitigation for the Rosemont Mine

(2) EPA letter to Corps LA District dated January 25, 2013

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ATTACHMENT
EPA EVALUATION OF IMPACTS TO THE AQUATIC ECOSYSTEM AND PROPOSED CWA COMPENSATORY MITIGATION FOR THE ROSEMONT MINE
PIMA COUNTY, ARIZONA

I. INTRODUCTION

The U.S. Environmental Protection Agency, Pacific Southwest Region (EPA) has prepared this document to assist the Corps in determining compliance with the Clean Water Act §404(b)(1) Guidelines (Guidelines), particularly with regard to significant degradation of the aquatic ecosystem (40 CFR 230.10(c)), and the compensatory mitigation that may be necessary to avoid it.

The document utilizes information presented and referenced in the Preliminary Administrative Final Environmental Impact Statement (PAFEIS), dated July 2013, prepared by Coronado National Forest; Rosemont's *Rosemont Copper Project Conceptual Habitat Mitigation and Monitoring Plan Summary* (Summary), dated September 2013; meetings with Rosemont, the Corps and Pima County; site visits by EPA staff; and other information contained in documents from multiple sources. EPA's careful review of this information, including our assessment of the full range of probable direct and secondary adverse impacts to the aquatic ecosystem resulting from permit issuance, leads us to conclude that the proposed Rosemont Mine project does not comply with 40 CFR §§ 230.10(b), (c) and (d) of the Guidelines and should not be permitted as proposed.

II. ADVERSE ENVIRONMENTAL IMPACTS TO THE AQUATIC ECOSYSTEM

The environmentally-damaging nature of the proposed project (*i.e.*, a large-scale, long-lasting, extractive mineral mine) and its geographic location (*i.e.*, large, high-functioning, undisturbed landscape) will combine to cause and/or contribute to significant, persistent degradation of the regional aquatic environment. This sensitive area is largely within National Forest boundaries, is adjacent to both federal and local nature preserves, is home to ten federally listed species, and is a hydrologic source area for state designated Outstanding Resource waters. These aquatic resources are recognized as being of regional and national importance.

The project will impact aquatic and wetland resources within Pima County's Cienega Creek Natural Preserve and the Bureau of Land Management's (BLM) Las Cienegas National Conservation Area (NCA). The National Landscape Conservation System was established to protect some of the most remarkable public lands in the American West.[2] At its nearest point, the mine site lies approximately 3 miles from the NCA. The Las Cienegas NCA was established by Congress and the President, in large part, to conserve, protect and enhance the unique and nationally important aquatic, wildlife, vegetation and riparian resources such as those in the Cienega Creek watershed. Six types of rare ecosystems are protected within the NCA, including aquatic ecosystems such as cienegas (marshlands), cottonwood-willow riparian wetlands, and mesquite bosques.

[2]http://www.blm.gov/wo/st/en/prog/blm_special_areas/NLCS.html

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Impacts from the proposed project include direct fill and secondary impacts which will result in the loss, conversion and functional degradation of aquatic and terrestrial habitats over several thousand acres. The consequence of groundwater drawdown from the proposed mine pit is the indirect loss or conversion of hundreds of acres of riparian vegetation, including wetlands, and the drying of streams currently characterized by permanent flow. These large-scale shifts in the amount and species composition of riparian areas and the loss of stream surface flows is an example of an ecological regime shift; a large threshold change in the ecological state or condition of the Cienega Creek watershed to drier conditions.

The project site supports 101.6 acres of waters, including wetlands associated with springs and seeps. The project will adversely affect three types of Special Aquatic Sites (wetlands, sanctuaries and refuges, and riffle and pool complexes, see 40 CFR 230.40-45) as well as Tier 3 "unique waters"; portions of Davidson Canyon Wash and Cienega Creek are designated by the State of Arizona as "Outstanding Arizona Waters" (section 303 of the CWA and 40 CFR 131.12). EPA has identified these waters as "Aquatic Resources of National Importance" pursuant to the CWA §404(q) MOA.

Filling streams, constructing the massive mine pit (2,900 feet deep), and land clearing disturbances will dramatically alter in perpetuity the topography and surface and subsurface hydrology within the Cienega Creek watershed. Placement of permanent fill and other mine-related features within this undisturbed landscape will fragment high-functioning blocks of aquatic and terrestrial wildlife habitat used as foraging and movement corridors, rendering surrounding habitats less suitable for fish and wildlife. [3]

Direct Impacts

The proposed project will directly fill 39.97 acres of waters, including a largely undisturbed network of 18 linear miles of streams comprised of up to 154 individual drainages. In addition, five springs and their associated wetlands will be filled.

Indirect / Secondary Impacts

EPA's Guidelines (40 CFR 230.11(h)) and the 2008 Mitigation Rule (40 CFR 230.93) clearly state the need to compensate for losses of waters due to secondary impacts. The requirement that secondary impacts be fully compensated is consistent with standard practice for projects of this magnitude and essential given that the range, extent and severity of secondary adverse impacts upon aquatic resources are as significant as the direct impacts.

To the extent the Corps may wish to utilize the assessment of secondary impacts provided by the Forest Service's NEPA document for the Corps' decision document, the Corps should consider the limitations of the current assessment. As described below, secondary impacts have yet to be analyzed upstream of

[3]For example, the U.S. Fish and Wildlife Service's biological opinion concludes that, because of the indirect effects of groundwater drawdown, the proposed project is likely to adversely affect designated critical habitat for the federally-listed endangered Gila chub and threatened Chiricahua leopard frog, and likely to adversely affect the federally-listed endangered Gila topminnow.

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 Guidelines to make defensible decisions regarding the regulatory restrictions on discharges and the possibility of mitigation.

Lost Functions to Waters Upstream of Mine - As discussed above, the project site supports 101.6 acres of waters of which 39.97 acres will be directly impacted. The remaining 62 acres of waters on the project site will likely be indirectly impacted. Some of these secondary impacts are accounted for with regard to reduced surface stormwater flows in Barrel and Davidson Canyons within the project area downstream of the mine site. However, there will also be secondary impacts to drainages upstream of the mine. These impacts include severing surface hydrology and connectivity, decreasing quality of wildlife habitat, and fragmentation of animal movement corridors. We believe that secondary impacts to waters that lie upstream from the mine site need to be more completely quantified and ultimately mitigated.

Reductions in Surface Water Flow Downstream of the Mine - At the request of the Corps, Rosemont estimated indirect impacts to jurisdictional waters in Barrel and Davidson canyons downstream from the proposed mine due to modeled reductions in surface water volume resulting from the Rosemont Project.[4] Secondary impacts to downstream waters were estimated at 28.4 acres during mine operation. The estimate shows impacts at the confluence of Cienega Creek and Davidson Canyon, but ceases its analysis at that confluence. EPA believes data showing an impact at this confluence is a signal that impacts are likely to extend some point beyond this confluence, and recommend that secondary impacts to waters downstream from the mine site include the reach of Cienega Creek from its confluence with Davidson Canyon downstream to Pantano Dam. Certainly, reductions in surface water flow volume have the potential to adversely affect other surface waters, including wetlands, in Cienega Creek downstream from the confluence of Davidson Canyon. These surface water impacts are likely to be significant, especially given the cumulative effects of predicted reductions in groundwater levels from the proposed mine pit.

Groundwater Drawdown - Secondary effects on the aquatic environment include dramatic and persistent changes to surface hydrologic and hydraulic regimes driven by groundwater hydrology.[5] Portions of sensitive and regionally significant downstream receiving waters, including Outstanding Arizona Waters, rely in part or whole on groundwater contributions to baseflow. Secondary impacts from project-related groundwater drawdown 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.

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[4] Email from Brian Lindenlaub, Westland Resources to Elizabeth Goldmann, EPA, dated August 16, 2013.

[5] Following mine closure the pit lake will continue to permanently divert, capture and evaporate 35-127 acre-feet of mountain-front groundwater recharge in perpetuity. This natural groundwater would otherwise replenish sensitive downstream receiving waters (PAFEIS. July 2013, Chapter 3, *Alternatives, Including the Proposed Action*; Comment Letter from Pima County to U.S. Forest Service on PAFEIS, dated August 14, 2013). During active mining, the pit will cause significant losses to recharge between 18,000-26,000 acre-feet, or about 900-1300 acre-feet annually.

According to the PAFEIS, eleven springs are highly likely to be indirectly impacted due to groundwater drawdown. An additional fifty-nine springs may be indirectly impacted due to drawdown. An additional 13 riparian areas associated with springs would be directly or indirectly disturbed with high certainty and an additional 36 riparian areas associated with springs may be indirectly disturbed. Although not formally delineated, subsets of these riparian areas contain jurisdictional wetlands and other waters of the U.S.[6]

Modification to the water balance along portions of Davidson Canyon, Empire Gulch, Gardner Canyon and Cienega Creek will adversely impact special aquatic sites. The 2,900-foot deep mine pit will permanently convert the hydrologic regime of the site from a water source area to a terminal sink, significantly lowering the surrounding regional aquifer. The pit will permanently reverse the natural direction of groundwater flow toward and into the mine pit, and away from the sensitive aquatic habitats in Las Cienegas NCA and Cienega Creek Natural Preserve. This 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.

Groundwater drawdown will result in stress and degradation of riparian habitat, including wetlands. The PAFEIS estimates that indirect effects from the proposed mine project will change the composition of 1,071 acres of riparian vegetation along Empire Gulch (*i.e.*, 407 acres of hydroriparian) and Barrel and Davidson canyons.[7] Several additional springs, seeps, streams, emergent marshes, and riparian areas within the project assessment area likely contain jurisdictional waters, including wetlands, which will be indirectly impacted by the proposed project, primarily from groundwater drawdown.[8]

Sensitivity and Applicability of Groundwater Models – All three groundwater models utilized by the Forest Service show an increasing, long-term trend of significant declines in groundwater levels due to

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[6] A June 2013 field inspection by EPA, BLM and Pima County staff estimates the presence of tens to hundreds of acres of jurisdictional waters/wetlands in the assessment area likely to be impacted by groundwater drawdown. To date, the geographic extent of potentially jurisdictional waters along Empire Gulch, Gardner Canyon, Cienega Creek, and the other noted waters, has not been formally delineated and therefore secondary impacts to jurisdictional waters have not been quantified.

[7] PAFEIS, July 2013, Chapter 3, *Seeps, Springs and Riparian Areas*

[8] For example, the PAFEIS states that for Empire Gulch and Cienega Creek all three groundwater models predict near- and long-term stream flow drawdown along Upper Cienega Creek. Comparing these projected model drawdowns with minimum monthly stream flows (2001-2010 period of record) for Upper Cienega Creek indicates that the predicted drawdown would cause the stream to go dry during critical low flow months (Chapter 3, Figure 70). The PAFEIS further concludes that a small change in stream flow could result in the loss of surface flow during these drought periods (PAFEIS, Chapter 3, *Seeps, Springs and Riparian Areas*). In addition, the PAFEIS states that Upper Cienega Creek receives surface water [and groundwater] flow from Empire Gulch and the potential exists for a reduction in Empire Gulch stream flow to result in reductions in Cienega Creek's stream flow as well. Small amounts of groundwater drawdown could affect near-and long-term stream flow in Empire Gulch and Cienega Creek and hydrologic changes predicted for Empire Gulch from drawdown could have a potential effect on springs and stream flow, potentially shifting some or all of the stream length from perennial to intermittent (PAFEIS, July 2013, Chapter 3, *Seeps, Springs and Riparian Areas*). Pima County, as well as the BLM which manages the NCA, have expressed similar concerns regarding the secondary effects to Empire Gulch and Cienega Creek surface waters from groundwater drawdown (Comments submitted to the Forest Service by Pima County and BLM on the PAFEIS, dated August 14, 2013). In addition, secondary impacts to intermittent surface flows are likely to occur in Box Canyon, Sycamore Canyon, Adobe Tank Wash, and Mulberry Canyon which all lie within the modeled 5-foot drawdown area (Comments submitted to the Forest Service by Pima County on the PAFEIS, dated August 14, 2013).

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the mine pit. Although there are limitations in groundwater model accuracy, the drawdown at Upper Empire Gulch Spring is within the accuracy of the models to predict (*i.e.*, 5- foot drawdown contour) and therefore, we believe impacts to streamflow and wetlands from drawdown within Empire Gulch are reasonably certain and will be significant.[9] We also believe that there is a high potential for many additional waters, including Cienega Creek, Gardner Canyon and others, to be adversely impacted by mine pit drawdown. These resources can be sensitive to changes in groundwater supply measured in inches, and thus EPA has questioned the applicability of even the best available modeling with respect to answering questions about probable impacts.

To address the limitations in the accuracy of the groundwater models, EPA recommends that a risk-based or weight-of-evidence approach be developed to combine multiple lines of evidence on mine projects' impacts from groundwater drawdown. Combining various lines of evidence reduces the probability of making false conclusions based on a single line of evidence (*e.g.*, relying only on models with limited accuracy), allows the use of multiple methods or information sources about the situation being assessed (*e.g.*, likely mine project effects on ground and surface water resources), and consequently allows decision makers to make better informed decisions.

III. ROSEMONT COPPER MINE - 404 CWA MITIGATION

To EPA's knowledge, no compensatory mitigation plan compliant with the regulations has been prepared to date. However, EPA has provided written comments to the Corps and the USFS on different versions of Rosemont's proposed mitigation activities.[10] The most recent information is a 4-page "Summary" dated September 2013, which appears to be a stand-alone document rather than a summary of a more substantive document or plan. A complete mitigation plan that satisfies each element of the 2008 Mitigation Rule will be necessary to issue a 404 permit.

Based on the Summary, proposed 404 mitigation consists of: 1) enhancement of waters and non-aquatic upland habitat at Cienega Creek below Pantano Dam, and, if necessary 2) conservation and establishment of waters at Sonoita Creek Ranch (SCR) and 3) conservation of a 160 acre parcel along a portion of Mulberry Canyon.[11] These components are sequential; the SCR and Mulberry Canyon activities are presented as a contingency if an ILF project with sufficient credits is not available for Rosemont's purchase at Pantano Dam. To date, EPA is not aware of any supporting documentation or assessment demonstrating the mitigation proposed to offset impacts to waters is compensatory.[12]

Cienega Creek Enhancement below Pantano Dam

Rosemont has acquired the rights to purchase 1,122 acre-feet per annum of surface water rights, a groundwater well, and an approximately 2-acre parcel at Pantano Dam supporting open water and

[9] PAFEIS, Chapter 3, Biological Resources, pp. 86-87.
[10] EPA letter to the Corps dated January 25, 2013 addressing mitigation plans at SCR. EPA letters to the USFS dated February 21, 2013 and August 15, 2013, responding to mitigation as presented in the DEIS and PAFEIS.
[11] EPA meeting with the Corps on September 10, 2013 and Rosemont's Summary dated September, 2013.
[12] See EPA letter dated January 25, 2013 regarding the inadequacies of the "functional assessment" for SCR.

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riparian habitat. Rosemont proposes to allocate 826 AFY of water rights to an ILF sponsor for development of an ILF project below Pantano Dam. Based on Pima County monitoring, the actual average "wet" water at the site is 360 AFY. The project undertaken by the third party sponsor would include various enhancement actions to generate "credits" under the ILF program for prospective 404 permittees. If Rosemont were to use an ILF program for its mitigation obligations, the total credits needed would be based upon calculation of a mitigation ratio using the Corps' Mitigation Ratio Checklist. Although the crediting mechanism and amount necessary for Rosemont's impacts are yet to be determined, Corps staff has stated that Rosemont's need is anticipated to be at least equal to all the credits generated by the Pantano Dam ILF project as currently described. To mitigate all secondary impacts, Rosemont proposes credit for the water rights transfer, the 2-acre parcel and the water well. [13]

On June 19, 2013, EPA met with the Corps, Pima County Regional Flood Control District (Pima County) and Tucson Audubon Society to discuss the feasibility of such an ILF project in Cienega Creek, downstream of Pantano Dam. On September 4, 2013 the Corps met with Pima County to discuss a revised ILF project. Under the current plan, Pima County as an ILF sponsor would accept 826 AFY of water rights from Rosemont to enhance approximately 150 acres of non-aquatic upland habitat, and 91 acres of Cienega Creek primarily through the release of water at several distribution points. The project would also create in-channel "microbasins" and channel modifications (berms) aimed at correcting head cutting and erosion.[14]

While EPA supports returning surface water to this reach of Cienega Creek, it is uncertain whether proposed water distribution points along Cienega Creek will result in any significant enhancement of aquatic functions; much of the released water will likely drain into the porous substrate and deep aquifer without functionally meaningful improvement in riparian habitat. This concern, and the availability of sufficient wet water for success, have been echoed by the ILF sponsor themselves:

> *We have concluded that significant uncertainty exists regarding our ability to mitigate for streams, seeps, and springs based on approximately 20 years of data documenting progressively declining surface water within Cienega Creek...We estimate that approximately 700 AFY are needed to sustainably raise the groundwater level downstream of the dam to a level that would support hydro-riparian species without continued surface irrigation. The current baseflow is insufficient and may actually decrease if the downward trend in surface water quantity continues. Ongoing irrigation is not a sustainable strategy for the long-term survival of hydro-riparian species nor does it meet the conditions of the 2008 404 Mitigation Rule...The diminishing base flows in Cienega Creek, from studies conducted for over 20 years and most recently by the Pima Association of Governments, is a trend that is expected to continue in to the future. It is possible that, under the best of circumstances, there may only be enough surface flow to maintain the existing riparian vegetation upstream of the dam in the future, if that.* (pp.1-2).[15]

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[13] The Summary is unclear, but it appears the ILF credits would be purchased to mitigate only direct fill impacts.

[14] Per EPA phone call September 9, 2013 with Chris Cawein, Pima County, 826 AFY of water rights approximates 350 AFY or less of wet water. Moreover, long-term monitoring clearly demonstrates that there is insufficient wet water available for the proposed project *(i.e.,* no dependable water is available for 40% of the 1908 senior water right, and perhaps none for the remaining water rights).

[15] Letter from Pima County Regional Flood Control District to Marjorie Blaine, Crops, dated July 31, 2013.

Since the mine itself will worsen this baseline condition of diminishing water supplies, EPA questions the viability of ILF or permittee-responsible mitigation below Pantano Dam. [18, 16]

EPA has several concerns with the ILF proposal which in our judgment render the project untenable for the mine's compensatory mitigation needs:

1. **High risk and uncertainty** – To be successful, the project would depend on wet water from rights that haven't produced at the necessary amounts, would require artificial means of retarding or eliminating infiltration (*i.e.,* liners), and is likely to need maintenance in perpetuity.

2. **Ecologically inappropriate** – The project, if successful, would provide credits to mitigate impacts to a high functioning water source area by enhancing a water sink area. The project would purport to replace the functions of 18 linear miles of streams across a landscape with a single segment of stream less than two miles in length.

3. **Counterproductive hydrological interventions** – Rather than provide enhancement, proposed erosion protection structures upstream of Colossal Cave Road may actually exacerbate erosion problems elsewhere along Cienega Creek, further reducing the project's overall value for aquatic resource compensation. Similarly, planned in-channel rock/earthen berms for slowing and retaining surface flows in tributary channels will likely quickly back up with sediment, or be washed away during large storm events.

4. **Jurisdictional area** – EPA believes the reach and extent of jurisdictional waters may be significantly overestimated at the Pantano Dam site. Most of the area proposed for enhancement is non-aquatic, upland habitat.

5. **Mitigation Rule** – the proposal lacks the certainty and other assurances required under the 2008 regulations (such as enforceable and ecologically meaningful success criteria).

6. **Temporal loss** – The amount of time likely required to sever and transfer water rights to the ILF sponsor also makes the consideration of any ILF credits as mitigation for Rosemont Copper unacceptable. The approval process could take two years or more and there are no guarantees Rosemont Copper will obtain approval from Arizona Department of Water Resources to sever and transfer these water rights should irrigation districts and other water right holders object.[17] Although there is discussion of purchasing water rights directly for Pima County, to avoid potential sever and transfer issues, the process issues have not been resolved.

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[16] During the June 19, 2013 meeting with the Corps, Pima County and Tucson Audubon, Pima noted there is incomplete information on the existing geologic condition below Pantano Dam. The potential exists for surface water to percolate deep into the aquifer without providing necessary hydrologic conditions to support enhancement of existing riparian.

[17] p. 44, Supplemental to the Biological Assessment Proposed Rosemont Copper Mine Santa Rita Mountains, Pima County, Arizona Nogales Ranger District, dated February 2013.

Sonoita Creek Ranch

The 1,200-acre Sonoita Creek Ranch (SCR) is six miles south of Sonoita, Arizona. Approximately 590 acre-feet per annum of water rights are appurtenant to the ranch. The SCR proposal described in Rosemont's Summary proposes a site protection instrument on the 1,200-acre ranch, and a permittee-responsible mitigation project including modification of grazing and an unspecified amount of creation of aquatic habitat within the floodplain of Sonoita Creek.

The Corps has determined the Sonoita Creek Ranch (SCR) site is not acceptable compensatory mitigation under § 404 CWA for impacts from the Rosemont Mine.[18] EPA concurs with this determination. EPA recognizes the conservation value of Sonoita Creek Ranch, but given the existing geomorphology of the site, we remain highly skeptical of the proposals to create and enhance wetlands on the ranch. In addition, the site is far removed from the Davidson Creek and Cienega Creek watersheds and therefore, does not provide ecological benefit for the loss of acreage and function that would occur from the proposed copper mine.

Preservation of 160-acre parcel in Mulberry Canyon

In the event that mitigation credits beyond Pantano Dam and SCR are required for the Rosemont Project, the Summary suggests that additional mitigation may be provided by preservation of the 160-acre Mulberry Canyon parcel. There is no information on the extent of aquatic resources on the site. Under this proposal, Rosemont would record a site protection instrument prohibiting certain land uses on the parcel (Summary, p.4).

Pursuant to the 2008 Mitigation Rule, preservation as 404 mitigation can be used when the resources to be preserved provide important physical, chemical or biological functions for the watershed; contribute significantly to the ecological sustainability of the watershed; and are under threat of destruction or adverse modification (33 CFR Part 332.3(h)).

EPA does not believe preservation of this parcel is appropriate compensation for project impacts. This proposed mitigation parcel does not have water rights. The parcel is surrounded by USFS land and is not under any foreseeable threat of destruction or adverse modification. In addition, the mitigation parcel lies downstream from the mine. The proposed Mulberry Canyon mitigation parcel would be adversely affected by the very impacts it is meant to mitigate.[19]

The Corps has determined the Mulberry Canyon parcel is not acceptable compensatory mitigation under § 404 CWA for impacts from the Rosemont Mine.[20] EPA concurs with this determination. Indeed, Mulberry Canyon represents a potential secondary impact area of the project itself that should be assessed, and for which Rosemont may be required to mitigate.

[18] EPA-Corps meeting September 10, 2013; phone conversation between David Castanon and Jason Brush September 26, 2013.
[19] PAFEIS, July 2013, Chapter 3, *Seeps, Springs and Riparian Areas.*
[20] Phone conversation between David Castanon and Jason Brush dated September 26, 2013.

Additional Conservation Lands

Rosemont Copper has developed a Conservation Lands Program, but has not presented this as part of proposed 404 mitigation. The program proposes conservation of lands surrounding the proposed mine to address federal and state endangered and sensitive species, cultural resources and public viewsheds. However, in a meeting with Rosemont and the Corps on August 7, 2013, Rosemont suggested that 1,700 acres at Fullerton Ranch and 940 acres at Helvetia Ranch Annex North might be considered as mitigation under §404 CWA. The Corps determined these conservation lands were not suitable as mitigation under §404 CWA.[21] EPA concurs with the Corps' determination.

Adequacy of Proposed §404 CWA Mitigation

The 2008 Mitigation Rule states, *The fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters of the United States authorized by DA permits* (33 CFR 323.3(a)(1)). EPA has identified significant flaws in Rosemont's plans for offsetting the project's environmental harm. First, the proposals lack an adequate functional assessment characterizing the services performed by streams/springs and wetlands directly and indirectly impacted by the project, or of those resources at the proposed mitigation lands. Second, 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. Enhancement of existing waters and upland habitat (Pantano Dam) in the lower watershed would not offset the mine's impacts to high quality headwater streams. Third, despite some assurances inherent in ILF proposals, there is great ecological uncertainty in the Pantano Dam proposal. Based on the information to date, EPA finds the proposed mitigation grossly inadequate to compensate for mine impacts. In summary:

- There is no acceptable functional assessment of the mine site or proposed mitigation sites on which to make a determination how the proposed ILF or other proposals compensate for project impacts (2008 Mitigation Rule, 33 CFR 332.8(o)(2), 33 CFR 332.3(f)(1)), ILF Enabling Instrument, June 2013, p. 15);
- There is significant uncertainty whether the ecological condition at the ILF site is suitable to support the proposed mitigation;
- The ILF sponsors will not assume full legal responsibility for the required reestablishment of specific acreage of riparian vegetation downstream of the dam site;[22]
- Additional water rights are necessary to conduct enhancement downstream of Pantano Dam;
- Declining water levels due to drought and exacerbated by climate change, and the proposed mine, will continue to reduce the availability of water in Cienega Creek;
- The proposed ILF project, if approved, would consist of enhancement of existing waters/uplands, providing limited compensation for the loss of aquatic area and function in the watershed as a result of the proposed project;
- The SCR proposal would not benefit the watershed affected by the mine, and its ecological success and sustainability are unlikely, and;

[21] EPA-Corps meeting September 10, 2013 and phone discussion between Jason Brush and David Castanon September 26, 2013.
[22] Memorandum dated August 13, 2013 from C.H. Huckelberry, County Administrator to Pima County Board of Supervisors.

- Preservation of the Mulberry Canyon parcel is an inadequate compensatory measure because it is a probable impact site and is not under foreseeable threat from development.

Usefulness of the Standard Operating Procedure for Determining Mitigation Ratios

The Corps' Mitigation Ratio checklist is a standard operating procedure (SOP) in the South Pacific Division used for determining compensatory mitigation amounts. The SOP seeks to simplify compliance with the 2008 Mitigation Rule by applying stepwise criteria to arrive at a compensation ratio (acres replaced for acres lost). The SOP allows both qualitative and quantitative approaches, but consistent with the Mitigation Rule, requires use of functional or condition assessment data to inform a quantitative approach whenever practicable.

As currently applied, the calculation of a simple ratio through the SOP for a project of this scope and magnitude fails to meet the clear intent of Corps regulations at 33 CFR 320.4(r)(2), which state: *"...all mitigation will be directly related to the impacts of the proposal, appropriate to the scope and degree of those impacts, and reasonably enforceable."*

- The SOP (Checklist Step 3) recommends that a functional/condition assessment should be required for impacts over 0.5 acre or 300 linear feet. The mine would result in 95,040 linear feet of stream impact and 40 acres of fill.
- Absent functional or condition assessment data, it is all the more important that any ratios generated by the SOP be rigorously defensible. The SOP's maximum ratio adjustment of 4:1 for the qualitative method is without adequate justification, and inappropriate in this context of landscape-scale impacts. Particularly with non-aquatic habitat preservation, ratios higher than 4:1 are allowed under the SOP (Question 11 – June 2013, Corps' SOP training PowerPoint).
- Out of kind, preservation-dominated mitigation activities such as those proposed in the Summary fail to address the net loss of function and area within the hydrologic source area landscape.
- Section 4.0 of the SOP defines enhancement as, *"the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource functions, but may also lead to a decline in other aquatic resource function(s)."* Proposed enhancement of non-aquatic upland is not considered enhancement in the SOP, but it is recognized in the Mitigation Rule (p. 19661) only when it has been demonstrated as critical for maintaining the integrity and sustainability of aquatic resource functions. A functional assessment is necessary to make this determination.
- EPA has noted several examples of significant risk and uncertainty above. The SOP notes: *"If too many uncertainty factors are identified this may indicate the overall mitigation proposal design is not acceptable."*(checklist #7, SOP PowerPoint).[23]
- Compensatory mitigation is required for secondary impacts (SOP checklist #9). Secondary impacts are not only wildly underestimated, but to our knowledge, only paper water rights,

[23] The Mitigation Rule Preamble notes the likelihood of success must be considered when evaluating compensatory mitigation proposals. If the potential for satisfying the objectives of a proposal is low, then alternative mitigation proposals with a higher likelihood of success should be required. Risk and uncertainty must be minimized as much as possible (p. 19633).

preservation of a 2-acre site, and retirement of an existing well have been proposed to date as compensation for secondary impacts.

- For ILF projects, an appropriate assessment method or other suitable metric must be used to assess and describe the aquatic resource types that will be restored, established, enhanced and or preserved. The number of credits must reflect the functional or condition assessment or other suitable metric (33 CFR 332.8).
- Separate assessments must be used for each resource impact (*e.g.*,springs, ephemeral waters) and for each mitigation type (*e.g.*, upland buffer preservation, in-stream enhancement)(SOP Section 7.3). The approach taken in the Summary appears to group all impacts into an acreage total and simply apply a ratio.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JAN 25 2013

Colonel R. Mark Toy
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
Attn: Regulatory Branch (SPL-2004-01399-MB)
5205 E. Comanche Street
Tucson, Arizona 85707

Subject: Draft Rosemont Copper Project Habitat Mitigation and Monitoring Plan (HMMP)

Dear Colonel Toy:

EPA Region 9 appreciates the Corps' ongoing coordination regarding your pending permit decision for the Rosemont copper mine, located on 4,750 acres of predominantly on U.S. Forest Service (USFS) lands in Pima County, Arizona. Enclosed please find comments reflecting our detailed technical review of the project's November 2012 HMMP and related documents,[1] which we trust will be useful to the Corps in advancing the project through the regulatory process.

In summary, we believe implementation of the HMMP would fail to fully compensate for the project's impacts to regulated waters. The methods used to assess aquatic functions at the project site and proposed mitigation sites are scientifically flawed, and therefore fail to adequately identify and quantify those functions. This fundamental error is then compounded by the attempt to establish appropriate compensation ratios. Among the most significant issues are:

- The failure to fully assess the direct, indirect and cumulative impacts from the proposed project;
- The functional assessment methodology does not provide any meaningful assessment of the functions of ephemeral systems across the proposed project and mitigations sites and significantly underestimates the function of impacted waters; and
- The habitat creation proposed at Sonoita Creek Ranch may not be ecologically sustainable and may not result in the creation of jurisdictional waters.

EPA remains concerned that substantial loss and/or degradation of water quality and other aquatic ecosystem functions are likely if the proposed mine is constructed. Although we are pleased to provide the enclosed detailed analysis of proposed compensatory mitigation, the applicant should be reminded that mitigation begins with the avoidance and minimization of impacts, and that compliance with 40 CFR 230.10(a) (alternatives) is prerequisite to assessing compliance with 40 CFR 230.10(d) (mitigation) or the requirements of Subpart J of the 404(b)(1) Guidelines.

[1] All documents November 2012 by WestLand Resources, Inc on behalf of Rosemont Copper Company: (a) *Functional Analysis of Impacted Waters of the U.S.* (RCFA); (b) *Sonoita Creek Ranch Functional Analysis and Mitigation Ratio Determination* (SCR); and (c) *State Route 83 Corridor and Davidson Parcels: Functional Analysis and Mitigation Ratio Determination* (SR83/Davidson).

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Thank you for your ongoing partnership in implementing CWA programs. As additional information on this project's regulatory progress becomes available, please ask your staff to coordinate with Elizabeth Goldmann at (415) 972-3398 or Dr. Robert Leidy at (415) 972-3463.

Sincerely,

Jason Brush
Supervisor
Wetlands Office

Attachment

cc: Rosemont Copper Company
U.S. Forest Service
U.S. Fish and Wildlife Service

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Rosemont Copper Mine
404 Comments on HMMP

Proposed Project Impacts

In our evaluation of the proposed HMMP, it is important to identify in advance the discrepancy that exists between EPA's and Rosemont's assessment of project impacts upon which the HMMP has been developed. In addition to other significant concerns (*e.g.*, functional analysis) described in this letter, the HMMP fails to provide compensation as required by the Guidelines and 2008 Mitigation Rule for the entire scope of direct and indirect/secondary project impacts associated with the proposed project.

The proposed project site supports 101.6 acres of waters, including wetlands, in the Cienega Creek watershed providing hydrologic, chemical and biological connectivity to Cienega Creek and the Santa Cruz River. In developing the HMMP, Rosemont identified only 39.97 acres of direct impacts and 2.79 acres of indirect impacts in their mitigation analysis.

EPA maintains the impacts from the proposed project include direct fill, secondary impacts resulting in functional degradation, and habitat conversion of aquatic and terrestrial resources over a large geographic area. The project will result in the loss or conversion of approximately 7,000 acres including semi-desert grassland, Madrean evergreen woodland, and Sonoran desert scrub communities, and their associated aquatic and riparian habitats, that form a vast, largely unfragmented, natural landscape.

The proposed project will authorize the direct fill of 39.97 acres of waters, including a largely undisturbed network of 18 linear miles of stream comprised of up to 154 individual drainages. There will also be direct impacts to aquatic habitats associated with several springs. Secondary effects on the aquatic environment include dramatic and persistent changes to hydrologic and hydaulic regimes within the project and adjoining watershed, adversely affecting the function of sensitive and regionally significant downstream receiving waters, including wetlands. The U.S. Forest Service estimates 1,364 acres of riparian habitat, likely to include a significant amount of jurisdictional riparian wetlands, impacted by the proposed project.[2] The project will adversely affect three types of Special Aquatic Sites (wetlands, sanctuaries and refuges, and riffle and pool complexes, see 40 CFR 230.40-45) as well as Tier 3 "unique waters"; portions of Davidson Canyon Wash and Cienega Creek are designated by the State of Arizona as "Outstanding Arizona Waters" (section 303 of the CWA and 40 CFR 131.12). In addition, EPA identified these waters as "Aquatic Resources of National Importance" pursuant to the 404q MOA.

The proposed project is likely to have significant impacts to downstream reaches of Davidson Canyon, Empire Gulch and Cienega Creek, including:[3]

- Modification to the water balance along portions of Davidson Canyon, Cienega Creek and Empire Gulch Creek adversely impacting special aquatic sites;
- Secondary impacts from project-related groundwater drawdown disrupting breeding, spawning, rearing and migratory movements, or other critically life history requirements of fish and wildlife resources;
- Groundwater drawdown resulting in stress and mortality to riparian habitat, including wetlands;

[2] DEIS for the Rosemont Copper Project (December 11, 2011), Chapter 3, Table 98.
[3] Letters from EPA to Corps dated January 5, 2012 and February 13, 2012

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- Modification of sediment yield resulting in adverse impact to downstream water quality. Permanent surface water quality impacts to 2.5 miles of Barrel Canyon Wash and 14 miles of Davidson Canyon Wash through increased channel scour and aggradation. Other changes include bank erosion and loss of riparian habitat;
- Adverse effects on aquatic organisms due to elevated suspended sediments;
- Loss of 18 miles of stream channel resulting in significant reduction of groundwater recharge functions within Davidson.

Rosemont's Habitat Mitigation and Monitoring Plan

On October 11, 2011, Rosemont Copper submitted a CWA 404 permit to the Corps requesting a permit to discharge dredged or fill material into waters to construct the proposed Rosemont Copper Mine. On November 8, 2012, EPA received a copy of the Rosemont Copper Mine HMMP. Rosemont Copper proposes the HMMP as compensatory mitigation in compliance with the CWA 404 permit and the 2008 Mitigation Rule.

The 2008 Mitigation Rule states the fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters. Compensatory mitigation may be performed using the methods of restoration, enhancement, establishment, and in certain circumstances, preservation.

Preservation

As described in the HMMP, Rosemont proposes to record a conservation easement on 1774 acres of land containing 35.34 acres of aquatic resources and approximately 39.45 acres of riparian vegetation within the Santa Cruz River watershed on the following parcels:

State Route 83 Corridor Parcels - The State Route 83 parcels consist of 4 parcels totaling 545 acres. The size of each parcel is not described in the referenced documents. These parcels contain surface water features that occur within or drain into Davidson Canyon (SR83/Davidson p. 2). Waters located within these conservation parcels total 13.76 acres and range from 0.94 acre to 7.28 acres per parcel. There are no water rights associated with the SR 83 parcels.

Davidson Parcels - The Davidson parcels consist of 2 parcels totaling 29 acres. These parcels consist of two adjoining parcels of land encompassing both sides of Davidson Canyon. Waters located within these conservation parcels total 1.75 acres (SR83/Davidson p. 3). There are no water rights associated with the Davidson parcels.

Sonoita Creek Ranch Parcel – The Sonoita Creek Ranch parcel is 1200 acres consisting of ranching, open space and agriculture. Perennial Monkey Spring is located 0.8 mile north of the ranch and provides surface water to the ranch. There are 19.83 acres of aquatic resources on the Sonoita Creek Ranch consisting of: 1) 13.03 acres of ephemeral drainages; 2) 0.16 acre of perennial drainage; 3) 5.92 acres of wetlands; and 4) 0.72 acre of 5 seasonal ponds. A total of 52.01 acres of riparian vegetation was identified on the parcel (SCR p. 6).

Creation

Sonoita Creek Ranch Parcel - The HMMP is proposing 115.5 acres of habitat consisting of a drainage feature, wetland fringe and riparian buffer (p. 9 SCR). Based on the maps provided in the HMMP, Rosemont is proposing a 3,000' riverine corridor with a 5' channel (1' to 2' bottom width) and 20' riparian habitat on each side (HMMP p. 17). This would result in approximately 0.34 acre of wetted channel and 2.75 acre of adjacent riparian habitat. The remainder of the 112 acres proposed as mitigation on this parcel would be sown with native seed mix. The native seed mix is comprised of approximately 91% upland species (HMMP p. 22-23). The 112 acres would remain as uplands.

Rosemont would share certified water rights on Monkey Springs with an upstream property owner and flow would be based on a water delivery schedule agreed to with the other property owner (HMMP p. 8). The flow of water would be controlled through existing infrastructure. This water would be used to create a perennial compacted drainage feature and adjacent riparian. Waters within the proposed 3,000' riverine channel will eventually infiltrate due to the nature of the soils on the agricultural field. Therefore, this channel may not be considered a jurisdictional water as it would not have a surface water connection with Sonoita Creek.

MRA - Functional Analysis of Jurisdictional Impacts

According to the 2008 Mitigation Rule, compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions. If a functional or conditional assessment, or other suitable metric is not used, a minimum one-to-one acreage or linear foot compensation ratio must be used. The Corps must require a ratio greater than one-to-one where necessary to account for the method of compensatory mitigation (*e.g.,* preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resources and the compensation site (CFR 230.93(f)).

To assess the functional condition of aquatic resources on the proposed project site as well as the proposed mitigation lands, WestLands modified a Rapid Stream-Riparian Assessment[4] (RSRA) for their own use and called it the Modified RSA approach or "MRA." The original methodology involves a quantitative evaluation of between two to seven indicator variables in five different ecological categories: water quality, fluvial geomorphology, aquatic and fish habitat, vegetation composition and structure, and terrestrial wildlife habitat. Each variable is rated on a scale that ranges from "1," representing highly impacted and non-functional conditions, to "5," representing a healthy and completely functional system. Whenever possible, scores are scaled against what would be observed in control or reference sites that have similar ecological geophysical characteristics, but which have not been heavily impacted by human activities.

Although the RSRA was designed to assess the functional condition of perennial systems, WestLands modified the RSRA in order to apply it to ephemeral systems. In addition, they propose the MRA can also be used to compare functions between ephemeral, intermittent and perennial stream reaches on the

[4] Steven, L.E., Stacey, P.B., Jones, A.K., Duff, D., Gourley, C., and J.C. Catlin. 2005. A protocol for rapid assessment of southwestern stream-riparian ecosystems. Proceedings of the Seventh Biennial Conference of Research on the Colorado Plateau titled *The Colorado Plateau II, Biophysical, Socioeconomic, and Cultural Research.* Charles van Riper III and David J. Mattsen Ed.s. pp. 397-420. Tucson, AZ: University of Arizona Press.

same scale. They used the MRA scores as an absolute assessment based upon the values and indicators in the RSRA Guidebook rather than as scores for comparison of stream reaches with similar biotic and abiotic characteristics (RCFA, p.4). The MRA averaged the indicators for each ecological category, and then calculated an overall score by averaging the five ecological categories. As a result, all ephemeral streams using the MRA scored "0" for water quality, fluvial geomorphology and fish/aquatic habitat. The overall MRA score of the Rosemont Project area was 1.17, indicating the aquatic resources are non-functioning or highly impacted (RCFA p. 11).

The MRA used by WestLands does not provide any meaningful assessment of the functions of ephemeral systems across the proposed project and mitigation sites. The MRA is not scientifically sound. Therefore, the MRA does not satisfy the requirements of a suitable assessment method to assess the loss of aquatic function (33 CFR 332.3 (f)(1)). Since 1993, the federal government has expressed the need for improvement of rapid assessment techniques to allow for better consideration of the functions of waters/wetlands in the context of the CWA Section 404 process. Fundamental to the development of a functional assessment is the recognition that waters/wetlands perform certain functions better than others, not because they are impacted in some way, but because waters are inherently different. Therefore, it is critical to accurately describe functions for each class of waters/wetlands that occur within a study area. It is not appropriate to strictly compare functions across classes of waters/wetlands. For example, comparison of the functions of 1st through 3rd order ephemeral riverine waters with those of perennial waters/wetlands for the purpose of computing MRA scores is not meaningful. Even though some functions overlap significantly between classes, which they often do, the functions are likely to be performed through the combination of slightly difference processes and at different levels or intensities.

Essential to the development of a functional assessment, is the use of reference systems. Reference sites are the observed and measured characteristics of a range of similar sites within a regional or study area. Development of a reference framework allows the use of a relative rather than an absolute scale, which provides for better resolution of expected functions and a regional standard for comparison. For example, within the context of a regional reference framework the 1st through 3rd order ephemeral streams on the Rosemont Project impact site likely would be scored as high functioning (*i.e.*, an overall functional rating or 4 or 5 within the RSRA framework).

The MRA also assigns a score of zero to RSRA categories that rely on the presence of water for proper functioning. The MRA assumes that "any variable within the five major RSRA categories that rely on the presence of surface water that cannot be assessed due to the lack of an appropriate water regime at the time of sampling will result in the overall major category receiving a score of zero, representing a lack of functionality" (p. 4). This fails to acknowledge that by definition ephemeral and intermittent streams are functioning aquatic ecosystems that periodically contain flowing water. Any scientifically valid functional assessment of ephemeral and intermittent streams must account for the seasonal nature of flows and either: 1) assess and score functions when water is present, or 2) assay the probable functions in the absence of flows. The MRA assumption that the ephemeral and intermittent streams have no function because there is no water present at the time of the assessment demonstrates a clear lack of understanding of how these aquatic ecosystems function. Ephemeral and intermittent streams on the Rosemont Project impact site perform important functions that were not properly assessed by the MRA. In this regard, there are several hydrogeomorphic (HGM) functional assessments available for modification and use in arid western systems similar to environmental conditions found at the Rosemont project site. The RSRA or other functional assessment methodologies could have been easily modified

to fully assess the functions of ephemeral and intermittent streams or other methodologies for the Rosemont Project.

The MRA does not assess the full range of functions that are performed by riverine waters at the Rosemont Project site. Several important functions not assessed by the MRA performed by ephemeral and intermittent riverine waters in the Arid West and that would be expected to occur in the Rosemont Project area include the following:

Hydrologic Functions

- *Surface and Subsurface Water Flow, Storage and Exchange* - The retention and/or circulation of surface and ground water within the floodprone area.
- *Sediment Mobilization, Transport, and Deposition/Storage* – The mobilization, transport, and deposition of sediment influences the channel pattern, dimension, and profile, channel bed materials, and vegetation of riverine waters/wetlands at the assessment site and in downstream waters.
- *Energy Dissipation* – Energy dissipation results in the allocation of potential energy to other forms of kinetic energy as water moves into, through, and out of a water/wetland.
- *Landscape Hydrologic Connections* – The hydrologic connectivity of contributing areas to riverine waters/wetlands and then, in turn, to other down-gradient waters/wetlands.

Biogeochemical Functions

- *Element and Compound Cycling* – Element and compound cycling includes the abiotic and biotic processes that convert compounds (e.g., nutrients and metals) from one form to another.
- *Organic Carbon Export* – The export of dissolved and particulate organic carbon through leaching, flushing, displacement, and erosion from waters/wetlands.
- *Detention, Retention, and Removal of Imported Elements, Compounds and Particulates* – The delay, transformation and removal of imported nutrients, contaminants, particulates, and other compounds into, through, and out of the riverine system.

Habitat/Faunal Support Functions

- *Maintenance of Spatial Structure of the Habitat* – The capacity of waters/wetlands to support animal populations and guilds by providing heterogeneous habitats.
- *Maintenance of Habitat Interpersion and Connectivity* – The capacity of a water/wetland to permit aquatic, semi-aquatic and terrestrial organisms to enter and leave a riverine system via permanent, intermittent, or ephemeral channels, floodprone areas, or unconfined hyporheic gravel aquifers, or other large contiguous habitat patches.
- *Distribution and abundance of Invertebrates and Vertebrates* – The capacity of the water/wetland to maintain the density and spatial distribution of characteristic aquatic, semi-aquatic and terrestrial invertebrates and vertebrates.

Several of the MRA sampling method indicators are not adequate to assess a particular function. For example, water quality is a societal value and not strictly a function. Hydrologic functions (*e.g.*, element and compound cycling, removal of compounds) are better measures of the ability of a water/wetland to affect "water quality." The MRA uses a single indicator (*e.g.*, channel shading, solar exposure) for water quality. Also, as noted above, it is not reasonable to assign a zero score to the functioning of a

water/wetland just because there is no water present at the time the assessment was conducted. Clearly, the waters that were assessed on the Rosemont Project impact site function in some capacity to improve the quality of downstream receiving water. The MRA is not designed to capture the performance of this function.

Other MRA sampling method indicators are inappropriate for the types to waters being assessed. For example, the logic for using variables 8 (riffle-pool distribution), 9 (underbank cover), and 10 (cobble embeddedness), to assess the functioning of fish/aquatic habitat in 1st and 2nd ephemeral streams is unclear. These variables are better suited for assessing fish and invertebrate habitat in perennial streams, not streams where one would not expect to find fish. If these variables are to be used, the logic for their use needs to be clearly justified and the scoring definitions need to be scaled within the context of a reference framework. In addition, there are 10 plant-related indicators for assessing riparian and vegetation and terrestrial wildlife habitat that are similar (sensu autocorrelated), which would tend to bias the combined scores.

The overall MRA water quality, hydrogeomorphology, and fish/aquatic habitat scores for the Rosemont Project area are zero (*e.g.*, Table 5), even though the scores for individual variables for these functions may not have scored zero. For example, if for the water quality function a site receives a score of "2" for channel shading from solar exposure in the absence of surface water, then why would it not receive the same score when surface water is present? Again, the assignment of a "zero" score in the absence of water at the time of the assessment unjustifiably lowers the overall MRA scores.

Calculating Mitigation Ratios

To assist in calculating a compensatory mitigation ratio, the functions and values of the mitigation sites were evaluated relative to the functions and values of the impact site prior to the occurrence of impacts. The functional scores of the impact and mitigation site informed the final mitigation ratio (RCFA p.13).

Using the MRA, WestLands calculated the overall functional score of the aquatic habitat: 1) Rosemont site scored 1.17; 2) Sonoita Creek Ranch scored 1.25; 3) and the SR 83 Corridor and Davidson Parcels scored 1.25. In order to determine compensatory mitigation ratios for the proposed Rosemont Copper Project, WestLands used the Mitigation Ratio Setting Checklist Attachment 12501.2 SPD. Using a qualitative impact mitigation comparison and ratio adjustment, WestLands concluded their proposed mitigation would provide 592% of the required mitigation credits. In other words, the compensatory mitigation package proposed by Rosemont Copper will provide nearly six times the required mitigation for unavoidable impacts to waters (HMMP p. 9).

Following our review of the HMMP and mitigation ratio calculations, we have identified several significant concerns:

- The MRA used in calculating the mitigation ratios is based on a flawed functional assessment methodology (see above) and, in all likelihood, significantly underestimates the function of the impacted waters.
- The Step Adjustment in the Mitigation Setting that relied, in part, on the MRI is therefore incorrect and skewed.
- The MRA functional analysis of Sonoita Creek Ranch scored nearly all (approaching 100%) of the drainage features, while the MRA for the impacted waters scored only 10% of the drainages, which would likely bias the overall scores.

- The proposed creation of 115.5 acres of habitat consisting of a drainage feature, wetland fringe, and riparian buffer proposed at Sonoita Creek Ranch (SCR, p. 9) may not result in the creation of jurisdictional waters of the U.S. Only 3.5 acres of the proposed 115.5 acres of habitat may qualify as a three-parameter jurisdictional wetland (SCR, p. 21).
- The proposed design would not be self-sustaining as it would largely rely on the release of regulated releases of irrigation water (see HMMP, pg. 19). Because of variable soil conditions that characterize the creation site, it is unclear whether the amount of water proposed for release is sufficient to maintain the proposed wetted channel and adjacent riparian wetlands.
- The aquatic habitat proposed at Sonoita Creek Ranch consists of 112 acres of uplands (91% of the proposed native seed mix consists of upland plants) and is not aquatic habitat.
- The preservation of wetlands at Sonoita Creek Ranch, formed from controlled water releases of irrigation water upstream may be isolated aquatic features that are not jurisdictional waters of the U.S. If so, they are unacceptable as mitigation.
- It is unclear why Rosemont did not propose a continuous corridor from the ponds through the agricultural field, hydrologically connecting to Sonoita Creek. Based on the information presented, we believe the proposed creation at Sonoita Creek Ranch is unlikely to be ecologically successful and sustainable, as required in the 2008 Mitigation Rule.
- It appears as though the mitigation proposal includes 101.3 acres of upland buffer as compensation for unavoidable impacts to waters (HMMP Table 7, p. 12). Any proposed upland buffer mitigation should be first applied toward the direct and indirect impacts to upland buffers on the project site. We do not believe Rosemont has conducted this analysis.
- The scoring of several mitigation ratio adjustments on the Mitigation Ratio Setting Checklist for the SCR and SR83/Davidson Canyon Parcels are unsupportable.
- The HMMP states that plants used for the Sonoita Creek Ranch habitat creation will "be obtained from the nearest local grower to take advantage of the local genotype to maximize success." (HMMP p. 21). All plant materials used for site restoration should come from within the Sonoita Creek Ranch or from within the Sonoita Creek watershed.
- Monitoring of all created habitat should be for a minimum 10-year period, not 5-years as implied in the HMMP.
- The success criteria presented in the HMMP do not adequately address invasive species control (p. 24).
- The SR 83 and Davidson Canyon mitigation parcels all lie downstream from the impacted drainages and yet the functional assessment used to determine compensatory mitigation does not factor in indirect effects from the proposed Rosemont copper mine to the proposed mitigation sites, thereby inflating the value of the site.
- Rosemont may convey the Sonoita Ranch property to another entity at any time (HMMP p. 25). Conveyance of the property should be pursuant to approval by the Corps.

On page 13 of the HMMP, Rosemont discusses conservation easements and notes, *"The implementation of mitigation activities described in this HMMP shall not limit or restrict Rosemont or it successors in interest from requesting and if approved securing additional compensatory mitigation credits from the mitigation sites for future 404 permits provided they are able to demonstrate functional capacity above currently proposed conditions of the function and values of the mitigation sites."*

The compensatory mitigation package proposed in the above referenced documents is grossly inadequate, fails to accurately assess the functional condition at the project site and mitigation sites, and

fails to provide compensation for proposed project impacts. Therefore, any future request by Rosemont for securing additional compensation is moot and contrary to mitigation guidelines.

ED_001077_00009389-00026

From: Brush, Jason
Location: R9-Room-1108-12-BayDelta/Region-9; R9-Room-1103-4-MamalaBay/Region-9
Importance: Normal
Subject: Bi-weekly Rosemont R9-WD update
Start Date/Time: Wed 1/15/2014 8:30:00 PM
End Date/Time: Wed 1/15/2014 9:00:00 PM

When: Wednesday, January 15, 2014 12:30 PM-1:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: R9-Room-1108-12-BayDelta/Region-9; R9-Room-1103-4-MamalaBay/Region-9

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*~*

Agenda for 1/15

1 Roll call

Ex. 5 - Deliberative Process

5 OW briefing strategy (all)

Ex. 5 - Deliberative Process

6 Next meeting: scheduled for Jan 30 (day after field trip) - do we want to meet earlier?
7 Adjourn

Changing from Thurs to Wed to not conflict with Monthly Regional Wetlands call.

Time and R9 room change.

Hello all:

I would like to set a recurring, short update call between R9 and Wetlands Division, focused on

Ex. 5 - Deliberative Process

R9's Brush or Goldmann will lead the calls, and will send an agenda at least 24hrs prior.

To: Miller, Clay[Miller.Clay@epa.gov]
Cc: Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Brush, Jason
Sent: Thur 1/2/2014 4:20:57 PM
Subject: Re: Bi-weekly Rosemont R9-WD update

Just cancelled it. Happy new year.

From: Miller, Clay
Sent: Thursday, January 02, 2014 8:20:08 AM
To: Brush, Jason
Cc: Flannery-Keith, Erin
Subject: RE: Bi-weekly Rosemont R9-WD update

Jason...the only participants for today's call from WD will be myself and Erin...Pendergast and Kaiser are either unavailable or out on leave...clay

-----Original Appointment-----
From: Brush, Jason
Sent: Thursday, January 02, 2014 11:18 AM
To: Kaiser, Russell; Miller, Clay; Fertik, Rachel; Flannery-Keith, Erin; Leidy, Robert; Goldmann, Elizabeth; Campbell, Rich; Bose, Laura; Pendergast, Jim
Cc: Jessop, Carter; Geredien, Ross; Graves, Karin
Subject: Canceled: Bi-weekly Rosemont R9-WD update
When: Thursday, January 02, 2014 2:30 PM-3:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: R9-Room-1103-4-MamalaBay/Region-9

Time and R9 room change.

Hello all:

I would like to set a recurring, short update call between R9 and Wetlands Division, focused on issues

Ex. 5 - Deliberative Process

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R9's Brush or Goldmann will lead the calls, and will send an agenda at least 24hrs prior.

To: Miller, Clay[Miller.Clay@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Goldmann, Elizabeth
Sent: Mon 12/9/2013 9:22:45 PM
Subject: FW: Rosemont Copper

More emails with Corps regarding indirect impacts…

From: Goldmann, Elizabeth
Sent: Monday, July 29, 2013 10:11 AM
To: Blaine, Marjorie E SPL
Cc: Leidy, Robert; Jessop, Carter
Subject: FW: Rosemont Copper

Hi Marjorie

Thanks for your email (pasted below). Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

We are currently working on providing you with the additional information you have requested and look forward to an open dialogue on these issues.

Thanks, Elizabeth

Elizabeth

I met with the USFS, SWCA, and Rosemont on Thursday to discuss different issues (like the required changes to the conservation measures of the draft BO) but primarily mitigation.

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Ex. 5 - Deliberative Process

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Thanks, Liz!

Marjorie Blaine
Senior Project Manager/Biologist
U.S. Army Corps of Engineers
Tucson Project Office, Regulatory Division
5205 E. Comanche Street
Tucson, AZ 85707
(520)584-1684 (phone)
(520)584-1690 (fax)

From: Goldmann, Elizabeth
Sent: Tuesday, July 23, 2013 1:55 PM
To: 'Blaine, Marjorie E SPL'
Cc: Leidy, Robert; Brush, Jason
Subject: Rosemont Copper

Hi Marjorie

I am following on our conversation last week regarding indirect impacts from the proposed Rosemont Copper Mine. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

In addition, we will be providing you with a copy of the power point presentation of Rob's trip for your consideration. I look forward to hearing from you.

Thanks,

Elizabeth

To: Miller, Clay[Miller.Clay@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Goldmann, Elizabeth
Sent: Mon 12/9/2013 9:18:59 PM
Subject: FW: effects of Ex. 5 - Deliberative Process

From: Goldmann, Elizabeth
Sent: Thursday, August 15, 2013 1:45 PM
To: 'Blaine, Marjorie E SPL'
Cc: Leidy, Robert
Subject: RE: effects of Ex. 5 - Deliberative Process

Hi Marjorie

Thanks for getting back to me. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Please call or email me if you have any questions.

-Elizabeth

Chapter 3, Seeps, Springs and Riparian Areas

Outstanding Arizona Waters

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Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Blaine, Marjorie E SPL [mailto:Marjorie.E.Blaine@usace.army.mil]
Sent: Wednesday, August 14, 2013 3:29 PM
To: Goldmann, Elizabeth
Subject: RE: follow up questions on RM (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Liz

Response below in red but you will need to view in rich text to see.

Marjorie

Assist us in better serving you!

You are invited to complete our customer survey, located at the following link:

http://www.spl.usace.army.mil/Missions/Regulatory.aspx

Note: If the link is not active, copy and paste it into your internet browser.

-----Original Message-----
From: Goldmann, Elizabeth [mailto:Goldmann.Elizabeth@epa.gov]
Sent: Monday, August 12, 2013 2:34 PM
To: Blaine, Marjorie E SPL
Subject: [EXTERNAL] follow up questions on RM

Hi Marjorie

I have a couple of questions as a follow up to your July 29th email, our meeting with Rosemont last week as well as our phone call after the meeting.

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Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks!

You're welcome!

Elizabeth

Classification: UNCLASSIFIED

Caveats: NONE

Ex. 5 - Deliberative Process

To: Miller, Clay[Miller.Clay@epa.gov]; Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Goldmann, Elizabeth
Sent: Mon 12/9/2013 9:16:17 PM
Rosemont.404.Mit.11.07.13.JDiamond.docx

Word version of our 11/7/13 letter to the Corps regarding impacts to waters and proposed compensatory mitigation.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JAN 05 2012

Colonel R. Mark Toy
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
Attn: Regulatory Branch (SPL-2004-01399-MB)
5205 E. Comanche Street
Tucson, Arizona 85707

Subject: Public Notice (PN) 2008-00816-MB for the proposed Rosemont Copper Mine Project, Rosemont Copper Company, Pima County, Arizona

Dear Colonel Toy:

We have reviewed the December 6, 2011 PN describing the proposed Rosemont Copper Mine Project (Rosemont) located 30 miles southeast of Tucson in Pima County, Arizona. According to the PN, the project would eliminate 38.6 acres of waters of the U.S. (waters) tributary to Davidson Canyon and Cienega creek, both designated as "Outstanding Waters" by the state of Arizona. In 2009, EPA worked closely with your staff regarding the ecosystem functions and services in this watershed, and we identified these waters as "aquatic resources of national importance." With the following comments, we reaffirm this resource designation and respectfully identify the Rosemont permit action as a candidate for review by EPA and Corps headquarters.[i]

EPA is concerned that substantial loss and/or degradation of water quality and other aquatic ecosystem functions is likely if this 4,200-acre mine is constructed and operated as proposed, in the 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. Seven federally listed endangered or threatened species occur within or adjacent to the project area to which adverse impacts are reasonably foreseeable.[ii]

Corps regulations prohibit issuance of a 404 permit if it would jeopardize the continued existence of listed species, or result in violation of water quality or toxic effluent standard (40 CFR 230.10(b)). In addition, pursuant to Section 303 of the Clean Water Act (CWA) and regulations at 40 CFR 131.12, the state's "Outstanding Water" designation means both Davidson Canyon Wash and Cienega Creek must be afforded the highest level of protection, and that no degradation of water quality is allowable.

Only discharges meeting all of EPA's 404(b)(1) Guidelines – a series of independent tests at 40 CFR 230 including the analysis of practicable offsite and onsite alternatives – can be permitted by the Corps. The 404 program contributes to the CWA goals to restore and maintain the chemical, physical and biological integrity of the nation's waters by prohibiting discharges of dredged or fill material that would result in avoidable adverse impacts to the aquatic ecosystem (40 CFR 230.10(a)), or the

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significant degradation of waters or human health and welfare (e.g., due to groundwater depletion and loss of cultural resources; 40 CFR 230.10(c)). Based on our review of the PN and the alternatives analysis submitted by the applicant, compliance with the 404(b)(1) Guidelines has not been demonstrated. There is presently insufficient information to conclude that the proposed project is the "Least Environmentally Damaging Practicable Alternative" (LEDPA), or meets any of the other restrictions on discharges, including the need to ensure appropriate compensatory mitigation for unavoidable impacts.

As additional information on this project becomes available, please ask your staff to contact Elizabeth Goldmann at (415) 972-3398 to continue our partnership in ensuring CWA compliance. If you would like to discuss this project personally, please call me at (415) 972-3572 or have your Regulatory Division Chief contact Jason Brush, Supervisor of our Wetlands Office, at (415) 972-3483.

Sincerely,

Alexis Strauss 5 Jan. 2012

Alexis Strauss
Director
Water Division

cc: Rosemont Copper Company
USFWS, Phoenix
USFWS, Tucson
M. Fulton, ADEQ
ADGF, Phoenix

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[i] This letter follows field level procedures outlined in the 1992 Memorandum of Agreement between EPA and the Department of the Army, Part IV, paragraph 3(a) regarding section 404(q) of the CWA. EPA Region 9 believes the project as proposed "may result in substantial and unacceptable impacts to aquatic resources of national importance."

[ii] This includes species known to occur in aquatic habitat or use these waters for forage or resting: Chiricahua leopard frog (*Lithobates chiricahuensis*), Mexican spotted owl (*Strix occidentalis lucida*), Southerwester willow flycatcher (*Empidonax traillii extimus*), Lesser long-nosed bat (*Leptonycteris yerbabuenae*), Ocelot (*Leopardus pardalis*), Gila chub (*Gila intermedia*), Gila topminnow (*Poeciliopsis occidentialis occidentalis*), and Jacquar (*Panthera onca*).

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

FEB 13 2012

OFFICE OF THE
REGIONAL ADMINISTRATOR

Colonel R. Mark Toy
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
PO Box 532711
Los Angeles, California 90053-2325

Subject: Permit Application No. 2008-00816-MB for the proposed Rosemont Copper Mine Project, Rosemont Copper Company, Pima County, Arizona

Dear Colonel Toy:

On January 5, 2012, the US Environmental Protection Agency (EPA) provided comments in response to your District's Public Notice for a Clean Water Act (CWA) Section 404 permit for the proposed Rosemont Copper Mine (enclosed). The 4,750 acre mine, proposed primarily on Coronado National Forest lands southeast of Tucson, would eliminate and/or significantly degrade hundreds of acres of aquatic and riparian resources including waters of the United States (waters), such as wetlands, springs, seeps and riffle-pool complexes. The significance of these impacts to sensitive and protected aquatic resources, and concerns regarding compliance with federal regulations (40 CFR 230), led us to identify the permit action as a candidate for the US Department of the Army and the EPA headquarters review pursuant to our agencies' Memorandum of Agreement implementing CWA Section 404(q).

In coordination with your staff in Tucson, as well as other federal and state agency regulatory authorities, we have been working to identify data gaps and clarify issues related to the many environmental uncertainties this project raises (please see our enclosed detailed comments). However, given the complexity of the project and the lack of any new substantive information provided since our January 5, 2012 letter, the EPA is now moving to preserve the option to seek higher level review of your pending permit decision. At this time, we respectfully reaffirm our objections on the basis that permit approval will have substantial and unacceptable impacts to "aquatic resources of national importance" (ARNI), including Cienega Creek and Davidson Canyon.

In summary, our enclosed comments detail specific deficiencies in the application related to each of the regulatory restrictions on 404 discharges. Of particular concern, the current proposal:

1. includes an inadequate analysis of off-site and on-site alternatives to demonstrate that the proposal is the least environmentally damaging practicable alternative (LEDPA);
2. provides questionable hydrological assessments concluding that impacts to downstream flows, sediment balance, and chemical contamination will not be significantly adverse or violate state standards;
3. provides no biological assessment (BA) to guide a determination whether the permit action would jeopardize the continued existence of any of ten federally listed threatened or endangered species;

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4. would contribute to the significant degradation of Arizona's rare and fragile wetland resources, reduced by one third over the last century alone;
5. provides no plan to compensate for unavoidable impacts to waters of the United States; and
6. could negatively impact recreation, aesthetics, and ecotourism, a $2.95 billion regional economy.

The above considerations, if unresolved, could provide an adequate basis for permit denial under the regulations in any environmental setting impacting waters of the U.S. In this setting, where virtually pristine ecological and recreational public resources—including state designated "Outstanding Waters"—thrive in a desert environment, it is vital that CWA protections are rigorously applied. Based on the information currently available, the EPA finds this project will result in the significant degradation of waters of the U.S., including substantial and unacceptable impacts to ARNI. This letter follows the field level procedures outlined in the August 1992 Memorandum of Agreement between the EPA and the Department of the Army, Part IV, paragraph 3(b) regarding Section 404(q) of the Clean Water Act.

Thank you for your ongoing partnership implementing the programs of the CWA and protecting human health and the environment. Please call me at (415) 972-3572 with any questions, or have your Regulatory Division Chief contact Jason Brush, our Wetlands Office Supervisor, at (415) 972-3483.

Sincerely,

Jared Blumenfeld

Enclosures:
EPA's Detailed Comments on the Proposed Rosemont Copper Mine 404 Permit Application
EPA letter dated January 5, 2012

cc: US Fish and Wildlife Service, Phoenix
US Fish and Wildlife Service, Tucson
US Forest Service, Coronado National Forest, Tucson
Bureau of Land Management, Tucson
Tohono O'odham Nation, Office of the Chairman and Vice Chairwoman
Arizona Department of Environmental Quality, Phoenix
Arizona Department of Environmental Quality, Tucson
Arizona Department of Game and Fish, Phoenix
Pima County Administrator's Office, Tucson
Rosemont Copper Company

DETAILED COMMENTS ON THE PROPOSED ROSEMONT COPPER MINE 404 PERMIT APPLICATION # 2008-00816-MB

I. Project Description

The Rosemont Copper Company (subsidiary of Canadian Augusta Corporation) proposes to develop the Rosemont Copper Mine Project in Pima County, AZ, approximately 30 miles south of the city of Tucson. The mine would occupy ~4,750 acres of National Forest Service, Bureau of Land Management and some privately owned lands, with the primary land holding being Coronado National Forest. The mine is projected to produce ~4.7 billion pounds of copper, 90 million pounds of molybdenum and 54 million pounds of silver over the proposed 25 year mine life.

Mining will be conducted using conventional open-pit techniques. Waste rock will be blasted and transported by haul truck to a storage area. Ore will be blasted and either transported by haul truck to a leach pad and processed by leaching (oxide ore), or crushed and loaded onto a conveyor for conventional sulfide milling (sulfide ore). Tailings will be stored using a dry stack tailings technique. The placement of waste rock will include perimeter buttresses, with placement of the perimeter of the dry stack tailings storage areas to provide structural and erosional stability of the tailings pile.

The copper concentrate from the milling operations will be shipped off site to a smelter. Leach ore will be placed on the heap leach pad. Solutions from the pad will be collected in a solution pond and then processed through the solvent extraction-electrowinning plant. Copper cathodes generated from the plant will be transported off site for further processing.

The proposed project includes a 950 acre mine pit, 1,460 acre waste rock storage areas, 126 acre heap leach area, 987 acre dry-stack tailings facility, ancillary facilities and structures, access and haul roads, and off site water and power and transmission lines.

II. Environmental Setting

The project site elevation ranges from 4,500 feet to 6,824 feet above mean sea level located in the Semidesert Grasslands biotic community that transition into Madrean Evergreen Woodland association on the higher slopes of the Santa Rita Mountains. The site supports a complex network of ephemeral and intermittent streams that provide critical surface and groundwater flow into perennial Cienega Creek.

The aquatic resources of the Cienega Creek watershed are located in a near pristine landscape rich in biodiversity. Four major drainages occur in the project area: Wasp, McCleary, Scholefield, and Barrel Canyons. Scholefield, Wasp and McLeary Canyons drain to Barrel Canyon which joins Davidson Canyon approximately 4 miles east of the project area. Davidson Canyon is a tributary to perennial Cienega Creek. Barrel Canyon is the largest of the four major drainages with an average channel width of 51 feet. The project site also supports sixty-three seeps and springs. The waters of the U.S. on the project site, in most instances, have riparian habitats associated with them.[1]

[1] Onsite Riparian habitat Assessment and Impact Analysis – Rosemont Project. Prepared for Rosemont Copper Company by WestLand Resources, Inc.. April 2010 (page 15).

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III. Project Impacts

The proposed project will have a variety of impacts to the aquatic environment including direct fill, secondary impacts resulting in functional degradation, and habitat conversion over a large geographic area. The project will result in the loss or conversion of approximately 7,000 acres including semi-desert grassland, Madrean evergreen woodland, riparian, and Sonoran desert scrub communities that form a vast, largely unfragmented, natural landscape. [2]

The proposed permit will authorize the direct fill of at least 38.6 acres of waters (18 linear miles of stream comprised of up to 154 individual drainages), including some direct impact to aquatic habitats associated with several springs.[3] Secondary (indirect) effects on the aquatic environment include dramatic and persistent changes to hydrologic and hydraulic regimes within the project and adjoining watersheds, adversely affecting the functioning of sensitive and regionally significant downstream receiving waters, including wetlands. For example, the Forest Service estimates 1,364 acres of riparian habitat (including a likely significant amount of jurisdictional riparian wetlands[4]) would be degraded or lost from changes to ground and surface water hydrology from the project. Water quality downstream of the project site will be degraded from changes in sediment loads, increasing suspended solids in some areas and altering channel morphology through aggradation and scour. Throughout the Cienega Creek watershed, impairment of floodplain and ecosystem services including water filtration, groundwater recharge, and flood attenuation are probable, as is the disruption of landscape-scale hydrological and ecological connectivity, decreases in regional biodiversity, and a loss of ecosystem stability.

The project will adversely affect three types of "Special Aquatic Sites" identified in the 404(b)(1) Guidelines (wetlands, sanctuaries and refuges, and riffle and pool complexes (40 CFR 230.40 – 45)), as well as Tier 3 "unique" waters (portions of Davidson Canyon and Cienega Creek that are designated by the State of Arizona as "Outstanding Arizona Waters"). These aquatic resources and adjoining habitat support ten federally listed endangered or threatened species for which project impacts are reasonably foreseeable (for example, filling streams will fragment currently continuous wildlife migration corridors).

Impacts to Special Aquatic Sites. Three of the six Special Aquatic Site types described in Subpart E of the Guidelines occur on or adjacent to the proposed project and would be adversely affected by the copper mine. Because of their special ecological characteristics of high food-web productivity, physical habitat critical for all life stages of aquatic life, water quality functions, and other important and easily disrupted ecological functions, these aquatic resources are given special recognition under CWA regulations.[5] Collectively, the Special Aquatic Sites in the project area play a regionally significant role in maintaining the existing, high quality functions and services in this watershed.

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[2] This acreage figure includes impacts associated with the mine site, transmission lines, and other project infrastructure. See DEIS, Ch. 3, Table 98.

[3] Pima County has conducted an independent GIS analysis of the linear and lateral extent of stream channels within the area affected by the Mine Plan of Operations. Pima County estimates that over 100 miles of streams and 116 acres of stream channel and floodplain (< 10-yr. floodplain) will be affected by the proposed project (Letter from Pima County to U.S. Army Corps of Engineers, dated 19 January 2012). Given this data, and the fact that the waters of the U.S. jurisdictional determination is unverified by the Corps, numbers in the PN may underestimate actual impacts to jurisdictional waters authorized by the proposed permit.

[4] DEIS for the Rosemont Copper Project (11 December 2011), Chapter 3, Table 98.

[5] 40 CFR § 230, Subpart E.

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Sanctuaries and refuges are areas designated under state and federal laws or local ordinances to be managed principally for the preservation and use of fish and wildlife resources.[6] Portions of lower Davison Canyon and Cienega Creek are designated by the State of Arizona as "Outstanding Waters" (see discussion, below) and are within the Cienega Creek Natural Preserve (CCNP), a 4,000 acre sanctuary along 12 stream miles noted for its ecological significance and natural beauty as a desert riparian oasis.[7] In addition, portions of Empire Gulch lie within the Las Cienegas National Conservation Area (LCNCA), administered by BLM, a 45,000 acre preserve set aside in large part to protect riparian wetlands and native aquatic organisms including endangered fish and amphibians.

The proposed project is likely to have significant impacts to the downstream reaches of Davidson Canyon, Empire Gulch and Cienega Creek. The state designation of Davidson Canyon and Cienega Creek as "Outstanding Waters" affords them special protection, prohibiting any lowering of water quality. Federal regulations for state-designated outstanding waters similarly state "Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected" (40 CFR 131.12(a)(3)). At this time, the applicant has not provided information demonstrating that modification to surface and groundwater hydrology, sediment transport and pollutant discharges to Davidson Canyon and Cienega Creek as a result of the proposed project will not result in any lowering of water quality, or other unacceptable impacts to onsite and downstream waters.

Wetlands and riffle-pool complexes are also Special Aquatic Sites that will be affected by the secondary effects of groundwater drawdown from the proposed project.[8] Although these resources have not been delineated, a significant proportion of streams and riparian areas are likely to include these special aquatic sites. Riffle and pool complexes are especially valuable as habitat for fish and wildlife, supporting important feeding, spawning, rearing, and refuge functions for aquatic and terrestrial species.

The proposed project will likely significantly change the balance of water along portions of Davidson Canyon and Cienega Creek within the CCNP, and Empire Gulch Creek within the LCNCA adversely impacting special aquatic sites. Specifically, secondary impacts from project-related groundwater drawdown are likely to change and disrupt breeding, spawning, rearing, and migratory movements, or other critical life history requirements of fish and wildlife resources. For example, pools and riffles used by Gila chub, Gila topminnow, and longfin dace would likely shrink or disappear within the CCNP and LCNCA as a result of mine-related groundwater drawdown. Pools and riffles would be especially vulnerable to desiccation during the typically driest months of May and June, and/or during droughts when intermittent pools characterize Cienega Creek embedded within long reaches of dry streambed. Seemingly small reductions in streamflow caused by groundwater drawdown during critically dry months could cause portions of Cienega Creek to stop flowing.[9] Similarly, groundwater drawdown could be expected to result in the loss of springs, and stress and mortality to riparian habitat, including wetlands.

Desert springs, often the sole sources of water for wildlife, support wetland ecosystems including rare and endemic species.[10] Human changes to groundwater are one of the greatest threats to long-term

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[6] 40 CFR § 230.40.
[7] http://rfcd.pima.gov/wrd/landmgt/cienegapreserve/
[8] Wetlands are defined at 40 CFR § 230.41. Riffle-pool complexes are defined at 40 CFR § 230.45.
[9] DEIS for the Rosemont Copper Project (11 December 2011), Chapter 3, Page 387.
[10] Patten, P.T., L. Rouse and J.C. Stromberg. 2007. *Isolated Spring Wetlands in the Great Basin and Mojave Deserts, USA: Potential Response of Vegetation to Groundwater Withdrawal.* Environmental Management DOI 10.1007/s00267-007-9035-9. 16pp.

sustainability of groundwater dependent ecosystems in arid and semi-arid regions.[11] Direct and indirect impacts to these seeps and springs as a result of the preferred alternative will affect the aquatic biota dependent on the range of spring-associated water sources. Following groundwater withdrawal, should the spring continue to flow, the wetlands supported by the outflow would be truncated. The amount of area suitable to support wetland species would be greatly reduced and the species least tolerant of drying conditions would be extirpated first and eventually replaced by transition upland species.[12] Sixty-three springs are expected to be lost from direct disturbance or lowering of the groundwater table during construction and operation.[13] Impacts to Scholefield No. 1 and Fig Tree springs are likely to occur within the active life of the mine as a result of drawdown in the regional aquifer.

Impacts to Surface Water Quantity. Ephemeral stream channel stormwater flows contribute significantly to groundwater recharge in arid regions.[14] Stormwater flows also provide seasonally significant surface water contributions to downstream waters. Collectively, in unaltered watersheds, storm flows are a significant source of water contributing to the base flow of downstream receiving waters.[15] The proposed project will result in alteration of the natural surface hydrology through construction of stormwater basins and diversions around the facility to convey and store stormwater originating upgradient of the mine areas. Impacts related to surface water quantity include the modification of stormwater peak flows, modification to overall runoff volume from the watershed, and the direct loss of stock tanks. Runoff reductions will adversely impact water availability for downstream uses. According to the Forest Service, the proposed project will result in a 33.8% reduction in runoff from the project area, reducing surface flow in Davidson Canyon by 5.4%.[16] Reductions in surface water availability in Davidson Canyon will result in adverse effects to riparian vegetation and wildlife use, including endangered, threatened or sensitive aquatic species (e.g., Huachuca water umbel, Gila chub, Gila topminnow, longfin dace, Chiricahua leopard frog, and lowland leopard frog).

The Pima Association of Governments (PAG) has conducted 20 years of hydrologic monitoring along Cienega Creek, including documentation of the relative contribution of surface and groundwater flows from Davidson Canyon to base flows in Cienega Creek.[17] Davidson Canyon, an intermittent stream upstream of its confluence with Cienega Creek, contributes significant flood flows to Cienega Creek during runoff events. Through analysis of water chemistry and stable isotopes, PAG also found that between 8 and 24% of Cienega's perennial base flows are attributable Davidson Canyon's underflow contributions.[18] Any decreases in the surface flows of Davidson Canyon resulting from the mine are therefore likely to significantly reduce contributing base flows to Cienega Creek.

Impacts to Surface Water Quality. Waters within the Cienega Creek watershed support riparian areas and provide natural erosion and sediment control. These waters carry or reduce pollutants and nutrients; therefore the loss of waters can affect water quality. The proposed project will directly affect sediment yield to downstream waters. The project will have permanent surface water quality impacts to 2.5 miles of Barrel Canyon Wash (23 acres) and 14 miles of Davidson Canyon Wash (234 acres), including a

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[11] Ibid.
[12] Ibid.
[13] DEIS, Ch. 3, Table 108.
[14] Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy, M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest.* U.S. EPA and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.
[15] Ibid.
[16] DEIS, Ch. 3, Tables 69 and 80.
[17] Pima Association of Governments .2003. *Contribution of Davidson Canyon to Base Flows in Cienega Creek*, 40pp.
[18] Ibid.

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reduction of sediment to the downstream reaches of Davidson Canyon Wash of 51.3 percent.[19] The reduction in the delivery of sediment to Davidson Canyon Wash and Cienega Creek have the potential to cause significant geomorphologic changes to downstream washes, resulting in increased channel scour and aggradation, including riparian areas in stream reaches designated as "Outstanding Waters" and CCNP. Aggradation and scour can result in the filling and scouring of pools and riffles used by fish and other aquatic organisms. These changes in channel morphology can also include bank erosion and the loss of riparian vegetation as the channel adjusts to a new sediment, water, and energy equilibrium.

Increased scour will likely result in significant changes to water quality by increasing total suspended sediment in surface water flows. Elevated levels of suspended sediment or moderate-to-high turbidity will likely have significant adverse effects on aquatic organisms in Davidson Canyon Wash and Cienega Creek. Increased suspended sediment and turbidity will have the potential to smother aquatic organisms as sediments settle out. Increases in turbidity can disrupt the feeding, movement, spawning, and rearing of aquatic organisms such as native fish and amphibians; federally listed aquatic species are particularly susceptible to these impacts (*e.g.*, Davidson Canyon's Huachuca water umbel, Gila chub, Gila topminnow, longfin dace, Chiricahua leopard frog, and lowland leopard frog).

Surface water quality may also be adversely impacted by a combination of projected project reductions in surface water quantity and groundwater drawdown. The PAG estimated that Davidson Canyon's relative contribution of base flows in Cienega Creek at Marsh Road between June 2002 and May 2003 ranged from 8-24 percent.[20] Because base flows in Davidson Canyon Wash are lower in dissolved solids, its contribution to Cienega Creek may effectively dilute concentrations of dissolved solids downstream and provide water quality benefits to aquatic species. Significant project related groundwater drawdown is expected to occur in Davidson Canyon, Cienega Creek, Empire Gulch, and Gardner Canyon.[21]

Groundwater drawdown will reduce streamflow, and the surface extent and persistence duration of pools and riffles. Water quality typically decreases as the volume of pools and riffles decrease, including increases in temperature and dissolved solid concentrations, and decrease in dissolved oxygen. These changes can result in increased algal blooms that further reduce the availability of dissolved oxygen. Water quality changes in desiccating pools and riffles can be expected to adversely affect aquatic organisms dependent on these habitats. Native fishes and amphibians such as Gila chub, Gila topminnow, longfin dace, and Chiricahua leopard frog could be expected to see their populations reduced or disappear from declines in water quality where they are known to occur in Davidson Canyon Wash, Cienega Creek, and Empire Gulch.

Impacts Resulting from Groundwater Drawdown. Ephemeral stream channel recharge from stormwater flows contributes significantly to groundwater recharge in arid regions.[22] The projected loss of an estimated 18 miles of stream channel attributable to the proposed project will significantly reduce the groundwater recharge functions within Davidson Canyon. In addition, significant groundwater drawdown will result from excavation of the mining pit.

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[19] DEIS, Ch. 3, Table 87.
[20] Ibid.
[21] DEIS, Ch. 3, Table 100.
[22] Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy,M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest.* U.S. EPA and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.

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The applicant did not analyze adverse effects to Cienega Creek through surface water modifications of its contributing tributaries. However, the applicant did identify several adverse environmental effects to Cienega Creek as a result of the proposed project. Cienega Creek is expected to experience drawdown of 1% to 3% of annual flow after 1,000 years; however, impacts could be much greater during critical periods of low flow (*e.g.*, May-June). During critical times of year, even small flow reductions could cause some portions of Cienega Creek to stop flowing. Although the DEIS states the decrease in groundwater would occur over a long period of time, the reduction in stream flow could impacts aquatic species needing standing or flowing water.[23]

Project groundwater drawdown is also expected to adversely impact 1,364 acres of riparian habitat, representing 29% of the total riparian habitat found within the 145,000-acre project analysis area.[24] This includes secondary impacts to riparian vegetation and wetlands along Cienega Creek (490.4 acres), Davidson Canyon (471.2 acres), Empire Gulch (58.3 acres), and Gardner Canyon (139.6 acres). An unknown, but potentially significant, amount of the total affected riparian acreage is jurisdictional wetlands.[25] Jurisdictional wetlands will most likely occur within areas mapped as hydroriparian and mesoriparian community types. Similarly, groundwater drawdown could be expected to result in the loss of up to 63 springs and associated riparian habitat and wetlands.[26]

Impacts to Reach and Extent of Jurisdictional Waters. Estimates of the extent of waters vary considerably between and within the PN and DEIS. A November 2010 Preliminary Jurisdictional Determination accepted by the Corps states that the entire project area supports 101.6 acres of waters, and the PN suggests 38.6 of these will be filled. However, the reach and extent of jurisdictional waters of the United States have not been formally delineated and may have been underestimated. Pima County has conducted a GIS analysis of the linear and lateral extent of stream channels within the area affected by the Mine Plan of Operations and estimated that over 100 miles of streams and 116 acres of stream channel and floodplain (*i.e.*, <10-yr floodplain) will be affected by the proposed project. The Bureau of Land Management has also expressed concern that riparian wetlands, seeps and springs within Empire Gulch may have been underestimated.[27]

Wetlands and other waters downstream of the project site have also not been delineated (e.g., along Davidson Canyon, Cienega Creek, Empire Gulch, and Gardner Canyon). This is a significant information deficiency because the Forest Service's estimate for secondary impacts to riparian communities along these streams, not including Davidson Canyon Wash, totals approximately 690 acres.[28] Presumably a significant portion of these riparian communities are jurisdictional wetlands, in addition to an unknown acreage of jurisdictional waters that lie below the ordinary high water mark. We are unable to determine the full extent and significance of direct and secondary project impacts in the absence of a complete jurisdictional delineation of all waters potentially impacted by the proposed project.

Other Environmental Considerations. The adverse affects of the project's changes to the regional hydrological regime would be further exacerbated by drought and projected climate change. Long-term ground and surface water monitoring within the Cienega Creek watershed indicates that the duration and extent of streamflow is very susceptible to drought; the length of stream segments that support perennial

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[23] DEIS, Ch. 3, p. 387.
[24] DEIS for the Rosemont Copper Project (11 December 2011), Chapter 3, Tables 98 and 99.
[25] Neither the applicant nor Corps has provided an assessment of jurisdictional wetlands potentially affected by secondary impacts.
[26] DEIS, Ch. 3, Table 108.
[27] U.S. Forest Service, Coronado National Forest, Personal Communication, 2 February 2012.
[28] DEIS, Ch. 3, Table 100.

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flow have been reduced beginning with the droughts of the 1980s.[29] In addition, climate change research and modeling predict a 10-20 percent reduction in precipitation in the desert southwest within the next 75 years, resulting in more arid conditions.[30] The potential cumulative effects of drought, aridity from climate change, and projections of reductions in surface water flows and groundwater drawdown attributable to the proposed project will likely result in significant adverse impacts to the aquatic environment.

IV. Aquatic Resources of National Importance

The EPA has determined that Cienega Creek and its major tributary, Davidson Canyon , are aquatic resources of national importance for the purposes of Part IV of the August 1992 Memorandum of Agreement between the EPA and the Department of the Army regarding Section 404(q) of the Clean Water Act. These aquatic resources are extraordinary, rare and intact ecosystems in a desert environment, and their protection is an explicit priority of local, state and federal agencies, environmental organizations, and the public.

The state of Arizona has designated reaches of both Davidson Canyon and Cienega Creek as Outstanding Arizona Waters (OAW) due to, among other factors, their exceptional ecological and recreational significance and the presence of federally threatened or endangered species. As OAW, their water quality meets or exceeds applicable water quality standards. Davidson Canyon Wash is a rare, spring-fed, low elevation desert stream, supporting a variety of uncommon flora and fauna. It flows to Cienega Creek, is the main surface water in a basin flowing in intermittent and perennial reaches to the northwest through the Las Cienegas National Conservation Area and into the Tucson groundwater Active Management Area.[31] Cienega Creek contributes flows to the Santa Cruz River via Pantano Wash, and contains remnants of a historically extensive cienega system, defined by springs and marsh areas supporting habitat for wildlife and plant species, included threatened and endangered species.

In December 2001, Pima County incorporated the Sonoran Desert Conservation Plan into its comprehensive land use plan by establishing the Conservation Lands System as the regional environmental vision. This system classifies lands into a variety of designations to reflect their relative value and importance in maintaining the biological diversity of Pima County. Davidson Canyon is identified under the plan as Biological Core area, and, along with Cienega Creek, an Important Riparian Area. By connecting the Empire, Santa Rita, and Rincon Mountain ranges—a network identified by the Arizona Department of Game and Fish, BLM and Pima County as critical wildlife movement corridor—Davidson Canyon, Cienega Creek and other riparian areas provide a natural habitat mosaic for the wide dispersal and migration of many species (*e.g.*, black bear, mountain lions, bobcats, coyotes).[32]

The upstream tributaries of Cienega Creek, including Davidson Canyon, Empire Gulch and its headwaters, provide a wide range of functions critical to aquatic ecosystem health and stability. These tributaries provide hydrologic connectivity within the watershed, facilitating the movement of water, sediment, nutrients, wildlife, and plant propagules. Ephemeral and intermittent streams are responsible for a large portion of basin ground-water recharge in arid and semi-arid regions through channel

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[29] http://www.pagnet.org/tabid/912/default.aspx
[30] Letter from Pima County to US Army Corps of Engineers, RE: SPL-2008-00816 Rosemont Mine, dated 19 January 2012.
[31] The Tucson Active Management Area was establishment pursuant to the 1980 Groundwater Management Act and is administered by the Arizona Department of Water Resources. The Tucson AMA has a statutory goal of achieving safe-yield by 2025 in order to address long-term implications of groundwater overdraft.
[32] DEIS, Chapter 3, page 370.

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infiltration. These ephemeral systems contribute to the biogeochemical functions of waters within their watershed by storing, cycling, transforming, and transporting elements and compounds, while facilitating the movement of sediment and debris and dissipating energy as part of natural fluvial adjustment.[33]

Finally, the national importance of these aquatic resources is underscored by the presence of ten federally-listed threatened or endangered species. These species rely, in whole or in part, on the health and extent of these aquatic resources to ensure their continued existence is not jeopardized. For example, listed fish such as the Gila chub (*Gila intermedia*) is primarily found in deep pools in Cienega Creek and Empire Gulch. Gila topminnow (*Poeciliopsis occidentalis occidentalis*), located in Cienega Creek and Davidson Canyon Wash only tolerates a narrow range of conditions and uses runs, riffles and pools for survival. Avian species such as the Southwestern willow flycatcher (*Empidonax traillii extimus*) nest and forage in associated riparian habitat, while the Mexican spotted owl (*Strix occidentalis lucida*) use these aquatic sites for foraging across its range of isolated mountains and canyons with mixed-conifer, pine-oak and riparian forests. Large mammalian predators, such as the ocelot (*Leopardus pardalis)* and jaguar (*Panthera onca*), depend on these stream corridors as critical movement corridors.

V. Clean Water Act 404(b)(1) Guidelines

The purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of waters of the United States. These goals are achieved, in part, by prohibiting discharges of dredged or fill material that would result in avoidable or significant adverse impacts on the aquatic environment pursuant to EPA's *Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials* (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA (Guidelines). The burden to demonstrate compliance with the Guidelines rests with applicant for a 404 permit. The Guidelines contain four main, independent requirements that must be met to obtain a permit.

1. Section 230.10(a) prohibits a discharge if there is a less environmentally damaging practicable alternative to the proposed project.
2. Section 230.10(b) prohibits discharges that will result in a violation of water quality standards or toxic effluent standards, jeopardize a threatened or endangered species, or violate requirements imposed to protect a marine sanctuary.
3. Section 230.10(c) prohibits discharges that will cause or contribute to significant degradation of waters. Significant degradation may include individual or cumulative impacts to human health and welfare; fish and wildlife; ecosystem diversity, productivity and stability; and recreational, aesthetic or economic values.
4. Section 230.10(d) prohibits discharges unless all appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

[33] See Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy,M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest*. U.S. EPA and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.

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Alternatives Analysis – 40 CFR 230.10(a)

Offsite Alternatives

In evaluating the practicability of offsite alternatives, the Corps directed the applicant to determine availability as the date of acquisition of the Rosemont Project in 2005. Based on a 2005 market entry year, the applicant presented an analysis of copper mining projects that were either underway or in the planning stage at that time. Although eleven offsite alternatives are listed in the AA, insufficient information has been provided in the analysis to eliminate some of the alternatives from further consideration.[34] Information regarding the aquatic resources at the eleven offsite alternatives was not provided. In order to remove offsite alternatives from consideration, additional information, including but not necessarily limited to the following, is needed:

> *Availability* - Several of the offsite alternatives (*e.g.,* Safford, Lone Star, Johnson Camp, Monitor and Markham Wash) were eliminated based on the applicant's following statement, "There was no indication that this facility was for sale in 2005, and it was therefore not available for purchase by Augusta." This statement alone does not substantiate whether these sites may or may not have been "available" under the Guidelines. Additional information is necessary in order to determine whether these alternatives were available at market entry.
>
> *Practicability* – The applicant states: "If an offsite alternative consists solely of Mineral Resources, by definition there is insufficient information to determine if extraction is feasible (the industry's term) or practicable (the 404(b)(1) Guidelines' term). It is not until the feasibility study is complete, and the Mineral Reserve identified, that it can be determined whether or not a given project is "capable of being" in light of cost, technology, and logistics." (page 8).

A letter to Westland Resources from Augusta dated August 30, 2010 discussed the history of the Rosemont Deposit. The letter describes the advancement of the Rosemont Project following its purchase in 2005. In particular, when describing the exploration drilling, it states,

> *"At the time of this initial work in 2005 and 2006, it was only appropriate to report on Mineral Resources of the Rosemont Deposit. The estimation of the Mineral Resources and assessment of the reasonable prospects for economic extraction required the judgment of a consulting engineer to serve as the official Qualified Person. In early 2007, the positive results from preliminary assessments of the Rosemont Deposit, allowed for the corporate decision to proceed to the next stage." (page 2)*

In August, 2007, Rosemont Copper Company completed an economic feasibility study for the Rosemont Deposit. Based on this information, it is unclear why other offsite alternatives were eliminated from further consideration for lack of a completed feasibility study by 2005 (market entry). Similar to the Rosemont Deposit, alternatives such as Lone Star, Copper Creek, Monitor, Broad Top Butte, and Peach-Elgin were identified as having mineral resources or were in the exploration phase during 2005. Therefore, these alternatives cannot be removed from further consideration under the Guidelines at this time.[35]

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[34] DEIS Appendix B: *CWA 404(B)(1) Alternatives Analysis Rosemont Copper Project*, September 2011

[35] The AA did not provide information regarding the aquatic resources on each offsite alternative in order to assess the potential environmental impacts associated with constructing a copper mine at these locations.

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Onsite Alternatives

The applicant evaluated six onsite alternatives for construction of the proposed copper mine. Several elements of the project are common to all alternatives: production rates, processing facility output, types of equipment, mineral processing operations and techniques, general plant site location, surface water management approach, reclamation and closure and access and utility alignments. With regard to the development of the onsite alternatives, the applicant considered various configurations of the largest project structural elements.

The onsite alternatives are listed in the AA as:

- Alternative 1 – Mine Plan of Operations
- Alternative 2 – Alternative Tailings Sequence
- Alternative 3 – Barrel Canyon Only
- Alternative 4 – Barrel Canyon Only, Landforming
- Alternative 5 – Scholefield Tailings
- Alternative 6 – Modified Pit Configuration.

The PN identifies Alternative 3 (Barrel Canyon Only) as the applicant's proposed project, and all on-site alternatives as practicable except for Alternative 6. The AA lists the Alternative 3 direct impacts at 37.7 acres of waters and ~207 acres of associated riparian habitat. The PN states the proposed project would impact 38.6 acres of waters. Average annual stormwater flows in Barrel Canyon will be reduced by 33.8 percent with 100-years flows reduced by 34.9 percent.

Comparing other alternatives presented in the AA, direct impacts to waters vary from 26.5 acres (Alternative 5 - Scholefield Tailings) to 50.5 acres (Alternative 4 - Barrel Canyon Only, Landforming). Average annual stormwater flow reductions to Davidson Canyon vary among the alternatives from 18.4% (Alternative 5 - Scholefield Tailings) to 45.8 % (Alternative 1 - Mine Plan of Operations). On both metrics, Alternative 5 - Scholefield Tailings has the fewest impacts to aquatic resources, although the AA dismisses it due to the loss of Scholefield Spring, one of the only wetlands identified within the project site. Yet, the Biological Resources section of the DEIS under *Impacts Common To All Action Alternatives* states:

> "Springs would be impacted by surface disturbance and by drawdown in the regional aquifer. Specifically, impacts to Scholefield No. 1 and Fig Tree springs are likely to occur within the active life of the mine as a result of drawdown in the regional aquifer. Riparian vegetation associated with these springs likely would be lost completely; WestLand Resources estimates approximately 0.8 acre of riparian habitat are associated with these springs (WestLand Resources Inc. 2010d)." (DEIS page 388).

The AA goes on to state that under Alternative 5 - Scholefield Tailings, major drainages remaining open would degrade due to adjacent upland mine operations, yet a functional assessment was not conducted on the project site nor qualitatively or quantitatively presented in the AA or DEIS.

The AA also describes power and water utility alignments impacting up to 0.98 acre of waters, dismissing jack-and-bore technology due to cost and potential for greater environmental impacts to vegetated uplands at the staging area. Based on the information provided to date, the applicant has not demonstrated jack-and-bore technology is more environmentally damaging, or that increased costs render the alternative methods impracticable.

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To reduce impacts to waters, additional analysis of onsite alternatives should be conducted. This includes, but is not limited to, the construction of higher waste rock piles, and the potential for partial backfill of the mining pit. Impacts to waters from elements common to onsite alternatives have not been broken down. The EPA recommends a delineation of impacts for each element and a description of avoidance and minimization for these elements (*e.g.,* movement of general plant site location, design of surface water management facilities, primary and secondary access).

Compliance with Other Environmental Standards – 40 CFR 230.10(b)

The Guidelines prohibit any discharge of dredged or fill material if it causes or contributes to violations of an applicable state water quality standard. Based on the information currently available, secondary impacts of the proposed fill discharges would result in significant degradation to outstanding natural resource waters in violation of applicable water quality standards (including anti-degradation policies). Reductions in streamflow, alterations in sediment transport, chemical leaching and groundwater drawdown will degrade water quality (*e.g.,* aquatic wildlife (warmwater) designated uses) and the aquatic ecosystem.

Data provided in the Draft EIS show that modeled water quality for untreated seepage from heap leach exceeds standards for cadmium, fluoride, nickel, and selenium. The modeling also shows that after treatment with an engineered biological system, this seepage would be expected to meets standards. Since the effectiveness of the seepage treatment system is a critical factor in determining whether state standards may be violated by the project, the applicant should provide more information on the engineered biological system that was utilized to model compliance. The modeled results in the EIS suggest concentrations of nickel and selenium well below known instrument detection levels or reduction efficiencies, and thus the EPA is skeptical that the reported efficiencies are scientifically supportable, and concerned that proposed treatments may never perform at the levels necessary to ensure that heap leach drain down does not exceed Arizona Aquifer Water Quality Standards.

Placing detention/retention basins on top of tailings or waste rock also represents a threat to water quality. Contrary to the applicant's stated goal of avoiding infiltration from these basins, such placement would promote infiltration by accumulating any appreciable precipitation into one location where overall evaporation rate is slowed. Even lined basins would create an unnecessary long term maintenance issue that would need to be addressed and paid for post closure.

In addition, the EPA is concerned the synthetic precipitation leaching procedure (SPLP)[36] test results presented in the DEIS may significantly understate the potential for seepage waters to exceed Arizona Aquifer Water Quality Standards. Based on SPLP testing methods, the DEIS concludes that

> "None of the constituents predicted in the waste rock seepage exceed current Arizona Aquifer Water Quality Standards. Arsenic is predicted to exceed the proposed lower arsenic standard of 0.010 milligram per liter" (p. 288).

[36] The SPLP (USEPA Method 1312) was developed to evaluate the fate and transport of metals in an engineered land disposal facility from which municipal solid waste is excluded. USGS modified the procedure to be used to measure fraction that controls rapid leaching. This test provides an indication of extent of leaching of salts and readily dissolvable constituents from dried mine materials. Static tests of this nature provided a preliminary simulation of short-term interaction with rain/snowmelt. These tests do not provide any data regarding when acidification may occur or the rates at which acid generation and neutralization reactions will proceed. As such, they are useful only for screening samples for their potential behavior.

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In EPA's experience, and based on information at other sites, it is highly likely that the ~2,000 acre waste rock pile will produce seepage in an intermittent manner, highly dependent on annual and/or seasonal precipitation cycles. This will result in relatively small amounts of seepage being exposed to large amounts of potential contaminants, leading to leachates of much higher concentration than predicted by SPLP testing methods. Arsenic is present as a contaminant at numerous hardrock sites in the western US and is likely associated with copper mineralization. Because of its relatively high solubility at neutral pH it is often overlooked when focusing on acid rock drainage, and has frequently resulted in concentrations greater than predicted by SPLP tests at other sites.

With regard to selenium, we note that less than doubling of the predicted concentrations (0.036 mg/L) would result in an exceedance of water quality standards (0.05 mg/L). Given the high liquid:solid dilution ratio employed in the SPLP tests performed for the geochemical characterization, the EPA believes that it is highly likely that any seepage produced from waste rock storage facilities would exceed the Arizona Aquifer Water Quality Standard of 0.05 mg/L for selenium. Selenium has been a particular contaminant of concern at other hardrock mine sites in the U.S., is mobilized under neutral conditions similar to arsenic and can result in significant additional reclamation and groundwater remediation costs.

The EPA recommends the applicant explain how static testing methods like SPLP meet the Arizona Department of Environmental Quality's Best Available Demonstrable Control Technology requirements for characterization of mining waste, when it is generally agreed that kinetic testing is the best predictor of long-term water quality. Kinetic test results might form a stronger basis for this analysis, along with methods such as bottle roll leach tests which use a more appropriate 2:1 liquid-to-solid ratio.

At other regional copper porphyry mines (e.g. Sierrita, Mission), adverse water quality impacts have been observed that were not predicted. In addition to baseline site geochemical characterization, we recommend the applicant evaluate regional geochemical site analogs and explain their expectation that the Rosemont mine will have different acid rock drainage and contaminant leaching potential than similar area copper mines.

In addition to considerations related to sediment discussed earlier, even a potential degradation of water quality from arsenic and selenium not exceeding standards could nevertheless be significant. Davidson Canyon and Cienega Creek are OAW (also referred to as Tier III waters under federal anti degradation policy), a status that prohibits any degradation under the law. Arizona's anti degradation rules reinforce this prohibition.[37] Federal anti degradation requirements provide that "water quality shall be maintained and protected" in Tier III waters, and that the water quality in Tier III waters may not be lowered to accommodate economic or social development in the area where the waters are located.[38]

Permitting the proposed project's reduction in stream flows to Davidson Canyon and Cienega Creek, its alteration of sediment transport, groundwater drawdown, and potential contamination of arsenic and selenium would be inconsistent with applicable anti degradation policy because regulatory authorities would have failed to maintain and protect existing water quality in those OAWs. In addition, such significant degradation of the aquatic ecosystem in Outstanding Natural Resource Waters is prohibited by the Guidelines at 40 CFR 230.10(b)(1) and 40 CFR 230.10(c).

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[37] "[d]egradation of an OAW ... is prohibited." ACC R18-11-107

[38] 40 CFR 131.12(a)

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Consistent with Corps regulations and the October 29, 2009 Department of the Army Memorandum regarding Water Quality, the EPA believes the likely impacts to water quality detailed above constitute "other water quality aspects" under 33 CFR 320.4(d) that should be specifically evaluated by the Corps during review of the application. This is particularly important given the potential impacts to OAW, which must be protected from any degradation in water quality.

The Guidelines also state no discharge of dredged or fill material shall be permitted if it jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973. Currently, there is insufficient information to assess the effect of the proposed project on ten federally listed species known to occur within or adjacent to the project site, but potentially significant adverse impacts are reasonably foreseeable. The applicant has not prepared a BA, and thus the USFWS has not yet initiated formal consultation with the USFS to determine the affects of the proposed project on listed species. Therefore, a determination cannot be made whether the project complies with this restriction under the Guidelines.

Significant Degradation – 40 CFR 230.10(c)

Pursuant to the Guidelines, no discharge of dredged or fill material can be permitted which will cause or contribute to significant degradation of waters of the United States. Based on the information currently available and detailed in Section III of this letter, the EPA believes the project, as proposed, will result in significant degradation under the following criteria outlined in regulation:

- Significant adverse effects to water circulation and fluctuation;
- Significant adverse effects to aquatic organisms due to suspended sediments and turbidity;
- Potential arsenic and selenium contamination from seepage waters to downstream waters;
- Significant direct and secondary effects on the structure and function of the aquatic ecosystem and organisms;
- Significant cumulative effects on waters within the 145,000- acre project analysis area;
- Significant secondary effects on the aquatic ecosystem.

Avoidance, Minimization, and Compensation-- 40 CFR 230.10(d)

No discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. For unavoidable impacts that remain, the applicant is required to comply with "Final Rule for Compensatory Mitigation for Losses of Aquatic Resources" (40 CFR Part 230 Subpart J).

Currently, there are no mitigation banks or in-lieu fee programs available to the applicant as compensation for unavoidable impacts to waters. According to the PN, the applicant is evaluating the potential for contiguous offsite Rosemont-owned parcels to offer compensatory mitigation, but no mitigation plan has been submitted. Rosemont anticipates mitigation credit for these parcels will be available through preservation with either a restrictive covenant or conservation easement placed over the mitigation lands. Rosemont is also evaluating offsite parcels within the Santa Cruz River watershed for preservation or restoration of surface water resources. Information provided to date by the applicant is insufficient to demonstrate their mitigation proposal meets the restrictions on discharge required by the guidelines at 40 CFR 230.10(d) and 40 CFR 230.12(a)(3)(iv).

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VI. Conclusion

When considered together, the direct and secondary impacts from discharges of dredged or fill material from the proposed project likely will cause or contribute to significant degradation of waters of the United States. The EPA has reached this conclusion based on the information currently available to us from the Corps PN and the Forest Service's DEIS, assessing the factual determinations required under the Guidelines by Subparts B and G, and consideration of Subparts C-F, with special emphasis on the persistence and permanence of the direct and secondary effects outlined in these subparts. Under these Guidelines we have considered individually and collectively the direct and secondary effects from discharges associated with the proposed project to waters of the United States contributing to significant degradation.

The proposed project will likely result in significant adverse effects: (1) to fish, wildlife and special aquatic sites; (2) on life history stages of aquatic life and other wildlife dependent on aquatic ecosystems; and (3) on aquatic ecosystem diversity, productivity, and stability, through the loss of fish and wildlife habitat.[39] This includes significant adverse effects on the physical, chemical, and biological components of the aquatic environment, including the following factual determinations as required under EPA's 404(b)(1) Guidelines.[40]

- *Water circulation and fluctuation determinations.* The proposed project will have significant adverse effects on downstream flows and normal surface and groundwater fluctuations through the direct discharge of fill material and through secondary impacts resulting from groundwater drawdown. The discharge of fill material will divert and obstruct the natural flow patterns of at least 18 miles of stream channel. The discharge of fill material will alter the bottom contours of these 38.6 acres of waters, resulting in significant downstream changes in the hydrology and hydraulics of high functioning receiving waters.

- *Suspended particulate/turbidity determinations.* Secondary effects from increased scour will likely result in significant changes to water quality by increasing total suspended sediment and turbidity in surface water flows. Elevated levels of suspended sediment or moderate-to-high turbidity will likely have significant adverse effects on aquatic organisms in Davidson Canyon and Cienega Creek. Increased suspended sediment and turbidity will have the potential to smother aquatic organisms as sediments settle out. Increases in turbidity can be expected to disrupt the feeding, movement, spawning, and rearing of aquatic organisms such as native fish and amphibians.

- *Contaminant determinations.* Based on our evaluation of the SPLP test results, the EPA believes the proposed project has a high likelihood of potential arsenic and selenium contamination from seepage waters to downstream waters.

- *Aquatic ecosystem and organism determinations.* The proposed discharge will have significant direct and secondary effects on the structure and function of the aquatic ecosystem and organisms. Adverse effects to the life stages of aquatic life and other wildlife dependent on aquatic ecosystems will occur largely through changes associated with the direct fill of 38.6 acres of waters and the potential adverse secondary effects to 1,364 acres of riparian habitat, including jurisdictional wetlands and other aquatic habitats. Secondary effects to high

[39] 40 CFR §230.10(c)(1-3).
[40] 40 CFR §230.11(a-h).

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functioning downstream waters will accrue primarily from reductions in surface water flows and the drawdown of groundwater related to excavation of a large mining pit and from the burying of 18 miles of stream channel that normally functions to deliver surface water and recharge groundwater. Groundwater drawdown will result in changes to the downstream water table, thereby negatively affecting water currents, circulation, and fluctuation with negative effects on aquatic organisms such as indigenous fish, amphibians, and riparian wetland species.

- *Determination of cumulative effects on the aquatic ecosystem.* Less than 1 percent of Arizona's landscape is wetland. Since the late 1800's, streams and wetlands throughout Arizona have been modified or drained, resulting in the loss of more than one-third of the State's original wetlands.[41] This project will exacerbate the reasonably foreseeable impacts on aquatic resources contributing to the significant cumulative loss of wetlands in Arizona.

- *Determination of secondary effects on the aquatic ecosystem.* Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of fill material, but do not result from the actual placement of the fill material. The proposed project will have significant adverse secondary impacts primarily to receiving waters. These impacts are related primarily to the reductions in surface flows and groundwater drawdown that result in significant adverse impacts to fish and wildlife dependent on healthy wetlands, streams (including pools and riffle sequences) with sufficient flows, and sanctuaries and refuges, for their survival.

- *Water-related recreation and aesthetics.* The proposed project will impair activities undertaken for amusement and relaxation such as canoeing, sightseeing and hiking, and these impacts will persist for at least a quarter century. The loss of values for consideration includes impairment of natural resources which support recreation activities (*e.g,* degradation of habitat). Aesthetics of the aquatic ecosystem apply to the quality of life enjoyed by the general public and property owners. Loss of value to consider includes creating distracting disposal sites and destroying vital elements that contribute to the compositional harmony or unity, visual distinctiveness, or diversity of an area. The project area is an important location for outdoor recreation. A study conducted by the Sonoran Institute shows that approximately $2.95 billion is spent annually for tourism and outdoor recreational activities in Pima and Santa Cruz Counties. Their analysis states that if the proposed project displaces only one percent of travel and tourism-related spending in the region, the economic loss would be greater than the entire annual payroll of the mine.[42]

Based on the information currently available to the EPA, the proposed discharge does not appear to comply with the substantive requirements in the regulations at 40 CFR 230.10 (a) – (d). The EPA believes that the proposed project will result in significant degradation to waters of the U.S. which constitutes substantial and unacceptable impacts to aquatic resources of national importance, including the "Outstanding Waters" of Davidson Canyon and Cienega Creek.

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[41] http://pubs.usgs.gov/wsp2425/state_highlights_summary.html

[42] J.E. Marlow. 2007. Mining's Potential Economic Impacts in the Santa Rita and Patagonia Mountains Region of Southeastern Arizona. Sonoran Institute Study.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JAN 05 2012

Colonel R. Mark Toy
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
Attn: Regulatory Branch (SPL-2004-01399-MB)
5205 E. Comanche Street
Tucson, Arizona 85707

Subject: Public Notice (PN) 2008-00816-MB for the proposed Rosemont Copper Mine Project, Rosemont Copper Company, Pima County, Arizona

Dear Colonel Toy:

We have reviewed the December 6, 2011 PN describing the proposed Rosemont Copper Mine Project (Rosemont) located 30 miles southeast of Tucson in Pima County, Arizona. According to the PN, the project would eliminate 38.6 acres of waters of the U.S. (waters) tributary to Davidson Canyon and Cienega creek, both designated as "Outstanding Waters" by the state of Arizona. In 2009, EPA worked closely with your staff regarding the ecosystem functions and services in this watershed, and we identified these waters as "aquatic resources of national importance." With the following comments, we reaffirm this resource designation and respectfully identify the Rosemont permit action as a candidate for review by EPA and Corps headquarters.[i]

EPA is concerned that substantial loss and/or degradation of water quality and other aquatic ecosystem functions is likely if this 4,200-acre mine is constructed and operated as proposed, in the 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. Seven federally listed endangered or threatened species occur within or adjacent to the project area to which adverse impacts are reasonably foreseeable.[ii]

Corps regulations prohibit issuance of a 404 permit if it would jeopardize the continued existence of listed species, or result in violation of water quality or toxic effluent standard (40 CFR 230.10(b)). In addition, pursuant to Section 303 of the Clean Water Act (CWA) and regulations at 40 CFR 131.12, the state's "Outstanding Water" designation means both Davidson Canyon Wash and Cienega Creek must be afforded the highest level of protection, and that no degradation of water quality is allowable.

Only discharges meeting all of EPA's 404(b)(1) Guidelines – a series of independent tests at 40 CFR 230 including the analysis of practicable offsite and onsite alternatives – can be permitted by the Corps. The 404 program contributes to the CWA goals to restore and maintain the chemical, physical and biological integrity of the nation's waters by prohibiting discharges of dredged or fill material that would result in avoidable adverse impacts to the aquatic ecosystem (40 CFR 230.10(a)), or the

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significant degradation of waters or human health and welfare (e.g., due to groundwater depletion and loss of cultural resources; 40 CFR 230.10(c)). Based on our review of the PN and the alternatives analysis submitted by the applicant, compliance with the 404(b)(1) Guidelines has not been demonstrated. There is presently insufficient information to conclude that the proposed project is the "Least Environmentally Damaging Practicable Alternative" (LEDPA), or meets any of the other restrictions on discharges, including the need to ensure appropriate compensatory mitigation for unavoidable impacts.

As additional information on this project becomes available, please ask your staff to contact Elizabeth Goldmann at (415) 972-3398 to continue our partnership in ensuring CWA compliance. If you would like to discuss this project personally, please call me at (415) 972-3572 or have your Regulatory Division Chief contact Jason Brush, Supervisor of our Wetlands Office, at (415) 972-3483.

Sincerely,

Alexis Strauss 5 Jan. 2012

Alexis Strauss
Director
Water Division

cc: Rosemont Copper Company
USFWS, Phoenix
USFWS, Tucson
M. Fulton, ADEQ
ADGF, Phoenix

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[i] This letter follows field level procedures outlined in the 1992 Memorandum of Agreement between EPA and the Department of the Army, Part IV, paragraph 3(a) regarding section 404(q) of the CWA. EPA Region 9 believes the project as proposed "may result in substantial and unacceptable impacts to aquatic resources of national importance."

[ii] This includes species known to occur in aquatic habitat or use these waters for forage or resting: Chiricahua leopard frog (*Lithobates chiricahuensis*), Mexican spotted owl (*Strix occidentalis lucida*), Southerwester willow flycatcher (*Empidonax traillii extimus*), Lesser long-nosed bat (*Leptonycteris yerbabuenae*), Ocelot (*Leopardus pardalis*), Gila chub (*Gila intermedia*), Gila topminnow (*Poeciliopsis occidentialis occidentalis*), and Jacquar (*Panthera onca*).

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To: Brush, Jason[Brush.Jason@epa.gov]
From: Miller, Clay
Sent: Wed 6/17/2015 8:18:44 PM
Subject: RE: ADEQ response to R9 letter - Rosemont Mine

No problem…

Ex. 5 - Deliberative Process

From: Brush, Jason
Sent: Wednesday, June 17, 2015 4:13 PM
To: Miller, Clay
Subject: RE: ADEQ response to R9 letter - Rosemont Mine

I'm in Denver at the national meeting. I've asked Liz to call you.

Jason A. Brush
Supervisor, Wetlands Section
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-2-4)
San Francisco, CA 94105
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
desk: 415.972.3483
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

To: Brush, Jason[Brush.Jason@epa.gov]
From: Miller, Clay
Sent: Wed 6/17/2015 7:53:12 PM
Subject: RE: ADEQ response to R9 letter - Rosemont Mine

Are available to talk? If not when would be a good time to ....

From: Brush, Jason
Sent: Wednesday, June 17, 2015 3:35 PM
To: Jessop, Carter; Leidy, Robert; Goforth, Kathleen
Cc: Miller, Clay; Woo, Nancy; Montgomery, Michael; Hashimoto, Janet; Sablad, Elizabeth; Goldmann, Elizabeth
Subject: ADEQ response to R9 letter - Rosemont Mine

From: Linda C. Taunt [mailto:Taunt.Linda@azdeq.gov]
Sent: Wednesday, June 17, 2015 12:24 PM
To: Woo, Nancy
Cc: Goldmann, Elizabeth; Brush, Jason
Subject: EPA letter - Rosemont Mine

Nancy – attached please find ADEQ's response to EPA's April 14, 2015 letter on water quality concerns unaddressed in our CWA 401 certification of the Rosemont Copper Project CWA 404 permit application.

If you or your staff have questions, please do not hesitate to contact Trevor Baggiore, WQD Director or myself.

Sincerely

Linda Taunt

To: Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]
From: Miller, Clay
Sent: Mon 5/5/2014 5:20:59 PM
Subject: RE: Hi Clay, Do have any time today for a call with me and Rob? eom.

Anytime this afternoon until 530 my time

From: Goldmann, Elizabeth
Sent: Monday, May 05, 2014 1:19 PM
To: Miller, Clay
Subject: FW: Hi Clay, Do have any time today for a call with me and Rob? eom.

I should mention we can give you a brief update on RM, and want to discuss mitigation with you. Thanks, E.

From: Goldmann, Elizabeth
Sent: Monday, May 05, 2014 10:18 AM
To: Miller, Clay
Subject: Hi Clay, Do have any time today for a call with me and Rob? eom.

To: Crawford, Tiffany[Crawford.Tiffany@epa.gov]
From: Miller, Clay
Sent: Mon 5/5/2014 12:16:43 PM
Subject: Fw: Rosemont News releases

Fyi

From: Brush, Jason
Sent: Friday, May 2, 2014 2:46:14 PM
To: Kaiser, Russell; Evans, David; Pendergast, Jim; Miller, Clay
Subject: FW: Rosemont News releases

From: Brush, Jason
Sent: Friday, May 02, 2014 11:45 AM
To: Blumenfeld, Jared; Diamond, Jane; Woo, Nancy; Zito, Kelly
Cc: Campbell, Rich; PerezSullivan, Margot
Subject: Rosemont News releases

Ex. 5 - Deliberative Process

From: Goldmann, Elizabeth
Sent: Friday, May 02, 2014 10:56 AM
To: Brush, Jason; Leidy, Robert; Jessop, Carter
Subject: News release - RM

http://augustaresource.com/News/News-Releases/News-Release-Details/2014/Augusta-Resource-provides-permitting-update/default.aspx

http://www.rosemontminetruth.com/

To: Brush, Jason[Brush.Jason@epa.gov]
From: Miller, Clay
Sent: Thur 4/24/2014 7:34:40 PM
Subject: Re: We're on the RM biweekly update call - are you coming? Eom

Ok thanks

From: Brush, Jason
Sent: Thursday, April 24, 2014 3:23:15 PM
To: Miller, Clay
Subject: RE: We're on the RM biweekly update call - are you coming? Eom

Jim said nobody available so we cancelled. It's ok, bigger update next week.

From: Miller, Clay
Sent: Thursday, April 24, 2014 12:06 PM
To: Brush, Jason; Pendergast, Jim; Kaiser, Russell
Subject: Re: We're on the RM biweekly update call - are you coming? Eom

Tried calling in assuming call was cancelled

From: Brush, Jason
Sent: Thursday, April 24, 2014 2:46:30 PM
To: Miller, Clay; Pendergast, Jim; Kaiser, Russell
Subject: We're on the RM biweekly update call - are you coming? Eom

Sent from my BlackBerry 10 smartphone on the Verizon Wireless 4G LTE network.

To: Brush, Jason[Brush.Jason@epa.gov]
From: Miller, Clay
Sent: Thur 3/27/2014 6:57:50 PM
Subject: Re: Missed conversation with Brush, Jason-Bi-weekly Rosemont R9-WD update

Just did. Thanks

From: Brush, Jason
Sent: Thursday, March 27, 2014 2:56:19 PM
To: Miller, Clay
Subject: RE: Missed conversation with Brush, Jason-Bi-weekly Rosemont R9-WD update

No worries. See email update.

From: Miller, Clay
Sent: Thursday, March 27, 2014 11:55 AM
To: Brush, Jason
Cc: Kaiser, Russell; Crawford, Tiffany
Subject: Re: Missed conversation with Brush, Jason-Bi-weekly Rosemont R9-WD update

I am at CEQ will not be available until 4 pm ET. Sorry

From: Brush, Jason <brush.jason@epa.gov>
Sent: Thursday, March 27, 2014 2:15:58 PM
To: Brush, Jason; Miller, Clay
Subject: Missed conversation with Brush, Jason-Bi-weekly Rosemont R9-WD update

Brush, Jason [2:13 PM]:

Are you around for our bi-weekly RM update in 15 min?

To: Pendergast, Jim[Pendergast.Jim@epa.gov]
From: Miller, Clay
Sent: Thur 2/27/2014 10:23:25 PM
Subject: FW: RE: Rosemont briefing materials
Rosemont EIS GWdrawdown.docx
RM mit sites 1 29 14.docx
Tier3 RM brief.docx
epa_tour_handout.pdf
Rosemont Copper Mine Briefing 1.29.2014.pdf

Additional materials from a few weeks ago

From: Leidy, Robert
Sent: Wednesday, February 05, 2014 6:31 PM
To: Miller, Clay
Cc: Brush, Jason
Subject: RE: Rosemont briefing materials

Clay,

Let me know if you have any questions.

Best,

Rob

Robert A. Leidy, Ph.D.

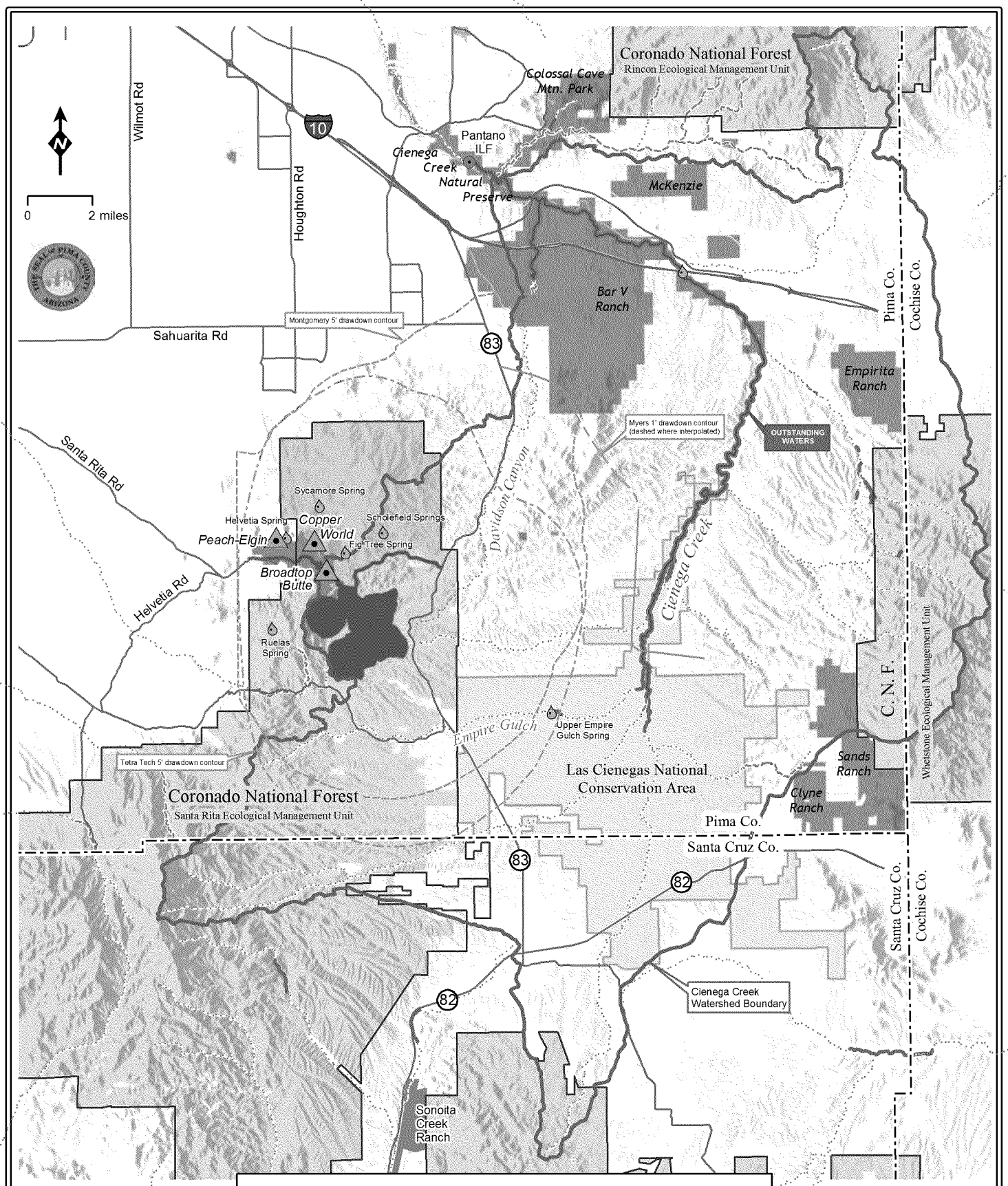
U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463



GROUNDWATER DRAWDOWNS, ROSEMONT MINE

- Barrel Alt. (Pit, Landform, Plant Site, Access Roads)
- Rosemont Patented Claims
- Additional Resource Deposits
- Coronado National Forest (White = Private Inholding)
- Portion of Forest Isolated (13,095 acres)
- Pima County Preserve Lands
- Perennial Flow
- Intermittent Flow
- Ephemeral Flow

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Rosemont Copper Mine – Project Summary

Ex. 5 - Deliberative Process

EPA Region 9 Briefing Materials for CEQ and EPA HQ Site Visit **January 29, 2014**

Background

Rosemont Mine is a proposed new open-pit copper and molybdenum mine on 4,750 acres of predominantly Coronado National Forest lands southeast of Tucson. The mineral deposit could reportedly produce up to 10% of the U.S. production

Ex. 5 - Deliberative Process

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Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]
Cc: Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Miller, Clay
Sent: Tue 2/18/2014 10:36:36 PM
Subject: RE: Rosemont Mine

Out on Friday should be available on Thursday

From: Goldmann, Elizabeth
Sent: Tuesday, February 18, 2014 5:35 PM
To: Miller, Clay; Kaiser, Russell
Cc: Brush, Jason; Jessop, Carter; Leidy, Robert
Subject: Rosemont Mine

Hi Russ and Clay

Do you have any time on Thursday or Friday to discuss the proposed Rosemont Mine? We would like to continue our discussions with you Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Are you available on Thursday from 4-5 pm (ET)? If not, let me know what works best.

Thanks, Elizabeth

To: Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Miller, Clay
Sent: Tue 2/11/2014 5:22:50 PM
Subject: FW: Proposed agenda for Corps-EPA meeting in LA on 2/12, incl. 90 minutes for RA and DE (1:30-3:00) (UNCLASSIFIED)

From: Brush, Jason
Sent: Tuesday, February 11, 2014 11:30 AM
To: David J Castanon
Subject: Re: Proposed agenda for Corps-EPA meeting in LA on 2/12, incl. 90 minutes for RA and DE (1:30-3:00) (UNCLASSIFIED)

Ex. 5 - Deliberative Process

Jason

From: Castanon, David J SPL <David.J.Castanon@usace.army.mil>
Sent: Monday, February 10, 2014 5:49:47 PM
To: Brush, Jason; Amato, Paul; Amato, Paul
Cc: Diebolt, Sallie SPL
Subject: RE: Proposed agenda for Corps-EPA meeting in LA on 2/12, incl. 90 minutes for RA and DE (1:30-3:00) (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jason,

I have asked Sallie to coordinate with Rob on logistics for the staff level conference call on Wednesday morning. Sallie and Marjorie would participate from the Corps end. I won't be on that call. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks,

David J Castanon

Chief, Regulatory Division

U.S. Army Corps of Engineers, Los Angeles District

915 Wilshire Blvd

Los Angeles, CA 90017

David.J.Castanon@usace.army.mil

☎ (213) 452-3406 Office

☎ Ex. 6 - Personal Privacy Cell

From: Brush, Jason [mailto:Brush.Jason@epa.gov]
Sent: Monday, February 10, 2014 11:35 AM
To: Castanon, David J SPL
Subject: [EXTERNAL] Re: Proposed agenda for Corps-EPA meeting in LA on 2/12, incl. 90 minutes for RA and DE (1:30-3:00) (UNCLASSIFIED)

I think I forgot to put on out-of-office message. I'm in mgrs retreat today and tomorrow (Amato acting), so limited abilities to communicate before Wed. Agreed we won't fly Rob down under circumstances, and a short caucus prior to executives' meeting probably makes sense. Jared and I could call Rob while we're en route from the airport; he and I are flying together and getting in around 12.

From: Castanon, David J SPL <David.J.Castanon@usace.army.mil>
Sent: Monday, February 10, 2014 10:04:12 AM
To: Brush, Jason
Subject: RE: Proposed agenda for Corps-EPA meeting in LA on 2/12, incl. 90 minutes for RA and DE (1:30-3:00) (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jason,

Sorry about the confusion regarding travel plans. I hadn't intended to have Marjorie or Sallie fly out for this. Also, the Corps has severe travel budget cuts this year. I suggest we have the staff meeting by phone to save scarce travel funds for both agencies. Only question is how we have the report-out of the staff meeting during the afternoon executive meeting. We will have Marjorie in the afternoon meeting so she can report out. Would you want some time to caucus with your staff prior to 1330? We can provide you a room for that call if needed.

I'll get back to you on your other comments shortly.

David J Castanon

Chief, Regulatory Division

U.S. Army Corps of Engineers, Los Angeles District

915 Wilshire Blvd

Los Angeles, CA 90017

From: Brush, Jason [mailto:Brush.Jason@epa.gov]
Sent: Friday, February 07, 2014 6:43 PM
To: Castanon, David J SPL
Subject: [EXTERNAL] RE: Proposed agenda for Corps-EPA meeting in LA on 2/12, incl. 90 minutes for RA and DE (1:30-3:00) (UNCLASSIFIED)

See {comments} below.

From: Castanon, David J SPL [mailto:David.J.Castanon@usace.army.mil]
Sent: Friday, February 07, 2014 5:09 PM
To: Brush, Jason
Subject: RE: Proposed agenda for Corps-EPA meeting in LA on 2/12, incl. 90 minutes for RA and DE (1:30-3:00) (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jason,

Thanks for the suggested agenda.

For the morning session, Col. Colloton and I have a meeting that morning so I would like to start at 11:00. Ex. 5 - Deliberative Process
Could you send that to me?

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

We have a small café in the lobby and we can maybe order and pay for sandwiches at the beginning of the meeting and I'll have someone on our staff go pick those items up.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

The first two items are fine.

Ex. 5 - Deliberative Process

David J Castanon

Chief, Regulatory Division

U.S. Army Corps of Engineers, Los Angeles District

915 Wilshire Blvd

Los Angeles, CA 90017

David.J.Castanon@usace.army.mil

☎ (213) 452-3406 Office

☎ Ex. 6 - Personal Privacy Cell

Assist us in better serving you! Please complete our brief customer survey, located at the following link:

http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

From: Brush, Jason [mailto:Brush.Jason@epa.gov]
Sent: Thursday, February 06, 2014 4:46 PM
To: Castanon, David J SPL
Cc: Diamond, Jane; Martynowicz, Trina; Ryerson.Teddy; Leidy, Robert; Goldmann, Elizabeth; Sumner, Rich
Subject: [EXTERNAL] Proposed agenda for Corps-EPA meeting in LA on 2/12, incl. 90 minutes for RA and DE (1:30-3:00)

Hi Dave – Sorry to be later than I promised, but I was called away this afternoon. Here is our suggestion for how to structure the meeting in LA on the 12th. -Jason

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

To: Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Miller, Clay
Sent: Thur 12/12/2013 4:03:10 PM
Subject: FW: Rosemont: Proposed email to Horst

fyi

From: Rader, Cliff
Sent: Thursday, December 12, 2013 10:52 AM
To: Goforth, Kathleen
Cc: Kaiser, Russell; Pendergast, Jim; Herrera, Angeles; Jessop, Carter; Brush, Jason; Hessert, Aimee; Bromm, Susan; Miller, Clay; Peck, Gregory; Marshall, Tom; Srinivasan, Gautam
Subject: RE: Rosemont: Proposed email to Horst

A few quick reactions; hope this helps.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Goforth, Kathleen
Sent: Wednesday, December 11, 2013 8:56 PM
To: Rader, Cliff
Cc: Kaiser, Russell; Pendergast, Jim; Herrera, Angeles; Jessop, Carter; Brush, Jason; Hessert, Aimee; Bromm, Susan
Subject: Rosemont: Proposed email to Horst

Below is what Region 9 proposes to send to Horst by COB (not midnight!) tomorrow (Thursday) in response to his request during last Friday's interagency call, as clarified by his 12/9 email message:

Horst –

This is in response to your 12/9 request for EPA's:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Flannery-Keith, Erin[Flannery-Keith.Erin@epa.gov]
From: Miller, Clay
Sent: Mon 12/9/2013 7:51:41 PM
Subject: FW: As requested
Ex. 5 - Deliberative Process Statement of Findings 2-93.doc
EPAcomments Ex. 5 - Deliberative Process .pdf
2007_07_10_wetlands Ex. 5 - Deliberative Process ArmyResponse.pdf
PimaCntyandTucsonAudubon.ILFLTR.PDF

-----Original Message-----
From: Brush, Jason
Sent: Monday, December 09, 2013 2:50 PM
To: Miller, Clay
Cc: Goldmann, Elizabeth
Subject: As requested

-----Original Message-----
From: Brush, Jason
Sent: Friday, September 20, 2013 8:34 PM
To: Castanon, David J SPL
Subject: Key follow-up items from our 9/10 meeting in SF

Sending a second time, without one attachment. First time message got bounced for size by usace servers. - JB

Hi Dave - Thanks again for taking the time to come up to SF. We discussed a lot, and I know that you, Sallie and Marjorie were going to mull over some of our discussion (and I know that Marjorie's schedule likely means that might take a little time). Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks again for working with us on this. It's a tough one!!

Best,
Jason

Jason A. Brush
Supervisor, Wetlands Office
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-8)
San Francisco, CA 94105
~~~~~~~~~~~~~~~~~~~~~~~~~
desk: 415.972.3483
fax: 415.947.3537
~~~~~~~~~~~~~~~~~~~~~~~~~

To: Fertik, Rachel[Fertik.Rachel@epa.gov]
From: Miller, Clay
Sent: Wed 12/4/2013 6:10:45 PM
Subject: FW: Two FYI docs from Pima Co. on Rosemont
FW: Pima County comments on the PAFEIS
FW: Pima County not endorsing Rosemont MOU Section 106

fyi

From: Brush, Jason
Sent: Wednesday, December 04, 2013 1:08 PM
To: Miller, Clay; Kaiser, Russell; Flannery-Keith, Erin
Subject: Two FYI docs from Pima Co. on Rosemont

To: Rader, Cliff[Rader.Cliff@epa.gov]; Suriano, Elaine[Suriano.Elaine@epa.gov]; Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Herrera, Angeles[Herrera.Angeles@epa.gov]; Brush, Jason[Brush.Jason@epa.gov]; Goldmann, Elizabeth[Goldmann.Elizabeth@epa.gov]; Leidy, Robert[Leidy.Robert@epa.gov]; Bose, Laura[Bose.Laura@epa.gov]
From: Goforth, Kathleen
Sent: Tue 12/3/2013 8:35:41 PM
Subject: FW: Pima County comments on the PAFEIS
August 14, 2013 - Pima County Comments - Rosemont Copper Mine Preliminary Administrative Final Environmental Impact Statement.pdf

FYI, I just received this from Pima County. The cover letter is worth reading.

Kathleen Martyn Goforth, Manager

Environmental Review Office (CED-2)

U.S. EPA, Region IX

75 Hawthorne Street

San Francisco, CA 94105

415-972-3521

From: Julia Fonseca [mailto:Julia.Fonseca@pima.gov]
Sent: Tuesday, December 03, 2013 11:40 AM
To: Goforth, Kathleen
Subject: Pima County comments on the PAFEIS

This is a 12 MB attachment that I would like to provide you. The cover letter summarizes over 100 pages of detailed staff comments on the preliminary administrative EIS and additional reference material cited in our comments.

Julia Fonseca

Environmental Planning Manager

Pima County Office of Sustainability and Conservation

201 N. Stone, 6th floor

Tucson, AZ 85701

(520) 724-6460

Julia.Fonseca@pima.gov

To: Jessop, Carter[JESSOP.CARTER@EPA.GOV]; Herrera, Angeles[Herrera.Angeles@epa.gov]; Scott, Jeff[Scott.Jeff@epa.gov]; Rader, Cliff[Rader.Cliff@epa.gov]; Suriano, Elaine[Suriano.Elaine@epa.gov]
Cc: Brush, Jason[Brush.Jason@epa.gov]
From: Goforth, Kathleen
Sent: Tue 12/3/2013 8:38:17 PM
Subject: FW: Pima County not endorsing Rosemont MOU Section 106
ju-rosemont mou section 106.pdf

FYI.

From: Julia Fonseca [mailto:Julia.Fonseca@pima.gov]
Sent: Tuesday, December 03, 2013 12:23 PM
To: Goforth, Kathleen
Subject: FW: Rosemont MOU Section 106

FYI, I just got this notice that Pima County does not endorse the MOU for mitigation of adverse effects on historic properties from the Rosemont mine.

From: Deborah Haro
Sent: Tuesday, December 03, 2013 12:49 PM
To: 'jupchurch01@fs.fed.us'
Cc: 'ledmunds@fs.fed.us'; Norris, Jr., Dr. Ned; Linda Mayro; Debra Rodriguez; Nicole Fyffe; Deseret Romero; Ally Miller; Andres Cano; Andres Vargas; Benny Gomez; Deb Miller; Evangelina Quihuis; Frank Franco; Hope E. Cramer; Jennifer C. Coyle; Jennifer Cabrera; Jennifer Eckstrom; Jennifer Wong; Joseph Cuffari; Keith Bagwell; Kiki Navarro; Lynne St. Angelo; Marcos Perez; Michael Lundin; Paula Maxwell; Ramon Valadez; Ray Carroll; Richard Elias; Sharon Bronson; Shirley Lamonna; Tom Ward
Subject: Rosemont MOU Section 106

Good afternoon Mr. Upchurch,

Please see the attached letter from Mr. Huckelberry regarding Rosemont Mine. The original letter will be provided to you via US mail.

Thank you,

Debbie

Deborah Haro

Pima County Administrator's Office

130 W. Congress Street, Floor 10

Tucson, Arizona 85701

Deborah.Haro@pima.gov

520.724.8770

********** ATTACHMENT NOT DELIVERED ********** This Email message contained an attachment named image001.jpg which may be a computer program. This attached computer program couldcontain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted. This was done to limit the distribution of computer viruses introducedinto the EPA network. EPA is deleting all computer program attachmentssent from the Internet into the agency via Email. If the message sender is known and the attachment was legitimate, youshould contact the sender and request that they rename the file nameextension and resend the Email with the renamed attachment. Afterreceiving the revised Email, containing the renamed attachment, you canrename the file extension to its correct name. For further information, please contact the EPA Call Center at(866) 411-4EPA (4372). The TDD number is (866) 489-4900. ********** ATTACHMENT NOT DELIVERED **********

COUNTY ADMINISTRATOR'S OFFICE

PIMA COUNTY GOVERNMENTAL CENTER
130 W. CONGRESS, FLOOR 10, TUCSON, AZ 85701-1317
(520) 724-8661 FAX (520) 724-8171

C.H. HUCKELBERRY
County Administrator

December 3, 2013

Jim Upchurch, Forest Supervisor
Coronado National Forest
300 W. Congress Street
Tucson, Arizona 85701

Re: **Your Letter of November 19, 2013 Regarding the Memorandum of Agreement Relative to Resolution of Adverse Effects on Historic Properties from the Proposed Rosemont Copper Mine**

Dear Mr. Upchurch:

Pima County will be unable to execute the subject agreement transmitted in your November 19, 2013 letter. We do not believe the project proponent, Rosemont Copper Company, has provided sufficient mitigation for the irreversible loss of historical and cultural values, nor has adequate consideration been given to tribal concerns and mitigation proposals.

The Sonoran Desert Conservation Plan adopted by Pima County is a community consensus plan for protecting the historic, cultural and biological resources of the County. The mitigation proposed by Rosemont Copper Company falls short of this locally accepted plan for mitigating adverse impacts for many of the same reasons identified in the letter from the Chairman of Tohono O'odham Nation.

The County declines to participate in the Memorandum of Agreement.

Sincerely,

C.H. Huckelberry
County Administrator

Enclosure

c: The Honorable Chairman and Members, Pima County Board of Supervisors
The Honorable Dr. Ned Norris, Jr., Chairman, Tohono O'odham Nation
Linda Mayro, Director, Sustainability and Conservation
Nicole Fyffe, Executive Assistant to the County Administrator

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

File Code: 1950/2810/2360
Date: November 19, 2013

C.H. Huckleberry
County Administrator
Pima County Administrator's Office
130 W. Congress, 10th Floor
Tucson, AZ 85701

Dear Mr. Huckleberry:

Enclosed please find the Rosemont Copper Project Section 106, Memorandum of Agreement (MOA) showing the signatures that we have received to date. These include the required signatories (Forest Service, Army Corps of Engineers, Arizona State Historic Preservation Office, and Advisory Council on Historic Preservation) as well as Rosemont Copper Company. Arizona State Land Department and the Arizona State Museum have also signed the MOA as concurring parties.

Exhibits A, D and E are included with the enclosed MOA. Exhibits B and C, the Federal HPTP (Historic Properties Treatment Plan) and Utilities HPTP respectively, continue to be available on the SWCA website. The access information is the same as our last correspondence; if you need the directions to gain access to the website, contact Bill Gillespie, Forest Archeologist at 520-388-8392 or wgillespie@fs.fed.us.

I have also enclosed three letters we received in response to inviting parties to sign the MOA. These include correspondence from the Arizona State Historic Preservation Office and Advisory Council on Historic Preservation sent when they signed the MOA and a letter from Chairman Norris of the Tohono O'odham Nation explaining his reasons for not signing the MOA.

The invitation to consulting parties to sign the MOA is still open. If you wish to do so, please return the signed document or signature page using photocopy, facsimile, or counterpart signature pages including scanned copies by email to:

Jamie Kingsbury, Deputy Forest Supervisor
Email: jkingsbury@fs.fed.us
Fax: (520)388-8305 Attn: Jamie Kingsbury
Address: Coronado National Forest
300 W. Congress Ave, Suite 600
Tucson, AZ 85701

I want to personally thank all of you who attended any of the Section 106 meetings and field trips we have held over the past year and a half. Many of you have made major contributions to seeing that adverse effects to historic properties are properly addressed.

Sincerely,

JIM UPCHURCH
Forest Supervisor

Enclosures

MEMORANDUM OF AGREEMENT
AMONG THE
CORONADO NATIONAL FOREST,
ARIZONA STATE HISTORIC PRESERVATION OFFICER,
ADVISORY COUNCIL ON HISTORIC PRESERVATION,
U.S. ARMY CORPS OF ENGINEERS,
AND THE ROSEMONT COPPER COMPANY,
REGARDING RESOLUTION OF ADVERSE EFFECTS ON HISTORIC PROPERTIES FROM THE ROSEMONT COPPER PROJECT

WHEREAS, the Rosemont Copper Company (Rosemont) proposes to construct and operate a mine to extract locatable minerals, including copper, molybdenum, and silver (Project) pursuant to the General Mining Law of 1872, as amended (30 U.S.C. §§ 22–47 [2006]), and has submitted a proposed mine plan of operations (MPO) to the Coronado National Forest (Forest), subject to Forest approval with appropriate environmental conditions included in a final MPO under 36 CFR § 228.5; and

WHEREAS, the Project consists of the construction, operation, and reclamation of the Rosemont Copper Project and associated infrastructure and ancillary facilities, including a water pipeline, a138-kilovolt transmission line with an associated maintenance road, relocation of an electric distribution line, commissioning and decommissioning of Forest roads, and relocation of a portion of the Arizona National Scenic Trail (Arizona Trail); and

WHEREAS, the Project will be situated on 995 acres of private land owned by Rosemont, 3,670 acres of land managed by the Forest, and 75 acres of State land managed by the Arizona State Land Department (ASLD); and

WHEREAS, Tucson Electric Power Company will supply electrical power to the Project via a 138-kilovolt transmission line pursuant to a Certificate of Environmental Compatibility (CEC) from the Arizona Corporation Commission (ACC), which was granted on June 12, 2012, by order of the ACC following the ACC's public notice and hearing process; and Rosemont will construct a water pipeline to the mine, and both the transmission line and water pipeline will be co-located within a utility corridor, and are subject to Arizona laws, and will require rights-of-way from the ASLD; and

WHEREAS, the U.S. Department of Agriculture Forest Service serves as the lead Federal agency for compliance with the National Environmental Policy Act (NEPA) (42 U.S.C. §§ 4321–4347), the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. § 3001), and the National Historic Preservation Act (NHPA) as amended (16 U.S.C. § 470f) for the Project; and the Forest has considered several Project alternatives in the Environmental Impact Statement for the Rosemont Copper Project (EIS); and

WHEREAS, the U.S. Army Corps of Engineers (COE), a Federal cooperating agency in preparing the EIS, with authority to issue permits under Section 404 of the Clean Water Act for various aspects of the Project, has designated the Forest as the lead agency under 36 CFR § 800.2(a)(2) to act on its behalf to fulfill its responsibilities under Section 106 and is a signatory to the MOA; and

WHEREAS, the Forest has consulted with the Arizona State Historic Preservation Office (SHPO) in its role of advising and assisting Federal agencies in carrying out their responsibilities under Sections 101 and 106 of the NHPA; and pursuant to 36 CFR Part 800, regulations implementing Section 106, at §§ 800.2 (c) (l) (i) and 800.6 (b); and in accordance with the *First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities Among New Mexico State Historic*

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Preservation Officer and Arizona State Historic Preservation Officer and Texas State Historic Preservation Officer and Oklahoma State Historic Preservation Officer and the Advisory Council on Historic Preservation and United States Department of Agriculture Forest Service Region 3, dated December 24, 2003 (Region 3 Programmatic Agreement), and the SHPO is a signatory to this Memorandum of Agreement (MOA) under 36 CFR § 800.6(c)(1); and

WHEREAS, the Forest, in consultation with the SHPO, as required by 36 CFR § 800.4(a)(1), has defined the Project's Area of Potential Effects (APE) to include the area enclosed within the mine perimeter fence, the associated access roads, the re-route of the Arizona Trail, the associated utilities corridor, and the area in which historic properties may be visually, audibly, and atmospherically affected by the undertaking (see Exhibit A); and

WHEREAS, under 36 CFR § 800.4(b), the Forest has consulted with SHPO and has identified historic properties within the APE through public scoping, archival research, oral history, and archaeological surveys, as described in the following reports (for full citations, see Exhibit E): *Archaeological Survey of Approximately 67.1 Acres in the Coronado National Forest, Pima County, Arizona* (Petersen 2007); *Results of an Archaeological Class I Inventory of Four Alternatives for the Proposed Rosemont Copper Mine, Rosemont Junction, Pima County, Arizona* (Petersen and Griset 2010); *Archaeological Survey of Alternatives to the Proposed Rosemont Copper Mine, Pima County, Arizona* (Barr et al. 2010); *A Cultural Resources Inventory of Approximately 3.3 Acres Near Santa Rita Road and South Country Club Road, East of Sahuarita, Pima County, Arizona* (Martin 2011); *Archaeological Survey for the Proposed Rosemont Copper Mine, Pima County, Arizona: Final Report* (Ezzo et al. 2011); *A Cultural Resources Inventory of Approximately 84 Acres Near Sahuarita, Pima County, Arizona* (Chamorro 2011); *An Ethnohistory of the Rosemont Copper Project Area in the Eastern Santa Rita Mountains, Pima County, Arizona* (Griset 2011); *A Revised Cultural Resources Inventory of Approximately 84 Acres Near Sahuarita, Pima County, Arizona* (Chamorro and King 2012); *A Cultural Resource Survey of the 46kV Alternative and Additional Areas for the Rosemont Project 138kV Line* (Swanson et al. 2012); *A Cultural Resources Inventory of Two Contiguous Arizona Department of Transportation Encroachment Permit Areas Along State Route 83 for Rosemont Copper, Pima County, Arizona* (Lindley and Buckles 2012); *National Register of Historic Places Registration Form: Ce:wi Duag ("Long Mountain" in O'odham)* (Griset, Gillespie, and Farrell 2012); *A Cultural Resource Survey for the Rosemont Project Utility Corridor* (Sheehan et al 2013); *A Cultural Resource Survey of Additional Areas for the Rosemont Project Utility Corridor, Pima County, Arizona* (Rayle 2013); *Rosemont Copper: A Cultural Resources Inventory Within and Around Helvetia, Pima County, Arizona* (Deaver 2013); and

WHEREAS, under 36 CFR § 800.4(c), the Forest evaluated all identified cultural resources within the APE for their eligibility under 36 CFR Part 63 for the National Register of Historic Places, and, as required by 36 CFR § 800.5(a), in consultation with the SHPO, consulting Indian Tribes (Tribes), and other consulting parties, has applied the criteria of adverse effect to historic properties within the APE and has determined that the Project will have an adverse effect on multiple historic properties within the APE; and

WHEREAS, the Forest has notified the Advisory Council on Historic Preservation (ACHP) of the Project's adverse effects on historic properties, in accordance with 36 CFR § 800.6(a)(1), and the ACHP has chosen to participate in the consultation under 36 CFR § 800.6(a)(1)(iii) and to be a signatory to the MOA; and

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WHEREAS, Rosemont is entitled to participate in the Section 106 consultation process under 36 CFR § 800.2(c)(4) and in the development of this MOA, per 36 CFR § 800.6(a)(2), because of its obligations and duties to implement the mitigation measures required by the MOA, has been invited by the Forest to be a signatory to this MOA under 36 CFR § 800.6(c)(2)(iii); and

WHEREAS, the Forest has gone through a consultation process to identify, notify, and seek consultation with federally recognized Tribes that have religious or cultural ties to the Project area, or whose direct ancestors had historic or pre-historic religious and cultural ties to historic properties that may be affected by the undertaking; and

WHEREAS, under 36 CFR § 800.2(c)(2)(ii), the Forest has engaged in or has made a good faith effort to engage in government-to-government consultation with the Ak-Chin Indian Community, Fort Sill Apache Tribe, Gila River Indian Community, Hopi Tribe, Mescalero Apache Tribe, Pascua Yaqui Tribe, Pueblo of Zuni, Salt River Pima-Maricopa Indian Community, San Carlos Apache Tribe, Tohono O'odham Nation, White Mountain Apache Tribe, and Yavapai Apache Nation and has invited the Tribes to participate in the identification and evaluation of historic properties, including traditional cultural properties (TCPs), to provide information about past and ongoing uses of the area by Native Americans, to assess the effects the undertaking will have on historic properties, and to discuss ways in which to avoid and mitigate effects on historic properties; and

WHEREAS, the Tribes have apprised the Forest, SHPO, and other consulting parties of their opposition to the Project, and the legislative councils of the Tohono O'odham Nation, Salt River Pima-Maricopa Indian Community, Pascua Yaqui Tribe, and San Xavier District of the Tohono O'odham Nation have set forth resolutions in opposition to the Project because the Project would significantly impact, destroy, or alter cultural and archaeological sites containing cultural resources and sacred objects of the O'odham, and would permanently and negatively alter the cultural and natural landscapes of the area, and would cause adverse effects on TCPs, including *Ce:wi Duag*, which is of particular cultural and religious significance to the Tribes; and

WHEREAS, many Tribes have apprised the Forest, SHPO, and other consulting parties that they oppose implementation of the Project until after all presumed litigation on this Project is resolved in order to prevent unnecessary permanent and direct effects to historic properties; and,

WHEREAS, despite their opposition to the Project and strong beliefs that the effects of this Project cannot be mitigated, many Tribes have participated in the development of this MOA and the Forest has invited them to be concurring parties to this MOA under 36 CFR § 800.6(c)(3); and

WHEREAS, Pima County has apprised the Forest, SHPO, Tribes, and other consulting parties of its opposition to the Project, and the Board of Supervisors has set forth a resolution, BOS Resolution 2007-15, January 16, 2007, in opposition to the Project.

WHEREAS, the Forest has consulted with the ASLD, Tribes, and other consulting parties regarding the potential effects the Project may have on historic properties within the utility corridor on State lands under its jurisdiction; and the ASLD is responsible for ensuring that adverse effects to historic properties on State lands are appropriately addressed in accordance with its legal obligations under State law (A.R.S. § 41-861 *et seq.*); and the Forest has invited ASLD to be a concurring party to this MOA; and

WHEREAS, the ASLD has the authority and responsibility to approve activities related to the undertaking on State lands in fulfillment of the terms of the ACC's order;

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WHEREAS, the Forest has consulted with the Arizona State Museum (ASM), which is responsible for issuing permits for archaeological data recovery on State land per A.R.S. § 41-841 *et seq.*, the Arizona Antiquities Act, and for coordinating responses to the discoveries of human remains, funerary objects, sacred ceremonial objects, and objects of national or tribal patrimony on State and private land under A.R.S. §§ 41-844 and 41-865, and the Forest has invited the ASM to be a concurring party to this MOA; and

WHEREAS, the Forest has consulted with Pima County and the Town of Sahuarita as part of the Section 106 process, and each has been invited to be a concurring party to this MOA; and

WHEREAS, the Forest has made diligent efforts to involve the public, property owners, and other interested parties early in the Federal decision-making process by notifying them of the Project and its impacts through the NEPA process and providing them with information on the Project and opportunities to comment on the preparation of the EIS, including at several public meetings, as required by the Council on Environmental Quality's regulations implementing NEPA (40 CFR § 1506.6), the NHPA's implementing regulations (36 CFR §§ 800.2(d); 800.6(1)(4)), and the Region 3 Programmatic Agreement; and

WHEREAS, per 36 CFR § 228.13, Rosemont is required to post a bond to ensure reclamation of surface disturbance to prevent or control damage to forest surface resources, per 36 CFR § 228.8(g); and

WHEREAS, for purposes of this MOA, all terms are used in accordance with 36 CFR § 800.16, 36 CFR § 79.4, and the Region 3 Programmatic Agreement;

NOW, THEREFORE, the Forest, SHPO, ACHP, COE (collectively, Signatories), and Rosemont or Invited Signatory agree that the Project will be implemented in accordance with the following stipulations to take into account the effect of the undertaking on historic properties.

STIPULATIONS

The Forest, and COE, as applicable shall ensure that the following measures are carried out:

I. Professional Qualifications

All historic preservation work carried out under the terms of this MOA and under its jurisdiction will be overseen by an individual who meets either the Secretary of Interior's Standards and Guidelines for Archaeological and Historic Preservation (48 *Federal Register* 44,716–44,742, September 23, 1983) or the qualification requirements in the Region 3 Programmatic Agreement, and takes into consideration the National Park Service's applicable guidance.

II. Federal Historic Properties Treatment Plan (Federal HPTP)

A. The Forest shall continue to consult with the consulting parties to finalize, approve, and implement the Federal HPTP (Exhibit B) for historic properties adversely affected on federal and private lands within the APE. The Federal HPTP describes all historic properties within the APE for all alternatives, other than those properties located on State lands, and those effects. The Federal HPTP will detail treatments to avoid, minimize, or mitigate adverse effects to historic properties caused by the alternative selected by the Forest in its Record of Decision (ROD). The Federal HPTP shall comprise:

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1. A Data Recovery Plan for those historic properties eligible for their archaeological information potential and that cannot be avoided, which will include:

   a) the research design encompassing the entire Project including the utility corridor and data requirements needed to address the research questions;
   b) the methods and techniques to be used for archival research, field investigations, collections processing, curation, data analysis, and reporting;
   c) the means for conveying the public benefit of the mitigation; and
   d) a Project Suspension/Termination Plan that stipulates the procedures to be followed if the Project is halted during data recovery for any reason.

2. A Plan for the Treatment of Human Remains, Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony (Burial Plan). The Burial Plan sets forth the procedures for identifying, treating, and transferring custody of human remains, funerary objects, and sacred objects discovered during Data Recovery or Project work on Federal or private land within the APE. The Burial Plan incorporates the provisions of both a Plan of Action prepared under NAGPRA, which applies to Federal land, and a burial agreement prepared under Arizona statute, which applies to private land;

3. A Discovery Plan with the procedures for inadvertent discoveries of cultural resources and/or human remains after data recovery investigations have been completed which will require Rosemont to notify the Forest of any such discoveries during the construction or operation of the mine and the ASM for discoveries on State and private land;

4. A Monitoring Plan that describes monitoring training and monitoring procedures (both short and long term) and which identifies historic properties to be avoided and sensitive sites with the potential for human remains; and

5. Treatments to mitigate impacts to the *Ce:wi Duag* TCP (see below).

B. The draft Federal HPTP will be revised after the Draft ROD is issued and an alternative selected. Only conforming changes to account for final project design and to present measures taken to avoid, reduce, or mitigate effects to historic properties subject to effects from the selected alternative will be made. The revised Federal HPTP may also include proposed staged data recovery schedule that coincides with phased development of the Project.

C. Within thirty (30) calendar days of the issuance of the Draft ROD, the Forest will provide consulting parties an opportunity to review the Federal HPTP, as revised, to ensure consistency of conforming changes such as opportunities for site avoidance rather than data recovery in the selected alternative. The consulting parties will have thirty (30) calendar days from receipt to provide comments to the Forest on the Federal HPTP. The Forest shall consider the comments from these parties, address them in the final Federal HPTP, and provide a response these parties explaining why certain comments may not be addressed prior to approval of the final Federal HPTP by the Forest. The Forest shall provide all consulting parties with the final Federal HPTP.

D. The Forest shall ensure that the mitigation measures in the approved Federal HPTP are implemented. Mitigation measures in the Federal HPTP may begin to be implemented upon the Forest's approval of the final MPO and the issuance of any necessary ARPA permits by the Forest and Clean Water Act Section 404 permit by COE. Mitigation treatments in the Federal

HPTP involving data recovery must be completed prior to the commencement of ground-disturbing activities within the affected historic property.

E. Forest's approval of the final MPO is contingent upon Rosemont's acceptance and Forest approval of the final Federal HPTP.

F. The Forest will distribute preliminary data recovery reports, including recommendations for further data recovery at sites, if appropriate, to SHPO and consulting parties for expedited (within 15-days) review and comment. Comprehensive, draft data recovery reports for the Federal HPTP will be distributed to consulting parties. The consulting parties will have thirty (30) days from receipt to provide comments to the Forest on the comprehensive, draft data recovery reports. The Forest shall consider the comments from these parties, address them in the final data recovery reports, and provide a response to these parties explaining why certain comments may not be addressed prior to approval of the final data recovery reports by the Forest. The Forest shall provide all consulting parties with the final data discovery reports.

III. Best Management Practices for Adverse Effects

Rosemont will:

A. Comply with the conditions and mitigation measures set forth in this MOA and implement the Federal HPTP and the Utilities HPTP, including on Rosemont-owned lands, and report this compliance to the Forest.

B. Ensure that driving occurs only on existing roads or roads constructed with approval of the Forest, and that any ground-disturbing activity between the boundary fence and the security fence will be authorized by the final MPO or by approval of the Forest if not included in the final MPO, and will follow the procedures specified in the Federal HPTP, or as required in emergency situations.

C. Coordinate with Tohono O'odham Nation, Mescalero Apache Tribe, Salt River Pima-Maricopa Indian Community, and the Forest to develop and implement a cultural sensitivity training program and archaeological monitor training program.

D. Ensure that, as appropriate, Project personnel, including employees and contractors, engaged in ground-disturbing activities, will receive cultural-sensitivity training and ongoing training on site protection measures, including information on the statutes and regulations protecting cultural resources.

E. Assist the Forest and COE in the implementation of the Federal and Utilities HPTPs by funding, coordinating, or conducting either directly or through the use of qualified consultants, the treatment measures specified in the Federal and Utilities HPTPs.

F. Ensure any information regarding the invitation or execution of a ceremony associated with the Project is not publicized.

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IV. Treatment and Voluntary Measures for Adverse Effects to *Ce:wi Duag* TCP (Exhibit B, Chapter 6)

A. Plant Resources

1. On Forest lands, opportunities to collect plants for traditional, medicinal, and ceremonial uses will continue with requests for collection coordinated by the Forest Archaeologist. Requests for collection will also be coordinated with Rosemont to ensure that proper health and safety requirements are met.

2. Rosemont will schedule a week during which tribal representatives can visit the mine area before construction to collect specimens of agave, sotol, yucca, beargrass, coral bean, and medicinal plants. All tribal representatives will undergo necessary safety training before entering the APE, and access will be coordinated with Rosemont. Prior to the removal of any plants, Tribes may perform ceremonies.

3. Where appropriate, Rosemont will incorporate culturally important plants in Rosemont's reclamation seed mixture. Species selected for the revegetation mix will be those that can be successfully propagated by seed and for which seeds are readily available in quantity.

4. Rosemont will permit collection of plants on conservation lands to the extent allowable under conservation requirements. Rosemont will coordinate access to the conservation lands by tribal representatives and may require a five (5) day notice of request for access.

B. Animal Resources

To the extent allowable under conservation requirements, the conservation lands set aside for the COE Clean Water Act, Section 404 Permit for the Project will be available to Tribal representatives for hunting, providing that the licenses and tags from Arizona Game and Fish Department have been obtained for large and small game. Other U.S. Department of Agriculture, National Forest system lands and State lands are available for hunting.

C. Springs and Mineral Resources

1. As part of the week-long visit by Tribal representatives to be facilitated by Rosemont before land disturbance begins, there will be an opportunity for Tribal representatives to conduct blessing ceremonies at the springs and to collect mineral resources associated with them and other areas within the APE.

2. Access to Forest lands within the perimeter fence for medicinal, ceremonial, and traditional uses will be coordinated by the Forest Archaeologist in compliance with US Department of Agriculture, Forest Service regulations and policy and with Rosemont to ensure compliance with health and safety requirements.

D. Cultural Landscape

1. Rosemont will provide access to the conservation lands by tribal representatives for ceremonial purposes and may require five (5) days advance request.

2. No later than the end of the third production year, Rosemont will create an exhibit at the Rosemont Public Visitor Center that describes the 7,000 years of occupation in the project area, the importance of Ce:wi Duag, and the new knowledge gained as a result of the data recovery conducted for the Project.

3. Concurrently with Item 2 above, Rosemont will use the information developed for the exhibit to create public brochures that will be accessible online via Rosemont and the Forest websites.

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4. Any interpretive exhibit, brochure, or other production that presents material about Ce:wi Duag or the Native American occupation and use of the area will be made in consultation with the Tribes.

V. Utilities Historic Properties Treatment Plan (Utilities HPTP)

A. The Utilities HPTP (Exhibit C) will describe all historic properties within the APE on State, private, and Federal land within the utility corridor and the nature of those effects and prescribes treatments to avoid, minimize, or mitigate those effects. The Utilities HPTP contains a Data Recovery Strategy, procedures for treating human remains, a discovery plan for inadvertent discoveries, and a monitoring plan.

B. The draft Utilities HPTP will be revised after the Forest's Draft ROD is issued and an alternative selected. Amendments to the Utilities HPTP will be consistent with the version made available at the time the MOA is signed. Only conforming changes to account for final project design and to present measures taken to avoid, reduce, or mitigate effects to historic properties subject to effects from the selected alternative will be made.

C. Within thirty (30) calendar days of the issuance of the Forest's Draft ROD, the Forest will provide consulting parties an opportunity to review the Utilities HPTP, as revised, to ensure consistency of conforming changes, such as opportunities for site avoidance rather than data recovery in the selected alternative. The consulting parties will have thirty (30) calendar days from receipt to provide comments to the Forest on the Utilities HPTP. The Forest shall consider comments from these parties and approve the final Utilities HPTP, but only after ASLD, ASM, and SHPO concur that State law requirements and the conditions of the ACC's Certificate of Environmental Compatibility have been fulfilled. The Forest shall provide all consulting parties with the final Utilities HPTP.

D. The Forest shall ensure the treatment measures in the approved Utilities HPTP on Federal and private lands are implemented. The COE shall ensure the treatment measures in the approved Utilities HPTP on State land within its permit area are implemented. The ASLD retains responsibility for ensuring compliance with the Utilities HPTP for historic properties located on State lands outside the COE's permit area. Mitigation measures in the Utilities HPTP may begin to be implemented upon the Forest's approval of the final MPO, and after the COE issues its Section 404 Permit and the ASLD issues its right-of-way.

E. The Forest will distribute preliminary data recovery reports, including recommendations for further data recovery at sites, to SHPO, ASM, and other consulting parties for expedited (within 15days) review and comment. Comprehensive, draft data recovery reports for the Utilities HPTP will be distributed to consulting parties. The consulting parties will have thirty (30) calendar days from receipt to provide comments to the Forest on the comprehensive, draft data recovery reports. The Forest shall consider the comments from these parties, address them in the final data recovery reports, and provide a response these parties explaining why certain comments may not be addressed prior to approval of the final data recovery reports by the Forest. The Forest shall provide all consulting parties with the final data recovery reports.

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VI. CURATION

Collections made during the course of the implementation of the Federal HPTP, including material remains collected during data recovery and associated records, will be curated in accordance with the provisions of the permits issued by the Forest under the ARPA and by the ASM under the Arizona Antiquities Act. Collections will be curated at a repository meeting the standards of 36 CFR § 79, "Curation of Federally-Owned and Administered Archaeological Collections" and ASM standards, with preference given to a tribal curation facility meeting those standards. Rosemont will fund such curation of collections.

VII. SYNTHESIS REPORT

Within one year of the completion of all data recovery reports required in the final Federal HPTP and final Utilities HPTP, Rosemont will submit a draft synthesis report to the Forest. The synthesis report shall integrate the results of data recovery for both the Federal and Utilities HPTPs, presenting summaries of the results of excavations and analyses of artifacts and other materials. The report will discuss how the results of data recovery addressed the expectations of the research design and how the results contribute to our knowledge of prehistoric and historic life ways and land use. The Forest shall provide the draft synthesis report to the consulting parties who may provide comments within sixty (60) calendar days of receipt. The Forest shall consider the comments from these parties, address them in the final report, and provide a response these parties explaining why certain comments may not be addressed prior to Forest's approval of the final report. The Forest shall provide all consulting parties with the final report.

VIII. REPORTING

Each calendar year following the execution of this MOA, within ninety (90) calendar days of the anniversary date of signing, the Forest will provide all consulting parties a summary report detailing work undertaken pursuant to its terms. Such report will convey a summary of work conducted in accordance with the Federal and Utilities HPTPs, proposed scheduling changes, and problems encountered and proposed resolutions. The Forest will invite consulting parties to an annual meeting to discuss the annual report and the implementation of the MOA and Federal and Utilities HPTPs in general.

IX. CONFIDENTIALITY

To the extent allowed by Federal and State law, information on the location and nature of all cultural resources and traditional cultural information shall be held confidential as provided by Section 304 of the NHPA (16 U.S.C. § 470w-3); 36 CFR § 800.11(c), Section 9 of the ARPA (16 U.S.C. § 470hh; 43 CFR § 7.3), Region 3 Programmatic Agreement with SHPO, as amended, and other applicable Federal laws, and by A.R.S. § 39-125.

X. TERM OF AGREEMENT

This MOA will be effective on the date of the final signature of the Signatories and will continue in effect for the duration of the final MPO unless it is terminated earlier in accordance with Article XI below. Per 36 CFR § 800.6(c)(2)(iv), the refusal of any party invited to become a signatory will not invalidate this MOA.

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XI. POINTS OF CONTACT

A. The points of contact designated to speak for the Signatories, Invited Signatory, and concurring parties and to make notifications, requests, reports, or other contacts for or to the Signatories, Invited Signatory, or concurring parties are listed in Exhibit D.

B. Any Signatory, Invited Signatory, or concurring party may add to or change its designated point(s) of contact by providing written notice of the addition or change to any Forest point of contact listed in Exhibit D. The written notice must come from either (a) an authorized point of contact for the relevant party listed in Exhibit D; (b) the chief executive or governing body of the respective Signatory, Invited Signatory, or concurring party; or (c) a person designated in writing by such governing body to speak on its behalf.

C. The Forest will notify Signatories, Invited Signatory, and concurring parties whenever a point of contact is added or changed as provided herein.

XII. TRANSFER OF PERMITS TO SUCCESSOR

Any transfer or assignment of the final MPO for the Project to another party will require the assignee or successor to assume all responsibilities of Rosemont under this MOA for mitigation of adverse effects, and any successor or assign of Rosemont is bound to the terms of this MOA. Any transfer or assignment of the permits for the Project to another party will require the assignee or successor to sign an amendment to this MOA to become an invited signatory at the time of transfer or assignment. All consulting parties will be notified if an amendment to reassign the duties of Rosemont is proposed.

XIII. AMENDMENTS

Any Signatory or Invited Signatory may request an amendment to the terms of this MOA. This MOA may be amended when such an amendment is agreed to in writing by all Signatories and Invited Signatory. The amendment will be effective on the date a copy signed by all of the Signatories is filed with the ACHP. Copies of all amendments will be sent to the consulting parties.

XIV. DISPUTE RESOLUTION

Should any Signatory or Invited Signatory to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, the Forest shall consult with such party to resolve the objection. If the Forest determines that such objection cannot be resolved, it will:

A. Forward all documentation relevant to the dispute, including the Forest's proposed resolution, to the ACHP. The ACHP shall provide the Forest with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the Forest shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, Signatories, and Invited Signatories and provide them with a copy of this written response. The Forest will then proceed according to its final decision.

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B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar day time period, the Forest may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the Forest shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories and Invited Signatory to the MOA, and provide them and the ACHP with a copy of such written response.

C. It is the Forest's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

D. If a consulting party objects to any actions proposed or the manner in which the terms of this MOA are implemented, they may inform any Signatory in writing and any Signatory may, at the Signatory's discretion, choose to pursue the procedures outlined above.

XV. TERMINATION

A. If any Signatory or Invited Signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the Signatories and Invited Signatory to attempt to develop an amendment per Stipulation XIV, above. If within thirty (30) days (or another time period agreed to by all Signatories and Invited Signatory) an amendment cannot be reached, any Signatory may terminate the MOA upon written notification to the other Signatories and Invited Signatory.

B. Once the MOA is terminated, the Forest and COE must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. The Forest and COE shall each notify the other Signatories and Invited Signatory as to the course of action it will pursue. If terminated, all actions by Rosemont will continue to be subject to the applicable requirements of other relevant laws such as the ARPA, NAGPRA, Clean Water Act, and applicable state laws. If the MOA is terminated, the Forest and COE will use available enforcement authorities to prevent or minimize adverse effects to historic properties until the reinitiated Section 106 process is completed.

XVI. EXECUTION AND COMPLETION OF SECTION 106

Execution of this MOA by the Forest, COE, SHPO, ACHP, and subsequent implementation of its terms evidences that the Forest and COE have taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment and that the Forest and COE have satisfied their responsibilities under Section 106.

XVII. AUTHORIZING SIGNATURES

In witness hereof, the following authorized representatives of the parties have signed their names on the dates indicated, thereby executing this agreement. This MOA may be signed by the Signatories and Invited Signatory using photocopy, facsimile, or counterpart signature pages. The Forest will distribute copies of all signed pages to the Signatories, Invited Signatory, and concurring parties, once the MOA is executed.

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SIGNATORIES:

USDA FOREST SERVICE, SOUTHWESTERN REGION

Calvin N. Joyner Date 10/22/13

Calvin N. Joyner, Regional Forester

ARIZONA STATE HISTORIC PRESERVATION OFFICER

James Garrison Date 11/5/13

James Garrison, Arizona State Historic Preservation Officer

ADVISORY COUNCIL ON HISTORIC PRESERVATION

John M. Fowler Date 11/6/13

John M. Fowler, Executive Director

U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT

David J. Castanon Date 10-22-13

David J. Castanon, Chief, Regulatory Division

INVITED SIGNATORY:

ROSEMONT COPPER COMPANY

Rod Pace 10/22/13 Date

Rod Pace, Chief Executive Officer

CONCURRING PARTIES:

AK-CHIN INDIAN COMMUNITY

_____ Date

Louis J. Manuel, Jr., Chairperson

FORT SILL APACHE TRIBE

_____ Date

Jeff Houser, Chairperson

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GILA RIVER INDIAN COMMUNITY

_____ Date
Gregory Mendoza, Governor

HOPI TRIBE

_____ Date
LeRoy N. Shingoitewa, Chairman

MESCALERO APACHE TRIBE

_____ Date
Sandra Platero, President

PASCUA YAQUI TRIBE

_____ Date
Peter Yucupicio, Chairman

PUEBLO OF ZUNI

_____ Date
Arlen Quetawki, Sr., Governor

SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

_____ Date
Diane Enos, President

SAN CARLOS APACHE TRIBE

_____ Date
Terry Rambler, Chairman

TOHONO O'ODHAM NATION

_____ Date
Ned Norris, Jr., Chairman

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WHITE MOUNTAIN APACHE TRIBE

_____Date
Ronnie Lupe, Chairman

YAVAPAI-APACHE NATION

_____Date
David Kwail, Chairman

ARIZONA STATE LAND DEPARTMENT

Vanessa Hickman Date 11/1/13
Vanessa Hickman, State Land Commissioner

ARIZONA STATE MUSEUM

_____ Date
Patrick Lyons, Director

PIMA COUNTY

_____ Date
C. H. Huckleberry, County Administrator

TOWN OF SAHUARITA

_____ Date
Duane Blumberg, Mayor

ATTACHMENTS:	Exhibit A.	Description of the Project and Area of Potential Effects
	Exhibit B.	*Draft Historic Properties Treatment Plan for the Rosemont Copper Project, Pima County, Arizona*
	Exhibit C.	*Draft Historic Properties Treatment Plan for Rosemont Copper Utilities, Pima County, Arizona*
	Exhibit D.	Points of Contact
	Exhibit E.	References Cited

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WHITE MOUNTAIN APACHE TRIBE

_____ Date
Ronnie Lupe, Chairman

YAVAPAI-APACHE NATION

_____ Date
David Kwail, Chairman

ARIZONA STATE LAND DEPARTMENT

_____ Date
Vanessa Hickman, State Land Commissioner

ARIZONA STATE MUSEUM

_____ Date 31 Oct 13
Patrick Lyons, Director

PIMA COUNTY

_____ Date
C. H. Huckleberry, County Administrator

TOWN OF SAHUARITA

_____ Date
Duane Blumberg, Mayor

ATTACHMENTS:	Exhibit A.	Description of the Project and Area of Potential Effects
	Exhibit B.	*Draft Historic Properties Treatment Plan for the Rosemont Copper Project, Pima County, Arizona*
	Exhibit C.	*Draft Historic Properties Treatment Plan for Rosemont Copper Utilities, Pima County, Arizona*
	Exhibit D.	Points of Contact
	Exhibit E.	References Cited

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Exhibit A
Description of the Project and Area of Potential Effects

Augusta Resource Corporation (Augusta Resource), the parent company of Rosemont Copper Company (Rosemont Copper), submitted a preliminary mine plan of operations (MPO) to the Coronado National Forest (Coronado) for development of the Rosemont ore deposit. The proposed mine site is located on the east side of the Santa Rita Mountains in the Nogales Ranger District, approximately 30 miles south of Tucson, Arizona (Figure 1). Mining activity is proposed on approximately 995 acres of private land owned by Rosemont Copper, 3,670 acres of National Forest System land, and 75 acres of Arizona State Land Department land administered as a State Trust. This includes a proposed utility corridor that is needed to provide utility services to the mine operation.

The Coronado has prepared a Draft Environmental Impact Statement (DEIS), in which several different alternatives were developed and analyzed. The specific Area of Potential Effect (APE) differs for each of the alternatives. All but the "No Action" alternative are expected to have adverse effects on multiple historic properties. A preferred alternative will be identified in the Final Environmental Impact Statement (FEIS). The draft Federal HPTP for the mine and draft Utilities HPTP for the utility corridor include all historic properties that would be adversely affected by any of the alternatives considered in the DEIS.

All action alternatives include a suite of proposed activities. The mine operation area includes an open pit, waste rock facility, tailings facility, heap leach facility, plant site and ancillary facilities, mine primary access road, and utility maintenance road. The full time-span of the mine, including construction, operation, reclamation, and closure, is expected to be between 24.5 and 30.0 years. The mine pit would be between 6,000 and 6,500 feet in diameter, with a final depth of up to 3,000 feet at the end of mine operation, encompassing an estimated 955 acres (590 acres of privately held land and 365 acres of Coronado land). A plant site for ore processing and other activities would be located to the northeast of the open pit. Waste rock and tailings would be placed in areas outside the open pit; locations vary with the different alternatives.

A new two-lane paved road, referred to as the "primary access road," would be constructed to provide primary access between State Route 83 and the mine. An unpaved "utility maintenance road" would be located within the utility corridor to provide access to a 138-kV electrical transmission line, a water supply line, and water-booster pump stations.

Two fences would enclose the mine operation area during its construction and operation. A 5-strand barbed wire security fence would surround the mine pit, facilities, and waste rock/tailings, and would be patrolled along an adjacent dirt road. A guarded entryway would be located where the fence intersects the access road. An outer perimeter fence, also 5-strand barbed wire, would be established outside of the security fence to restrict public access during construction and operation. The outer perimeter fence would effectively define the area made inaccessible to the public during the mining project. Portions of existing Forest Service roads and the Arizona National Scenic Trail within the fenced area would be decommissioned and rerouted to provide public access to areas outside the perimeter fence.

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In addition to rerouting the Arizona Trail and Forest Service roads, connected actions include the construction of utility corridors, service roads, and access roads for the project, and potential rerouting of additional Forest roads and trails, as necessary.

In 2012 the Arizona Corporation Commission approved a utility corridor that is 500 feet wide, but construction would occur within a right-of-way typically less than 60-feet in width within much of that corridor; in a few locations, the disturbance corridor is wider to accommodate pumping stations or cut-and-fill operations in areas of steep, rugged terrain. The 138-kV transmission line would bring power from the Sahuarita substation over the Santa Rita ridgeline and into the mine operation area. Monopoles would be between 75 and 150 feet tall, except at major road or line crossings, where poles would not exceed 199 feet. The proposed water pipeline consists of 20-inch diameter piping that will be fitted and installed below the existing ground surface. Up to four booster stations would be built along the water pipeline and an unpaved service road would be constructed within this corridor where needed.

A total of approximately 5,300 to 6,200 acres would be utilized for the mine and connected actions, depending on the alternative selected. Upon closure of the mine and completion of reclamation, the facilities and utilities would be removed as a condition of the Arizona Corporation Commission's Certificate of Environmental Compatibility (CEC); the open pit, waste rock, and tailings would remain.

An APE for direct physical effects to historic properties is expected for each of the proposed actions. Archaeological sites in the areas of the mine pit, facilities, and waste rock and tailings storage would be effectively removed or buried. Which historic properties would be adversely affected depends on the project alternative selected and whether project design can be altered to avoid direct impacts. Historic properties between the perimeter and security fences should not be adversely affected by direct effects since new ground disturbance would be minimized. Effects on archaeological sites in the utility corridor are more limited since ground disturbance from both the transmission line and the water line are more restricted in scope.

An APE for indirect visual, atmospheric, and audible effects to historic properties is also expected from many of the proposed actions. Indirect effects such as these have a potential to diminish the integrity of historic properties, including undisturbed parts of the *Ce:wi Duag* Traditional Cultural Property (TCP). Figure 2 shows the location of *Ce:wi Duag* TCP with respect to the APE for visual effects for the mine, facilities, waste rock/tailings deposits, and transmission line.

The APE for visual effects is defined as those areas where project activities are visible, generalized from viewshed analysis. The designated APE for visual effects for the mine and waste rock deposits includes areas extends approximately six miles (10 km) from the mine. The mine would not be visible from all locations within this area since elevated landforms block the view from many low-lying areas. The APE for visual effects encompasses the area of audible and atmospheric effects that have the potential to alter the qualities of historic properties.

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Figure 2 also shows the mine visible from most of the northern portion of the Santa Rita Mountains, east of the ridge crest of the mountains; it would not be visible from the west side of the ridge crest. Mine and waste rock deposits would be visible from much of the northern half of the *Ce:wi Duag* TCP. Two National Register of Historic Places listed historic properties are located on the east side of the Santa Rita Mountains (Empire Ranch Headquarters and Kentucky Camp). Each is listed on the National Register of Historic Places in recognition of their architectural characteristics and importance to history. Mine operations would not be visible from either site.

The APE for visual effects for the monopole transmission line is considered to extend one-half mile (0.8 km) from the utility corridor centerline, based on consultation with State Historic Preservation Office. Although the transmission line may be visible outside this corridor, its visual intrusiveness would diminish with distance. CEC conditions stipulate visual mitigation for the utility corridor. For the transmission line, non-specular conductor and dulled-surface transmission structures will be installed. Also within the utility corridor, Rosemont will minimize vegetation disturbance and will perform revegetation to preconstruction conditions. The CEC conditions further stipulate that Rosemont will file an annual certification that the transmission line is needed, and once service is no longer required, that the transmission line will be removed and environmental remediation will be performed.

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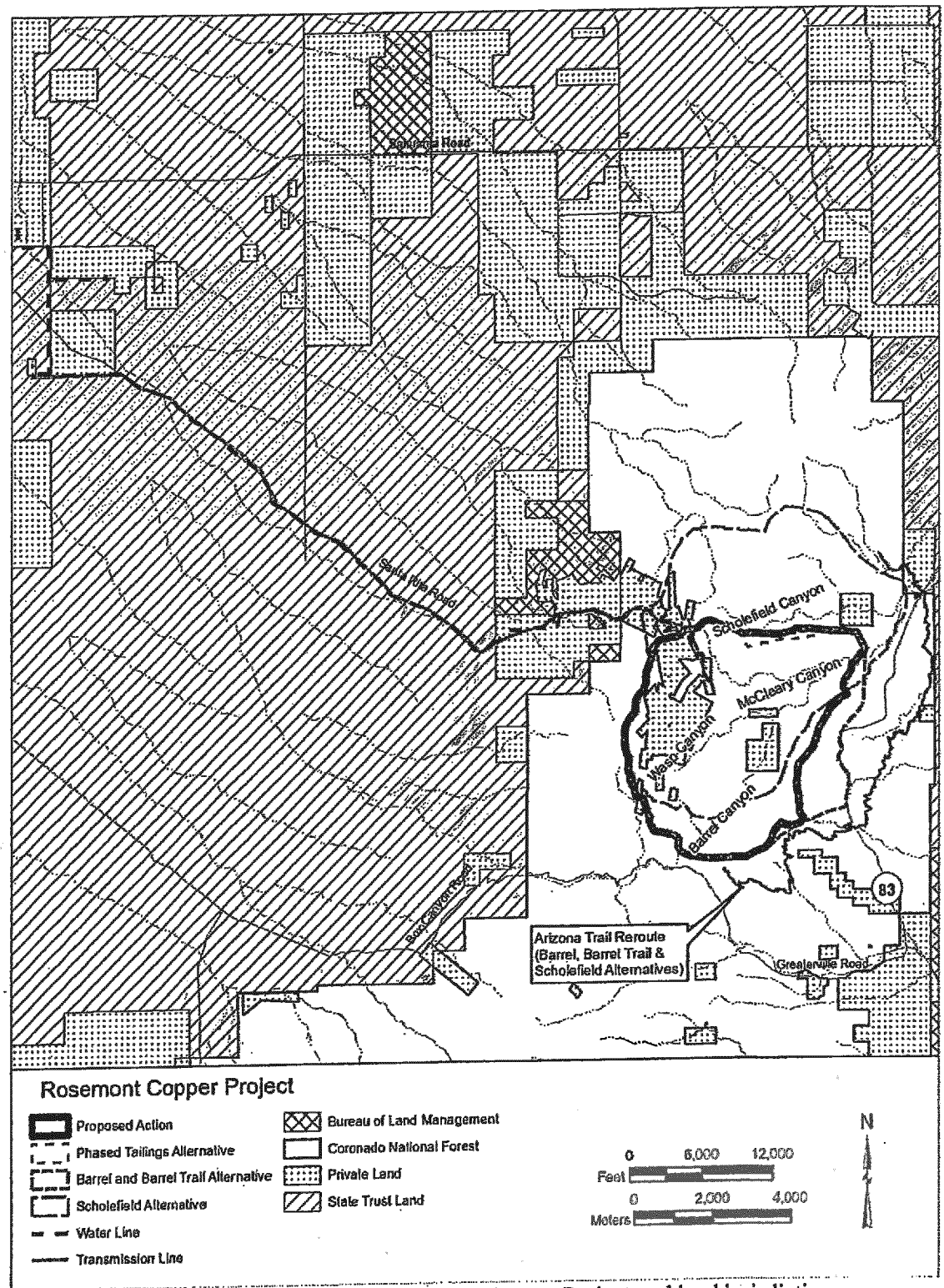

Figure 1. Components of the proposed Rosemont Copper Project and land jurisdiction

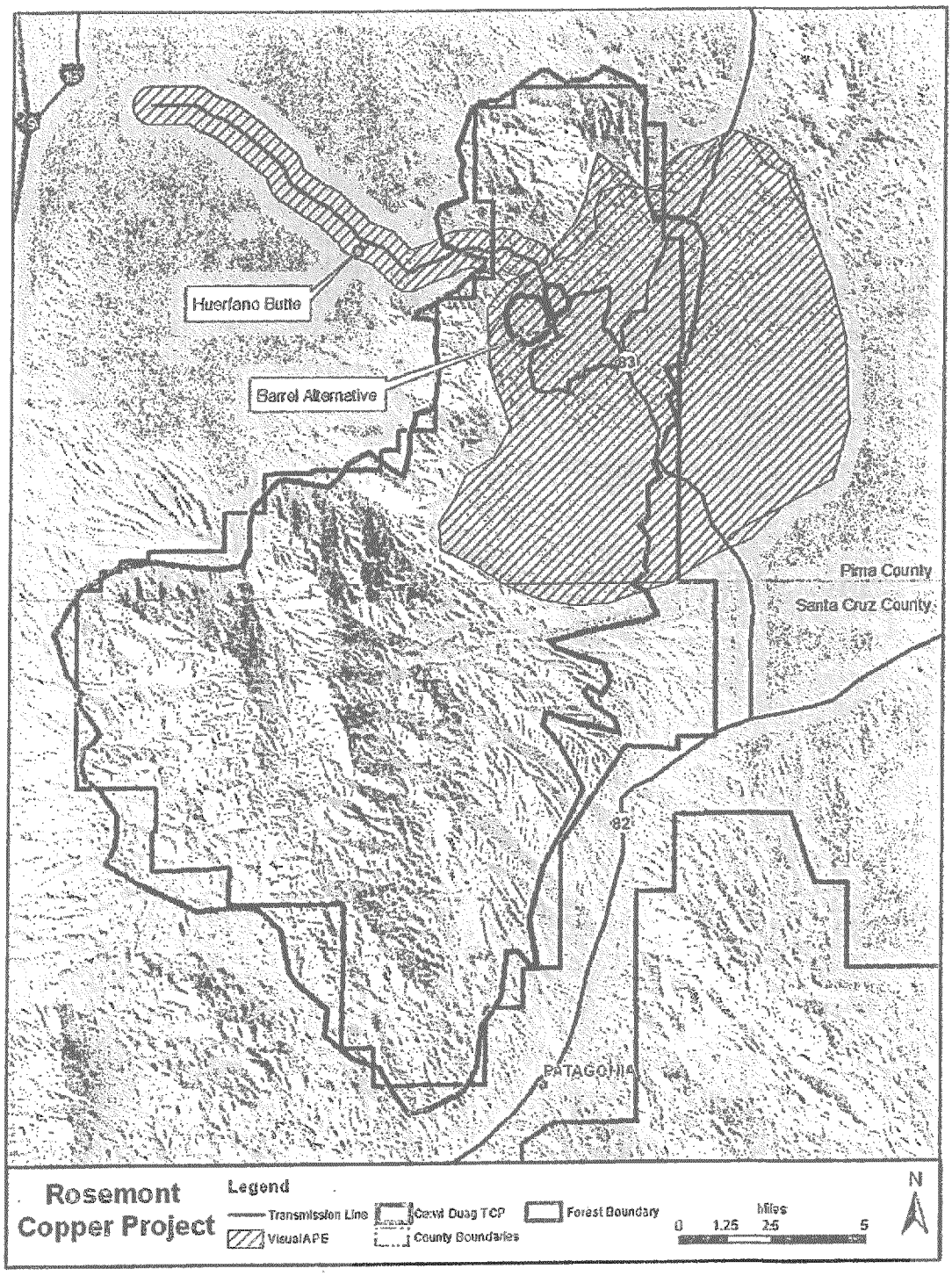

Figure 2. Map showing Area of Potential Effect for visual impacts of the mine operation and transmission line in relation to identified Traditional Cultural Properties

Exhibit B
Draft Historic Properties Treatment Plan for the Rosemont Copper Project
Pima County, Arizona

Intentionally not included.

Exhibit C
Draft Historic Properties Treatment Plan for Rosemont Copper Utilities
Pima County, Arizona

Intentionally not included.

Exhibit D
Designated Points of Contact (POC)

Tribal Government	Tribal Chairperson/ President/ or Governor	Designated POC
AK-CHIN INDIAN COMMUNITY	**Louis J. Manuel, Jr.** Chairperson 42507 West Peters & Nall Road Maricopa, AZ 85239 (520) 568-2227	**Caroline Antone** Cultural Resources Program Manager 42507 W. Peters & Nall Road Maricopa, AZ 85239
FORT SILL APACHE TRIBE	**Jeff Houser** Chairperson Route 2, Box 121 Apache, Oklahoma 73006 (580) 588-2298	**L. Michael Darrow** Secretary-Treasurer/NAGPRA Coordinator Route 2, Box 121 Apache, OK 73006 (580) 588-2298
GILA RIVER INDIAN COMMUNITY	**Gregory Mendoza** Governor P.O. Box 97 Sacaton, AZ 85247	**Barnaby V. Lewis** Tribal Historic Preservation Officer Cultural Resource Management Program Dept. of Land and Water Resources P.O. Box 2140 Sacaton, AZ 85247 (520) 562-7152
HOPI TRIBE	**LeRoy N. Shingoitewa** Chairman P.O. Box 123 Kykotsmovi, AZ 86039 (928) 734-3102	**Leigh Kuwanwisiwma** Director Hopi Cultural Preservation Office P.O. Box 123 Kykotsmovi, AZ 86039 (928) 734-3612 (928) 734-2331 fax
MESCALERO APACHE TRIBE	**Sandra Platero** President P.O. Box 227 Mescalero, NM 88340 (575) 464-4494	**Holly Houghten** Tribal Historic Preservation Officer Resource Management and Protection P.O. Box 227 Mescalero, NM 88340 (575) 464-3005 (575) 464-4637 fax
PASCUA YAQUI TRIBE	**Peter Yucupicio** Chairman 7474 S. Camino De Oeste Tucson, AZ 85746 (520) 883-5000 (520) 883-5014 fax	**Veronica Darnell** Attorney General Office 7474 S. Camino De Oeste Tucson, AZ 85746 (520) 883-5106

Tribal Government	Tribal Chairperson/ President/ or Governor	Designated POC
SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY	**Diane Enos** President 10005 E. Osborn Scottsdale, AZ 85256 (480) 850-8000 (480) 850-7277 fax	**Shane Anton** Cultural Programs Supervisor Community Development Department and Cultural and Environmental Services 10005 E. Osborn Road Scottsdale, AZ 85256 (480) 362-6331
SAN CARLOS APACHE TRIBE	**Terry Rambler** Chairman P.O. Box 0 San Carlos, AZ 85550 (928) 475-2361 (928) 475-2567 fax	**Vernelda J. Grant** Tribal Historic Preservation Officer Historic Preservation and Archaeology Department P.O. Box 0 San Carlos, AZ 85550 (928) 475-5797
TOHONO O'ODHAM NATION	**Ned Norris, Jr.** Chairman P.O. Box 837 Sells, AZ 85634 (520) 383-2028	**Peter Steere** Tribal Historic Preservation Officer P.O. Box 837 Sells, AZ 85634 (520) 383-0202
WHITE MOUNTAIN APACHE TRIBE	**Ronnie Lupe** Chair P.O. Box 1150 Whiteriver, AZ 85941 (928) 338-4346 x 201 (928) 338-1514 fax	**Mark Altaha** Tribal Historic Preservation Officer P.O. Box 507 Whiteriver, AZ 85926 (928) 338-3033 (928) 338-6055 fax
YAVAPAI-APACHE NATION	**David Kwail** Chairman 2400 W. Datsi Street Camp Verde, AZ 86322 (928) 567-3649; (928) 567-3994 fax	**Vincent Randall** Apache Culture Manager P.O. Box 21 Clarksdale, AZ 86324 (928) 649-6960
PUEBLO OF ZUNI	**Arlen Quetawki, Sr.** Governor Zuni Tribal Council P.O. Box 339 Zuni, NM 87327 (505) 782-4481; (505) 782-2700 fax	**Kurt Dongowski** Tribal Historic Preservation Officer Zuni Heritage and Historic Preservation Office P.O. Box 339 Zuni, NM 87327 (505) 782-4814

Federal/State or Local Government	Authorized Official	Designated POC
ADVISORY COUNCIL ON HISTORIC PRESERVATION	**John M. Fowler** Executive Director 1100 Pennsylvania Ave, NW, Suite 803 Washington, DC 20004	**Katry Harris** Program Analyst 1100 Pennsylvania Ave, NW, Suite 803 Washington, DC 20004 (202) 606-8520
ARIZONA STATE HISTORIC PRESERVATION OFFICE	**James Garrison** Arizona State Historic Preservation Officer 1700 W. Washington St. Phoenix, AZ 85007	**Ann Howard** Deputy Arizona State Historic Preservation Officer **James Cogswell** Compliance Specialist 1700 W. Washington St. Phoenix, AZ 85007 (602) 542-7142
ARIZONA STATE LAND DEPARTMENT	**Vanessa Hickman** State Land Commissioner 1616 W. Adams St. Phoenix, AZ 85007	**Steve Ross** Cultural Resource Manager 1616 W. Adams St. Phoenix, AZ 85007 (602) 542-2767
ARIZONA STATE MUSEUM	**Patrick Lyons** Director 1013 E. University Blvd. Tucson, AZ 85721	**Todd Pitezel** Curator of Mandated Programs 1013 E. University Blvd. Tucson, AZ 85721 (520) 621-4795
PIMA COUNTY	**C. H. Huckleberry** County Administrator Pima County Administrator's Office 130 W. Congress Ave. 10th Floor Tucson, AZ 85701	**Linda Mayro** Cultural Resources Manager **Loy Neff** Cultural Resources and Preservation Division Manager Pima County Cultural Resources and Historic Preservation Office 201 N. Stone Ave. Tucson, AZ 85701 (520) 724-8794
TOWN OF SAHUARITA	**Duane Blumberg** Mayor 375 W. Sahuarita Center Way Sahuarita, AZ 85629	**Orlantha Henderson** Planner 375 W. Sahuarita Center Way Sahuarita, AZ 85629 (520) 822-8800

Federal/State or Local Government	Authorized Official	Designated POC
U.S. ARMY CORPS OF ENGINEERS LOS ANGELES DISTRICT	**David J. Castanon** Chief, Regulatory Division 915 Wilshire Blvd Los Angeles, CA 90017	**Sallie Diebolt** Chief AZ Branch Regulatory Division 3636 N Central Ave, Suite 900, Phoenix, AZ 85012 (602) 230-6950 **Marjorie Blaine** Senior Project Manager 5205 E. Camanche Street Tucson, AZ 85707 (520) 670-6277
U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE SOUTHWESTERN REGION	**Calvin N. Joyner** Regional Forester USDA Forest Service Southwest Regional Office 333 Broadway SE Albuquerque, NM 87102	**Jim Upchurch** Forest Supervisor **Jamie Kingsbury** Deputy Forest Supervisor **William Gillespie** Forest Archaeologist Coronado National Forest 300 W. Congress St., Ste. 600 Tucson, AZ 85701 (520) 388-8300 (520) 388-8305 fax

Project Proponent	Authorized Official	Designated POC
ROSEMONT COPPER COMPANY	**Rod Pace** Chief Executive Officer PO Box 35130 Tucson, AZ 85740	**Kathy Arnold** Vice President Environmental and Regulatory Affairs PO Box 35130 Tucson, AZ 85740 (520) 297-7723

Exhibit E
References Cited

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Janice K. Brewer
Governor

Bryan Martyn
Executive Director

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Larry Landry, Phoenix, *Chair*
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Mark Brnovich, Phoenix
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Alan Everett, Sedona
Vanessa Hickman,
State Land Commissioner

In reply, refer to SHPO-2011-0486(115510)

November 5, 2013

Jim Upchurch, Forest Supervisor
Coronado National Forest
300 W. Congress St.
Tucson, AZ 85701
Attn.: Bill Gillespie, Forest Archaeologist

Re: Rosemont Mine Project Section 106 Memorandum of Agreement

Dear Mr. Upchurch:

After much consideration and discussion with the Arizona State Historic Preservation Office (SHPO) staff, I have decided to sign the Memorandum of Agreement (MOA) for the Rosemont Mine undertaking and its adverse effect on historic properties on the Coronado National Forest (Forest), State Trust land, and private lands. My willingness to sign the MOA should not be interpreted as support for the Rosemont Mine or lack of support for the Tribes. The SHPO is not commenting on the propriety of the Rosemont Mine; such comment from this office is not appropriate. Because of the significance of the project, I felt it important to summarize the rationale behind my decision to sign the MOA.

If I do not sign the MOA, the SHPO would no longer be a participant in the Section 106 process. We would no longer have the capacity for independent review and comment on the finalization and implementation of the Historic Property Treatment Plans (HPTPs) for the federal land portion and for the utilities corridor. Both HPTPs require considerable revision, and we believe that the Forest could benefit from our comments in revising these important treatment plans. Additionally, if I do not sign the MOA, the Advisory Council on Historic Preservation may not sign. This could effectively terminate Section 106 consultation, with the attendant consequences.

Signing the MOA allows the SHPO to continue to have our concerns presented during implementation of the MOA. By signing the MOA, the SHPO could also continue to represent the Tribes in helping to make their perspectives known.

Arizona State Parks • 1300 W. Washington Street • Phoenix, AZ 85007
Phone/TTY: (602) 542-4174 • Fax: (602) 542-4188

I am also concerned that not signing this MOA would set a precedent for similar undertakings in Arizona. I am aware that numerous other mines are in the planning stages throughout Arizona, and more are likely to be developed. It would be difficult to say that the SHPO would like involvement in these future consultations if we backed out of the consultation process for the Rosemont Mine undertaking.

We would like to make it clear that the SHPO believes that the Tohono O'odham Nation should have been designated an invited signatory to the MOA. We have previously stated this recommendation to the Forest; however, we recognize that this is the Forest's decision. I understand from recent letters by the Tohono O'odham Nation that they feel that tribal concerns were not adequately represented in the MOA. I note that forwarding mitigation proposals to the Forest, either from the Tribes, this office, or any other consulting party, does not guarantee that they will form part of an agreement. The Forest is obligated to take these comments into account and it is the Forest that makes this determination. I recommend that the Forest continue to consult with the Tohono O'odham Nation to seek their explicit, substantive concerns about the MOA, in hope that these issues can be further taken into account during mitigation. We also recognize that the Tohono O'odham Nation and other Tribes may choose to continue to have their concerns addressed through provisions of the National Environmental Policy Act.

In short, I believe that the SHPO has a long-term obligation to protect historic properties within the Rosemont Mine project area, and failing such protection, to see that adverse effects to these properties are responsibly mitigated. I appreciate your continued consideration of this matter; please let me know if you have any questions or concerns.

Sincerely,

James W. Garrison

James W. Garrison
State Historic Preservation Officer
Arizona State Parks

Cc: Dr. Ned Norris, Jr., Chairman, Tohono O'odham Nation
Peter Steere, Tribal Historic Preservation Officer, Tohono O'odham Nation
Katry Harris, Program Analyst, Advisory Council on Historic Preservation

Preserving America's Heritage

November 6, 2013

Mr. Jim Upchurch
Forest Supervisor
Coronado National Forest
300 W. Congress
Tucson, AZ 85701

REF: Mine Plan of Operations, Rosemont Copper Mine
Caronado National Forest, Arizona

Dear Mr. Upchurch:

Enclosed is your copy of the fully executed Memorandum of Agreement for the referenced project. By carrying out the terms of the Agreement, you will fulfill your responsibilities under Section 106 of the National Historic Preservation Act and the implementing regulations, "Protection of Historic Properties" (36 CFR Part 800). The original Agreement will remain on file at our office.

The ACHP was contacted by the Chairman of the Tohono O'odham Nation who encouraged the ACHP to not sign the Agreement. This tribe does not intend to sign the Agreement because it does not believe the Forest Service has adequately considered its trust responsibility to Indian tribes when it explored ways to avoid, minimize, or mitigate adverse effects to historic properties. In addition, the tribe, and the other participating tribes, repeatedly requested to be invited to sign the Agreement and views the Forest Service invitation to concur unacceptable.

The ACHP considered the concerns of and opposition by the Tohono O'odham. We have signed the Agreement because the Section 106 review process and the resolution of adverse effects documented in it meet the requirements of the Act and regulations. However, we were frustrated during the course of the Section 106 consultation because Forest Service provided minimal leadership in the review process. For this reason, we cannot recommend this case as a good example of Section 106 consultation where an acknowledged Sacred Site to several Indian tribes, which is also a historic property, is adversely affected by a mining undertaking.

We remind you that Section 2 (2) of the Act states that it is the policy of the federal government to "provide leadership in the preservation of the prehistoric and historic resources of the Unites States and of the international community of nations and in the administration of the national preservation program in partnership with States, Indian tribes, Native Hawaiians, and local governments." In this case, the Forest Service, as the lead federal agency, struggled to consider the effects of the undertaking and all of its parts to historic properties located on land controlled by the Arizona Division of State Lands. Similarly, the range of alternatives and measures to avoid, minimize, and mitigate adverse effects to historic properties

ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov

was limited by the actions taken by the Applicant to negotiate separately and confidentially with Indian tribes. In future similar undertakings, we encourage the Forest Service to maintain its leadership role by acknowledging its responsibility to resolve adverse effects of the undertaking and all of its parts and to consult with Indian tribes regarding its decision making.

We look forward to working with the Forest Service at the policy level to seek opportunities to improve the Forest Service leadership in the Section 106 process and consistency with the Sacred Sites Report (2012) and the "Memorandum of Understanding Among the U.S. Department of Defense, U.S. Department of the Interior, U.S. Department of Agriculture, U.S. Department of Energy, and the Advisory Council on Historic Preservation Regarding Interagency Coordination and Collaboration for the Protection of Indian Sacred Sites" (2012). For this reason, we have copied this letter to the Forest Service Federal Preservation Officer, Michael Kaczor, and the Director of the Office of Tribal Relations, Fred P. Clark.

If we may be of further assistance as the Agreement is implemented, Katry Harris by telephone at (202) 606-8520 or by e-mail at kharris@achp.gov.

Sincerely,

for Reid J. Nelson
Director
Office of Federal Agency Programs

Tohono O'odham Nation Office of the Chairman & Vice Chairwoman

COMPASSION FAITH TRADITION RESPECT

Ned Norris, Jr.
Chairman

Wavalene M. Romero
Vice Chairwoman

October 30, 2013

Jim Upchurch, Forest Supervisor
Coronado National Forest
300 W. Congress St.
Tucson, AZ 85701

Via Email and U.S. Mail

RE: Rosemont Mine Project Section 106 Memorandum of Agreement

Dear Supervisor Upchurch:

This letter is to inform you that the Tohono O'odham Nation does not intend to sign the Section 106 Memorandum of Agreement for the Rosemont Copper Project dated October 23, 2013. The Nation and other tribes met with you at a tribal leaders meeting on September 24, 2013. At that meeting, the leaders reiterated a number of the tribal concerns regarding the Project. These concerns include the fact that this Project will irrevocably alter the cultural landscape of Ce:wi Duag (Santa Rita Mountains). Under the preferred alternative, it is expected that 86 cultural resource sites will be destroyed, 32 of which are known or likely to have human remains. This scale of destruction simply cannot be mitigated.

The tribal leaders further indicated that in order to even consider signing the Memorandum of Agreement, all affected tribes would need to be signatories to the Agreement. The Agreement that you forwarded on October 23, 2013, has once again relegated all affected tribes to concurring parties. This designation is simply unacceptable to the Nation. Before the Nation would consider signing this Agreement, all affected tribes would need to be elevated to the level of signatory status.

Additionally, as I indicated in my letter to Secretary Vilsack dated August 20, 2013, which you were copied on, Forest Service representatives early on in the consultation process encouraged tribes to "think outside of the box" in considering mitigation proposals. To that end, the Nation and other tribes have recommended numerous proposals to you and your staff. None of those proposals appear in the Memorandum of Agreement dated October 23, 2013.

P.O. Box 837, Sells, AZ 85634. (520)383-2028 . Fax (520)383-3379

The Nation is disappointed with the Memorandum of Agreement circulated for signature. Although small language concessions were made here and there, the document does not represent a true collaborative effort with the affected tribes. Although the Forest Service made an effort to listen to the affected tribes, those concerns are not adequately represented in the Memorandum of Agreement. For these reasons, the Nation will not be signing the Memorandum of Agreement dated October 23, 2013.

Sincerely,

Dr. Ned Norris, Jr., Chairman
Tohono O'odham Nation

cc: Katry Harris, Advisory Council on Historic Preservation
Ann Howard, State Historic Preservation Office

To: Peck, Gregory[Peck.Gregory@epa.gov]
From: Rader, Cliff
Sent: Tue 2/25/2014 7:39:27 PM
Subject: FW: Draft 401 Certification & Public Notice for Rosemont
401 Certification Public Notice.pdf
Draft Certification LTF 55425.docx

From: Jessop, Carter
Sent: Tuesday, February 25, 2014 1:20 PM
To: Rader, Cliff
Subject: FW: Draft 401 Certification & Public Notice for Rosemont

Hi Cliff,

See below. Laura Bose (WTR-1) and Janet Hashimoto (WTR-2) in R9's Water Division are leading the review and comments on the 401.

- Carter

Carter W. Jessop

U.S. EPA, Region 9

Environmental Review Office (CED-2)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3815

jessop.carter@epa.gov

From: Bose, Laura
Sent: Friday, February 21, 2014 10:32 AM
To: Brush, Jason; Hashimoto, Janet; Jessop, Carter
Cc: Diamond, Jane
Subject: Fw: Draft 401 Certification & Public Notice for Rosemont

Hi. We will need to get together to discuss after our review

From: Linda C. Taunt <Taunt.Linda@azdeq.gov>
Sent: Friday, February 21, 2014 8:59:48 AM
To: Bose, Laura; Diamond, Jane; 'Vogel, Mindy S -FS'; Upchurch, Jim -FS; 'Blaine, Marjorie E SPL'
Cc: Michael A. Fulton
Subject: Draft 401 Certification & Public Notice for Rosemont

Attached are the public notice as it appears today in the Arizona Daily Star and the draft State 401 certification for the Rosemont Copper Project. These documents are also being placed on our website calendar this morning.

The close of the comment period is currently set for March 24, 2014. We anticipate we will receive requests to extend the comment period. We'll make that decision when we see the comments and the requests.

If you have any questions, please contact me directly.

Linda Taunt, Deputy Director

Water Quality Division

Arizona Department of Environmental Quality

P: 602.771.4416

E: lc1@azdeq.gov

2739 Health Care

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Mon-Fri CNA
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Public Notices

918 Public Notices

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: JOLIE PROPERTIES, LLC L-1896611-2
II. The address of the known place of business is: 2562 W. Calle Morado, Tucson, AZ 85745
III. The name and street address of the statutory agent is: Yolanda Harvey, 2562 W. Calle Morado, Tucson, AZ 85745
A. Management of the limited liability company is vested in a manager or managers. The names and addresses of each person who is a manager AND each member who owns a twenty percent or greater interest in the capital or profits of the limited liability company are: 2562 ...

918 Public Notices

NOTICE OF TRUSTEE'S SALE File ID. #13-09110 Johnson Notice is hereby given that David W. Cowles, Attorney at Law, as trustee (or successor trustee, or substituted trustee), pursuant to the Deed of Trust which had an original balance of $198,000.00 executed by Nick Johnson also known as Nicholas Johnson, a married man, 3743 N Tyndall Ave Tucson, AZ 85719 , dated August 30, 2007 and recorded September 5, 2007, as Instrument No./Docket-Page Docket 13133, Page 2554 of Official Records in the office of the County Recorder of Pima County, State of Arizona, will sell the real property described herein by public auction on May 14, 2014 at 10 a.m. at the East Entrance to the Superior Court Building at the Pima County Courthouse, 110 West Congress, Tucson, AZ 85701, to the highest bidder for cash (in the forms which are lawful tender in the United States and acceptable to the Trustee, payable in accordance with ARS 33-811A), all right, title, and interest conveyed to and now held by it under said Deed of Trust, in the property situated in said County and State and more fully described as: Lot 1, Block 3 of a RESUBDIVISION OF LOTS 9 AND 12 OF CATALINA SUBDIVISION NO. 2, Pima County, Arizona, according to the plat of record in the office of the Pima County Recorder in Book 9 of Maps, Page 14. The street address/location of the real property described above is purported to be: 3743 N Tyndall Ave Tucson, AZ 85719. Tax Parcel No.: 113-03-10203. The undersigned Trustee disclaims any liability for any incorrectness of the street address and other common designation, if any, shown herein. The beneficiary under the aforementioned Deed of Trust has accelerated the Note secured thereby and has declared the entire unpaid principal balance, as well as any and all other amounts due in connection with said Note and/or Deed of Trust, immediately due and payable. Said sale will be made in an "as is" condition, but without covenant or warranty, express or implied, regarding title, possession or encumbrances, to satisfy the indebtedness secured by said Deed of Trust, advances thereunder, with interest as provided therein, and the unpaid principal balance of the Note secured by said Deed of Trust with interest thereon as proved in said Note, plus fees, charges and expenses of the Trustee and of the trusts created by said Deed of Trust Current Beneficiary: CitiMortgage/ABN AMRO; Care of/Servicer: CitiMortgage, Inc. 1000 Technology Drive O'Fallon, MO 63368-2240; Current Trustee: David W. Cowles 2525 East Camelback Road #300 Phoenix, Arizona 85016 (602) 255-6000. Dated: 02/03/2014 /S/David W. Cowles, Attorney at Law, Trustee/Successor Trustee under said Deed of Trust, and is qualified to act as Successor Trustee per ARS Section 33-803 (A) 2, as a member of the Arizona State Bar, STATE OF ARIZONA, County of Maricopa. This instrument was acknowledged before me on 02/03/2014, by DAVID W. COWLES, Attorney at Law, as Trustee/Successor Trustee. /S/Mary P. Dobos, Notary Public Commission expiration is 10/22/2014. NOTICE: This proceeding is an effort to collect a debt on behalf of the beneficiary under the referenced Deed of Trust. Any information obtained will be used for that purpose. Unless the loan is reinstated, this Trustee's Sale proceedings will result in foreclosure of the subject property. A-FN4443906 02/21/2014, 02/28/2014, 03/07/2014, 03/14/2014
Publish February 21, 28, March 7, 14, 2014
Arizona Daily Star

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918 Public Notices

NOTICE OF PRELIMINARY DECISION TO ISSUE A STATE WATER QUALITY CERTIFICATION OF A FEDERAL ACTION

Public Notice No. 27-14AZ
Published on Friday, February 21, 2014
Arizona Daily Star

Pursuant to the Clean Water Act (CWA) Section 401 and in accordance with Arizona Administrative Code R18-1-401, the Director of the Arizona Department of Environmental Quality (ADEQ) intends to issue a conditional State 401 water quality certification for a U.S. Army Corps of Engineers (CoE) CWA 404 individual Permit to the following applicant:

Applicant:
Ms. Katherine Arnold
Rosemont Copper Company
2450 W. Ruthrauff Road, #180
Tucson, AZ 85705

Project Name: Rosemont Copper Project
Project
Location: Approximately 30 miles southeast of Tucson in the Santa Rita Mountains and Coronado National Forest near Greaterville, Pima County, AZ

CoE Public Notice / Application No.: SPL-2008-00816-MB
LTFNo.: 55425

The draft certification is available for public review, Monday through Friday, 8:30 a.m. to 4:30 p.m., at ADEQ, 1110 West Washington Street, Records Management Center, Phoenix, Arizona, 85007. In Phoenix, please call (602) 771-4380 or e-mail RecordsCenter@azdeq.gov 24 hours in advance to schedule an appointment to review the file.

The draft certification may be viewed online at: **http://www.azdeq.gov/cgi-bin/vertical.pl** on the Events and Notices Calendar for the date of this public notice.

Persons may submit comments on the proposed action, in writing, to Robert Scalamera, Project Manager, ADEQ, Surface Water Section, 1110 West Washington Street, MC5415A-1, Phoenix, AZ 85007 or electronically to **rosemont401comments@azdeq.gov** Comments must include the name, mailing address and e-mail address (if available) of the commenter. Comments must be received by 5 pm on March 24, 2014.

Publish February 21, 2014
Arizona Daily Star

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: JAYCAL, LLC
L-1904008-8
II. The address of the known place of business is: 9349 E. Cathy Pl. Tucson, AZ 85710
III. The name and street address of the statutory agent is: Neal Eckel, Durazzo, Eckel & Hawkins, 45 N. Tucson Blvd, Tucson, AZ 85710
A. Management of the limited liability company is vested in a manager or managers. The names and addresses of each person who is a manager AND each member who owns a twenty percent or greater interest in the capital or profits of the limited liability company are: Allen Wayne Olson, 9349 E. Cathy Pl. Tucson, AZ 85710, member /manager; Lisa Marie Olson, same as above, member /manager
Publish February 20, 21, 22, 2014
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918 Public Notices

Extension of Comment Period Draft Coronado National Forest Land and Resource Management Plan (FLRMP) and Draft Programmatic Environmental Impact Statement for Revision of the FLRMP

The U.S. Department of Agriculture, Forest Service, Coronado National Forest (Forest Service) has prepared a Draft Forest Land and Resource Management Plan (FLRMP) and Draft Programmatic Environmental Impact Statement for Revision of the FLRMP (DEIS).

The proposed plan, programmatic draft environmental impact statement and plan set of documents can be found at the following web address: **http://www.fs.usda.gov/detail/coronado/landmanagement/planning/?cid=fsewdev7_018702.** The 90-day public review period began on November 23, 2013, the day after publication of a Notice of Availability of the DEIS in the Federal Register by the U.S. Environmental Protection Agency. It has been extended an additional 14 days ending on March 6, 2014. This comment period is not related to the Rosemont Copper Project. Interested parties may submit comments to the following:

U.S. Mail:
Coronado Forest Plan Revision
P.O. Box 1919
Sacramento, CA 95812

Fax:
(916) 456-6724

Email:
CoronadoNF@fscomments.org
Please include in the subject line: Coronado National Forest, Plan Revision

For more information regarding the developments of the proposed land management plan and DEIS please contact Yolynda Begay at yolyndabegay@fs.fed.us or (520) 388-8370.

The USDA Forest Service is an equal opportunity provider and employer.

Publish February 21, 2014
Arizona Daily Star

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: SENIOR ADVOCATE FOR INDEPENDENT LIVING LLC L-1895751-9
II. The address of the known place of business is: 2400 N. Creek Vista Drive, Tucson, Arizona 85749
III. The name and street address of the statutory agent is: Amy DuBois, 2400 N. Creek Vista Drive, Tucson, Arizona 85749
A. Management of the limited liability company is vested in a manager or managers. The names and addresses of each person who is a manager AND each member who owns a twenty percent or greater interest in the capital or profits of the limited liability company are: Amy DuBois, 2400 N. Creek Vista Drive, Tucson, Arizona 85749, manager
Publish February 21, 22, 23, 2014
Arizona Daily Star

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: ALDEHE LLC L-1895996-6 II. The address of the known place of business is: 10540 E. Rusty Spur Dr., Tucson, AZ 85749
III. The name of the statutory agent is: Helde Foy, 10540 E. Rusty Spur Dr. Tucson, AZ 85749 B. Management of the limited liability company is reserved to the members. The names and addresses of each person who is a member are: Denise Zeffer-Gullett, 8441 E. Agape Dr. Tucson, AZ 85715, member; Alan C. Zeffer, 4901 E. Sunrise Dr. #1016, Tucson, AZ 85718, member; Helde Foy, 10540 E. Rusty ...

918 Public Notices

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: MARTINEZ FILM WORKZ LLC L-1887883-1
II. The address of the known place of business is: 6110 E. Lippizan Way, Hereford, AZ 85615
III. The name and street address of the statutory agent is: United States Corporation Agents, Inc. 17470 N. Pacesetter Way, Scottsdale, AZ 85255
A. Management of the limited liability company is vested in a manager or managers. The names and addresses of each person who is a manager AND each member who owns a twenty percent or greater interest in the capital or profits of the limited liability company are: David T. Martinez, member/manager
Publish February 21, 22, 23, 2014
Arizona Daily Star

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: ARBITER CREATIVE L.L.C. L-1893654-3
II. The address of the known place of business is: 8130 N. Carolyn Place, Tucson, AZ 85704
III. The name of the statutory agent is: Harrison Alan Koch, 8130 N. Carolyn Place, Tucson, AZ 85704
B. Management of the limited liability company is reserved to the members. The names and addresses of each person who is a member are: Harrison Alan Koch, 8130 N. Carolyn Place, Tucson, AZ 85704, member
Publish February 21, 22, 23, 2014
Arizona Daily Star

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: ARTIFACTS LLC
L-1901711-1
II. The address of the known place of business is: 6201 E Vista Del Canon, Tucson, AZ 85750
III. The name of the statutory agent is: Elizabeth Joy Bon, 6201 E Vista Del Canon, Tucson, AZ 85750
B. Management of the limited liability company is reserved to the members. The names and addresses of each person who is a member are: Elizabeth Joy Bon, member; Benjamin James Bon, member
Publish February 20, 21, 22, 2014
Arizona Daily Star

Stuffed to the gills
Time to clean out all that useless stuff the two of you have accumulated over the past few months. Who needs dishes with flowers on them anyway? I'd rather have a steak. And what's a duvet cover? Basically, your place is filled with a bunch of useless stuff you've got to get rid of to make room for your life. Go to Star Classified and put an ad in the paper.
Star Classified 573-4343

918 Public Notices

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: GLEDBETTER ROI SOLUTIONS, L.L.C. L-1900475-4
II. The address of the known place of business is: 7570 E. Speedway Blvd. Unit 553, Tucson, AZ 85710
III. The name of the statutory agent is: United States Corporation Agents, Inc., 17470 N. Pacesetter Way, Scottsdale, AZ 85255
B. Management of the limited liability company is reserved to the members. The names and addresses of each person who is a member are: George S. Ledbetter, 7570 E. Speedway Blvd. Unit 553, Tucson, AZ 85710, member/manager
Publish February 21, 22, 23, 2014
Arizona Daily Star

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: PATENT SALES COMPANY LLC L-1892934-2
II. The address of the known place of business is: 60333 E. Ankole Dr. Oracle, AZ 85623
III. The name of the statutory agent is: William Patent, 60333 E. Ankole Dr. Oracle, AZ 85623
B. Management of the limited liability company is reserved to the members. The names and addresses of each person who is a member are: William Patent, 60333 E. Ankole Dr. Oracle, AZ 85623, member
Publish February 19, 20, 21, 2014
Arizona Daily Star

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: RORO'S POPCORN & MORE., LLC L-1902707-9
II. The address of the known place of business is: 3980 E Calle Agassiz, Vail, AZ 85641
III. The name of the statutory agent is: 3980 E Calle Agassiz, Vail, AZ 85641
B. Management of the limited liability company is reserved to the members. The names and addresses of each person who is a member are: Rochelle Smith, 3980 E Calle Agassiz, Vail, AZ 85641, manager
Publish February 19, 20, 21, 2014
Arizona Daily Star

ARTICLES OF ORGANIZATION HAVE BEEN FILED IN THE OFFICE OF THE ARIZONA CORPORATION COMMISSION FOR

I. Name: THE GREEN TECHS OF TUCSON LLC L-1899326-1
II. The address of the known place of business is: 810 W. Limberlost Dr. #41
III. The name of the statutory agent is: Raymond Otero, 810 W. Limberlost Dr. #41
B. Management of the limited liability company is reserved to the members. The names and addresses of each person who is a member are: Raymond Otero, manager
Publish February 21, 22, 23, 2014
Arizona Daily Star

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ADEQ
Arizona Department of Environmental Quality
Janice K. Brewer, Governor
Henry R. Darwin, Director

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CERTIFICATION

STATE OF ARIZONA
Clean Water Act Section 401 Water Quality Certification
U.S. Army Corps of Engineers Public Notice / Application No.: **SPL-2008-00816-MB**
ADEQ LTF 55425

1.0 AUTHORIZATION

This State Water Quality Certification (Certification) is issued by the Arizona Department of Environmental Quality (ADEQ) under the authority of Section 401(a) of the federal Clean Water Act (CWA) (33 U.S.C. §1251 et seq.) and Arizona Revised Statutes Section 49-202. The conditions listed in Section 5.0 are in addition to conditions in the pending U.S. Army Corps of Engineers (CoE) Application No. SPL-2008-00816-MB. These Certification conditions are enforceable by CoE. Civil penalties up to a maximum of $25,000 per day of violation may be levied if these Certification conditions are violated. Criminal penalties may also be levied if a person knowingly violates any provision of the CWA.

Subject to the conditions in Section 5.0, ADEQ certifies that based on the information in Section 3.0, the activities proposed for the **Rosemont Copper Project** will not violate applicable surface water quality standards in the subject waterbodies including McCleary, Scholefield, Wasp and Barrel Canyons – all ephemeral tributaries to Davidson Canyon in the Santa Cruz River Watershed, near Greaterville, Pima County.

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1.1 APPLICANT INFORMATION

Project Name:	**Rosemont Copper Project**
Latitude/Longitude:	31° 49' 45.3"; 110° 44' 35.2"
Applicant:	Rosemont Copper Company Ms. Katherine Arnold, Vice President Environmental & Regulatory Affairs
Applicant Address:	2450 W. Ruthrauff Road, #180 Tucson, AZ 85705

1.2 AUTHORIZING SIGNATURE

_____
Signature
Water Quality Division
Arizona Department of Environmental Quality

Signed this _____day of _____, 2014

2.0 DESCRIPTION OF ACTIVITIES BEING CERTIFIED

The proposed Rosemont Copper Project will directly impact approximately 38.6 acres of waters of the U.S. (WUS) with the discharge of dredged/fill material as detailed in Table 2 of the CoE Public Notice /Application No. SPL-2008-00816-MB. In addition, approximately 2.5 acres will be indirectly impacted by the reduced flows in Barrel Canyon down to its confluence with McCleary Canyon, resulting from the development of the dry stack tailings and waste rock facilities in Barrel Canyon. Lastly, approximately 0.75 acres of WUS will be temporarily impacted by the water line crossing and road access for utility pole construction. NOTE: Changes have been made to the project design during the development of the Final Environmental Impact Statement that modified certain activities proposed in this Public Notice.

3.0 INFORMATION REVIEWED

During the development of this State Certification, ADEQ had access to and reviewed the following documents which are on file with ADEQ:

1. U.S. Army Corps of Engineers Public Notice / Application No. 2008-00816-MB. Comment period from December 6, 2011 through January 19, 2012.
2. CWA Section 401 Certification application package dated January 12, 2012, received by ADEQ on January 17, 2012; applicant: Katherine Arnold, Rosemont Copper; agent: Brian Lindenlaub, Westland Resources Inc. Review of application was suspended on January 25, 2012 pending completion of a federal action and reinitiated on January 3, 2014 following the publication of the draft Record of Decision for the Project by the USDA Forest Service, Southwest Region.
3. State of Arizona, Water Quality Standards for Surface Waters, A.A.C. Title 18, Chapter 11, Article 1. Davidson Canyon is designated as an Outstanding Arizona Water beginning approximately 13 miles downstream from the subject project (as estimated from USGS gage at the downstream end of project site) and continuing downstream from that point. *Available online at: http://www.azsos.gov/public_services/Title_18/18-11.htm*
4. "Final Environmental Impact Statement for the Rosemont Copper Project", USDA Forest Service, Southwest Region, MB-R3-05-6, December, 2013. *Available online at: http://www.rosemonteis.us/*
5. "Draft Record of Decision and Finding of Nonsignificant Forest Plan Amendment for the Rosemont Copper Project", USDA Forest Service, Southwest Region, MB-R3-05-9, December, 2013. *Available online at: http://www.rosemonteis.us/*
6. Davidson Canyon Unique Water Nomination, prepared by Pima Association of Governments for Pima County Regional Flood Control District, January, 2005. *Available at http://www.rosemonteis.us/documents/pag-watershed-planning-2005*
7. "Contribution of Davidson Canyon to Base Flows in Cienega Creek", prepared by Pima Association of Governments, November, 2003. *Available at: http://www.pagnet.org/wq/reports/wq_report_94.html*

8. "Water Resource Trends in the Cienega Creek Natural Preserve, Pima County, AZ" prepared by Brian Powell, Pima County Office of Sustainability and Conservation, August 2013. *Available at: http://www.rosemonteis.us/files/references/powell-2013.pdf*

9. Technical Memorandum, "Rosemont Surface Water Quality Baseline Analysis", prepared by Mike Thornbrue, Tetra Tech, April 13, 2010.
10. "Davidson Canyon Hydrogeologic Conceptual Model and Assessment of Spring Impacts", Tetra Tech, July, 2010.
11. Technical Memorandum, "Rosemont Conceptual Barrel Alternative Stormwater Control Alternatives", by Ronson Chee, Tetra Tech, January 31, 2012.
12. "Davidson Canyon Conceptual Surface Water Monitoring Plan", prepared by Water and Earth Technologies, Inc., March, 2012.
13. "Davidson Canyon Conceptual Groundwater Monitoring Plan", prepared by Engineering Analytics, Inc., March, 2012.
14. "Integrated Watershed Summary - Rosemont Project", Rosemont Copper, June 2012.
15. Memorandum, "Estimates of Phasing of Stormwater Reductions during Operations", prepared by Chris Garrett, SWCA, April 5, 2013.
16. Draft Memorandum "Revised Analysis of Surface Water Quality", prepared by Chris Garrett, SWCA, August 25, 2013.
17. Arizona Game and Fish Department letter to Marjorie Blaine, ACOE Project Officer, dated January 17, 2012 Re: Public Notice No. 2008-00816-MB.
18. Bureau of Land Management, Tucson Field Office, Comments on Rosemont Mine 404 Permit Application, undated.
19. EPA letter to Colonel R. Mark Toy, ACOE District Engineer, LA District, dated January 5, 2012 Re: Public Notice No. 2008-00816-MB.
20. EPA letter to Colonel R. Mark Toy, ACOE District Engineer, LA District, dated February 13, 2012 Re: Public Notice No. 2008-00816-MB.
21. EPA letter to Colonel Kim Colloton, ACOE District Engineer, LA District, dated November 7, 2012 Re: Analysis of updated draft CWA §404 Compensatory Mitigation Proposals for Rosemont Mine, Pima County, AZ.
22. Rosemont letter to Colonel Kim Colloton, ACOE District Engineer, LA District, dated December 13, 2013 Re: EPA Evaluation of Rosemont Mine Compensatory Mitigation.
23. Pima County Administrator's Office letter to Colonel Kim Colloton, ACOE District Engineer, LA District, dated December 30, 2013 Re: EPA November 7, 2013 letter and Rosemont December 13, 2013 letters.

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4.0 NOTIFICATION PROVISIONS

For any correspondence regarding this project, the ADEQ mailing address is:

Arizona Department of Environmental Quality
Robert Scalamera
Surface Water Section / State 401 Certification / mailstop 5415A-1
1110 West Washington Street
Phoenix, Arizona 85007

For questions or general comments:

email: XXX@azdeq.gov
Voice: (602) xxx-xxxx

In any correspondence, reference:

Rosemont Copper Project
CoE File No.: **2008-00816-MB**
ADEQ LTF No.: **55425**
401 cert reading file: **rs314:005**

5.0 CONDITIONS FOR STATE 401 WATER QUALITY CERTIFICATION

For the purposes of this Certification the following definitions apply:

- Waters of the U.S. (WUS) as defined by the CoE and U.S. Environmental Protection Agency (EPA) under the Clean Water Act. This Certification applies only to activities within a WUS.
- Temporary means no longer than the period of this Certification.
- Native material/fill is defined as pollutant-free soil, sand, gravel or similar material from the streambed or banks in the immediate area of the permitted work.
- Emergency vehicles and emergency responders are not restricted by the conditions in this Certification.

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5.1 General Conditions

ADEQ's State 401 Water Quality Certification of these activities proposed by the applicable CWA 404 Permit, does not affect or modify in any way the obligations or liability of any person for any damages, injury, or loss, resulting from these activities. This Certification is not intended to waive any other federal, state or local laws.

If monitoring, by ADEQ or others, indicates that water quality is adversely affected by the activities certified herein, ADEQ will notify the CoE and request suspension of the CWA 404 permit.

Issuance of a State 401 Water Quality Certification does not imply or suggest that requirements for other permits including, but not limited to Aquifer Protection Permits, Arizona Pollutant Discharge Elimination System Permits, Reclaimed Water permits are met or superseded. Applicant should contact ADEQ to ensure all applicable permits are obtained.

This Certification applies only to the activities described in Section 2.0 and is based upon the information listed in Section 3.0. This Certification is valid for the same period as the CWA 404 permit, as issued by the CoE. The applicant must apply for renewal, modification or extension of this Certification if the CWA 404 permit is renewed, modified, extended or otherwise changed. This Certification may be reopened, by ADEQ, at any time due to a change (i.e., lowered or more stringent) in a surface water quality standard for a parameter

likely to result from project activities. ADEQ may add or modify conditions in this Certification to ensure that the applicant's activities comply with the most recent standard.

1) The applicant shall provide a copy of this Certification to all appropriate contractors and subcontractors. The applicant shall also post and maintain a legible copy of this Certification in a weather-resistant location at the construction site where it may be seen by the workers.
2) The applicant shall notify ADEQ of project completion within 30 days following project completion.
3) The applicant is responsible for all activities certified herein and any exceedences of WQS in any WUS that such activities may cause or contribute to.
4) This Certification does not authorize the discharge of mining, construction or demolition wastes, wastewater, process residues or other potential pollutants to any WUS except as specified in the application and supporting documents and allowed, specified or not prohibited in the CWA 404 permit or elsewhere in this Certification.
5) The applicant shall provide a copy of monitoring results report Record of Decision (ROD) General Stipulation #15 to ADEQ on quarterly basis.
6) The applicant shall provide a copy of the annual report ROD General Stipulation #16 to ADEQ.

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5.2 Specific Conditions

Except as specified in the application and supporting documents and allowed, specified or not prohibited in the CWA 404 permit or elsewhere in this Certification, the following specific conditions apply to all certified project activities.

1) Within 180 days of the effective date of the CWA 404 permit, the applicant shall submit to ADEQ, for review and approval, a surface water mitigation program designed to maintain aquatic and riparian resources at pre-project levels in Davidson Canyon and Lower Cienega Creek. The program shall include, but is not limited to, a description of measures that will be taken to offset predicted reductions in surface water flow, in response to the project, along with a proposed schedule for implementation. The Final Environmental Impact Statement (FEIS) predicts a 17.2% reduction in average annual post-closure stormwater runoff volume as a result of the proposed activities. The surface water mitigation program shall describe measures that will offset the reduced runoff volume should it occur. The draft mitigation program shall be submitted to the address and contact person in Section 4.0.

   The mitigation program shall identify measures, as necessary, to ensure that any water used to mitigate a predicted reduction in stream flows, meets applicable Arizona surface water quality standards, including for Outstanding Arizona Waters, where applicable.

Within 30 days of ADEQ approval of the program, the applicant shall implement the approved mitigation program in accordance with the schedule set forth in the approved program. Should the results of required monitoring and/or revised hydrologic modeling (FEIS Mitigation Measures FS-BR-22, FS-BR-27, FS-GW-02, FS-SR-05) indicate that water quality in Davidson Canyon or Lower Cienega Creek is adversely affected by the activities certified herein, ADEQ may request that the COE suspend the CWA 404 Permit and require additional mitigation.

Stormwater Management

2) Industrial stormwater discharges covered under Arizona's Mining Multi-Sector General Permit (Mining MSGP) and allowable non-stormwater discharges, identified in Part 1.1.3 of ADEQ's Mining MSGP, must not cause or contribute to an exceedance of an Arizona Surface Water Quality Standard.
3) Stormwater that comes into contact with mine drainage that is subject to 40 CFR Part 440 or any other process water is not authorized to be discharged and is not covered under Arizona's Mining MSGP.
4) Unimpacted stormwater that has not been in contact with mine operations may be diverted directly to surface water.

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Erosion Prevention and Hydraulic Alterations

5) Clearing, grubbing, scraping or otherwise exposing erodible surfaces shall be minimized to the extent necessary for each construction phase or location.
6) Dredged or fill material shall be placed so that it is stable, meaning after placement, the material does not show signs of excessive erosion. Indicators of excess erosion include: gullying, head cutting, caving, block slippage, material sloughing, etc. Material shall not discharge (e.g., via leaching, runoff) harmful or toxic substances into streams or wetlands.
7) Erosion control, sediment control and/or bank protection measures shall be installed before construction and pre-operation activities, and shall be maintained during construction and post-construction periods to minimize channel or bank erosion, soil loss and sedimentation. Control measures shall not be constructed of uncemented or unconfined imported soil, or other materials easily transported by flow.
8) The effectiveness of all pollution control measures, including those preventing erosion and affecting sedimentation, shall be reevaluated after each flow event and repaired/modified as needed.
9) Direct runoff of water used for irrigation or dust control shall be limited to the extent practicable and shall not cause downstream erosion or flooding nor cause an exceedence of applicable water quality standards.

10) Except where the activities certified herein are intended to permanently alter any WUS, all disturbed areas shall be restored and (re)vegetated as indicated in the application documents if approved by the CoE (including offsite/*in lieu* mitigation). Denuded areas shall be revegetated as soon as physically practicable. Vegetation shall be maintained on unarmored banks and slopes to stabilize soil and prevent erosion. Fill used to support vegetation rooting or growth shall be protected from erosion.
11) If retention/detention basins are included in or added to the project, applicant will complete the grading necessary to direct runoff towards retention/detention basins no later than immediately following initial land clearing or rough grading.
12) Retention/detention basins shall be sized to accept storm runoff and capture sediment prior to it entering any WUS. Detention basins will provide detention through the use of controlled outflow spillways and shall cause no significant change to the hydraulic conditions of the downstream WUS outside of the project boundaries. The basins shall be maintained as needed to maintain functionality.
13) Activities herein certified shall, as much as practicable, be performed during periods of no flow in any WUS. No work shall be done, nor shall any equipment or vehicles enter any WUS while flow is present, unless all conditions in this Certification are met.
14) When flow is present in any WUS within the project area, the applicant and any contractor will not alter the flow by any means except to prevent erosion or pollution of any WUS.
15) Any disturbance in the stream bank or streambed areas shall be stabilized to prevent erosion and sedimentation of the waterbody during and after operations. Any disturbed areas shall be contoured and vegetated as soon as practicable.
16) Applicant will take measures necessary to prevent approaches to any WUS crossing from causing erosion or contributing sediment to any WUS.
17) The applicant shall ensure no adverse change, due to the subject project, has occurred in the stability with respect to stream hydraulics, erosion and sediment load, of any WUS including downstream from the project. If such change has occurred, the applicant shall take steps to restore the pre-project stability of any impacted segments.

Sediment Loads

18) When flow in any WUS in the work area is sufficient to erode, carry or deposit material, activities certified herein shall cease until:
    - the flow decreases below the point where sediment movement ceases, or
    - control measures have been undertaken; e.g., equipment and materials easily transported by flow are protected with non-erodible barriers or moved outside the flow area.

19) Silt laden or turbid water resulting from activities certified herein shall be settled, filtered or otherwise treated to ensure no exceedence of, or reduction from, natural background levels of sediment occurs in any WUS.
20) Any washing or dewatering of fill material must occur outside of any WUS prior to placement and the rinseate from such washing shall be settled, filtered or otherwise treated to prevent migration of pollutants (including sediment) or from causing erosion to any WUS. Other than replacement of native fill or material used to support vegetation rooting or growth, fill placed in locations subject to scour must resist washout whether such resistance is derived via particle size limits, presence of a binder, vegetation, or other armoring.

Pollution Prevention

21) If activities certified herein are likely to cause or contribute to an exceedence of water quality standards - operations shall cease until the problem is resolved or until control measures have been undertaken.
22) Construction material and/or fill (other than native fill or that necessary to support re-vegetation) placed in any WUS, shall not include materials that can cause or contribute to pollution of the WUS. Examples of prohibited fill include pollutant-contaminated soil and materials defined as pollutants or hazardous in Arizona Revised Statutes (A.R.S.) § 49-201.

    Acceptable construction materials that will or may contact water in any WUS are: untreated logs and lumber; natural stone (crushed or not), crushed clean concrete (recycled concrete); native fill; precast, sprayed or cast-in-place concrete (including soil cement and unmodified grouts); steel (including galvanized); plastic and aluminum. Other materials allowed for this project, only if placed in accordance with application and supporting documents, are mining residues including tires, waste rock, gangue and tailings.

23) The applicant shall erect barriers, covers, shields and other protective devices as necessary to prevent any construction materials, equipment or contaminants/pollutants from falling, being thrown or otherwise entering any WUS.
24) Area(s) must be designated, entirely outside of any WUS, for equipment staging and storage. In addition, the applicant must designate areas, located entirely outside of any WUS, for fuel, oil and other petroleum product storage and for solid waste containment. All precautions shall be taken to avoid the release of wastes, fuel or other pollutants to any WUS.
    - Any equipment maintenance, washing or fueling that cannot be done offsite will be performed in the designated protected area. All equipment shall be inspected for leaks, all leaks shall be repaired and all repaired equipment will be cleaned to remove any fuel or other fluid residue prior to use within (including crossing) any WUS.

- A spill containment plan shall be maintained onsite to ensure that pollutants are prevented from entering any WUS. Any pollutant generated by activities certified herein shall be properly disposed of in accordance with applicable regulations.

25) A spill response kit will be maintained in this (these) area(s) to mitigate any spills. The kit will include material specifically manufactured and sold as spill adsorbent/absorbent and spill containment. The applicant will ensure that whenever there is activity on the site, that there are personnel on site trained in the proper response to spills and the use of spill response equipment.
26) Upon completion of the activities certified herein (except as noted in condition 27 - concrete curing), areas within any WUS shall be promptly cleared of all forms, piling, construction residues, equipment, debris or other obstructions.
27) If fully, partially or occasionally submerged structures are constructed of cast-in-place concrete instead of pre-cast concrete, applicant will take steps; e.g., sheet piling or temporary dams, to prevent contact between water (instream and runoff) and the concrete until it cures and until any curing agents have evaporated or otherwise cease to be available; i.e., are no longer a pollutant threat.
28) Washout of concrete handling equipment must not take place within any WUS and any washout runoff shall be prevented from entering any WUS.

Temporary and Permanent Structures

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29) Permanent pipes, temporary pipes and culvert crossings shall be adequately sized to handle expected flow and properly set with end section, splash pads, headwalls or other structures that dissipate water energy to control erosion.
30) Debris will be cleared as needed from culverts, ditches, dips and other drainage structures in any WUS to prevent clogging or conditions that may lead to washout.
31) All temporary structures constructed of imported materials and all permanent structures, including but not limited to, access roadways; culvert crossings; staging areas; material stockpiles; berms, dikes and pads, shall be constructed so as to accommodate overtopping and resist washout by streamflow.
32) Any temporary crossing, other than fords on native material, shall be constructed in such a manner so as to provide armoring of the stream channel. Materials used to provide this armoring shall not include anything easily transportable by flow. Examples of acceptable materials include steel plates, untreated wooden planks, pre-cast concrete planks or blocks; examples of unacceptable materials include clay, silt, sand and gravel finer than cobble (roughly fist-sized). The armoring must, via mass, anchoring systems or a combination of the two, resist washout.
33) No vehicles or equipment shall ford any unarmored WUS crossing when flow is present.
34) Any ford, other than fords on native material, shall be designed, and maintained as necessary, to carry the proposed traffic without causing erosion or

sedimentation of the stream channel while dry or during a flow event equal to or less than the design event for the crossing.

35) No unarmored ford shall be subject to heavy-truck or equipment traffic after a flow event until the stream bed is dry enough to support the traffic without disturbing streambed material to a greater extent than in dry conditions. Light vehicles (less than 14,000 pounds gross weight) are not restricted by this condition.

36) Temporary structures constructed of imported materials are to be removed no later than upon completion of the permitted activity.

37) Temporary structures constructed of native materials, if they provide an obstacle to flow, or can contribute to or cause erosion, or cause changes in sediment load, are to be removed no later than upon completion of the permitted activity.

DRAFT

To: Peck, Gregory[Peck.Gregory@epa.gov]
From: Rader, Cliff
Sent: Thur 1/9/2014 8:37:43 PM
Subject: FW: ROSEMONT: Corps precedent Ex. 5 - Deliberative Process
RM issues Ex. 5 - Deliberative Process docx

From: Goforth, Kathleen
Sent: Thursday, January 09, 2014 3:29 PM
To: Rader, Cliff; Hessert, Aimee; Suriano, Elaine
Cc: Herrera, Angeles; Hanf, Lisa; Scott, Jeff
Subject: ROSEMONT: Corps precedent Ex. 5 - Deliberative Process

FYI.

From: Brush, Jason
Sent: Thursday, January 09, 2014 11:26 AM
To: Diamond, Jane
Cc: Goforth, Kathleen; Leidy, Robert; Jessop, Carter; Kaiser, Russell; Goldmann, Elizabeth
Subject: Supporting info for today's RA Rosemont discussion -- Corps precedent Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Goldmann, Elizabeth
Sent: Tuesday, December 31, 2013 12:59 PM
To: Brush, Jason; Leidy, Robert; Jessop, Carter

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Bromm, Susan[Bromm.Susan@epa.gov]; Peck, Gregory[Peck.Gregory@epa.gov]
From: Rader, Cliff
Sent: Thur 1/9/2014 5:29:08 PM
Subject: FW: Next Steps and Agency views on Ex. 5 - Deliberative Process Deliberative - pre-decisional RE: Rosemont Mine - Ex. 5 - Deliberative Process
2013_12_30_PimaCountyRosemontMitigationLettertoCorps.pdf

The final version…note changes!

From: Goforth, Kathleen
Sent: Thursday, January 09, 2014 12:13 PM
To: Greczmiel, Horst
Cc: Blumenfeld, Jared; Diamond, Jane; Scott, Jeff; Kopocis, Ken; Bromm, Susan; Rader, Cliff; Brush, Jason; Jessop, Carter; Herrera, Angeles; Hanf, Lisa; Johnson, Kathleen; Leidy, Robert; Evans, David; Goldmann, Elizabeth
Subject: RE: Next Steps and Agency views Ex. 5 - Deliberative Process - Deliberative - pre-decisional RE: Rosemont Mine - Ex. 5 - Deliberative Process

Horst –

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Best wishes for the new year –

-Kathy

From: Greczmiel, Horst [mailto: Ex. 6 - Personal Privacy
Sent: Monday, December 23, 2013 7:46 AM
To: 'Cal Joyner (cjoyner@fs.fed.us)'; 'Jim Upchurch (jupchurch01@fs.fed.us)'; Kopocis, Ken; Blumenfeld, Jared; Bromm, Susan; Rader, Cliff; Goforth, Kathleen; 'Ann Acheson - CEQ (aacheson@fs.fed.us)'; 'Joe Carbone (jcarbone@fs.fed.us)'; 'Robert Bonnie (robert.bonnie@osec.usda.gov)'; 'Meryl Harrell (meryl.harrell@osec.usda.gov)'; 'Blaine, Marjorie E SPL'; 'Castanon, David J SPL'; Meg.E.Gaffney-Smith@usace.army.mil; 'Dave Sire (david_sire@ios.doi.gov)'; 'Deborah Rawhouser (drawhous@blm.gov)'; 'Edwin Roberson'; Ann Acheson - CEQ (aacheson@fs.fed.us); Thomas_Flanagan@nps.gov; David Cottingham (David_Cottingham@fws.gov); Larry Bright (Larry_bright@fws.gov)
Cc: Guzy, Gary S.; Boots, Michael J.; Patel, Manisha
Subject: Next Steps and Agency views on Ex. 5 - Deliberative Process - Deliberative - pre-decisional RE: Rosemont Mine - Ex. 5 - Deliberative Process
Importance: High

We will not have our weekly call this Friday and will resume with a call on January 3d with USFS, EPA, and the Corps – others may join if they wish. The focus of the January 3 call will

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Ex. 5 - Deliberative Process

The final comments on the views should be sent to me by close of business on the 7th (note that the due dates have been extended since our conversation last Friday – the new dates provide some additional time for those constrained by the holiday schedules). Our call on January 10th

Ex. 5 - Deliberative Process

Here is a compilation of the current draft views:

Views from the Corps:

Ex. 5 - Deliberative Process

Views from NPS:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Views from BLM:

Ex. 5 - Deliberative Process

Views from EPA region IX:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

# # # #

Thank you all and have a safe, healthy, and joy-filled holiday!

Horst Greczmiel

Associate Director for NEPA Oversight

Council on Environmental Quality

Ex. 6 - Personal Privacy

Please consider the environment before printing this e-mail

To: Peck, Gregory[Peck.Gregory@epa.gov]
From: Rader, Cliff
Sent: Thur 12/12/2013 2:16:23 AM
Subject: FW: Rosemont: Proposed email to Horst

"an ecological regime shift" ????

Cliff Rader
Director, NEPA Compliance Division
202-564-7159

From: Goforth, Kathleen
Sent: Wednesday, December 11, 2013 8:55 PM
To: Rader, Cliff
Cc: Kaiser, Russell; Pendergast, Jim; Herrera, Angeles; Jessop, Carter; Brush, Jason; Hessert, Aimee; Bromm, Susan
Subject: Rosemont: Proposed email to Horst

Below is what Region 9 proposes to send to Horst by COB (not midnight!) tomorrow (Thursday) in response to his request during last Friday's interagency call, as clarified by his 12/9 email message:

Horst –

This is in response to your 12/9 request for EPA's:

Ex. 5 - Deliberative Process

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Environmental Issues

Impacts from the proposed project include direct fill and indirect impacts that would result in the loss, conversion and functional degradation of aquatic habitats over several thousand acres, including state, federal, and locally-protected preserves.

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Concern regarding the USFS Characterization of Impacts

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Torres, Tomas[Torres.Tomas@epa.gov]
From: Peck, Gregory
Sent: Wed 7/27/2016 11:03:28 PM
Subject: Re: Thanks - HudBay Meeting

Thank you Tomas. I appreciate your message and generous offer. We'll plan to reach out to you as we identify any questions or concerns.

Best
Greg

Gregory E. Peck
Chief of Staff
Office of Water
U.S.Environmental Protection Agency
Washington, DC 20460

(202)564-5700

On Jul 27, 2016, at 6:43 PM, Torres, Tomas <Torres.Tomas@epa.gov> wrote:

Hello Greg –

Thanks for accommodating a last minute pre-meeting today and for including the Region in your discussions with HudBay. Please let me know if there are any particular topics HudBay raised today that you would like to discuss with us further, we would be happy to re-convene with you internally. **Ex. 5 - Deliberative Process**

Ex. 5 - Deliberative Process

Regards,

Tomás Torres, Director, Water Division

U.S. Environmental Protection Agency

75 Hawthorne Street (WTR-1)

San Francisco, CA 94105

(415) 972-3337

Visit us at: www.epa.gov/region9/water

To: Craig R SES (US) Schmauder[craig.r.schmauder.civ@mail.mil]
From: Peck, Gregory
Sent: Wed 1/20/2016 1:59:43 PM
Subject: Fwd: Rosemont Mine - 404 elevation fact sheet
404q_factsheet.pdf
ATT00001.htm

Gregory E. Peck
Chief of Staff
Office of Water
USEPA
Washington, DC 20460

Begin forwarded message:

From: "Brush, Jason" <Brush.Jason@epa.gov>
Date: January 19, 2016 at 7:05:51 PM EST
To: "Rodgers, Kerry E. EOP/CEQ" <kerry_e_rodgers@ceq.eop.gov>, "robert.bonnie@osec.usda.gov" <robert.bonnie@osec.usda.gov>, "meryl.harrell@osec.usda.gov" <meryl.harrell@osec.usda.gov>, "patrick.holmes@osec.usda.gov" <patrick.holmes@osec.usda.gov>, "aacheson@fs.fed.us" <aacheson@fs.fed.us>, "jcarbone@fs.fed.us" <jcarbone@fs.fed.us>, "cjoyner@fs.fed.us" <cjoyner@fs.fed.us>, "jupchurch01@fs.fed.us" <jupchurch01@fs.fed.us>, "tparker03@fs.fed.us" <tparker03@fs.fed.us>, "kdewberry@fs.fed.us" <kdewberry@fs.fed.us>, "msvogel@fs.fed.us" <msvogel@fs.fed.us>, "Leff, Karin" <Leff.Karin@epa.gov>, "Suriano, Elaine" <Suriano.Elaine@epa.gov>, "Beauvais, Joel" <Beauvais.Joel@epa.gov>, "Peck, Gregory" <Peck.Gregory@epa.gov>, "Miller, Clay" <Miller.Clay@epa.gov>, "Blumenfeld, Jared" <BLUMENFELD.JARED@EPA.GOV>, "Ryerson.Teddy (Separated)" <Ryerson.Teddy@epa.gov>, "Goforth, Kathleen" <Goforth.Kathleen@epa.gov>, "Dunning, Connell" <Dunning.Connell@epa.gov>, "Gaudario, Abigail" <Gaudario.Abigail@epa.gov>, "Johnson, Kathleen" <Johnson.Kathleen@epa.gov>, "Jessop, Carter" <JESSOP.CARTER@EPA.GOV>, "Penman, Crystal" <Penman.Crystal@epa.gov>, "Woo, Nancy" <Woo.Nancy@epa.gov>, "jennifer.a.moyer@usace.army.mil" <jennifer.a.moyer@usace.army.mil>, "Charles.R.Smith567.civ@mail.mil" <Charles.R.Smith567.civ@mail.mil>, "david.b.olson@usace.army.mil" <david.b.olson@usace.army.mil>, "Wade.L.Eakle@usace.army.mil" <Wade.L.Eakle@usace.army.mil>, "David.J.Castanon@usace.army.mil" <David.J.Castanon@usace.army.mil>, "Sallie.Diebolt@usace.army.mil" <Sallie.Diebolt@usace.army.mil>, "carol_braegelmann@ios.doi.gov" <carol_braegelmann@ios.doi.gov>, "mtupper@blm.gov" <mtupper@blm.gov>, "bamme@blm.gov" <bamme@blm.gov>, "lbaker@blm.gov" <lbaker@blm.gov>, "uhong@blm.gov" <uhong@blm.gov>, "rmsuazo@blm.gov" <rmsuazo@blm.gov>, "drawhous@blm.gov" <drawhous@blm.gov>, "jshoemaker@blm.gov" <jshoemaker@blm.gov>, "tshannon@blm.gov"

<tshannon@blm.gov>, "Christy_JohnsonHughes@fws.gov" <Christy_JohnsonHughes@fws.gov>, "Benjamin_Tuggle@fws.gov" <Benjamin_Tuggle@fws.gov>, "steve_spangle@fws.gov" <steve_spangle@fws.gov>, "jean_calhoun@fws.gov" <jean_calhoun@fws.gov>, "jason_douglas@fws.gov" <jason_douglas@fws.gov>
Cc: "Mallory, Brenda N. EOP/CEQ" < Ex. 6 - Personal Privacy >, "Patel, Manisha D. EOP/CEQ" Ex. 6 - Personal Privacy "Drummond, Michael R. EOP/CEQ" < Ex. 6 - Personal Privacy "Heberling, Paul D. EOP/CEQ" < Ex. 6 - Personal Privacy >
Subject: RE: Rosemont Mine - 404 elevation fact sheet

All – As was briefly mentioned on our call Friday, attached is the EPA fact sheet on the general steps and timelines for seeking higher-level review of 404 permits.

Additional information about the elevation process can be found here:
http://www.epa.gov/cwa-404/dispute-resolution-under-section-404q

Jason A. Brush
Supervisor, Wetlands Section
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (WTR-2-4)
San Francisco, CA 94105
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desk: 415.972.3483
~~~~~~~~~~~~~~~~~~~~~~~~~~~~

To: Srinivasan, Gautam[Srinivasan.Gautam@epa.gov]
From: Peck, Gregory
Sent: Fri 1/3/2014 8:59:18 PM
Subject: FW: Rosemont Mine: Pima County Letter
hcn5wbhv3f5.pdf

From: Evans, David
Sent: Friday, January 03, 2014 3:28 PM
To: Kopocis, Ken
Cc: Stoner, Nancy; Peck, Gregory; Best-Wong, Benita; Pendergast, Jim; Kaiser, Russell; Brush, Jason; Diamond, Jane
Subject: FW: Rosemont Mine: Pima County Letter

Ken,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process Thought you might wish to take a quick look when you have a few minutes.

Dave Evans

David S. Evans, Acting Deputy Director

Office of Wetlands, Oceans and Watersheds

Phone: 202-566-0535

From: Leidy, Robert
Sent: Friday, January 03, 2014 1:21 PM
To: Brush, Jason; Goforth, Kathleen; Goldmann, Elizabeth; Jessop, Carter; Campbell, Rich; Herrera, Angeles
Cc: Evans, David; Pendergast, Jim; Kaiser, Russell; Miller, Clay; Fertik, Rachel
Subject: FW: Rosemont Mine CWA Section 404 Compensatory Mitigation Proposal

All,

Attached is a letter received by EPA R9 on January 2 from Pima County Administrator Chuck Huckelberry to District Engineer Kim Colloton on the adequacy of mitigation proposed by Rosemont Mine to offset impacts to aquatic resources.

Best,

Rob

Robert A. Leidy, Ph.D.

U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

From: Julia Fonseca [mailto:Julia.Fonseca@pima.gov]
Sent: Thursday, January 02, 2014 7:34 AM
To: Goldmann, Elizabeth; Leidy, Robert
Subject: FW: Rosemont Mine CWA Section 404 Compensatory Mitigation Proposal

Greeting and happy 2014,

Here is the letter that has been sent by the County Administrator's Office to Colonel Colloton.

Julia Fonseca

Environmental Planning Manager

Pima County Office of Sustainability and Conservation

201 N. Stone, 6th floor

Tucson, AZ 85701

(520) 724-6460

Julia.Fonseca@pima.gov