

6/30/2014

DEPARTMENT OF THE INTERIOR Mail - Four Corners Power Plant and Navajo Mine Energy Project Draft EIS

COMMENT #301



FCCP-Navajo-Energy-EIS, OSM <osm-fcpp-navajo-energy-eis@osmre.gov>

Four Corners Power Plant and Navajo Mine Energy Project Draft EIS

1 message

Perkins, Steven R

Fri, Jun 27, 2014 at 9:54 PM

To: "FCCPNavajoEnergyEIS@osmre.gov" <FCCPNavajoEnergyEIS@osmre.gov>

Mr. Calle,

I would like to register my support for the Four Corners Power Plant and Navajo Mine Energy Project. The proposed Project is vital to the economy of San Juan County and the Navajo Nation, and without the Project employment opportunities will be lost and social services such as education and health care will suffer. Additionally, the draft EIS demonstrates that the Project can be implemented, and the economic benefits derived, in a manner that is environmentally sustainable and compatible with the local communities. For these reasons, among others, I support the Four Corners Power Plant and Navajo Mine Energy Project and encourage OSMRE to approve the Project.

301.001

Sincerely,

Steve Perkins

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1/1

Comment Letter 301..... Perkins, S.

Response 301.001

Thank you for your comment. OSMRE is considering all alternatives analyzed in the Draft EIS and will notify the public of its decision via the Record of Decision, anticipated in spring of 2015.

6/30/2014

DEPARTMENT OF THE INTERIOR Mail - FCPP/Navajo Mine EIS
COMMENT #302



FCPP-Navajo-Energy-EIS, OSM <osm-fcpp-navajo-energy-eis@osmre.gov>

FCPP/Navajo Mine EIS

1 message

sarah white [redacted]
To: fcppnavajoenergyeis@osmre.gov

Fri, Jun 27, 2014 at 11:17 PM

Resident human health remains at high risk in the impacted areas from both coal ash and the coal burning power plant. The DEIS claims that health impacts from 25 more years of FCPP and Navajo Mine would be minor when there are known public health crises throughout the area. I would count more than half the population in the Four Corners area suffering from Respiratory, Kidney, Heart, Digestive System, And Central Brain Problems, Meningitis, Cancer, and rheumatoid Arthritis from living in this pollution, so don't tell me there is no health impact in the Four Corners. The DEIS complete failure on public health represents one of the worst environmental justice situations in the country.

302.001

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Thank you,
Sarah J. White

Comment Letter 302.....White, S.

Response 302.001

Section 4.17 of the Draft EIS addresses health and safety; specifically, pages 4.17-22 through 4.17-24 summarize the results of the human health risk assessment conducted for the project.

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6/30/2014

DEPARTMENT OF THE INTERIOR Mail - Navajo Mine EIS comments

COMMENT #303



FCPP-Navajo-Energy-EIS, OSM <osm-fcpp-navajo-energy-eis@osmre.gov>

Navajo Mine EIS comments

1 message

Ramirez, Tim F [REDACTED] <[REDACTED]> Fri, Jun 27, 2014 at 2:04 PM
To: "FCPPNavajoEnergyEIS@osmre.gov" <FCPPNavajoEnergyEIS@osmre.gov>

To whom it may concern,

I'm a resident of the four corners area and employed by Navajo mine. The benefits from this company and mine have provided much to my life and family and are very close to my heart. If these businesses are not allowed to continue this will greatly impact my ability to live the same. BHP Billiton has taught me many great things about life and the importance of being a leader in safety and environment. Just take a look at our operation and you can see that we live by our charter values. I hope you take my comments into consideration and allow Navajo Mine and APS four comers power plant to continue their permits. 303.001

Thank you,

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1/1

Comment Letter 303.....Ramirez, T.

Response 303.001

Thank you for your comment. OSMRE is considering all alternatives analyzed in the Draft EIS and will notify the public of its decision via the Record of Decision, anticipated in spring 2015.

6/30/2014

DEPARTMENT OF THE INTERIOR Mail - FCPP/Navajo Mine EIS Comment
COMMENT #304



FCPP-Navajo-Energy-EIS, OSM <osm-fcpp-navajo-energy-eis@osmre.gov>

FCPP/Navajo Mine EIS Comment

1 message

Victoria Gutierrez [REDACTED]
To: FCPPNavajoEnergyEIS@osmre.gov

Fri, Jun 27, 2014 at 10:20 PM

My name is Victoria Gutierrez. I am from Littlewater, New Mexico. I was born in Shiprock, New Mexico. I currently live in Fruitland, New Mexico. This is a few miles from the Four Corners Power Plant. And the Navajo Mine. So I am a life long resident. I'm very concerned about the way this E.I.S. was done. I went to three of these E.I.S. Community meeting's. And I wasn't impressed, actually I was very disappointed. The open-house format doesn't work for Navajo. We need public speaking. I talked with Marcello about this and he stated, it was because people don't like to talk publically. I told him, it should still be available, to those that wish to speak. public speaking allows, all to be involved. A lot of times people are afraid to speak up about issues that affect them. But when they hear someone else talking about the same things that affect them, the very people that were scared to speak, know they are not alone and begin to speak about the issues they concerned about.

304.001

And I seen this at these meetings, people were talking instead of writing. It's human nature. Even though throughout these meetings people were told, those EIS meetings were not for questions, Comments Only. I was told that I could not ask questions. That if I had a comment I had to go to the table and write my comment. And the OSM representatives were there just to tell us about that one picture board they were displaying and nothing else. and if I had concerns or questions about anything not on the picture boards they have up, then I was informed to write OSM an email for answers to my questions. I told them, this was a public event, for the community, they should be answering questions. If not then why do a public event. I was then shown the table and instructed to go fill out the little blue paper, again if I had a comment. I have recordings of my entire time at these EIS meetings. So I can faithfully say, I have proof.

I was followed by numerous OSM staff, while talking with different OSM representatives. They stood right in front of me or in back, and I tried including them in the conversation, but they refused. So I asked if they'd stop following me and standing by me, wherever I went. They (OSM) were staring forcefully and said I can stand wherever I want. I stated if your going to stand and stare then involve yourself in the conversation at hand. Otherwise you are making me very uncomfortable. This I took as an intimidation factor. Not only to myself, but they did this to the community member's that were asking questions. from what I witnessed. I had numerous OSM representatives standing around me.

I asked about the Air Quality picture board, and was told that graph about reductions, was based on fact. That a study was done on this. Then it turned out after 35 minutes of OSM representatives not being able to show me where and whom did the study, Marcello Calle said that it was just a prediction. And No study has been done. Then I stated, then why would you be giving out false information to the OSM representatives telling me . So this EIS is poorly done. The people giving information didn't have the answers to questions not only myself but other community people had. There was one picture board about coal ash and the representative said, that they are planning to bury the ash, where it is at. The community member asked, what about the contamination to the Chaco Wash and the San Juan River. Again OSM representatives stated it will take 200 year's before it pollutes the river's! The community member stated, that is horrible. What about The Future Generations!? What kind of water sources will they be drinking? And what future are we leaving our next generation.

304.002

Community people and family member's also asked for interpretation in Navajo disk. They said to write a request for one, we do not have them readily available, and to date NO disk has been sent. I told Marcello how At the Tiis Tsoh Sikaad EIS meeting that I heard an elder said she felt threatened being followed and repeatedly hounded. And not just her but several other people. It is really sad how this whole process has taken place. I also stated that, The Shiprock EIS should have been done at the Shiprock Chapter House. Not out of the way at the Shiprock H.S., where there is no signage showing there is an EIS going on. He stated that the place was booked because of space, I informed him that the Shiprock Chapter is big enough for their poster boards. He informed me that OSM contacted the local chapter's about the EIS. And I also told him that not even the Chapter officials knew what an EIS was. Told him at Chapter meetings we've been too that no one knew, then I asked how was the notice sent, he said through mail. I said simply sending out the 1,500 page book to each chapter doesn't

304.003

304.004

304.005

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1/2

Comment Letter 304.....Gutierrez, V.

Response 304.001

Please see Master Response #9, Public Meeting Format

Response 304.002

Please see Master Response #9, Public Meeting Format

Response 304.003

Please see Master Response #9, Public Meeting Format and Master Response #10, Translation of the EIS.

Response 304.004

Please see Master Response #9, Public Meeting Format

Response 304.005

Please see Master Response #9, Public Meeting Format. Section 1 and 4.11 summarize the public outreach conducted as part of the project.

Four Corners Power Plant and Navajo Mine Energy Project
Final Environmental Impact Statement

6/30/2014

DEPARTMENT OF THE INTERIOR Mail - FCPP/Navajo Mine EIS Comment

COMMENT #304

inform anyone. That the secretary puts it on the desk and that's it. Told him the Tiis Tsoh Sikaad Chapter where ↑
their previous EIS was held. We had a chapter meeting and the chapter told us, we do not know what an EIS is.
Told him it's even in the minutes. So how can OSM say everyone was informed.

While I was talking with Marcello Calle I asked him for some information in the EIS book. It took 20 minutes
and three other OSM representatives to look up the information, then he rips the page with the information on it. I
still have the ripped out page. So my question was, not everyone knows. Not even OSM themselves, know the
EIS book. So that explains why a lot of questions during these So Called Community meetings went unanswered
or re-routed. People are suffering from the pollution, here in the San Juan Basin. There are numerous people in
my own family that are suffering cancer and have died from Heart Disease and Cancer. There are a lot of not of
the norm diseases showing themselves here. My family love to go fishing but they will not eat the fish in area
waters. We need a Health Study done. And I'm not talking about just inside ones home. A real Health and
Environmental Study.

The purchase of the Navajo mine was done in secret. Without the people consent. Community people are very
upset, and feel neglected when it comes to their own government. With the purchase of the mine and the Waiver
of liability to BHP. To let a billion dollar company that has gotten rich off Indigenous resources, walk away with no
responsibility. It's out right criminal, so yes I've talked with people all over. And the people are very shamed by
this happening and let down. This Whole process is a human rights issue!

The job factor does not equal out the human factor. These are lives of people. We live here and breathe this
air, we eat the food, we drink the water. Protection of the people, should never be neglected! This is a humanity
issue. Protection for the wildlife, and livestock. We are dealing with extreme drought here. Dust storms plague
the area, every other day. When I was younger it never was like this. It's real heart breaking and brings me to
tears when I think of how future children will live, what will this place be like. I look at my son, he's 3 year's old.
And I think what will he be living in. What will his children be living in. And it makes me so mad and so sad and I
feel pain knowing what it's like today. I'm truly afraid for our future. There's a saying around here... " The rain
stops where the power plants begin. Meaning the closer you get to my area the more drought you have. Were
surrounded by power plants and this Navajo Mine. It's awful when you take your child to the hospital for one
respiratory illness after the other and seeing your loved ones the same. And I know I am not alone in this feeling.
There are so many people around here getting sick. And so many that are dying when they don't have too. And
for what? Money! This is neglect, neglect of our human rights and it too me is indigenous genocide.

This Navajo Mine and F.C.P.P. have been here long enough, the coal era is over. No one even wants the coal,
it's of the poorest quality. Practically rock! I would like to see OSM do what's right and do these EIS Community
meetings again. Handled better and without the harassment and silencing of the people. Do a real community
EIS. And prompt for a health study and environmental study to be done.

My last comment is this. Close the Navajo Mine. Clean up the Area. Let F.C.P.P. shut down once and for all.

Victoria Gutierrez

Community and Tribal Member

<https://mail.google.com/mail/tb349/u/0/?ui=2&ik=6ac25a16cb&view=pt&search=inbox&th=146e0b445cc9bd38&siml=146e0b445cc9bd38>

2/2

6/30/2014

DEPARTMENT OF THE INTERIOR Mail - Four Corners-Navajo Mine DEIS Comments

COMMENT #305

unit 5 can later reach 0.81 GW

Lines 92 to 181 is Four Corners power plant unit 4.
Total Power (GW) is the addition of the power of units
4 and 5.

Unit 4 can exceed 40% efficiency which might be
impossible. Unit 5 efficiency looks about right.

Have not calculated carbon content of the coal.

Sincerely,

Vincent H. Yazzie

 DLY_2014nmQ1.xlsx
390K

Vincent Yazzie [REDACTED]

Fri, Jun 27, 2014 at 2:27 AM

Reply-To: Vincent Yazzie [REDACTED]

To: "FCPPNavajoEnergyEIS@osmre.gov" <FCPPNavajoEnergyEIS@osmre.gov>

June 26, 2014

Marcelo Calle
Office of Surface Mining Reclamation and Enforcement
Western Region Office
1999 Broadway, Suite 3320
Denver, CO 80202-3050
FCPPNavajoEnergyEIS@osmre.gov

Vincent H. Yazzie
[REDACTED]

<https://mail.google.com/mail/tb349/u/0/?ui=2&ik=6ac25a16cb&view=pt&search=inbox&th=146dc0eaae13503c&siml=146dc0eaae13503c&siml=146dc6fa7dda42d1> 2/5

6/30/2014

DEPARTMENT OF THE INTERIOR Mail - Four Corners-Navajo Mine DEIS Comments
COMMENT #306



Fcpp-Navajo-Energy-EIS, OSM <osm-fcpp-navajo-energy-eis@osmre.gov>

Four Corners-Navajo Mine DEIS Comments

12 messages

Vincent Yazzie [REDACTED] Fri, Jun 27, 2014 at 4:49 PM

Reply-To: Vincent Yazzie [REDACTED]
To: OSM FCPP-Navajo-Energy-EIS <fcppnavajoenergyeis@osmre.gov>
Cc: Percy Deal [REDACTED], Lori Goodman [REDACTED], Sylvia Clahchischilli [REDACTED], Adella Begaye [REDACTED]

June 27, 2014

Vincent H. Yazzie
[REDACTED]
[REDACTED]

Dear Sir,

Retransmitting with correct subject line and subject page numbers. Attached Excel file is updated.

Four Corners Power Plant (FCPP) exceeds capacity. See lines 153, 154, 159, 160, 163, 169, 171 and column U in attached file DLY_2014nmQ1.xlsx. SCR only designed for 1.540 GW. FCPP will not be able to handle the extra ammonia from the SCR. Unit 4 can exceed 0.80 GW.

There were exceptions to BART settlement which was the ability of FCPP to handle the ammonia.

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Comment Letter 306..... Yazzie, V.

Response 306.001

Air: The air quality analysis in the EIS was conducted with historic operational data from the FCPP, including operation of Units 4 and 5. Future emission estimates are based on the highest year's data; therefore, are conservative estimates based on historic operational data. The analysis in the EIS assumes FCPP conformance with the Federal Implementation Plan and Best Available Retrofit Technology.

Alternatives: OSMRE is considering all of the alternatives that were analyzed in the Draft EIS and will inform the public of its decision via the Record of Decision, anticipated in the spring of 2015.

306.001



6/30/2014

DEPARTMENT OF THE INTERIOR Mail - Four Corners-Navajo Mine DEIS Comments

COMMENT #306

F CPP needs to install and engineer an ammonia system for a power plant capacity of 1.62 GW if F CPP unit 5 can later reach 0.81 GW

Lines 92 to 181 is Four Corners power plant unit 4. Total Power (GW) is the addition of the power of units 4 and 5.

Unit 4 can exceed 40% efficiency which might be impossible. Unit 5 efficiency looks about right.

Have not calculated carbon content of the coal.

The historic baseline is off, Volume 1, Background and Overview,

Two Federal actions were completed prior to the Draft EIS: OSM's approval of a SMCRA permit transfer associated with the equity sale and merger of Navajo Mine Coal Company (NMCC) with the Navajo Transitional Energy Company (NTEC), including all assets formerly held by BNCC, and the US Environmental Protection Agency's (EPA's) issuance of a Federal Implementation Plan (FIP) for the installation of Best Available Retrofit Technology (BART) at the F CPP.

Unit 4 and 5 can exceed 1.540 GW giving wrong emission data for the background.

Volume 1, Page 3, Executive Summary. BART mentioned 6 times.

Unfortunately, the Federal Implementation Plan (FIP) was based upon wrong emission data. Units 4 and 5, can add +/- 5% of error to the emissions data. Units

<https://mail.google.com/mail/u/0/?ui=2&ik=6ac25a15cb&view=pt&search=inbox&th=146df9e429c8b11&siml=146df9e429c8b11&siml=146e06f7c036a> 2/54

6/30/2014

DEPARTMENT OF THE INTERIOR Mail - Four Corners-Navajo Mine DEIS Comments

COMMENT #306

1, 2, and 3 emission data not checked. Units 4 and 5 were engineered for a higher power rating. Units 1, 2, and 3 were most likely engineered for a higher power rating. The FIP plan is off.

Table ES-1, Volume 1, page 3, Executive Summary is off. Summary Comparison of Historic and Future Emission Rates is off as Units 4 and 5 engineered for higher power rating.

Modeled emissions is off. As I said before, model emissions used sub-bituminous coal of 8,800 btu/lb. Moisture free, mineral free, ash free coal is around 11,700 btu/lb. EPA refused to re-run the model. Attached is APS report saying BHP misapplied ASTM D-388-05 by entering 22.3% ash as "0.223." Report is EPA-R09-OAR-2010-0683-0056(1).pdf.

APS engineered the plant to burn higher density coal.

BART is mentioned twice in volume 1, Executive summary, FCPP, page 12. There will be more ammonia to handle and the SCR has to be re-engineered for a higher flow of ammonia, more ammonia storage facilities, and more ammonia trucks.

Volume 1, Executive Summary, Interim Period (2014-

<https://mail.google.com/mail/u/0/?ui=2&ik=6ac25a15cb&view=pt&search=inbox&th=146df04e29c5b11&siml=146df04e29c5b11&siml=146e06f7c036a> 3/54

Response 306.002

Air: The air quality analysis in the EIS was conducted with historic operational data from the FCPP, including operation of Units 4 and 5. Future emission estimates are based on the average of the two highest year's data; therefore, are conservative estimates based on historic operational data. The analysis in the EIS assumes FCPP conformance with the Federal Implementation Plan and Best Available Retrofit Technology.

Alternatives: OSMRE is considering all of the alternatives that were analyzed in the Draft EIS and will inform the public of its decision via the Record of Decision, anticipated in the spring of 2015.

306.002

6/30/2014

DEPARTMENT OF THE INTERIOR Mail - Four Corners-Navajo Mine DEIS Comments

COMMENT #306

2018), page 12-13.

EPA BART FIP was meant to coverup that FCPP was burning higher energy density coal using a secret higher output rating power-plant. EPA BART FIP was based upon bad data and bad engineering. Emissions are off. EPA BART FIP is a bad baseline and should not be relied upon. FCPP emissions need to be analyzed again for another baseline. Were units 1, 2, and 3 engineered for a higher power rating?

Volume 1, 1.1.2, Four Corners Power Plant, page 1-2, 1-3. BART FIP was based upon false modeling and false emissions data. The resulting options for FCPP should never have been offered. Bad BHP coal rank data, illegal FCPP power rating, bad EPA emission modeling results in BAD BART FIP.

Volume 1, 1.4.2.4, U.S. Environmental Protection Agency, page 1-12. BART FIP based upon bad BHP coal rank data and illegal FCPP Power Rating. Emissions need to be redone and BART FIP redone.

Volume 1, 2. Current Operations of Navajo Mine, FCPP and Transmission lines, page 2-1. BART FIP based upon bad BHP coal rank data and illegal FCPP Power Rating. Emissions need to be redone and BART FIP redone.

Volume 1, 2.2 Four Corners Power Plant Operations, page 2-18. Unit 4 was re-engineered in 1969 to be an 810 MW or more. Units 1, 2, 3, and 5 need to be

<https://mail.google.com/mail/u/0/?ui=2&ik=6ac25a15cb&view=pt&search=inbox&th=146df04e29c8b11&siml=146df04e29c8b11&siml=146e06f7c036a> 4/54

6/30/2014

DEPARTMENT OF THE INTERIOR Mail - Four Corners-Navajo Mine DEIS Comments

COMMENT #306

rechecked if they were engineered for a higher rating. BART FIP based upon bad BHP coal rank data and illegal FCPP Power Rating. Emissions need to be redone and BART FIP redone.

Volume 1, 2.4.2. EPA Federal Implementation Plan for Best-Available-Retrofit-Technology (Post 2014). Page 2-35. When FCPP operated plant beyond 1.540 GW, FCPP was illegally emitting emissions into the environment and violating BART and BART FIP plan.

Volume 1, 2.4.2.2 Actions to Comply with BART Ruling Page 2-36
BART FIP based upon bad BHP coal rank data and illegal FCPP Power Rating. Emissions need to be redone and BART FIP redone. Options were based upon bad data.

Volume 1, 2.4.2.2 Installation on SCR Equipment on Units 4 and 5 Page 2-37 to 2-38. More ammonia truck, bigger SCR, bigger tanks as Unit 4 and Unit 5 combined exceeded 1.540 GW producing more illegal emissions. I am afraid the original reduced emissions in Table 2-8 is not true. Errors in power rating and emissions will elevate Historic Baseline Emissions. Estimated future emission will be higher with the illegal power rating of FCPP. Future versus Historic Baseline percentages will be lower due to the illegal power rating of FCPP.

Volume 1, 3. Description of the Proposed Action and

<https://mail.google.com/mail/u/0/?ui=2&ik=6ac25a15cb&view=pt&search=inbox&th=146df04e29c5b11&siml=146df04e29c5b11&siml=146e06f7c036a> 5/4

Response 306.003

The EIS provides analysis of risks and hazards associated with the ammonia source for the selective catalytic reduction (SCR) devices, furthermore the EIS has been updated to indicate that APS has committed to the urea transport option. SCR devices will be engineered to meet the requirements of the Federal Implementation Plan (FIP) and Best Available Retrofit Technology (BART). Operational output for Units 4 and 5 with SCR equipment installed are analyzed in the EIS, based on historical operational performance data. The air quality analysis in the EIS was conducted with historic operational data from the FCPP, including operation of Units 4 and 5. Future emission estimates are based on the average of the two highest year's data; therefore, are conservative estimates based on historic operational data. The analysis in the EIS assumes FCPP conformance with the FIP and BART.

306.003

6/30/2014

DEPARTMENT OF THE INTERIOR Mail - Four Corners-Navajo Mine DEIS Comments

COMMENT #306

Alternatives, page 3-1.

BART FIP based upon bad BHP coal rank data and illegal FCPP Power Rating. Emissions need to be redone and BART FIP redone. Options were based upon bad data.

Volume 1. 3.2.1.2. FCPP page 3-14 to 3-15. BART FIP based upon bad BHP coal rank data and illegal FCPP Power Rating. Emissions need to be redone and BART FIP redone.

Volume 1. 3.2.1.2. FCPP page 3-15. BART FIP based upon bad BHP coal rank data and illegal FCPP Power Rating. Emissions need to be redone and BART FIP redone. Options were based upon bad data. APS lied about the power rating of FCPP it is actually higher.

Volume 1. 3.3.4.2. FCPP page 3-53. This is a good alternative. FCPP has lied about their power rating. BHP lied about the coal rank.

So much fraud in the BART FIP process (illegal power rating) and BHP coal rank errors, modeling errors.

Also FCPP and Utah International used fly ash as fertilizer in the soil for Watson pit, Dodge Pit and Bitsui Pit. Fly_ash_soil.jpg is where fly ash from pre-1977 is draining into the San Juan River damaging endangered fish down stream. Soil in this area needs to be removed and put in lined pits.

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6/30/2014

DEPARTMENT OF THE INTERIOR Mail - Four Corners-Navajo Mine DEIS Comments
COMMENT #306

Also BHP does tolerated criminals among its superintendents for 2 years.

Two men arrested for allegedly stealing \$480K of fuel from BHP Billiton

NO ACTION ALTERNATIVE E IS THE FINAL SOLUTION.

Sincerely,

Vincent H. Yazzie

ps will be adding more



Two men arrested for allegedly stealing \$480K of fuel fr...

FARMINGTON — Two men have been arrested on suspicion of stealing fuel from BHP Billiton, acco...

View on ...

Preview by Yahoo

3 attachments



fly_ash_soil.jpg
428K

DLY_2014nmQ1.xlsx
390K

<https://mail.google.com/mail/u/0/?ui=2&ik=6ac25a15cb&view=pt&search=inbox&th=146df04e29c5b11&siml=146df04e29c5b11&siml=146a06e07c036a> 7/54



COMMENT #307
Northwest
1216 Lincoln Street
Eugene, Oregon 97401
(541) 485-2471

Rocky Mountains
103 Reeder's Alley
Helena, Montana 59601
(406) 443-3501

Southwest
208 Paseo del Pueblo Sur #602
Taos, New Mexico 87571
(575) 751-0351

Defending the West www.westernlaw.org

Western Environmental Law Center

Send via electronic mail (comments only), and U.S. Mail (comments and exhibits)

June 27, 2014

Marcelo Calle
Office of Surface Mining Reclamation and Enforcement
Western Region Office
1999 Broadway, Suite 3320
Denver, CO 80202-3050
FCPPNavajoEnergyEIS@osmre.gov

Re: Conservation Groups' Comments on the Draft Environmental Impact Statement for the Four Corners Power Plant and Navajo Mine Energy Project

Dear Mr. Calle:

The Western Environmental Law Center, on behalf of San Juan Citizens Alliance, Diné Citizens Against Ruining Our Environment, Center for Biological Diversity, Amigos Bravos, WildEarth Guardians, and Sierra Club (collectively "Conservation Groups"), respectfully submits the following comments on the Office of Surface Mining Reclamation and Enforcement's ("OSM") Draft Environmental Impact Statement for the Four Corners Power Plant ("FCPP") and Navajo Mine Energy Project [hereinafter "Project DEIS" or "DEIS"] released for comment on March 28, 2014, pursuant to the National Environmental Policy Act ("NEPA").

The Proposed Action that the Project DEIS analyzes includes several related actions, including:

1. Approval of Navajo Mine's application for a new Surface Mining Control and Reclamation Act (SMCRA) permit for the Pinabete Permit Area, which is located within the existing Navajo Mine Lease Area, to begin operations in 2016 and continue through 2041 in 5-year permit renewal

CONSERVATION GROUPS COMMENTS ON DEIS FOR
FCPP AND NAVAJO MINE ENERGY PROJECT

PAGE 1 OF 106

Comment Letter 307..... WELC,
Anderson, M.

COMMENT #307

intervals;¹

2. Renewal of Navajo Mine's existing SMCRA permit for Areas I, II, III, and portions of Area IV North of the Navajo Mine Lease Area for 5 years beginning in 2014;
3. Approval of Arizona Public Service Company's (APS') Proposed Four Corners Power Plant (FCPP) lease amendment and right-of-way (ROW) renewals, located on the Navajo Reservation in San Juan County, New Mexico, for continued operation through 2041;² and
4. ROW renewals for portions of four transmission lines associated with the FCPP.

DEIS at ES-i; *see also* Notice of Intent To Initiate Public Scoping and Prepare an Environmental Impact Statement for the Four Corners Power Plant and Navajo Mine Energy Project, 77 Fed. Reg. 42329 (July 18, 2012). These actions are collectively referred to as "the Project," or "the Proposed Action."

I. INTRODUCTION

Obtaining electricity from coal-fired power plants is not a wise decision. The impacts to communities and the environment from coal are enormous and, tragically, too often ignored, discounted, and left unremedied. Attempts to mitigate those impacts are expensive, and not necessarily effective. The Navajo Mine and FCPP, making up one of the dirtiest fossil fuel complexes in the United States, illustrate these facts well.

Furthermore, coal is no longer competitive with clean, renewable energy sources. Colstrip Power Plant in Montana, for example, was recently assigned a negative value in a deal for the purchase of hydro units and the coal-fired Colstrip plant.³ El Paso Electric plans to sell its stake

¹ Conservation Groups request that OSM provide information regarding why this lease area is referred to as the Pinabete Expansion instead of continuing with previous nomenclature, especially in light of ongoing litigation surrounding Area IV, part of which would be included in the Pinabete Expansion.

² A major component of the DEIS is whether BIA should approve the lease (Lease #3) for the FCPP. As such, a copy of lease #3 should be an appendix to the DEIS so the terms of the lease can be reviewed by the public and subject to comment. OSM's failure to produce this crucial document as an appendix to the DEIS is arbitrary, capricious, and denies the public of meaningful input into a major component of the DEIS. We ask that the lease #3 be released to the public as a component of the DEIS and that the public be given an adequate amount of time to review and comment on the terms of the lease as part of the DEIS public comment process.

³ NorthWestern Energy, *Application for Approval to Purchase and Operate PPL Montana's*

Response 307.001

Lease Amendment #3, one of the project actions that triggered NEPA review, contains sensitive information regarding the financial nature of the lease; thus, a full copy of Lease Amendment #3 is not included as an appendix to the EIS. The relevant information contained in the Lease is directly summarized in the Draft EIS, and the consequences of BIA approval is analyzed throughout the document. This disclosure of the lease terms in the Draft EIS is sufficient to facilitate public review and comment; disclosure of the entire amendment would not change the alternatives analyzed or any of the conclusions within the Draft EIS. Public comment on the amendment itself is not part of this NEPA process.

307.001

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in FCPP, and just announced that its electricity mix will be free from coal by 2016.⁴ Instead of coal, El Paso is doubling its solar portfolio, and has signed an agreement for the purchase of solar for “5.79 cents a kilowatt-hour — less than half the 12.8 cents per kilowatt-hour average price for electricity from new coal plants, according to Bloomberg.”⁵

Despite the huge shifts in electricity production, and the alternatives now available, OSM has put the blinders squarely on in crafting the DEIS for the Navajo Mine and FCPP. OSM’s DEIS fails, among other things, to:

- Consider compliance with Diné law despite the Project’s location on Navajo lands, and the impacts that the Project imposes on the Navajo Nation.
- Comply with NEPA’s mandates to take a hard look at the past, present, and future impacts that the Project has had and would continue to impose on surrounding communities and the environment.
- Ensure that the agency and the public can consider the Project thoroughly instead of treating the NEPA process as a required formality that the agency must go through before rubber-stamping the proposed project.
- Consider any alternatives that would deviate from continued operation of the mine and plant, thus limiting the ability of the DEIS to sharply define the issues and provide a clear basis for choice among options by the decision maker and the public.

In short, OSM’s DEIS is deficient. It fails to provide for meaningful public discussion, limiting the public’s ability to participate effectively in the NEPA process for a crucial decision about continued operation of FCPP and expansion of Navajo Mine, and fatally undermining OSM’s ability to make a reasoned and informed decision to allow coal operations beyond 2016.

With these comments, we ask OSM and the Cooperating Agencies to correct the inadequacies in the DEIS’s analysis of impacts, and to provide real consideration of additional alternatives, including alternatives that include transition away from continued operation of Navajo Mine and FCPP. Once OSM and the Cooperating Agencies have made the necessary corrections, we request that OSM and the Cooperating Agencies re-issue the DEIS for public comment. It is only when these deficiencies are corrected, the impacts and costs of the plant are properly

307.002

Hydroelectric Facilities, for Approval of Inclusion of Generation Asset Cost of Service in Electricity Supply Rates, for Approval of Issuance of Securities to Complete the Purchase, and for Related Relief, Docket No. D2013.12.85 (December 2013) (attached as Exhibit 1).

⁴ Kiley Kroh, *Texas Utility Doubles Large-Scale Solar, Says It Will Be Coal-Free By 2016*, ThinkProgress, June 17, 2014 (available at: <http://thinkprogress.org/climate/2014/06/17/3449604/texas-utility-solar/> (last accessed June 24, 2014)) (attached as Exhibit 2).

⁵ *Id.*

Response 307.002

Please see Master Response #6, Recirculation of the EIS.

COMMENT #307

assessed, and appropriate alternatives considered, that OSM and the Cooperating Agencies will ↑
have a rational basis for making any decision regarding the mine and plant. Further, it is our
sense that a robust analysis may demonstrate that the continued operation of the FCPP and
Navajo mine for an additional 25 years will result in significant environmental impacts that
cannot be acceptably mitigated.

II. CONSERVATION GROUPS

A. Conservation Groups' Participation

The Project directly impacts the Conservation Groups and their members: the Navajo Mine and
FCPP are situated just miles from many of the Conservation Groups' members, and the impacts
of the Project, which ripple across the land, water, and sky of the region, have been imposed on
all. Consequently, the Conservation Groups have participated extensively in proceedings
surrounding the Navajo Mine and FCPP.

Related specifically to this NEPA process, the Conservation Groups timely submitted scoping
comments on October 31, 2012, and supplemental scoping comments on April 3, 2013; we
hereby incorporate those comments and their exhibits by reference. The Conservation Groups'
members also participated in public scoping meetings in 2012, and more recently in public
meetings for the DEIS in April and May 2014.⁶ In addition, Diné C.A.R.E. organized and
attended several Chapter and community meetings to inform the Diné public about the Navajo
Mine/FCPP EIS process from June 2013 - June 2014. Several resolutions were passed regarding
requests to extend the DEIS comment period in April and May 2014.

Most of the Conservation Groups also submitted numerous comment letters regarding the
transfer of the Navajo Mine from BHP Billiton to the Navajo Transitional Energy Company
(Navajo Mine SMCRA Permit NM-0003F Transfer), including a letter sent on June 7, 2013,
comments on the Environmental Assessment submitted on June 17, 2013, supplemental
comments submitted on June 24, 2013, and supplemental comments submitted on September 27,
2013.⁷ Diné C.A.R.E. also sent letters (via electronic mail and postal mail) to the office of
Secretary of the Interior, Sally Jewell, to the office of U.S. Senate Committee on Indian Affairs,
to the office of Deputy Inspector General, which are all within the Department of the Interior
("DOI"). These letters outlined concerns by Diné community members about the rushed Navajo
Mine purchase, the Navajo Mine transfer permit, the exclusion of BIA's approval, and other
concerns. As of June 24, 2014, no response has been received by any of the DOI's offices.
These comments letters are incorporated herein by reference. The Conservation Groups believe
that OSM illegally segmented the mine sale from this DEIS and thus this DEIS is deficient for
failing to analyze the mine sale as part of this DEIS.

307.003

⁶ As discussed below, the Conservation Groups have numerous concerns about the way in which
OSM allowed for public participation on the DEIS.

⁷ Conservation Groups' comments regarding the mine transfer are attached as Exhibits 3-7.

Response 307.003

See Master Response #7 for an explanation regarding the Navajo
Mine Permit Transfer EA relationship to the Draft EIS.

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In addition, many of the Conservation Groups submitted comments on BHP Billiton's application for the Pinabete mine expansion on August 13, 2012.⁸ The Conservation Groups also submitted comments on BHP's application for a Clean Water Act section 404 permit for activities at the Navajo Mine on November 1, 2012.⁹ Many of the Conservation Groups are also engaged in active litigation challenging the adequacy of OSM's Environmental Assessment for the expansion of Area IV North at Navajo Mine.¹⁰

B. About the Conservation Groups

The following is a description of the Conservation Groups that are signatories to this comment letter.

San Juan Citizens Alliance ("SJCA") is a non-profit organization, with over 500 members in the Four Corners region, actively involved in energy development oversight; advocating for cleaner air quality and better stewardship of our natural systems; promoting reduced energy consumption, energy efficiency and renewable energy; and working for improvements to community health. SJCA members in the Four Corners region live in areas of existing high-density energy development and infrastructure.

Diné Citizens Against Ruining Our Environment ("Diné C.A.R.E.") is an all-Navajo non-profit environmental organization who works with many Navajo communities affected by energy and environmental issues on the Navajo Nation. Diné C.A.R.E. is comprised of a federation of grassroots community activists from Arizona, New Mexico and Utah who strive to educate and advocate for our traditional teachings derived from Diné Fundamental Laws. Diné C.A.R.E.'s goal is to protect all life in Navajo ancestral homeland by empowering local and traditional people to organize, speak out, and determine the outlook of the environment through civic involvement and engagement in decision-making process relating to tribal development.

The Center for Biological Diversity ("the Center") is a non-profit 501(c)(3) corporation with offices in Arizona, New Mexico, California, Nevada, Oregon, Washington, Alaska, Illinois, Minnesota, Vermont, and Washington, D.C. The Center works through science, law, and policy to secure a future for all species, great or small, hovering on the brink of extinction. The Center has 320,000 members and online activists throughout the United States, Colorado, New Mexico and the world. The Center is actively involved in species and habitat protection issues worldwide, including throughout the western United States. The Center, its members, and staff members use the lands in and near the BNCC Navajo Mine, and in particular the Chaco and San

⁸ Conservation Groups' comments regarding the Pinabete expansion are attached as Exhibit 8.

⁹ Conservation Groups' comments regarding the CWA section 404 permit are attached as Exhibit 9.

¹⁰ *Dine Citizens Against Ruining the Environment v. U.S. Office of Surface Mining Reclamation and Enforcement*, Civil Action No. 1:12-cv-1275-JLK (D. Colo).

COMMENT #307

Juan rivers, for recreational, scientific, and aesthetic purposes. They also derive recreational, scientific, and aesthetic benefits from these lands through wildlife observation, study, and photography. The Center and its members have an interest in preserving their ability to enjoy such activities in the future. As such, the Center and its members have an interest in helping to ensure their continued use and enjoyment of these activities on these lands. The Center is particularly concerned about species and critical habitats that are affected by coal mining at the BNCC Navajo Mine and coal burning at FCPP. The Center and its members are adversely affected by mining operations at the Navajo Mine as well as from impacts at the FCPP.

Amigos Bravos is a nonprofit river conservation organization whose mission is protect and restore the waters of New Mexico. Amigos Bravos' effort is inspired by New Mexico's traditional water users and guided by the vision of water as both a cultural and natural resource. Amigos Bravos has members throughout New Mexico that use and enjoy the water resources of New Mexico for irrigation, livestock watering, fishing, recreation, spiritual pursuits, and aesthetic interests. Amigos Bravos is increasingly concerned that the observed and anticipated impacts of global warming and climate change will compromise its interests and the interests of its members.

WildEarth Guardians is a west-wide nonprofit environmental organization dedicated to protecting and restoring the wildlife, wild places, and wild rivers of the American West. Through its Climate and Energy Program, WildEarth Guardians advocates for cleaner energy and works to ensure the impacts of fossil fuel development are minimized in order to protect the Earth's climate and natural resources.

Sierra Club has more than 1.4 million members and supporters who work for a safe and healthy community in which to live, smart energy solutions to combat global warming and an enduring legacy for America's wild places. Since 1892, the Sierra Club has been working to protect communities, wild places, and the planet itself. Sierra Club is the oldest, largest, and most influential grassroots environmental organization in the United States. In New Mexico, Sierra Club has over 7000 members. It has been a priority of the Sierra Club nationally and locally to stop irresponsible coal mining, curb global warming and ensure clean air and clean water for all.

III. COMMENTS ON THE DEIS

A. The DEIS Fails To Consider Fundamental Laws of the Diné.

Diné Bi Beenahaz'áanii (Fundamental Laws of the Diné [hereinafter "FLD"], was approved by the Navajo Nation Council in 2002. (1 NNC §§ 201-206, enacted by Council Resolution CN-69-02).¹¹ It articulates the origin and foundation of all Navajo life and government (§1). It presents an authoritative Diné perspective on what are proper and acceptable ways for human beings to sustain themselves and their communities. Therefore, any

¹¹ See Dine Fundamental Law (attached as Exhibit 10) (available at: <http://www.navajocourts.org/dine.htm> (last accessed June 26, 2014)).

COMMENT #307

credible analysis of the environmental and cultural impacts of the proposed Navajo Mine/FCPP project, located on the Navajo Nation must specifically address all relevant portions of the FLD.

Diné C.A.R.E. provided comments during the Navajo Mine/FCPP EIS Scoping comment period in the fall of 2012. Those comments included a section noting that OSM must consider and respond to the FLD in the DEIS.¹² Yet, the DEIS failed to consider FLD, especially as it pertains to coal combustion waste, climate change, environmental justice, water impacts, health impacts, socioeconomics, and endangered species. For these categories, the DEIS states that prolonging mining and power plant operations for an additional 25 years would cause minor to no impacts.

Diné C.A.R.E. would like to know why the following principles of the FDL were not considered in the DEIS:

§4.E. "It is the right and freedom of the people that every child and every elder be respected, honored and protected with a healthy physical and mental environment, free from all abuse."

§5.A. "The four sacred elements of life, air, light/fire, water and earth/pollen in all their forms must be respected, honored and protected for they sustain life."

§5.C. "All creation, from Mother Earth to Father Sky to the animals, those who live in water, those who fly and plant life have their own laws, and have rights and freedom to exist."

§5.D. "The Diné have a sacred obligation and duty to respect, preserve and protect all that was provided for we were designated as the steward of these relatives through our use of the sacred gifts of language and thinking."

§5.E. "Mother Earth and Father Sky is part of us as the Diné and the Diné is part of Mother Earth and Father Sky; The Diné must treat this sacred bond with love and respect without exerting dominance for we do not own our mother or father."

§5.F. "The rights and freedoms of the people to the use of the sacred elements of life as mentioned above and to the use of the land, natural resources, sacred sites and other living beings must be accomplished through the proper protocol of respect and offering and these practices must be protected and preserved for they are the foundation of our spiritual ceremonies and the Diné life way."

§5.G. "It is the duty and responsibility of the Diné to protect and preserve the beauty of the natural world for future generations."

These are not hortatory admonitions that OSM can simply ignore. They are foundational precepts of the Diné people, and must be considered in good faith by OSM in the DEIS and,

¹² See Conservation Groups' Scoping Comments at 6-8.

Response 307.004

Diné Law reflects the importance to the Navajo Nation that their lands and resources are managed in accordance with the Tribe's cultural beliefs. Diné Law emphasizes the deep relationship of the Navajo with the Earth and outlines the Navajo "way of life". OSMRE recognizes and respects the intent and nature of this tribal policy, but it is the responsibility of the Navajo Nation alone to enforce/consider Diné Law in making decisions. The purpose of NEPA is to assess how project alternatives could potentially affect the ecological and the human environment, thus, the NEPA process reflects some of the concepts of environmental stewardship outlined in Diné Law . Diné Law , however, does not include any measureable and enforceable regulatory standards that could be technically applied to the vast majority of resources analyzed in the EIS. In order to clarify the role of Diné Law in this NEPA process, the EIS has been revised to include the following language in Section 1.4.2.6: Chapter 1 (Purpose & Need) on the applicability of Diné Law on the Project: Footnote: It is worth noting that in 2007 the Navajo Nation developed legislation (1 N.N.C. §§ 201-206) that codified Diné Law . Diné Law explains the origin of the Navajo people and their relationship with the Earth. This Navajo law is considered cultural in nature and lacks any measurable and enforceable regulatory standards that could be technically applied to measure effects; therefore, Diné Law is not used as a regulatory framework in this EIS. Further information on Diné Law, related to the use of the hogan at the Navajo Mine for traditional Navajo ceremonies for purposes of mitigating adverse impacts to the natural world from resource extraction, can be found on page 4.11-17.

COMMENT #307

indeed, must help drive OSM's decision-making process. Unfortunately, due to the fact that FLD principles were not considered, the DEIS fails to thoroughly assess the cultural, human, health impacts, and environmental impacts associated with prolonging mining and power plant operations for another 25 years and fails to ensure consistency with the FLD, as required by OSM's legal responsibilities to the Diné people. The DEIS is therefore arbitrary and capricious.

B. The DEIS Fails To Provide Clarity As To Applicable Regulations Or Even Who Is Acting As Project Proponent.

1. The DEIS Fails To Explain Adequately The Implications Of The Transfer of Ownership Of The Navajo Mine To The NEPA Process.

As an initial matter, the DEIS fails to provide clarity about who is acting as the Project Proponent seeking the permits subject to the NEPA review in the DEIS. Ownership of the Navajo Mine was transferred to the Navajo Nation on December 31, 2013. The DEIS does not make it clear whether this transfer included a wholesale adoption of the permit applications previously submitted by BHP, or whether those permit applications are subject to change now that the Navajo Nation is the owner of the mine. The DEIS notes only that the DEIS analyzes "approval of *Navajo Mine's* application" for a new SMCRA permit, and "[r]enewal of *Navajo Mine's* existing SMCRA permit." DEIS at 1-1 (emphasis added). As it is not the mine itself that can seek the permits, but, rather, only the mine's owners or operators, it is unclear whose applications are being reviewed. The DEIS must identify and disclose all documents related to the purchase of the mine by the Navajo Nation from BHP to allow the public a full understanding of the nature of the transaction and its implications. OSM's failure to analyze the mine sale as part of this DEIS constitutes an illegal segmentation of the project.

307.005

307.006

The DEIS also includes Navajo Nation as designated Cooperating Agency. DEIS at 1-13. As noted, Navajo Nation completed the purchase of Navajo Mine in December of 2013, which shifted Navajo Nation from being in a permitting/agency role concerning delegated authority on several regulations (including CCA Title V, cultural and Endangered Species Act components) to a project proponent, as owner of Navajo Mine. OSM, as Lead Agency for the DEIS, and the Office of Environmental Compliance and Policy ("OEC") – "as cooperating agency to assist with compliance of NEPA and other applicable Federal laws," DEIS at 5-2 – should have immediately (in late 2013) removed Navajo Nation from the project Memorandum of Understanding where Navajo Nation had Cooperating Agency status. Cooperating agencies (i.e., agencies with jurisdiction by law or special expertise) and agencies that are authorized to develop or enforce environmental standards, must comment on environmental impact statements within their jurisdiction, expertise or authority. 40 C.F.R. §§ 1503.2, 1508.5. OSM has inappropriately allowed Navajo Nation to continue to participate in formulation of the DEIS even where the status of Navajo Nation changed from agency oriented actions to a proponent of continued operations at Navajo Mine (as new owner). This situation presents a conflict of interest that OSM has failed to address or remedy. Further, as noted elsewhere in this comment letter, the Navajo Nation has contracted away its rights to enforce its tribal environmental standards on the FCPP, further evidencing its conflict of interest in this matter.

307.007

Response 307.005

The Project Proponent for the SMCRA permit is NTEC; MMCo (formerly BHP Navajo Mine Company) is the operator of the mine, and will continue to hold some of the permits, as described in the Draft EIS. Further information on permit status, beyond that provided in the Draft EIS, is available in the Permit Transfer EA conducted for OSMRE's decision whether to transfer the SMCRA permit from BHP Navajo Mine to NTEC.

Response 307.006

See Master Response #7 for an explanation regarding the Navajo Mine Permit Transfer EA relationship to the Draft EIS. In regard to the request for due diligence documents, these are developed as part of a transaction to inform business decisions, therefore, such documentation is not a part of the Proposed Project evaluated in the Draft EIS.

Response 307.007

NTEC is an LLC created by the Navajo Nation and is a project applicant. In their purchase of the mine and with the transfer of the SMCRA permit, NTEC has stepped into the role of BHP Navajo Mine Company. The Navajo Nation is not a project applicant. They are a Cooperating Agency due to their tribal trust lands involved, issuance of the 401 Clean Water Act Certification, and jurisdiction over the project. The Navajo Nation is not the lead agency for the NEPA process, and at most can provide input for OSMRE's consideration during development of the Draft EIS.

For the role of the Navajo Nation in the enforcement of tribal standards at FCPP, please see Master Response 11, Covenant 17.

COMMENT #307

2. The DEIS Fails To Recognize and Explain Applicable Regulations

In addition to failing to explain who is acting as the Project Proponent, the DEIS presents a muddled picture of the applicable regulatory structure at the mine and power plant. The DEIS states that under covenant 17 of APS's lease for the FCPP, the Navajo Nation may not impose tribal regulation on the operation of FCPP. DEIS at 4.8-3, 4.5-4. OSM then states that it may not rely on tribal water quality standards or tribally listed endangered species to assess the environmental impacts of the DEIS alternatives. *Id.* However, the DEIS then contradicts itself by stating "[t]he Navajo Mine and FCPP are located on the Navajo sovereign tribal land; therefore, air emissions and air quality are under the jurisdiction of the Navajo Nation Environmental Protection Agency ("NNEPA") and overseen by the EPA Region IX in San Francisco." DEIS at 4.1-1. The DEIS attempts to explain this contradiction by stating: "In 2005, the NNEPA and owners of the FCPP entered into a Voluntary Compliance Agreement that resolves jurisdictional authority dispute and states that the administration and enforcement of the NNEPA permit cannot be more stringent than EPA limits and federal court decisions; thereby, limiting the tribe's ability to enforce more stringent limits than that established by the EPA." DEIS at 4.1-1, *fit.* 1.

307.008

The Conservation Groups reject the notion that OSM may ignore tribal environmental standards for purposes of this NEPA process. The Navajo Nation has set environmental standards that have universal applicability on the reservation. OSM has a duty to consider compliance with all such tribal environmental standards in conducting its NEPA assessment. More specifically, NEPA regulations impose a duty on OSM to consider "[p]ossible conflicts between the proposed action and the objectives of Federal, regional, State, and local (*and in the case of a reservation, Indian tribe*) land use plans, policies and controls for the area concerned. 40 C.F.R. § 1502.16(c) (*emphasis added*); *see also* 40 C.F.R. § 1506.2(d). OSM's failure to assess compliance with tribal water quality standards, endangered species regulations, and other tribal environmental standards violated the regulatory requirements of NEPA.

Furthermore, even assuming, *arguendo*, that the Navajo Nation's water quality or other protective standards cannot be *enforced* against the FCPP, this does not obviate OSM's procedural obligation, in accord with NEPA, to take a hard look at environmental impacts relative to those standards. Given that such standards are presumably designed to actually protect water quality—including use of that water for, e.g., swimming, fishing, agriculture, and aquatic wildlife—these standards provide critical benchmarks for gauging the acceptability of coal operations to guide the development of mitigation measures and to ensure that OSM's choice of action is reasoned and informed. Indeed, by not providing this analysis, OSM's DEIS strongly suggests that there is something to hide regarding impacts.

307.009

The Conservation Groups also object to the attempt by the Navajo Nation and the owners of the APS to prevent OSM from applying tribal standards through a series of contractual agreements. The owners of the FCPP should not be able to "pick and choose" the tribal environmental standards with which it wishes to comply. Instead, the FCPP is subject to the same generally applicable tribal environmental standards as all other parties. OSM's uncritical acceptance of this scheme to allow the largest polluter on the Navajo Nation to contractually avoid compliance with tribal environmental law is arbitrary, capricious, unconstitutional, and a violation of the

307.010

Response 307.008

The EIS utilizes and discloses tribal environmental standards where applicable within the Regulatory Framework subsection of each resource category, including 4.1-4, 4.5-4, and 4.8-3, in accordance with NEPA requirements. Table 1-1 also includes regulatory actions and roles of the Navajo Nation and Hopi Tribe. Further, Section 4.5.4 of the EIS states that "The analysis of potential impacts to water quality is based on a comparison of water quality monitoring data at the FCPP and Navajo Mine Lease Area to NNEPA standards. These standards although not applicable to the FCPP, provide a consistent metric against which to evaluate potential changes to water quality as a result of the project alternatives. Further, the NPDES permit includes monitoring for some constituents for which NNEPA standards exist; these permit limits match the NNEPA standards." See Master Response #11 related to Covenant 17.

Response 307.009

Figure 4.5-8 provides a comparison of Morgan Lake surface water quality sampling to Navajo Nation standards for those constituents that were detected. Figure 4.5-9 compares water quality monitoring data in Chaco River upstream and downstream of the FCPP to Navajo Nation standards, and has been updated to include more recent monitoring data. A discussion of these results is provided on pages 4.5-33 and 4.5-34 of the Draft EIS. As shown on Figure 4.5-8, the concentration of constituents were at or below the Navajo Nation standard for all constituents, with the exception of one data point for aluminum which exceeds the chronic standard for aquatic habitat. Based on these data, OSMRE's analysis concludes on page 4.5-57 that "continued operations regarding uptake and discharge of water from Morgan Lake would not adversely affect surface water quality of water bodies in the vicinity of the plant."

Response 307.010

The EIS utilizes and discloses tribal environmental standards where applicable within the Regulatory Framework subsection of each resource category, in accordance with NEPA requirements. See Response 307.008 and 307.009 for a discussion of OSMRE's use of "tribal environmental standards as benchmarks." See Master Response #6 Recirculating the Draft EIS and Master Response #11 related to Covenant 17.

COMMENT #307

NEPA regulations. OSM must, at the least, provide a critical analysis explaining why this scheme is legally permissible. OSM must also, regardless, re-issue the DEIS for public comment after conducting a full and complete analysis of whether the DEIS alternatives will comply with federal, state, local, and generally applicable *tribal* environmental laws and, independently, take a hard look at impacts by using tribal environmental standards as benchmarks to guide the development of mitigation measures and to ensure that OSM's choice of action is reasoned and informed.

C. **NEPA Requires OSM Both To Consider Carefully The Project's Significant Environmental Impacts, and To Ensure That Relevant Information Is Available To The Public; the DEIS Does Not Fulfill These Requirements.**

NEPA is "our basic national charter for protection of the environment." 40 C.F.R. § 1500.1(a). "The centerpiece of environmental regulation in the United States, NEPA requires federal agencies to pause before committing resources to a project and consider the likely environmental impacts of the preferred course of action as well as reasonable alternatives." *New Mexico ex rel. Richardson v. Bureau of Land Mgmt.*, 565 F.3d 683, 703 (10th Cir. 2009); 42 U.S.C. § 4331(b). "NEPA's purpose is twofold: (1) to ensure that agencies carefully consider information about significant environmental impacts and (2) to guarantee relevant information is available to the public." *Northern Plains Resource Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1072 (9th Cir. 2011) [hereinafter "NPRC"]. An "action-forcing" statute, "NEPA's purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action." 40 C.F.R. § 1500.1(a), (c). NEPA thus compels agencies to take a "hard look" at the environmental consequences of its proposed action, carefully reviewing the record to ascertain whether the agency decision is "founded on a reasoned evaluation of the relevant factors." *Wetlands Action Network v. U.S. Army Corps of Eng'rs*, 222 F.3d 1105, 1114 (9th Cir. 2000) (*rev'd on other grounds Wilderness Soc'y v. U.S. Forest Service*, 630 F.3d 1173, 1178 (9th Cir. 2011)).

To accomplish these goals, NEPA requires that all federal agencies prepare a "detailed statement" regarding all "major federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). This statement, an EIS, must, among other things, describe the "environmental impact of the proposed action," and evaluate alternatives to the proposal. *Id.* An EIS "shall provide full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. An agency must therefore take a hard look at the direct, indirect, and cumulative impacts of the proposed action. 40 C.F.R. §§ 1502.16, 1508.7, 1508.8, 1508.25. The agency also must "study, develop, and describe alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources . . ." 42 U.S.C. § 4332(E). CEQ regulations provide that the alternatives evaluation "is the heart of the environmental impact statement." 40 C.F.R. § 1502.14. It should "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. § 1502.14.

The Project DEIS that OSM has prepared does not meet NEPA's requirements. First, instead of illustrating that "OSM carefully consider[ed] information about significant environmental

Response 307.011

With regard to taking a "hard look" in general, please see Master response #1. The EIS provides a comprehensive and detailed analysis for all resource areas and technical issues raised in scoping. The technical methodologies employed for each resource area relied upon best available information and quantified potential effects. Specific reasoning for how each resource takes a "hard look" at issues is discussed in the responses below. In regards to cumulative effects, the baseline accounts for the past 50 years of FCPP/Navajo Mine operations; see Master Response 14. In many instances, prior operations have influenced the quality and characteristic of the existing environment and those effects are captured in the existing environment characterization. For example, Section 4.15.2.1 discusses historic CCR placement in Navajo Mine as part of the Affected Environment.

COMMENT #307

impacts,” it reveals that OSM failed to take a hard look at the impacts of continued operation of the Navajo Mine and FCPP for an additional 25 years. OSM’s analysis is deficient in several respects. OSM improperly defined the baseline, and thus discounts significant impacts. OSM failed to take a hard look at impacts of the Project on climate change, public health, water resources, air quality, coal combustion waste, endangered species, and environmental justice, trust assets, cultural resources, and cumulative impacts. Finally, OSM also failed to “guarantee relevant information is available to the public.” *Northern Plains Resource Council*, 668 F.3d 1067, 1072. Not only does the EIS fail to provide sufficient information as noted, OSM’s public participation process has been lacking: OSM has not allowed sufficient time for review of the Project DEIS, and public meetings were lacking in both information and a process by which to ensure that the public was welcomed, could provide information, and have questions about the Project DEIS answered. 307.012

The Conservation Groups request that OSM significantly amend the DEIS to incorporate and respond to the information and issues raised below, as well as the information and concerns raised in the Conservation Groups’ scoping comments. At that point, we request that OSM release an amended DEIS so that the public has an opportunity to comment on a DEIS that adequately describes the impacts of the Proposed Action.

D. OSM Has Illegally Defined The Baseline By Which Impacts Are Measured

Throughout the DEIS, OSM relies upon an improper baseline by which to measure impacts of the Proposed Action. This deficiency is critical, in particular, because neither OSM nor any other federal agency has ever completed a comprehensive environmental review of the mine and power plant complex, evidencing the fact that this so-called “baseline” is one that hides largely unknown and potentially significant direct, indirect, and cumulative impacts. In this context, the additional impacts caused by another 25 years of coal mining, coal combustion, and coal ash waste disposal could constitute the proverbial ‘straw that breaks the camel’s back,’ in particular at the regional and local scale relevant to properly understanding the scope, magnitude, and long-term consequences of coal operations at this complex to inform alternatives, mitigation measures, and the very propriety of permitting further coal operations.

OSM quotes from the CEQ guidance on establishing a proper baseline, but then completely ignore that guidance in the DEIS. CEQ notes specifically: 307.013

The current condition is frequently used as the benchmark for comparing the environmental effects of the alternatives. However, in cases of continued operations, the current condition may not adequately represent how actions have impacted resources in the past, are currently impacting resources, or how resources might respond to future impacts. Designating existing environmental conditions as a benchmark may focus the environmental impact assessment too narrowly, overlooking cumulative impacts of past and present actions or limiting assessment to the Proposed Action and future actions. For example, if the current environmental condition were to serve as the condition for assessing the impacts of relicensing a dam, the analysis would only identify the marginal environmental

Response 307.012

Please see Master Response #8, Draft EIS Comment Period Was Too Short. OSMRE extended the comment period by 30 days in order to provide additional time for the public to review the EIS and provide comments. In total, the public was given 91 days from March 28 to June 27, 2014 to review and comment on the Draft EIS. This public comment window is effectively double the length of time provided in the OSMRE NEPA Handbook (Section 2.E.3.n). In response to the claim that the public forum was not adequate, please see Master Response #9, Public Meeting Format.

Response 307.013

Please see Master Response #14, No Action Alternative and Environmental Baseline

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changes between the continued operation of the dam and the existing degraded state of the environment. In this hypothetical case, the affected environment has been affected for more than 50 years with accompanying declines in flows reductions in fish stocks, habitat loss, and disruption of hydrologic functions. If the assessment took into account the full extent of continued impacts, the significance of the continued operation would more accurately express the state of the environment and thereby better predict the consequences of relicensing the dam (CEQ 1997).

DEIS at 4-1. CEQ's guidance is reinforced by the CEQ regulations implementing NEPA. CEQ's definition of cumulative effects, for example, provides that OSM's duty to take a hard look at impacts encompass "the incremental impact of the action *when added to other past, present, and reasonably foreseeable actions* regardless of what agency (Federal or non-Federal) or person undertakes such actions." 40 C.F.R. § 1508.7. This definition then proceeds to explain that "[c]umulative impacts can result from individually minor but collectively significant actions taking place over a period of time." *Id.*

Despite CEQ's admonishment in its guidance – as reinforced by the definition of "cumulative effects" – that federal agencies not discount the "cumulative impacts of past and present actions or limiting assessment to the Proposed Action and future actions," as well as CEQ's regulations themselves, OSM proceeds to do just that. OSM asserts that two completed actions – and these actions' past, present, and reasonably foreseeable impacts – constitute part of the baseline, including the BART determination, and the Navajo Mine transfer. DEIS at 4-1. As a result of this definition of the baseline, OSM fails to take a hard look at the direct, indirect, and cumulative impacts caused by continued operation of the Navajo Mine and FCPP.

First, to reiterate a point made above, OSM's so-called "baseline" operates to obscure and hide the true scope, magnitude, and long-term consequences of coal operations. For example, there is an obvious and significant difference between 50 years of mercury deposition caused by coal-fired power plant combustion and 75 years of mercury deposition caused by coal-fired power plant combustion, even if the last 25 years is anticipated to result in marginally less deposition than the first 50 years. In this light, reducing suffering caused by impacts from the mine and power plant may be welcomed, but reduction of impacts neither eliminates impacts nor does it address past and cumulative impacts. Thus, OSM must take a hard look at the true extent of that suffering and the true extent of the impacts causing that suffering by taking a hard look at past, present, and future impacts in the aggregate, to identify where impacts are additive or synergistic, and to calibrate alternatives and mitigation measures accordingly. It is only when OSM is armed with such a "hard look" environmental review that it can provide itself a basis for determining whether coal operations should continue beyond 2015.

Second, with its inclusion of the BART determination as part of the baseline, OSM ignores the past 50 years of operation of Navajo Mine and FCPP. FCPP and its five coal burning units have been in nearly continuous operation from the late 1960s through 2013. Each year of operation involved myriad and persistent direct, indirect, and cumulative impacts to the land, air, water, and people of the region expressly caused by coal mining at the Navajo Mine, the coal

Response 307.014

With regard to taking a "hard look" in general, please see Master Response #1. The EIS provides a comprehensive and detailed analysis for all resource areas and technical issues raised in scoping. The furthest extent, the technical methodologies employed for each resource area relied upon best available information and quantified potential effects. Specific reasoning for how each resource takes a "hard look" at issues are discussed in the responses below. In regards to cumulative effects, the baseline accounts for the past 50 years of FCPP/Navajo Mine operations. In many instances, prior operations have influenced the quality and characteristic of the existing environment and those effects are captured in the existing environment characterization. For example, Section 4.15.2.1 discusses historic CCR placement in Navajo Mine as part of the Affected Environment. The BART determination and the Navajo Mine transfer are analyzed in this EIS; however, by acknowledging the changes from these federal actions in the environmental baseline, the Draft EIS avoids attributing beneficial impacts (e.g., reduced air emissions) to the Action alternatives, See Master Comment #14.

Response 307.015

Master Response #14 in part addresses this question. The effects of past operations are fully addressed in the EIS, in part through the description of the environmental setting. The setting includes two clearly differentiated discussions: the first is of the past 50 years of operations at full capacity, and the second is operations from 2014 to 2018, the transition period within which the compliance actions with the EPA's FIP for BART would be implemented. Public health is explicitly addressed in this way, including site specific data (soil, water, and air), as well as regional studies conducted by government agencies. With regard to mercury deposition, regional surface water quality conditions, which account for historic, ongoing power plant emissions, are described in Section 4.5.2.2; the results of site-specific soil data are addressed in public health and ecological risk

assessment; potential impacts of mercury deposition on fish species within the San Juan Basin waterway is discussed on Page 4.8-69.

The cumulative impact assessment, which addresses the cumulative impacts of past, present, and reasonably-foreseeable future actions, explicitly brings the historic perspective to bear. This is also carried through the environmental justice analysis.

Response 307.016

See Master Response #14, Baseline. As described in the introduction to Chapter 4, Approach to Environmental Analysis, there have been two completed federal actions that may affect the continuing operations at FCPP, and at Navajo Mine. At FCPP, the EPA has made its ruling with respect to BART to control air emissions. For Navajo Mine, OSMRE has approved the SMCRA permit transfer from BNCC to NTEC (Section 2.4.1). These completed federal actions form part of the environmental baseline to which the effects of continuing operations and the Proposed Actions are compared.

However, in each description of the environmental setting, the measured current conditions (prior to 2014) are described first; this includes the 50 years of prior operations, and describes the baseline that most people in the vicinity of the project experience. This description is followed by the expected conditions as a result of BART compliance or as a result of the SMCRA (interim period: 2014-2018) permit transfer. Environmental consequences are then determined relative to this baseline condition.

This approach does not ascribe any environmental benefits to the project. In contrast, the benefits of these two completed actions are simply described as part of the environmental setting, specifically in that part of the setting that describes the “interim period” during which the FIP for BART is implemented.

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combustion process at the FCPP, and the disposal of coal ash waste. Year in and year out, these impacts piled up, causing ever increasing and, at the least, ever persistent impacts.

On December 31, 2013, APS ceased operation of Units 1-3. This DEIS was issued for public comment in March 2014. Despite the fact that Units 1-3 had been in continuous operation for nearly 50 years from the late 1960s through all of 2013, OSM considers the cessation of operations of Units 1-3 to be the baseline for the FCPP. Units 1-3 were in operation when this NEPA process was commenced. Units 1-3 were in operation when OSM elicited scoping comments from the public. At the time OSM issued its DEIS, Units 1-3 had been dormant for only 2 months. Nevertheless, OSM ignores the nearly 50 years of operation of units 1-3—and those units' attendant impacts—and instead claims that 2 months of dormancy at these units represents the baseline. With this conceit, OSM sweeps the prior 50 years of operations under the rug, effectively concluding that continued coal operations to provide 1500-MW of power are a benefit to the environment. This conclusion is absurd; while coal impacts moving forward may be less, that does not mean they provide a benefit to the environment, or that impacts are minor or insignificant and thus do not require serious mitigation or a serious evaluation regarding the propriety of authorizing another 25 years of coal operations.

The CEQ NEPA Regulations direct federal agencies to "commence[] its NEPA process at the earliest time possible." 40 C.F.R. § 1501.2(d)(3). More specifically, "[f]or applications to the agency appropriate environmental assessments or statements shall be commenced no later than immediately after the application is received." 40 C.F.R. § 1502.5(b). It appears that OSM intentionally delayed issuance of the DEIS until after December 30, 2013, to claim that FCPP's retirement of Units 1-3 could be considered part of the baseline for the project. To help clarify OSM's action, OSM should clearly state—and support with evidence in the record—when OSM initially received an application from APS, BHP, or the Navajo Nation to commence the NEPA process. Alternatively, if this NEPA process was initiated by OSM, OSM should state the date that this NEPA process was initiated, and under what basis. OSM should also include all documents supporting or involving the commencement of this NEPA process into the administrative record for this proceeding. Further, OSM should include in the administrative record any and all communications discussing the issuance of the DEIS after December 30, 2013 or the cessation of operations of Units 1-3.

As discussed in more detail throughout these comments, by sweeping the 50 years of coal mining and combustion at the FCPP and Navajo mine complex under the rug, OSM purports to improperly "focus the environmental impacts assessment too narrowly," and "overlook impacts of past and present actions." CEQ Guidance, quoted at DEIS at 4-1; 40 C.F.R. § 1508.7. Nowhere does the DEIS take a proper hard look at the past impacts from coal mining, coal combustion, or coal ash disposal. Thus, OSM completely disregards the significant degradation caused by Navajo Mine and FCPP over the last 50 years, and limits its concerns about impacts to the 25 years of future operation, as if it were operating on a clean slate. See, e.g., DEIS at 4.5-41 (discounting water quality issues: "Information on existing water resources was used as the baseline to measure and identify potential impacts from the Proposed Action and alternatives."); DEIS at 4.5-45 (discounting increased pollution as within the variation of "baseline" wells); DEIS at 4.5-59 (discounting continued deposition of toxics to waterways due to relative impacts: "Therefore, while mercury and selenium would continue to be deposited into the San Juan River

Response 307.017

As demonstrated by the project timeline and administrative record, the EIS process was initiated in July 2013 and the final BART decision was published August 2013, during the scoping period. As such, the Draft EIS baseline reflects the requirement of implementing this decision (which required either shut-down of Units 1, 2, and 3 or installation of emissions controls on all five units in order to meet specific thresholds). The timing of this implementation had no bearing on the date of issuance of the Draft EIS or its contents.

Response 307.018

Please see Master Response #1, Deficient Analysis and Master Response #14, Baseline, and response 307.019. In order to further clarify how the EIS analyzes the consequences of historic operations as it pertains to Section 4.5 Water Resources/Hydrology the following text has been added to page 4.5-1: The discussion incorporates the effects of the past 50 years of operations of the FCPP and the Navajo Mine on water resources through comparison of current conditions to water quality standards; current best management practices; historic data collected prior to FCPP and/or Navajo Mine operations; and hydrologic data collected upgradient and/or upstream of FCPP and/or Navajo Mine operations.

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watershed, surface water quality impacts would be minor compared to baseline conditions.); DEIS at 4.7-30 (discounting impacts to wildlife from continued operation merely because they are not an increase over “baseline”).

While it is certainly a good thing that surface water quality impacts from coal operations over the course of the next 25 years will be less (we reject OSM’s subjective use of “minor,” in particular given its failure, detailed above, to use Navajo Nation water quality standards as a benchmark for analysis) than operations over the preceding 50 years, OSM must take a hard look at the full 75 years of coal operation impacts, in particular to gauge whether these impacts are additive (e.g., 25 years of impacts + 50 years of impacts=cumulative impact) or synergistic (e.g., 50 years of impacts x 25 years of impacts=cumulative impact) given their persistence.

Including the mine transfer as part of the baseline presents additional problems. OSM seems to assume that because it has included that transfer as part of the baseline, that it need not consider numerous aspects of the Project, instead claiming that those impacts were addressed in the Environmental Assessment for the transfer.¹³ However, the Navajo Mine Transfer EA specifically states that it does not address impacts beyond 2016:

This EA considers implications of the permit and lease transfers through the end of the current coal supply agreement, July 2016 (OSM 2012b). Proposed Navajo Mine operations beyond the life of the coal supply agreement would be analyzed in the Environmental Impact Statement (EIS) currently being prepared by OSM (OSM 2012c).¹⁴

Moreover, the Navajo Mine Transfer EA never conducted a comprehensive analysis of the mine’s full history of impacts—i.e., the cumulative impacts caused by 50 years of coal mining—and certainly did not consider those impacts relative to the context and intensity of connected and cumulative coal-fired combustion operations. As the DEIS only addresses impacts beyond 2016, OSM cannot point to the transfer EA as a proxy for analysis of post-2016 impacts.

¹³ See, e.g., Videos of Public Meeting (available at: https://www.youtube.com/watch?v=p_5wBhTj4-k&feature=youtu.be, and <https://www.youtube.com/watch?v=B0JBhUk9Ag> (last accessed June 26, 2014)).

¹⁴ OSM, *Environmental Assessment, Navajo Mine SMCRA Permit NM-0003F Transfer*, 2 (November 2013) (attached as Exhibit 11); OSM, *Finding of No Significant Impact, Navajo Mine SMCRA Permit NM-0003F Transfer*, (November 2013) (attached as Exhibit 12); see also Letter from Pearl Chamberlin, Acting Regional Director, United States Department of the Interior, Bureau of Indian Affairs, Navajo Region, to Charles Roybal, BHP Navajo Coal Company, May 10, 2013 (attached as Exhibit 13); Letter from Pat Risner, President, BHP Navajo Coal Company and Harrison Tsosie, Attorney General, Navajo Nation to Sharon Pinto, Regional Director, United States Department of the Interior, Bureau of Indian Affairs, May 15, 2013 (attached as Exhibit 14).

Response 307.019

With regard to using Navajo Nation water quality standards see Responses 307.008, 307.009, and 307.010: Figure 4.5-8 provides a comparison of Morgan Lake surface water quality sampling to Navajo Nation standards for those constituents that were detected. Figure 4.5-9 compares water quality monitoring data in Chaco River upstream and downstream of the FCPP to Navajo Nation standards. A discussion of these results is provided on pages 4.5-33 and 4.5-34 of the Draft EIS. As shown on Figure 4.5-8, the concentration of constituents were at or below the Navajo Nation standard for all constituents, with the exception of one data point for aluminum which exceeds the chronic standard for aquatic habitat. Based on these data, OSMRE’s analysis concludes on page 4.5-57 that “continued operations regarding uptake and discharge of water from Morgan Lake would not adversely affect surface water quality of water bodies in the vicinity of the plant.” With regard to taking a hard look at the full 75 years of operation, please see Master Response #14, Baseline and Response 307.018. As described, the analysis considers the potential impact of another 25 years of operation in addition to the baseline conditions that are present and account for the past 50 years. With regard to the use of “Minor”, CEQ regulations require that NEPA analyses discuss the magnitude and duration of impacts; OSMRE NEPA Handbook page 2-31 specifically directs OSMRE to “characterize impact levels, i.e., negligible, minor, moderate, major or low, medium, high, etc.” Based on the data presented and comparison to Navajo Nation water quality standards, the conclusion matches the significance criteria presented in Section 4.5.4. Changes would affect the quantity or quality but not the use of water or are similar to those caused by random fluctuations in natural processes.

Response 307.020

Please see Master Response #14, Baseline and Master Response #7, Mine Transfer EA.

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Instead, as explained by the Conservation Groups, OSM should have discussed the transfer and the Proposed Action in a single EIS, partly to avoid the absurd consequences now apparent in the DEIS.¹⁵ Furthermore, OSM should have taken a comprehensive hard look at the mine's historic impacts – impacts caused by 50 years of coal mining and coal ash waste disposal. As they have engineered it, BIA and OSM never fulfill their responsibilities to comprehensively assess the environmental and financial implications of the mine transfer (and underlying mine operations at the heart of that transfer) and the changing status of the Navajo Nation from Cooperating Agency role to project proponent (with a financial stake in the perpetuation of the Navajo Mine and FCPP. OSM thus acts arbitrarily and capricious when it segments connected and cumulative actions and consequently fails to address the significant environmental and financial implications of the transfer. See *Utahns for Better Transp. v. U.S. Dept. of Transp.*, 305 F.3d 1152, 1182-83 (10th Cir. 2002); *Thomas v. Peterson*, 753 F.2d 754, 758 (9th Cir. 1985); 40 C.F.R. § 1508.25(a) (agencies may not “divid[e] a project into multiple ‘actions,’ each of which individually has a insignificant environmental impact, but which collectively have a substantial impact);” *Wetlands Action Network v. U.S. Army Corps of Eng’rs.*, 222 F.3d 1105 (9th Cir. 2005) (the test for determining connected actions is “whether each of two projects would have taken place with or without the other and thus had independent utility”); *Conservation Soc’y of S. VI. v. Sec. of Transp.*, 531 F.2d 637, 640 (2d. Cir. 1976).

The Project and the mine transfer are both connected and cumulative actions. NEPA regulations provide that actions are connected if they “[c]annot or will not proceed unless other actions are taken previously or simultaneously” or if they “[a]re independent parts of a larger action and depend on the larger action for their justification.” 40 C.F.R. § 1508.25(a)(1)(ii)-(iii). Relevant factors for determining whether actions are connected include, whether the segment (1) “has logical termini”; (2) “has substantial independent utility”; (3) “does not foreclose the opportunity to consider alternatives”; and (4) “does not irretrievably commit federal funds for closely related projects.” *Utahns for Better Transp.*, 305 F.3d at 1183. The transfer and approval of post-2016 operations are also cumulative actions. 40 C.F.R. § 1508.25(b). “Cumulative actions” are actions that, “when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.”

Even if these actions are somehow deemed neither connected nor cumulative, OSM still, as discussed below, has an independent duty to address indirect and cumulative impacts, in particular where impacts were not addressed in prior environmental reviews. 40 C.F.R. §§ 1508.7, 1508.8(b). OSM’s transfer EA delimited the temporal scope of its assessment to only impacts occurring through the life of the permit—i.e., the end of 2015. Yet the indirect consequence of the transfer was to continue the Navajo mine’s operations and, therefore, to set the stage – i.e., create indirect impacts from – mine and power plant operations to continue in 2016 and beyond. Moreover, the impacts of continued mine operations – whether pre-transfer, or during the time period assessed by the Navajo mine transfer EA, when combined with impacts caused by post-2016 operations, cause cumulative impacts.

307.021

Response 307.021

Please see Master Response #7, Mine Transfer EA, #14, No Action Alternative and Environmental Baseline. Cumulative impacts are addressed in Section 4.18 of the EIS.

¹⁵ See Exhibits 3-7.

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OSM's DEIS should have fully analyzed the implications of the Navajo Mine transaction, including evaluation of due diligence reports and full analysis of financial information concerning continued operations of FCPP and Navajo Mine.¹⁶ Ideally, this would be done in a single EIS, but OSM's decision to separate out these various projects, even if somehow permissible in accord with NEPA, does not obviate the agency's duty, if it prepares multiple NEPA analyses, to take a hard look at past, present, and cumulative impacts caused by pre-2016 mining operations, pre-2016 coal-fired power plant operations, and pre-2016 coal combustion waste disposal impacts, in conjunction with post-2016 mine, power plant, and coal combustion waste impacts. We would note that the inclusion of the SMCR permit in the DEIS as part of the Proposed Action makes the assigning of transfer liabilities (that can only be understood relative to a comprehensive assessment of impacts) and assets, defining of ownership and regulatory requirements, and the responsibility of the Federal government even more important to consider in the context of a true hard look NEPA review, which this DEIS is not.

307.022

E. The Project DEIS Does Not Meet the Requirements of NEPA Because OSM Has Failed To Take The Requisite Hard Look At Significant Environmental Impacts, Including Direct, Indirect, and Cumulative Impacts, of the Project.

1. OSM Failed To Take A Hard Look At The Project's Contributions To Climate Change

a. The Project's Contributions to Climate Change Are Significant, And Warrant Additional Analysis

The United States National Climate Assessment recently released a report discussing impacts caused by climate change that are occurring presently, and that are expected to occur in the future.¹⁷ The report notes: "observed warming and other climatic changes are triggering wide-

¹⁶ The Navajo Nation spent approximately \$3 million on the preparation of a due diligence assessing the risks and liabilities associated with the purchase of the Navajo mine from BHP. Navajo Nation Press Release Discussing Due Diligence Report (attached as Exhibit 15). This due diligence report has never been released to the public, despite requests from Diné C.A.R.E. See Open File Request to Navajo Nation from Diné C.A.R.E. (April 29, 2014) (attached as Exhibit 16). The DEIS should have included the Due Diligence Report as an appendix to the DEIS because it contains valuable information on potential environmental, economic and human health risks and impacts. Such information is directly relevant to a NEPA analysis of the impacts of continued operation of the mine for an additional 25 years. We ask that the due diligence report and all related information be released to the public as a component of the DEIS and that the public be given an adequate amount of time to review and comment on the report and related information as part of the DEIS public comment process.

¹⁷ Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., *Climate Change Impacts in the United States: The Third National Climate Assessment*. U.S. Global Change Research Program (May 2014) (attached as Exhibit 17).

Response 307.022

See Master Response #7 for an explanation regarding the Navajo Mine Permit Transfer EA relationship to the Draft EIS. With regard to the request for the due diligence documents, these are developed as part of a transaction to inform business decisions, therefore, such documentation is not a part of the Proposed Project evaluated in the Draft EIS.

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ranging impacts in every region of our country and throughout our economy,” and that GHG “emissions come mainly from burning coal, oil, and gas.”¹⁸ Contrary to assertions in the Project DEIS that climate change will only present challenges in the future, *see* DEIS at 4.2-1, the Climate Assessment makes it clear the challenges from climate change are already upon us, and the need to reduce GHG emissions is pressing.¹⁹ President Obama reiterated these conclusions, noting: “This is not some distant problem of the future. This is a problem that is affecting Americans right now. Whether it means increased flooding, greater vulnerability to drought, more severe wildfires – all these things are having an impact on Americans as we speak.”²⁰

Given this imperative, the need to address climate change at FCPP is obvious. FCPP historically has been the 15th most-polluting power plant of GHGs,²¹ emitting around 14 million metric tons of CO₂e each year, which by itself represented over half a percent of total U.S. electric power generation emissions nationally, and 18.5 percent of regional electric power generation emissions, making it the largest contributor in the state. *See* DEIS at 4.2-10, 4.2-11.²² The electric power generation sector emits one-third of all GHG emissions nationally, with FCPP contributing 0.2 percent of total U.S. GHG emissions. *Id.* Even after the retirement of units 1-3, and once Selective Catalytic Reduction is installed on the remaining units, FCPP will continue to emit at least 10.34 million metric tons of GHGs annually, still placing it easily within the top 50 most GHG polluting coal-fired power plants in the country. DEIS at 4.2-16.²³ Over the 25 years that the Project anticipates continued operation, FCPP would contribute 258.5 million metric tons of CO₂e, the equivalent of over 29 billion gallons of gasoline consumed, or the electricity use of over 35.5 million homes in one year.²⁴

Emissions from the Navajo Mine would add an additional 70,251 metric tons of CO₂e, an additional 1.8 million metric tons over the life of the Proposed Action. DEIS at 4.2-22. As

¹⁸ *Id.* at 1-2.

¹⁹ *Id.*, *passim*.

²⁰ Justin Gillis, *U.S. Climate Has Already Changed, Study Finds, Citing Heat and Floods*, N.Y. Times, May 6, 2014 (attached as Exhibit 18).

²¹ Environment America, *America’s Dirtiest Power Plants: Their Oversized Contribution to Global Warming and What We Can Do About It*, 28 (Sept. 2013) (attached as Exhibit 19).

²² *See also*, Rodica Lindenmaier, Manvendra K. Dubey, Bradley G. Henderson, Zachary T. Butterfield, Jay R. Herman, Thom Rahn, and Sang-Hyun Lee, *Multiscale observations of CO₂, CO₂, and pollutants at Four Corners for emission verification and attribution*, Proceedings of the National Academy of Sciences (2014) (attached as Exhibit 20).

²³ Exhibit 19 at 28.

²⁴ *See* EPA Greenhouse Gas Equivalency Calculator (available at: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>).

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discussed in our scoping comments,²⁵ although the mine's emissions are significantly smaller than FCPP's, they are nonetheless substantial, and made even more problematic given that they are primarily fugitive emissions of methane, a GHG with a global warming potential ("GWP") 33 times that of carbon dioxide over a 100-year time period, and 105 times as potent as carbon dioxide over a 20-year time period.²⁶ EPA, notably, does not assess methane's GWP over a near-term 20-year time period, using only a 100-year time period. Furthermore, EPA uses an outdated methane GWP of 21, premised on the Intergovernmental Panel on Climate Change's (IPCC's) 1997 Fourth Assessment Report. The IPCC's most recent 2013 Fifth Assessment Report has abandoned the 1997 figures. Instead, while the IPCC has not updated its methane GWP's in accord with the study cited in footnote 25, it has increased its methane GWPs significantly, concluding that, over a 100-year time period, methane, accounting for carbon feedbacks, is 34 times as potent a climate pollutant as carbon dioxide and, over a 20-year time period, 86 times as potent.²⁷ Based on the Shindell study cited in footnote 25, the mine's methane emissions would contribute not 57,687 metric tons of CO₂e annually as asserted in the Project DEIS, but, rather, 90,651 metric tons CO₂e annually using a 100-year time period, or 288,435 metric tons CO₂e annually using a 20-year time period to gauge warming impacts; over the Proposed Action's 25-year life, the mine's total GHG emissions would total between 2.6 million metric tons and 7.5 million metric tons CO₂e.

As a nation, we are seeking to make changes to decrease our GHG emissions. On a personal level, homes and businesses are seeking, among other steps, to implement energy efficiency measures, reduce miles traveled or buying more efficient cars. Local and state governments are implementing broader measures, including renewable portfolio standards, and incentives for renewable energy development, among many other measures. Nationally, the President just unveiled his plan to cut carbon pollution in America.²⁸ Noting that "[p]ower plants are the largest major source of emissions in the U.S., together accounting for roughly one-third of all domestic greenhouse gas pollution," the President put the reduction of carbon pollution from power plants at the top of the list.²⁹ To implement that goal, the Administration has announced

²⁵ See Conservation Groups' Scoping Comments at 33-35.

²⁶ Shindell et al., *Improved Attribution of Climate Forcing to Emissions*, SCIENCE 2009 326 (5953), p. 716, available at: www.sciencemag.org/cgi/content/abstract/326/5953/716 (attached as Exhibit 67 to Conservation Groups' Scoping Comments); see also Robert Howarth, Drew Shindell, et al., *Methane Emissions from Natural Gas Systems* (Feb. 25, 2012) (attached as Exhibit 68 to Conservation Groups' Scoping Comments).

²⁷ IPCC Fifth Assessment Report, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2013), available at: www.climatechange2013.org.

²⁸ President's Plan to Cut Carbon Pollution in America (available at: <http://www.whitehouse.gov/climate-change> (last accessed June 26, 2014)).

²⁹ *Id.*

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new carbon pollution standards for new power plants, and just recently issued proposed carbon pollution standards for existing power plants.³⁰

Despite the urgent need for action called for by the Climate Assessment, the numerous IPCC reports, and scientists worldwide, and despite the significant GHG emissions from FCPP that will continue for 25 years if the Proposed Action goes forward, OSM amazingly concludes that “while the Proposed Action would contribute to the effects of climate change, its contribution relative to other sources would be minor in the short- and long-term.” DEIS at 4.2-23. In short, OSM is stating that 258.5 million metric tons of CO₂e does not need to be addressed because relative to total GHG emissions, the emissions are minor. What OSM’s absurd argument fails to recognize is that all GHG pollution relative to total emissions is minor. Climate change is a death by a thousand cuts; there is no one source that if shut down will solve the problem. There are few individual sources, however, that contribute to climate change as much as coal-fired power plants. As the President’s Climate Action Plans acknowledges, given that one third of U.S. GHG emissions come from power plants, they are a good place to start. OSM, however, even dismisses a third of our nation’s GHG emissions, stating: “Electrical power generation accounts for just 34 percent of GHG emissions nationwide.” DEIS at 4.2-23 (emphasis added). This blasé attitude reveals the root problem with OSM’s argument: if taken to its logical conclusion, OSM would have us all sit on our hands, as any effort to reduce GHG emissions, by OSM’s standards, could be brushed aside as minor.

Not only is OSM’s approach ridiculous, it is also illegal. NEPA does not allow an agency to sweep significant impacts under the rug without first taking a hard look at the impacts, including impacts from climate change. An agency must “consider every significant aspect of the environmental impact of a proposed action.” *Baltimore Gas & Elec. Co.*, 462 U.S. at 107 (quotations and citation omitted). To fulfill this mandate, agencies must disclose the “ecological[,] ... economic, [and] social” impacts of a proposed action. 40 C.F.R. § 1508.8(b). It is well settled that where an agency action causes greenhouse gas pollution, NEPA mandates that agencies analyze and disclose the impacts of that pollution. As the Ninth Circuit has held: “[T]he fact that climate change is largely a global phenomenon that includes actions that are outside of [the agency’s] control ... does not release the agency from the duty of assessing the effects of its actions on global warming within the context of other actions that also affect global warming. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008) (quotations and citations omitted); see also *Border Power Plant Working Grp. v. U.S. Dep’t of Energy*, 260 F. Supp. 2d 997, 1028-29 (S.D. Cal. 2003). The need to evaluate such impacts is bolstered by the fact that “[t]he harms associated with climate change are serious and well recognized,” and environmental changes caused by climate change “have already inflicted significant harms” to many resources around the globe. *Massachusetts v. EPA*, 549 U.S. 497, 521 (2007); see also *id.* at 525 (recognizing “the enormity of the potential consequences associated with manmade climate change.”).

The EIS must “discuss the actual environmental effects resulting from [the proposed action’s] emissions.” *Ctr. for Biological Diversity*, 538 F.3d at 1216. As we noted in our scoping comments, CEQ has come out with draft guidance for agencies for evaluating climate change

³⁰ *Id.*

Response 307.023

The Draft EIS acknowledges projected impacts of climate change and includes an extensive analysis of carbon dioxide equivalent (CO₂e) emissions from FCPP. The emissions data are presented in a straightforward way, neither minimizing nor exaggerating global warming potential from FCPP. The conclusion that FCPP contribution relative to other sources is minor is consistent with the impact analysis methodology employed throughout the EIS, and the methodology presented in Section 4.2. This is also consistent with the Draft Guidance published by EPA in December 2014.

The Final EIS was modified to address that in June 2014, EPA issued the “Clean Power Plan” proposal to cut carbon pollution from existing power plants. The EIS was changed to acknowledge the proposed plan; however, because of the uncertainties associated with the proposed plan and the proposed time frames, there is no change to the conclusions or analysis in the EIS.

Response 307.024

Please see Master Responses #1, Deficient Analysis, and #5, Climate Change. The EIS includes a robust analysis of climate change and the FCPP and Navajo Mine’s global warming potential, consistent with CEQ guidance. The conclusion that climate change impacts are minor relative to other sources is consistent with the impact analysis methodology employed throughout the EIS.

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impacts.³¹ CEQ's guidance provides that, as a general rule, an agency should consider a project's GHG emissions if they exceed 25,000 metric tons CO₂-equivalent (CO₂e). CEQ, *Draft Guidance* at 3. An agency should consider "direct and indirect GHG emissions," and where they are significant (i.e., greater than 25,000 tons CO₂e), they should be "quantified and disclosed," taking "account of all phases and elements of the proposed action over its expected life." *Id.* at 5; 40 C.F.R. §§ 1508.25(c)(1)-(3). CEQ's Guidance counsels: "In the agency's analysis of direct effects, it would be appropriate to: (1) quantify cumulative emissions over the life of the project; (2) discuss measures to reduce GHG emissions, including consideration of reasonable alternatives; and (3) qualitatively discuss the link between such GHG emissions and climate change." CEQ, *Draft Guidance* at 3.

OSM's quantification of emissions – although a step in the right direction – and cursory discussion of the issue of climate change, do not constitute the required hard look of the issue and the Project's contribution to the problem compelled by NEPA. As discussed above, the Project's contribution is not, as OSM would like to believe, insignificant or minor. OSM's conclusion that the Proposed Action "would not result in a major contribution to adverse effects associated with climate change," and [t]herefore, no additional mitigation is recommended," DEIS at 4.2-24, flies in the face of CEQ guidance directing that mitigation be addressed when emissions are over 25,000 tons CO₂e annually. When direct and indirect GHG emissions exceed the relevant threshold, 25,000 tons CO₂e, the agency should also consider "mitigation measures and reasonable alternatives to reduce action-related GHG emissions." CEQ, *Draft Guidance* at 3. Here, emissions will be well over 400 times CEQ's threshold for considering "mitigation measures and reasonable alternatives." Contrary to the Conservations Groups' recommendations in scoping comments, OSM has failed to include any alternatives that provide for meaningful comparison amongst impacts. Furthermore, OSM's forthright statement that it will not consider mitigation measures demonstrates that instead of taking a hard look at impacts, OSM is merely stating that there will not be any, and therefore further analysis is unnecessary.

The DEIS acknowledges that FCPP and SJGS are the overwhelming sources of GHG emissions for the state of New Mexico:

As shown in Table 4.2-6, electric power generation, including FCPP, comprised 76 percent of GHG emissions in geographic New Mexico during the 2008-2010 reporting period. Of electric power generation, FCPP contributed 45 percent, the San Juan Generating Station contributed 37 percent, and other plants contributed 18 percent. The FCPP was the largest emitter of GHGs in the geographic state during the reporting period.

DEIS at 4.2-11. A recent study published by Los Alamos National Laboratory and Department of Energy refers to the San Juan Generating Station and Four Corners Power Plant as the largest

³¹ See CEQ, *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions* (Feb. 2010) (hereinafter CEQ, *Draft Guidance*) (attached to Conservation Groups' Scoping Comments as Exhibit 62).

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point source of pollution in the United States.³² According to the Featured Research Release on the study in Science Daily on May 21, 2014:

Air pollution and greenhouse gas emissions from two coal-fired power plants in the Four Corners area of northwest New Mexico, the largest point source of pollution in America, were measured remotely by a Los Alamos National Laboratory team. Led by Laboratory senior scientist Manvendra Dubey, the study is the first to show that space-based techniques can successfully verify international regulations on fossil energy emissions. Furthermore, the study was able to distinguish that emissions from the nearby San Juan Generating Station are actually less polluting than those from the nearby Four Corners Generating Station.³³

The study concludes that 75 percent of the atmosphere (~10 km) in the region is polluted.³⁴ Given this information, it becomes indisputably apparent that the DEIS must be significantly updated to account for the atmospheric impacts to the Four Corners region from the FCPP/Navajo Mine. The fact that DOE and LANL consider SJGS and FCPP a single source of pollution points to the importance of evaluating cumulative impacts to the region. Despite the DEIS failing to analyze climate change from FCPP/Navajo Mine with the position that greenhouse gases remain unregulated, OSM and Cooperating Agencies must acknowledge, identify and evaluate the significant impacts now occurring from climate change in the Four Corners region.

The slight reduction in CO₂ from FCPP envisioned in the DEIS Proposed Action is a band-aid on a gaping wound. Carbon dioxide emissions from FCPP are historically 13 million tons per year; the plan for 2016-2041 would still allow 10.34 million tons per year. The Four Corners region continues to experience drought, fires, drier/hotter conditions that are leading to environmental and ecosystem degradation and collapse. The United States Southwest is extremely susceptible to the impacts from continued burning of coal. The Navajo Nation has seen an increase in the formation of sand dunes, which has altered the landscape and restricted traditional uses of the land.³⁵ As we are writing these comments, a massive uncontained fire of almost 15,000 acres has broken out near Asaayi Lake on the Navajo Nation (in the Chuska Mountains – in the higher elevated northeastern part of the Navajo Nation). On June 16, 2014, Navajo Nation President Ben Shelly declared a State of Emergency where families/homes are being evacuated and heavy

³² See Exhibit 20.

³³ Dep't of Energy, Los Alamos National Laboratory, *Power plant emissions verified remotely at Four Corners sites, largest point source pollution in U.S.*, Science Daily (May 20, 2014) (attached as Exhibit 68).

³⁴ *Id.*

³⁵ See studies by USGS Scientist Dr. Margaret Hiza, (available at: <http://www4.nau.edu/eeop/dunes/index.asp> (last accessed June 26, 2014)).

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smoke is inhaled by humans throughout the entire region. Sadly, this fire represents conditions that are now common in the U.S. Southwest. The Asayyi Lake fire follows on the heels of the Oak Creek Fire near Sedona, Arizona with devastating environmental and economic impacts on affected communities.

Moreover, as the DEIS meekly admits: “Due to the area’s aridity, climate change could have a substantial impact if the already low precipitation amounts decrease in the future (NM 2005).” DEIS at 4.1-16. Given these two facts, OSM’s failure to consider the Project’s contribution to climate change and the impacts already being felt in the Southwest is unsupportable. As the primary author of the Climate Assessment’s section on impacts to the Southwest explained:

“For the Southwest, climate change is water change,” said Garfin. “What affects the reliability of our water supplies, and the timing of rain and snow in our region affects everything. The snow-covered peaks of Colorado, Utah, and California are the water towers of the Southwest.”³⁶

The author notes that these impacts will be of particular significance to Native American communities:

“If I could add one more page to the Southwest section of the National Climate Assessment, I would highlight the important impacts of climate change on southwestern tribes and Native Nations, and the special vulnerabilities of Native peoples to climate change,” said Garfin. “Impacts include drying up of springs and other important sources of water, and losses of important ceremonial plant species from the same global change-type drought that has made ghost forests of millions of acres of pines across the West, including on reservation lands.”³⁷

Given what is known about the association of burning coal and climate change impacts, the DEIS must take a hard look at the impacts of continued operation of the Navajo Mine and FCPP in conjunction with global and national emissions trends—and climate change impact forecasts for the region—to take the requisite hard look at direct, indirect, and cumulative climate change impacts. The IPCC has determined that the next fifteen years are critical in averting potentially disastrous climate changes.³⁸ As President Obama’s science adviser, John P. Holdren, noted “the longer society waits to implement strong measures to cut greenhouse gas emissions, the more

³⁶ Ari Phillips, *As Population Surges, Harsh Climate of Southwest Will Only Get Harsher*, ClimateProgress, May 8, 2014 (available at: <http://thinkprogress.org/climate/2014/05/08/3434633/national-climate-assessment-southwest/> (last accessed June 23, 2014)) (attached as Exhibit 21).

³⁷ *Id.*

³⁸ Intergovernmental Panel on Climate Change, Fifth Assessment Report, *Climate Change 2014: Mitigation of Climate Change*, 2014 (available at: <http://www.ipcc.ch/report/ar5/index.shtml> (last accessed June 23, 2014)).

Response 307.025

See Master Response #5 Climate Change. The EIS includes an analysis of baseline conditions relative to climate change. The EIS addresses regional contributions to climate change from 17 electric power-generating facilities in the Four Corners region (northeastern Arizona, southwestern Colorado, Navajo Nation, and northwestern New Mexico) within a distance of 400 km (248 miles), including FCPP and SJGS that report to Federal and tribal EPAs pursuant to Part 75 (Table 4.2-4). Section 4.2 has additionally been expanded to discuss the social impacts of climate change. The impact of climate change on other resources is addressed in the cumulative impacts section 4.18 of the EIS.

Response 307.026

See Master Response #5 Climate Change. The EIS includes a robust analysis of climate change and the FCPP and Navajo Mine’s global warming potential. The EIS addresses regional contributions to climate change from 17 electric power-generating facilities in the Four Corners region (northeastern Arizona, southwestern Colorado, Navajo Nation, and northwestern New Mexico) within a distance of 400 km (248 miles), including FCPP that report to Federal and tribal EPAs pursuant to Part 75 (Table 4.2-4). See Section 4.2.2.7, Regional and State GHG Emissions.

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costly and difficult it will become to limit climate change to less than catastrophic levels.³⁹ OSM must heed this warning, and address the issue fully in the DEIS.

b. OSM Fails to Consider the Social Cost of the Significant Carbon Emissions At Navajo Mine and FCPP

OSM also attempts to avoid analysis of climate change by asserting: “at present no regulatory mechanism exists for assessing the significance of the GHG emissions,” and that “the regulatory framework does not support quantification of [the societal] costs.” DEIS at 4.2-23. The Project DEIS’s claims of impossibility are flatly contradicted by the fact that a standardized federal agency protocol – the social cost of carbon – does exist, and was specifically developed to estimate the social, economic, and ecological impacts of greenhouse gas pollution. The federal social cost of carbon is an estimate of the incremental dollar value of damages associated with an incremental increase in greenhouse gas pollution. It is intended to include changes in net agricultural productivity, human health, property damages, and the value of ecosystem services, all of which climate change can degrade.⁴⁰ A dozen departments and agencies developed the protocol in 2010 to effectively measure the costs and benefits of proposed regulations, as required by Executive Order 12866.⁴¹ The social cost of carbon thus permits decision-makers to address, and the public to understand, the broad benefits of reducing carbon emissions, or the costs of increasing emissions, in analyses of actions that may have small, or “marginal,” impacts on cumulative global emissions.⁴² Agencies have routinely used the social cost of carbon protocols to achieve these goals when evaluating the costs and benefits of rulemakings, and the Environmental Protection Agency (EPA) has recommended that other agencies use the protocol.

307.027

³⁹ Justin Gillis, *Climate Efforts Falling Short, U.N. Panel Says*, New York Times, April 13, 2014 (available at: <http://www.nytimes.com/2014/04/14/science/earth/un-climate-panel-warns-speedier-action-is-needed-to-avert-disaster.html> (last accessed June 23, 2014)) (attached as Exhibit 22).

⁴⁰ Interagency Working Group on Social Cost of Carbon, Technical Support Document (May 2013) (attached as Exhibit 23) at 1; see also Cass R. Sunstein, *The Real World of Cost-Benefit Analysis: Thirty-Six Questions (and Almost as Many Answers)*, 114 Colum. L. Rev. 167, 171-73 (Jan. 2014) (describing origins of interagency agreement on the social cost of carbon).

⁴¹ Interagency Working Group on Social Cost of Carbon, Technical Support Document (Feb. 2010) at 1-3 (attached as Exhibit 24). Federal agencies that developed and endorsed the protocol included: the Council on Environmental Quality (which oversees NEPA compliance); the Department of Agriculture; and the Environmental Protection Agency (EPA) (which regulates greenhouse gas emissions). The federal social cost of carbon was developed through a robust process that included “[t]echnical experts from numerous agencies [meeting] on a regular basis to consider public comments, explore the technical literature in relevant fields, and discuss key model inputs and assumptions.” *Id.* at 1.

⁴² *Id.* at 1.

Response 307.027

With respect to including the social cost of carbon for the Project, NEPA does not require a cost-benefit analysis, although CEQ NEPA regulations allow agencies to use it in NEPA analyses in certain circumstances (40 CFR § 1502.23). The CEQ regulation states (in part), “...for the purposes of complying with the Act, the weighing of the merits and drawbacks of various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations.”

The Interagency Working Group (IWG) of federal agencies was convened in order to facilitate compliance with Executive Order 12866, which requires that agencies recognize costs and benefits of regulatory rulemaking, including the Social Cost of Carbon (SCC). The IWG developed a technical approach for monetizing the potential social cost from cumulative global emissions when developing regulation. The FCCP and Navajo Mine Energy Project EIS is not being prepared to support the promulgation of a regulation, but to inform the agencies’ decisions whether or not to approve certain operating permits, lease amendments and right-of-way renewals.

A quantitative analysis of the SCC has been added to the Final EIS in Section 4.2. The Draft EIS considered the SCC in a qualitative manner, but did not quantify the effects. Subsequent to issuance of the Draft EIS, CEQ published Draft Guidance on climate change analysis (CEQ 2014), in which CEQ indicates that emissions monetization is not required in every project-level NEPA analysis. Nonetheless, OSMRE determined that a quantitative analysis would be included in the Final EIS, following the Interagency Working Group Methods. The results of the SCC analysis do not change the conclusions or the findings of level of significance for the Climate Change issue; however, the analysis has been added to provide additional context to OSMRE’s decision.

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in NEPA reviews.⁴³

Indeed, in an opinion issued just today in the U.S. District Court for the District of Colorado, Judge Jackson lambasted the Forest Service for attempting to avoid quantifying these costs when a tool to do so is available: “a tool is and was available: the social cost of carbon protocol.” *High Country Conservation Advocates v. U.S. Forest Service*, Docket no. 1:13-cv-01723-RBJ, slip op. at 17 (June 27, 2014). Thus, Judge Jackson concluded: “Even though NEPA does not require a cost-benefit analysis, it was nonetheless arbitrary and capricious to quantify the *benefits* of the lease modifications and then explain that a similar analysis of the *costs* was impossible when such an analysis was in fact possible.” *Id.* at 19.

Research conducted by the National Research Council has confirmed the fact that the negative impacts of energy generation from fossil fuels are not represented in the market price for such generation.⁴⁴ In other words, failing to internalize the externalities of energy generation from fossil fuels – such as the impacts to climate change and human health – has resulted in a market failure that requires government intervention. OSM should be mindful of this cost failure as it

⁴³ For example, EPA, the Department of Transportation and the Department of Energy have utilized the Interagency Working Group’s approach in rulemakings. See, e.g., EPA and National Highway Traffic Safety Administration, Final Rule, 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions, 77 Fed. Reg. 62,624, 63,004-06 (Oct. 15, 2012); Department of Energy, Final Rule, Energy Conservation Program: Energy Conservation Standards for Standby Mode and Off Mode for Microwave Ovens, 78 Fed. Reg. 36,316; 36,349-52; 36,363-64 (June 17, 2013) (explaining basis for social cost of carbon analysis and identifying range of benefits from reducing energy use of appliances). EPA has recommended that other federal agencies use the Interagency Working Group’s approach in NEPA documents. See Sarah E. Light, NEPA’s Footprint: Information Disclosure as a Quasi-Carbon Tax on Agencies, 87 Tul. L. Rev. 511, 545-46 & n.160 (Feb. 2013) (describing EPA recommendation that State Department, in evaluating impacts of Keystone XL Pipeline, “explore . . . means to characterize the impact of the GHG emissions, including an estimate of the ‘social cost of carbon’ associated with potential increases of GHG emissions.”).

⁴⁴ See, e.g., National Research Council, *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use* (2010) (attached as Exhibit 56 to Conservation Groups’ Scoping Comments); Nicholas Muller, et. al., *Environmental Accounting for Pollution in the United States Economy*, AMERICAN ECONOMIC REVIEW at 1649-1675 (Aug. 2011) (attached as Exhibit 58 to Conservation Groups’ Scoping Comments); see also, Generation Investment Management, *Sustainable Capitalism*, (Jan. 2012) (advocating a paradigm shift to *Sustainable Capitalism*; “a framework that seeks to maximize long-term economic value creation by reforming markets to address real needs while considering all costs and stakeholders.”) (attached as Exhibit 25); see also Risky Business Project, *Risky Business, The Economic Risks of Climate Change in the United States*, (June 2014) (attached as Exhibit 26); see also Justin Gillis, *Bipartisan Report Tallies High Toll on Economy From Global Warming*, New York Times (June 24, 2014) (available at: <http://www.nytimes.com/2014/06/24/science/report-tallies-toll-on-economy-from-global-warming.html> (last accessed June 25, 2014)) (attached as Exhibit 27).

Response 307.028

With respect to including the social cost of carbon protocol for the Project. The Interagency Working Group (IWG) of federal agencies was convened in order to facilitate compliance with Executive Order 12866, which requires that agencies recognize costs and benefits of regulatory rulemaking, including the Social Cost of Carbon (SCC). The IWG developed a technical approach for monetizing the potential social cost from cumulative global emissions when developing regulation. The FCCP and Navajo Mine Energy Project EIS is not being prepared to support the promulgation of a regulation, but to inform the agencies’ decisions whether or not to approve certain operating permits, lease amendments and right-of-way renewals.

A quantitative analysis of the SCC has been added to the Final EIS in Section 4.2. The Draft EIS considered the SCC in a qualitative manner, but did not quantify the effects. Subsequent to issuance of the Draft EIS, CEQ published Draft Guidance on climate change analysis (CEQ 2014), in which CEQ indicates that emissions monetization is not required in every project-level NEPA analysis. Nonetheless, OSMRE determined that a quantitative analysis would be included in the Final EIS, following the Interagency Working Group Methods. The results of the SCC analysis do not change the conclusions or the findings of level of significance for the Climate Change issue; however, the analysis has been added to provide additional context to OSMRE’s decision.

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evaluates the Proposed Action, and should consider the social cost of carbon emissions from the mine and power plant. Moreover, the federal working group addressing the social cost of carbon (“SCC”) has released new estimates that revise significantly upward the costs associated with GHG pollution, with median impacts pegged at \$43 and \$65 per ton.⁴⁵ However, OSM’s analysis arbitrarily assumes a price of carbon that is \$0 by failing to consider externalized costs altogether, such as human health and environmental degradation, thus stacking the deck in favor of perpetuating the mine and power plant. Moreover, the DEIS has failed to meaningfully contemplate a transition to renewable energy generation, not only as an alternative which may eventually suppress demand for the power from FCPP and consequently the coal from Navajo Mine, but also, as suggested above, as a reasonable and alternative pathway toward mitigating climate change as it relates to agency decision-making on federal lands.⁴⁶

307.029

In short, OSM’s analysis must fairly account for both benefits *and* the associated costs. *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983) (once agency chose to “trumpet” a set of benefits, it also had duty to disclose the related costs); *High Country Conservation Advocates v. U.S. Forest Service*, Docket no. 1:13-cv-01723-RBJ, slip op. (June 27, 2014). “There can be no hard look at costs and benefits unless all costs are disclosed.” *Id.*

c. **The DEIS fails to assess the impact of mandatory greenhouse gas reductions requirements on the FCPP.**

On June 2, 2014, the U.S. EPA issued a proposed rule setting guidelines for reduction of greenhouse gas (GHG) emissions from existing coal-fired power plants.⁴⁷ This proposal is known as the Clean Power Plan. Generally, the rule would require a 30 percent nationwide reduction of GHG emissions from existing coal fired power plants by 2030. The rule does not propose GHG reductions from existing coal fired power plants located on tribal lands.⁴⁸ However, EPA is taking comment on how to address GHG emissions from these sources.⁴⁹ EPA will issue a final rule on GHG reductions from existing coal plants on tribal lands by June 2015.⁵⁰ As such, the DEIS must assess the reasonably foreseeable impact of mandatory GHG reductions requirements on the FCPP. Independently, the Clean Power Plan’s 30% reduction

307.030

⁴⁵ See Interagency Working Group on the Social Cost of Carbon, United States Government, *Technical Support Document: Technical Update on the Social Cost of Carbon for Regulatory Impact Analysis – Under Executive Order 12866* (May 2013) (attached as Exhibit 23).

⁴⁶ See, e.g., United Nations Intergovernmental Panel on Climate Change, *Renewable Energy Sources and Climate Change Mitigation* (2012) (attached as Exhibit 28).

⁴⁷ EPA’s Clean Power Plan Proposed Rule, 79 Fed. Reg. 34830.

⁴⁸ *Id.* at 34854.

⁴⁹ *Id.*

⁵⁰ *Id.*

Response 307.029

With regard to alternatives to coal, please see Master Response #2, Alternatives.

With respect to including externalized costs for the Project. NEPA does not require a cost-benefit analysis, although CEQ NEPA regulations allow agencies to use it in NEPA analyses in certain circumstances (40 CFR § 1502.23). The CEQ regulation states (in part), “...for the purposes of complying with the Act, the weighing of the merits and drawbacks of various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations.”

The Interagency Working Group (IWG) of federal agencies was convened in order to facilitate compliance with Executive Order 12866, which requires that agencies recognize costs and benefits of regulatory rulemaking, including the Social Cost of Carbon (SCC). The IWG developed a technical approach for monetizing the potential social cost from cumulative global emissions when developing regulation. The FCPP and Navajo Mine Energy Project EIS is not being prepared to support the promulgation of a regulation, but to inform the agencies’ decisions whether or not to approve certain operating permits, lease amendments and right-of-way renewals.

A quantitative analysis of the SCC has been added to the Final EIS in Section 4.2. The Draft EIS considered the SCC in a qualitative manner, but did not quantify the effects. Subsequent to issuance of the Draft EIS, CEQ published Draft Guidance on climate change analysis (CEQ 2014), in which CEQ indicates that emissions monetization is not required in every project-level NEPA analysis. Nonetheless, OSMRE determined that a quantitative analysis would be included in the Final EIS, following the Interagency Working Group Methods. The results of the SCC analysis do not change the conclusions or the findings of level of significance for the Climate Change issue; however, the analysis has been added to provide additional context to OSMRE’s decision.

Response 307.030

In June 2014, EPA issued the “Clean Power Plan” proposal to cut carbon pollution from existing power plants. The proposal establishes

state-by-state goals to reduce greenhouse gases by 2030. The focus is on power plants, but states have discretion to meet goals with a combination of industries. The proposed regulation is subject to comment and finalization. Additionally, tribal lands are not given goals at this time. A proposed timetable is suggested for moving into the process with tribes, with July 2017 being when EPA would have a proposed goal for tribal lands. States are given a year to establish programs, with a provision for a 2-year extension; therefore, 2020 is when states are required to have a program in place. The tribes will likely lag that by a year or two, with the compliance timeframe lagging also. Therefore, the suggestion that the Clean Power Plan's 30 percent reduction should be applied to the FCPP and Navajo Mine Energy Project is not consistent with the EPA's approach to taking a state-wide look at reductions and allowing states flexibility in how reductions can be met. The EIS was changed to acknowledge the proposed plan; however, because of the uncertainties associated with whether the plan will be adopted or modified, and how it would be implemented on the Navajo Nation, there is no change to the conclusions or analysis in the EIS.

OSMRE notes that the implementation of EPA's FIP for BART would result in a 26% reduction in GHG emissions from FCPP. The 26% reduction figure is correct. The Stamper report based calculations on power plant performance figures from the PSD permit. PSD permit applications are required to present "potential to emit" data rather than historic performance data. The historic performance data were used in preparation of the Draft EIS because they are a more accurate representation of operational conditions at the plant.

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should serve as a reasonable benchmark for gauging carbon mitigation alternatives or mitigation measures at the mine and power plant complex. 40 C.F.R. §§ 1500.2(c), (f), 1502.1, 1502.14, 1508.20, 1508.25(b)(2), (3).

Regardless, based on the proposed rule, the DEIS should assume that at least a 30 percent reduction of GHG emissions will be required from coal-fired power plants on the Navajo Nation from 2005-2030. Operationally, this can be done through various mechanisms, e.g., by improving the efficiency of the power plant's operations, capturing and marketing methane emissions from the mine, or mandating lower power plant capacity factors and replacing that power with energy efficiency and clean energy programs.

Of the three coal-fired power plants located on tribal lands in the United States, two of them are located on the Navajo Nation—the FCPP and the Navajo Generating Station (“NGS”).

The FCPP is one of the largest coal fired power plants in the western United States. In 2012, the Four Corners power plant consisted of 5 units with 2,060 megawatts (MW) of generating capacity emitting an annual average of 15,439,236 tons per year of CO₂e. DEIS at ES-iii. Of this total, Units 1-3 at the FCPP emitted an annual average of approximately 4,042,526 tons per year of CO₂e, while units 4-5 emitted an annual average of approximately 11,396,710 tons per year.⁵¹ On December 31, 2013 Units 1-3 ceased operation, resulting in a 17 percent reduction of GHG emissions at the FCPP.⁵²

NGS is the largest coal fired power plant in the western United States with a generating capacity of 2,250 MW. 78 Fed. Reg. 8275. Each of the three units at NGS is rated at 750 MW.⁵³ In 2012 NGS emitted 15,474,761 tons of CO₂e.⁵⁴ NGS does not have a final enforceable requirement to cease operation of any of its three units or reduce its emissions of GHGs.

In summary, in 2012, the combined CO₂e emissions from the FCPP and NGS amounted to 30,913,997 tons. In 2014, the FCPP reduced its emissions by 17 percent. Thus, it is reasonably foreseeable that the Navajo Nation will need to achieve an additional 13 percent reduction of CO₂e or 5,231,663 tons per year. This reduction could be achieved by the retirement of either FCPP Unit 4 or 5 by 2030.

Based on the Clean Power Plan, the DEIS should assume that the federal government will impose a 30 percent GHG reduction requirement on the FCPP. The DEIS states in several places

⁵¹ *Id.*

⁵² The DEIS incorrectly reports the greenhouse gas reduction as a 26 percent reduction. In fact, the reduction is only 17 percent. *See*, Expert Report of Victoria Stamper (attached as Exhibit 29).

⁵³ *Id.*

⁵⁴ <http://ghgdata.epa.gov/ghgp/main.do>

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the lease between APS and the Navajo Nation prohibits the tribe from adopting regulations applying to FCPP. DEIS at 4.5-4, 4.8-3. Thus, in the event the Navajo Nation adopted a tribal implementation plan, it would not be able to mandate emission reductions at the FCPP. The same is true at NGS.⁵⁵ Therefore, the DEIS should not defer an analysis of GHG reductions at FCPP until the adoption of a tribal implementation plan and instead should assume that the FCPP will likely be regulated directly by the federal government's mandate for a 30 percent reduction by 2030. In light of the foregoing, the DEIS is deficient because it fails to assess the impact of the Clean Power Plan on the FCPP and also fails to fully assess the reasonably foreseeable alternative of the retirement of either unit 4 or 5 at the FCPP by 2030.

307.031

Further, OSM is required to consider and ameliorate GHG pollution by law. Secretarial Order 3226 (January 19, 2001) ("Order") commits the Department of the Interior to address climate change through its planning and decision-making processes. The Order provides that "climate change is impacting natural resources that the Department of the Interior ("Department") has the responsibility to manage and protect." Sec. Or. 3226, § 1; *see also* Sec. Or. 3289 Amend. No. 1 (Feb. 22, 2010). The Order also "ensures that climate change impacts are taken into account in connection with Department planning and decision making." *Id.* The Order obligates BLM to "consider and analyze potential climate change impacts" in four situations: (1) "when undertaking long-range planning exercises"; (2) "when setting priorities for scientific research and investigations"; (3) "when developing multi-year management plans, and/or" (4) "when making major decisions regarding the potential utilization of resources under the Department's purview." *Id.* at § 3. The Order specifically provides that "Departmental activities covered by this Order" include "management plans and activities developed for public lands" and "planning and management activities associated with oil, gas and mineral development on public lands." *Id.* (emphasis added). The Order underscores the obligation of OSM to fully assess a Unit 4/5 retirement alternative and renewable energy alternatives to burning coal at FCPP. Unfortunately, the DEIS is deficient because it fails to fully assess either alternative.

307.032

d. OSM Fails To Consider The Necessity For Ecological Resiliency To Withstand The Ongoing Impacts Of Climate Change

Beyond mitigating climate change by reducing contributions of GHG pollution to the atmosphere, the agency can also help promote ecological resiliency and adaptability by reducing external anthropogenic environmental stresses as a way of best positioning communities to withstand what is acknowledged as ongoing and intensifying climate change degradation. Such work, of course, requires OSM to actually take a hard look at climate change impacts to the region, including the incremental impact caused by the power plant's past, present, and future GHG pollution emissions.

Thus, OSM has an obligation – independent of its duty to consider the Proposed Action's contribution to climate change – to consider how the Proposed Action is contributing to the ability of the area to withstand climate change. Resilience is "an ability to recover from or adjust

307.033

⁵⁵ <http://bigstory.ap.org/article/carbon-standards-reservation-plants-delayed>

Response 307.031

In June 2014, EPA issued the "Clean Power Plan" proposal to cut carbon pollution from existing power plants. The proposal establishes state-by-state goals to reduce greenhouse gases by 2030. The focus is on power plants, but states have discretion to meet goals with a combination of industries. The proposed regulation is subject to comment and finalization. Additionally, tribal lands are not given goals at this time. A proposed timetable is suggested for moving into the process with tribes, with July 2017 being when EPA would have a proposed goal for tribal lands. States are given a year to establish programs, with a provision for a 2-year extension; therefore, 2020 is when states are required to have a program in place. The tribes will likely lag that by a year or two, with the compliance timeframe lagging also. The EIS was changed to acknowledge the proposed plan; however, because of the uncertainties associated with the proposed plan, there is no change to the conclusions or analysis in the EIS.

The assertion that a 30 percent reduction is a reasonably foreseeable requirement that should be addressed in the EIS is speculative; there is no certainty that tribal implementation will occur in the reasonably foreseeable future, if at all.

The suggestion that the Clean Power Plan's 30 percent reduction should be applied to the FCPP and Navajo Mine Energy Project is not consistent with the EPA's approach to taking a state-wide look at reductions and allowing states flexibility in how reductions can be met. Coal-fired power plants are not required to be eliminated.

Response 307.032

Please see Master Response #2, Renewable Energy Alternatives.

Response 307.033

The EIS addresses climate change contributions on a regional scale (Section 4.2.2.7, Regional and State GHG Emissions). Although not suggested in the CEQ guidance or Draft EPA guidance on climate change, the analysis of cumulative impacts of climate change takes a multi-media approach to addressing the resilience of the ecosystem.

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easily to misfortune or change.”⁵⁶ In the context of climate change and the many resultant impacts, such as the alteration to the biosphere and impairments to human health, the resiliency of our landscapes and a community’s ability to respond and adapt to these changes takes on a new magnitude of importance.

This analysis is of particular importance given the increasingly severe ways in which climate change is already impacting the Southwest.⁵⁷ As noted, the Navajo Nation is experiencing increased temperatures and drought which are changing the way of life for Navajo people.⁵⁸ Indeed, CEQ expressly noted that “[a]gencies should also consider the particular impacts of climate change on vulnerable communities where this may affect the design of the action or the selection among alternatives.” CEQ, Draft Guidance at 8. “[S]overeign tribal governments with legal rights to reservations and trust resources are affected by ecological changes on the landscape in ways that many Americans are not.” CEQ, Draft Guidance at 8.

Finally, OSM must adequately consider the cumulative impacts of GHG emissions in the region. “The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.” *Cr. for Biological Diversity*, 538 F.3d 1172, 1217. Accordingly, in addition to considering the specific direct, indirect, and cumulative GHG pollution emissions from the FCPP power plant, OSM must also consider aggregate, cumulative GHG emissions from all sources within the region, including the San Juan Generating Station, a stone’s throw to the north of the FCPP, and the NGS, just across the border, on the Navajo Nation, in Arizona, as well as the intensive oil and gas development underway in the area. The agency’s failure to assess cumulative impacts, particularly, as here, the cumulative impacts of climate change, “impermissibly subject[s] the decisionmaking process contemplated by NEPA to ‘the tyranny of small decisions.’ ” *Kern*, 284 F.3d at 1078 (citation omitted).

2. OSM Failed To Take A Hard Look At The Project’s Impacts To Public Health

In our scoping comments, the Conservation Groups requested a public health study to evaluate the legacy of pollution and public health impacts that the Navajo Mine and FCPP have inflicted on surrounding communities.

Given the nearly 50 year history of the FCPP and the high levels of pollution from the facility, including, notably, that the FCPP is a top coal plant emitter of NOx in

⁵⁶ MERRIAM-WEBSTER COLLEGIATE DICTIONARY (11th ed. 2008).

⁵⁷ See Climate Assessment (attached as Exhibit 17).

⁵⁸ Julie Nania & Karen Cozzetto, et. al, *Considerations for Climate Change and Variability Adaptation on the Navajo Nation* (March 2014) (attached as Exhibit 30); Bobby Magill, *The Navajo Nation’s Shifting Sands of Climate Change*, Climate Central (May 28, 2014) (attached as Exhibit 31).

Response 307.034

The cumulative impacts from 17 regional power plants (including SJGS and NGS) are analyzed, showing the FCPP percentage contributions of regional GHG (Section 4.2.2.7, Regional and State GHG Emissions). The Climate Change section (4.2) is inherently cumulative in nature and evaluates FCPP emissions in a regional, national, and global context. In addition, Section 4.18.3.2 presents additional considerations of the cumulative impacts of climate change, including multi-media effects.

307.034

307.035

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the U.S. – with an estimated 44,649 tons of emissions per year – the subject EIS should include a thorough human health assessment. Such an assessment should further include relevant data from Center for Disease Control, EPA, Navajo Nation, and Indian Health Services, as well as information from the states of Utah, Colorado, New Mexico, and Arizona. Moreover, the Navajo Nation should be provided specific studies that evaluate Navajo Nation human life expectancies compared to the general U.S. population, including mortality rates and rates for diseases such as diabetes, cancer, respiratory, and heart disease. Accordingly, the EIS should provide comprehensive analysis of human health and other environmental factors that critically evaluate the impacts from the subject coal facilities. Among other things, the EIS should evaluate if there are disproportionate health impacts that may be occurring to the people of the Four Corners Region.⁵⁹

This request followed earlier, and repeated requests. The Conservation Groups have consistently commented in earlier NEPA analyses for the region (including Desert Rock Energy project DEIS, Navajo Mine Expansion EA) that public health studies for the region remain inadequate and unacceptable. Moreover, throughout these comments, whether with regard to water quality, air quality, coal combustion waste, or other issues, we have emphasized that coal operations may cause potentially significant public health impacts—in particular in light of total, cumulative impacts caused by multiple public health impact vectors that have caused persistent impacts for the past 50 years, impacts that may persist for an additional 25 years. Unfortunately, the Project DEIS does not deviate from gross mischaracterizations and unsupported claims concerning public health, ignoring the 50-year legacy of FCPP and Navajo Mine that have contributed to mercury deposition throughout the region’s waterways, high human respiratory problems, as well as numerous other health issues.

In addition to the Conservation Groups, the Navajo Nation has raised concerns over the lack of public health data for the region. Navajo Nation comments to the USEPA on the Federal Implementation Plan for BART for FCPP included the following (pertaining also to Navajo Generating Station):

The Navajo Nation recognizes that pollution and human exposure to environmental hazards are important factors in assessing impacts of these plants and for framing a rule to meet the goal-oriented progress towards pristine air conditions in federal Class 1 mandated by the CAA. Furthermore, the Navajo Nation expects that within each implementation phase of the Regional Haze Program, there will be strong integration of health assessments and studies which are interrelated to the goal of promoting a strong economy and healthy environment and are vital to the sovereignty of the Navajo Nation. The USEPA is encouraged to pursue health studies in collaboration with the Navajo Nation to study local risks associated with exposure to criteria pollutants, indoor air pollutants, and other contributing air pollutants, from which improved public

⁵⁹ Conservation Groups’ Scoping Comments at 58.

Response 307.035

Section 4.17 considers project-specific impacts, and the findings (negligible to minor) reflect the specific analyses and modeling (air quality, human health, ecological analyses). Section 4.18 considers cumulative impacts, including mercury deposition and its environmental impacts. A detailed Human Health Risk Assessment (HHRA) was conducted for the Project. The HHRA was conducted according to the HHRA Protocol established by the EPA (2005b) for hazardous waste combustion facilities. The HHRA evaluated risk of inhalation of contaminations from stack emissions as well as from consumption of food and water within the deposition area. Past deposition was addressed through a project-specific soil sampling program, augmented by existing information from published sources. The Draft EIS cites additional studies (New Mexico Department of Health, Bunnell et al.) that addresses past and current public health issues. The findings are supported by data, and adequately characterize the environmental setting including past impacts, as well as potential future impacts.

307.035

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health and effective rulemakings under the CAA may be achieved.

USEPA proposes that BART determinations will improve public health in addition to improving visibility. We can anticipate that the same stance on improving public health will be included in the forthcoming NGS proposed rule. On that issue the Navajo Nation provides the following comments:

1. Very little public health data is available in the Four Corners region and on the Navajo and Hopi reservations to establish a meaningful public health baseline;
2. A meaningful public health baseline is critical to measuring the impacts to public health for any BART option or future USEPA rulemaking;
- ...
4. The Navajo Nation urges USEPA to generate and collect more public health research/data that characterizes the actual public health impacts attributed to FCPP and NGS; and actual health impacts attributed to other sources.⁶⁰

In short, a meaningful public health baseline for the Four Corners region does not exist. Conservation Groups' requests for data from EPA, Center for Disease Control and Indian Health Services in evaluating the correlation between public health and FCPP/Navajo Mine remain ignored. The DEIS goes to great length to let the public know how fortunate we are that reduced emissions from FCPP will now improve our health, but the legacy of past operations combined with another 25 years of continued operation of over two thirds of the plant, continue to contribute to, if not cause, potentially significant public health issues.

The DEIS discussion of Sensitive Receptors includes recognition of certain population groups considered more sensitive to air pollution, including "those with cardio respiratory diseases such as asthma and bronchitis." DEIS at 4.1-66. Despite this recognition that perhaps there are serious health issues associated with living in proximity to FCPP/Navajo Mine, the DEIS does not contain a scientific, data-driven approach to evaluation of public health issues, instead callously dismissing impacts to people – including the elderly and children – who live in the region.

307.036

OSM must consider the direct, indirect, and cumulative impacts of allowing the Navajo Mine and FCPP to pollute for another 25 years, but the DEIS fails to do so. See 40 C.F.R. §§ 1508.25(c); 1508.7; *Utahns for Better Transp. v. U.S. Dep't of Transp.*, 305 F.3d 1152, 1172 (10th Cir. 2002) as modified on reh'g, 319 F.3d 1207 (10th Cir. 2003). In particular, OSM must consider public health in light of cumulative impacts in the region. Cumulative impacts include

307.037

⁶⁰ Letter from Ben Shelly, President, Navajo Nation to Dr. Anita Lee, United States Environmental Protection Agency, Region IX, Navajo Nation Comments on the October 19, 2010, Notice of Proposed Rulemaking and the February 25, 2011 Proposed Supplemental Rulemaking Implementing BART at Four Corners Power Plant: Navajo Nation, EPA-R09-OAR-2010-0683, FRL-9213-7 and FRL-9269-4 (June 2, 2011) (emphasis added) (attached as Exhibit 32).

Response 307.036

Public health issues are addressed in Section 4.17 of the EIS; see Response 307.035. The analysis for public health focuses primarily on the human health risks from exposure to contaminants in air emissions produced by the proposed activities at the Navajo Mine and FCPP. Public health risks associated with hazardous materials, including the potential for public exposure to hazardous wastes, hazardous materials, or CCR is discussed in Section 4.15, Hazardous and Solid Wastes. In addition, the Draft EIS cites two public health studies conducted within the vicinity of the FCPP and Navajo Mine to further address this issue.

Response 307.037

Section 4.17 considers project-specific impacts, and the findings (negligible to minor) reflect the specific analyses and modeling (air quality, human health, ecological analyses). Section 4.18 considers cumulative impacts, including mercury deposition and its environmental impacts. A detailed Human Health Risk Assessment (HHRA) was conducted for the Project. The HHRA was conducted according to the HHRA Protocol established by the EPA (2005b) for hazardous waste combustion facilities. The HHRA evaluated risk of inhalation of contaminations from stack emissions as well as from consumption of food and water within the deposition area. Past deposition was addressed through a project-specific soil sampling program, augmented by existing information from published sources. The Draft EIS cites additional studies (New Mexico Department of Health, Bunnell et al.) that addresses past and current public health issues. The findings are supported by data, and adequately characterize the environmental setting including past impacts, as well as potential future impacts.

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the “incremental impact of the action when added to other *past*, present, and reasonably foreseeable future actions.” 40 C.F.R. § 1508.7. In order to add the incremental impacts of the Proposed Action to past, present, and future actions, OSM must first determine what the impacts from those other actions are. “A proper consideration of the cumulative impacts of a project requires “some quantified or detailed information; . . . [g]eneral statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided.” *Klamath-Siskiyou Wildlands Cir. v. Bureau of Land Mgmt.*, 387 F.3d 989, 993 (9th Cir. 2004). The analysis “must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects.” *Id.* at 994.

The Project DEIS presents a classic case of “perfunctory” analysis. Instead of describing past impacts from 50 years of Project operation and what those impacts have done over that time period populations in the area, or performing a public health study as requested, the Project DEIS summarizes a few studies in a couple of paragraphs, brushes them off as not specific enough to determine impacts with certainty, and then summarily concludes that health impacts are therefore minor. DEIS at 4.17-4. For example, the DEIS quotes a recent Community Health Profile, which concludes:

San Juan County’s most recent Community Health Profile includes a comprehensive overview of health indicators including respiratory health (San Juan County 2010). This study found that San Juan County has a higher incidence of chronic lower respiratory disease (CLRD) comprised of chronic bronchitis, asthma, and emphysema compared to New Mexico or the rest of the United States. Another study found that elevated levels of ozone in San Juan County were linked to incidence of asthma-related medical visits. This study found that San Juan County residents are 34 percent more likely to have asthma-related medical visits after 20 parts per billion increases in local ozone levels (NMDH 2007).

DEIS at 4.17-4.

Instead of considering the impacts of the Project in that context, OSM considers the Proposed Action in a vacuum, conducting a risk analysis solely based on future air emissions from FCPP. See DEIS at 4.17-23-24. Based entirely on that analysis, which did not take into account possible impacts from water contamination or other exposure pathways, OSM concludes that the “effects are minor.” DEIS at 4.17-24. The DEIS’s cumulative impacts analysis is no better, focusing again solely on air emissions from FCPP, and using primarily “default exposure assumptions” rather than actual data from the site to assess impacts. DEIS at 4.18-53.

Even where OSM concedes that pollution exceeds EPA standards for residential land uses, OSM refuses to consider the Project’s contribution, and the cumulative impacts of those exceedances, instead brushing the issue aside; “Arsenic is known to be high in the soils of the southwestern U.S. Therefore, cumulative health risks from deposition are minor.” DEIS at 4.18-53 (citation omitted). Arsenic is also carcinogen, with serious impacts to humans and animals with increased

307.038

Response 307.038

See response to EPA comment 243.009 for response to “perfunctory analysis”, and use of the New Mexico Department of Health study, Bunnell et al., and project specific analysis addressing project-specific and cumulative impacts to community health. Section 4.18 (cumulative) has been augmented to include the discussion from Section 4.17 (Public Health and Safety) as it pertains to this issue.

The comment notes “pollution that exceeds EPA standards,” but arsenic is present at high, natural levels in the background soils of much of the US Southwest including the Four Corners area. With regard to arsenic, the sentence quoted is cited in the Draft EIS as AECOM 2013. This report cites USGS soil sampling data which shows arsenic concentrations in soil, beyond the FCPP deposition and therefore representing the natural background of the area ranging from 3.9 to 10 mg/kg (average 5.9 mg/kg).

As stated in Section 4.18, shallow soil samples within the deposition area averaged 4.17 mg/kg, well within the same range of high natural background. Similar to the detailed discussion provided in 4.18.3.8 for metals, from the comparison of these data, it can be seen that recently measured soil metals concentrations within the future FCPP deposition area are generally within the range reported by the USGS for New Mexico. While regional variation in soil metals concentrations would be expected across the U.S, these data show that the arsenic concentrations currently within the deposition area (e.g., current conditions) would not be discernably different from the regional background level. However, it is also possible that concentrations measured in soils across the US Southwest reflect a mixture comprising both a natural geologic source as well as long-term historical anthropogenic contributions. Regardless of source, the current conditions data relates directly to past and present cumulative impacts since they integrate across time and space all local, regional, and global sources including naturally-occurring sources and those released from the first 50 years of FCPP emissions that may have been deposited in the San Juan Basin. Compared to environmental benchmarks such as background concentrations, the historic operations did not lead to discernably-increased concentrations.

Based on the modeling of future conditions, the impact of future operations similarly would not lead to increases in arsenic above background levels.

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exposure.⁶¹ The fact that arsenic levels are already high should cause OSM to pay special attention to additional contributions, not serve as an excuse to brush aside impacts. Furthermore, OSM fails to consider whether the high levels are a result of the Project, and importantly, whether different alternatives, or at the least, mitigation measures could address the problem.

OSM similarly dismisses the Project's contribution to decreased ambient air quality, summarily stating that the counties within the air basin are attainment areas for criteria pollutants, and apparently therefore assuming that no further analysis is necessary. DEIS at 4.18-54. Compliance with NAAQS does not excuse OSM from its obligation to consider the direct, indirect, and cumulative impacts on public health from the Project. *S. Fork Band Council v. U.S. Dept. of the Int.*, 588 F.3d F.3d 718, 726 (9th Cir. 2009) (citing *Klamath-Siskiyou Wildlands Center v. BLM*, 387 F.3d 989, 998 (9th Cir. 2004)) (BLM's argument that it need not consider impacts because a facility operated under a state permit issued pursuant to the Clean Air Act is "without merit"); *Southern Oregon Citizens Against Toxic Sprays v. Clark*, 720 F.2d 1475, 1480 (9th Cir. 1983) (another agency's consideration of environmental impacts does not relieve BLM of its duty to consider effects; "BLM must assess independently [the impacts]"); *see also Calvert Cliffs' Coordinating Comm., Inc. v. U. S. Atomic Energy Comm'n*, 449 F.2d 1109, 1123 (D.C. Cir. 1971) ("Certification by another agency that its own environmental standards are satisfied involves an entirely different kind of judgment.").

The DEIS then attempts to take credit for an assumption that air emissions would be reduced in San Juan County and respiratory health status of residents, somehow justifying the continued operation of FCPP for another 25 years from 2016:

The cumulative public health effects also depend on the ambient air quality in the San Juan Air Basin and the respiratory health status of residents in the area. San Juan County and the other counties within the San Juan Air Basin are all designated as attainment areas for criteria pollutants. With the implementation of BART at FCPP, emissions from FCPP were reduced in comparison to baseline emissions. Given current regulatory trends, it is likely that allowable PM and ozone precursor emissions for all sources in San Juan County, including Navajo Mine, would be reduced to meet tighter ambient air quality standards for ozone and PM_{2.5}. As a result, ambient air concentrations of ozone and PM in San Juan County would be lower. Overall, there would be minor cumulative public health effects of the Proposed Action because there would be no measureable change to ambient air quality compared to baseline conditions, and there would be a reduction in FCPP emissions as a result of compliance with EPA's BART rule.

OSM's perfunctory conclusion that "there would be minor cumulative public health effects of the Proposed Action because there would be no measureable change to ambient air quality compared to baseline conditions" flies in the face of the entire NEPA process, and in particular fails to satisfy OSM's duty to take a hard look at direct, indirect, and cumulative impacts. 40

⁶¹ *See, e.g.*, Agency for the Toxic Substances and Disease Registry, *Public Health Statement: Arsenic* (August 2007) (available at: <http://www.atsdr.cdc.gov/ToxProfiles/tp2-cl-b.pdf>).

Response 307.039

The Draft EIS relied upon multiple lines of evidence to address air quality and its effects on public health. The Human Health Risk Assessment addressed the public health consequences of atmospheric deposition of air pollutants; the Fugitive Dust Analysis addressed whether the PM NAAQS are protective of public health, using the composition of Navajo Mine coal as the dust; and the Diesel Particulate Model addressed the public health impacts of air emissions from diesel equipment. In addition, the air quality analysis leading to the conclusion that the Four Corners Region is in attainment is extensive. The following sources of data were included in the analysis:

A regional air monitoring network composed of 17 stations collectively measure ambient concentrations of six criteria air pollutants:

- State and Local Air Monitoring Stations (SLAMS) (New Mexico, Colorado)
- Tribal Monitors (Navajo Nation, Southern Ute Indian Tribe)
- Non-EPA Federal Monitors (USFS, NPS)
- Special Purpose Monitors (Colorado)
- Interagency Monitoring of Protected Visual Environments (IMPROVE) (NPS)

NMED Air Quality Modeling Study for the Four Corners Region (2009).

The study addressed air quality impacts of growth, especially the oil and gas industry and electric power generation, on Class I and surrounding Class II areas in the Four Corners region.

The Four Corners Air Quality Task Force model of air quality impacts of proposed mitigation strategies. A high resolution regional scale dispersion model of the Four Corners region was developed.

An updated 2005 emissions inventory and a projected inventory for 2018 were developed. The 2005 and 2018 inventories comprised emissions from electric power generation, oil and gas exploration and production, other proximate anthropogenic sources, along with

applicable mobile source, fugitive dust, biogenic, and wildfire emissions.

The EPA and National Acid Deposition Program (NADP) operate nationwide networks of deposition-oriented monitoring sites.

CASTNET data were used for the historic 12-year period from 2000 through 2011. The data were used to illustrate historic deposition trends as measured by the CASTNET monitoring program, showing absolute amounts of precipitation, total nitrogen compounds, and total sulfur compounds over the 12-year period.

Annual summary data from seven National Trends Network (NTN) sites located at Canyonlands, Grand Canyon, Mesa Verde, Petrified Forest, Alamosa, Bandelier, and Green River was aggregated to provide a general estimate of historic deposition in the Four Corners region.

Annual sampling data from four Mercury Deposition Network (MDN) sites located at Sycamore Canyon, Molas Pass, Mesa Verde, and Navajo Lake were compared and aggregated to provide a general estimate of historic mercury deposition in the Four Corners region.

Annual sampling data from two AMoN sites located in Navajo Lake and Farmington were compared and aggregated to provide a general estimate of historic ambient ammonia concentrations in the Four Corners region.

Several quantitative models were developed by the project applicants and critically reviewed for adequacy and accuracy by OSMRE. These models evaluate the potential air quality impacts of the Proposed Action and alternatives. These include calculations of mobile and stationary source emissions in comparison to federal standards; air deposition modeling; Ozone Assessment; and plume visibility.

Response 307.040

EPA established NAAQS for criteria pollutants that threaten human health and the environment (40 CFR Part 50). The CAA established primary standards to protect public health and secondary standards that

set limits to protect the environment (e.g., decreased visibility, damage to animals, crops, vegetation, and buildings). The ambient air quality standards are intended to protect the public health and welfare and specify the concentration of pollutants (with an adequate margin of safety) to which the public may be exposed without adverse health effects. The standards are designed to protect those segments of the public most susceptible to respiratory distress (known as sensitive receptors). The Four Corners area is designated attainment for all NAAQS. The air quality is therefore considered protective of human health and the environment.

The Draft EIS relied upon multiple lines of evidence to address air quality and its effects on public health. The Human Health Risk Assessment addressed the public health consequences of atmospheric deposition of air pollutants; the Fugitive Dust Analysis addressed whether the PM NAAQS are protective of public health, using the composition of Navajo Mine coal as the dust; and the Diesel Particulate Model addressed the public health impacts of air emissions from diesel equipment. In addition the air quality analysis leading to the conclusion that the Four Corners Region is in attainment is extensive (see response to comment number 307.0394).

The conclusion that there are minor impacts is consistent with the impact analysis methodology employed throughout the EIS. The health impacts are based on extensive analysis of the regional air quality and the EPA standards set to protect human health.

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C.F.R. §§ 1508.25, 1508.7, 1508.8. As stated above, before OSM can assert that the status quo – or even an improvement over the status quo – will not cause impacts to public health, OSM must determine that the future impacts “when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions,” will not cause impacts. 40 C.F.R. § 1508.7. OSM’s cursory statement of minor impacts does not take into consideration whether the past impacts actually caused public health impacts, whether the future impacts will cause public health impacts, and most importantly, whether the future impacts on top of the past impacts will cause significant impacts. Simply, OSM has not “created a record sufficient to allow us to evaluate whether its ‘no effects’ determination is reasonable.” *California Wilderness Coalition v. U.S. Dept. of Energy*, 631 F.3d 1072, 1101 (9th Cir. 2011).

Moreover, OSM cannot shun its duty to address cumulative impacts by summarily stating that impacts will not change from previous conditions, or even that they will be potentially be ameliorated. As the Ninth Circuit has explained regarding a rule *improving* fuel efficiency standards: “simply because the Final Rule may be an improvement over the [status quo] does not necessarily mean that it will not have a ‘significant effect’ on the environment.” *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1224 (9th Cir. 2008); 40 C.F.R. § 1508.27(b)(1) (“a significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial”).

The Conservation Groups request that OSM completely update the DEIS to establish a meaningful public health baseline identifying the multitude of known impacts from humans living in proximity to FCPP/Navajo Mine and SJGS/San Juan Mine and allow public comment on the same.

3. OSM Failed To Take A Hard Look At The Project’s Impacts To Scarce Water Resources

One hundred percent of New Mexico continues to suffer from drought conditions, with 85 percent of the state in severe drought.⁶² The current drought conditions have persisted for four years and have revealed just how precious water resources in New Mexico are for the economy and way of life of New Mexicans.⁶³ An article in Smithsonian released on June 20, 2014 states that Arizona could be out of water in 6 years due to prolonged drought and expanding human population.⁶⁴ In addition, cities in Arizona (Phoenix and Tucson) could be forced to cut water

⁶² See National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration, United States Drought Monitor (available at: <http://droughtmonitor.unl.edu/MapsAndData/DataTables.aspx?NM> (last accessed June 9, 2014)).

⁶³ *Id.*

⁶⁴ Colin Schultz, *Arizona Could be Out of Water in Six Years*, Smithsonian.com, June 20, 2014, (available at: http://www.smithsonianmag.com/smart-news/arizona-could-be-out-water-6-years-180951814/?utm_source=facebook.com&no-ist (last accessed June 23, 2014)).

Response 307.041

Please see response to Comment 243.009.

307.041

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deliveries from the Colorado River and Lake Mead with uncertainties over water supplies to the Central Arizona Project.⁶⁵ According to data used by the New York Times, Lake Powell holds 42 percent of its capacity and Lake Mead holds approximately 45 percent of its capacity.⁶⁶

If upstream states continue to be unable to make up the shortage, Lake Mead, whose surface is now about 1,085 feet above sea level, will drop to 1,000 feet by 2020. Under present conditions, that would cut off most of Las Vegas's water supply and much of Arizona's. Phoenix gets about half its water from Lake Mead, and Tucson nearly all of its.⁶⁷

Navajo Mine and FCPP use a significant amount of water. BHP Billiton holds the water rights for the water used at the Navajo Mine and the FCPP.⁶⁸ DEIS 4.12-6. BHP's right allows them a diversionary right of 51,600 acre-feet annually, with a consumptive right of 39,000 acre-feet annually for waters drawn from the San Juan River. DEIS at 4.5-32. Put another way, the mine and power plant allow the equivalent of a 71 cubic foot per second ("cfs") diversion, with a continuous 54 cfs of that being consumed. If even more water is needed, FCPP also has an agreement with Jicarilla Apache Water Authority for supplemental water. *Id.* In addition to surface water use, the Project "would result in the loss of coal seam aquifers in the Fruitland Formation and a reduction in groundwater quantity as a result of mining operations." DEIS at 4.12-6.

307.042

The DEIS concedes that water withdrawals from the San Juan River are already of great concern, especially given reasonably foreseeable increased demands on the river for residential, municipal, and agricultural uses. DEIS at 4.12-3. "Future water development within the basin is anticipated to occur and has the potential to affect species dependent on the flow regime of the San Juan River." DEIS 4.12-3. OSM fails to take the next step, however, of considering the impact of large withdrawals for mining and power production at the Navajo Mine and FCPP and how those could be mitigated.

In addition, decreased flows have substantial impacts to water quality. As flows decrease contaminants become more concentrated which can result in an increase of water quality

⁶⁵ Michael Wines, *Arizona Cities Could Face Cutbacks in Water From Colorado River*, *Officials Say*, New York Times, June 17, 2014 (available at: <http://www.nytimes.com/2014/06/18/us/arizona-cities-could-face-cutbacks-in-water-from-colorado-river-officials-say.html> (last accessed June 23, 2014)) (attached as Exhibit 33).

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ Interestingly, the ownership of these water rights will remain with BHP Billiton despite the fact that they will no longer own or operate the mine, and have no interest in FCPP. DEIS at 4.12-6.

Response 307.042

Water rights for the Navajo Mine were first permitted in 1958 with the stated use. The permit authorizes use of water for coal mining, coal processing and beneficiation, coal utilization including electric power generation and production of coal chemicals. Water management plans (including those addressing reasonably foreseeable increased demands for residential, municipal, and agricultural uses) developed subsequent to that date have accounted for this use of the water. Current water use at the Navajo Mine is discussed on page 4.5-39 and current water use at FCPP is discussed on pages 4.5-41 and 4.5-49 of the EIS. As discussed in Section 4.5.4.1, no changes to water use would occur as a result of the project. Therefore, there would be no change in baseline conditions.

The Fruitland Formation is discussed in detail in Section 4.5 of the EIS. Section 4.5.2 of the EIS states, "Groundwater production within the Fruitland Formation is limited. The majority of exploratory drill holes within the Navajo Mine Lease Area have not produced measurable groundwater during drilling...baseline water quality in the Fruitland Formation (based on data collected from monitoring wells in Areas IV North and South and Area V) is poor and exceeds NNEPA surface water quality standards for livestock watering and drinking water." Discussion of impacts to the Fruitland Formation can be found in Section 4.5.4.1 which states, "The amount of groundwater encountered during the proposed mining is expected to be limited. No water supply wells are located in the Fruitland Formation within the ROI. Additionally, the projected drawdown during mining would not affect any existing or anticipated future use based on drawdowns from the modeling simulations."

The shutdown of Units 1, 2, 3 decreased overall water usage at the FCPP; however, the analysis considers that the water right would remain the same and therefore does not include this as a beneficial impact.

COMMENT #307

standard violations. The DEIS fails to analyze the water quality impacts of continued withdrawal of water from the San Juan River.

As the San Juan River is a principal tributary of the Colorado River, the continued primary use of San Juan River to cool FCPP and the San Juan Generating Station represents a significant problem. Scientists have highlighted the association between climate change and impacts to water, worsening dust storms and rising human health problem in the Southwest:

Some researchers say climate change in the Southwest is also essentially “water change” because the biggest, most difficult adjustments may be forced upon the region by worsening water scarcity.

Climate scientists have described the desert Southwest as a hotspot for climate change. Climate data show that much of the Southwest has been heating up more than other regions of the country, and scientists say the region’s dryness appears to be contributing because in wetter areas, some of the sun’s heat would be used up evaporating water vapor from the soil.

Scientists also have found that recent droughts are worsening dust storms. Hotter temperatures and more frequent droughts are projected to worsen smog and air pollution in the future, posing health risks, particularly for those who are most vulnerable — the elderly, those with health problems and the poor.⁶⁹

The DEIS ignores the severity of the associated impacts between climate change and drought plaguing the U.S. Southwest. APS’s quest to retrofit and continue operations at FCPP will require more water and result in more water scarcity.

Despite this combination of scarce resources, and large consumptive use, the DEIS fails to take a hard look at the Project’s impact to water resources, not only in its consumptive use, but the impacts the Project has to water quality, which effectively decreases the amount of water in the system available for higher uses. First, OSM fails to consider the impact to water quality as a result of the installation of SCR. Second, OSM fails to look analyze reasonably foreseeable actions under the Clean Water Act. Finally, OSM fails to take a hard look at numerous other ways in which the Project is polluting ground and surface waters.

307.043

⁶⁹ Ian James, *Vanishing Water: An Already Strained Water Supply, Threatened by Climate Change, Desert Sun, Desert Sun*, (available at: <http://www.desertsun.com/longform/news/environment/2014/06/14/global-warming-southwest-water-supply-drought/10418637/> (last accessed June 23, 2014)) (attached as Exhibit 34).

Response 307.043

Water use at the Navajo Mine and FCPP is permitted through the New Mexico Office of State Engineer (Permit 2838). Consumptive use for the duration of the project, with required BART retrofits at the FCPP, would not increase above the water rights allowed (See Section 2.2.4). The reduction in metal emissions from the FCPP, and accordingly the reduced deposition into surface water, is the result of the shutdown of Units 1, 2, and 3, and not due to the installation of SCR. There would be no change in the concentration of metals deposited into surface water as a result of the installation of SCR, and accordingly, no impact to surface water quality. Further, installation of the SCR would not change the composition of the CCR that would be disposed. With regard to the “hard look” at the project impacts to water resources, please see Master Response #1, Deficient Analysis.

COMMENT #307

a. OSM Failed To Consider The Impact To Water Quality Resulting From The Installation Of Selective Catalytic Reduction On The Remaining Units At FCPP.

Glaringly missing from OSM's analysis on water quality impacts is the DEIS's complete lack of information on how water quality will change given the installation of Selective Catalytic Reduction on units 4 and 5 for any post-2016 operation. DEIS at 4.5-41. OSM asserts: "Neither of these completed Federal actions [mine transfer and BART] would change the affected environment for water resources/hydrology." DEIS at 4.5-41. This conclusion, however, simply ignores basic principles of physics.

307.044

Without SCR, significant amounts of pollutants have been allowed to escape into the air with numerous impacts to air quality, water quality, public health, wildlife, and the environment generally. SCR will improve those impacts. However, SCR does not make these pollutants magically disappear. Rather, it transfers them from the plant's stack emissions to its coal ash waste, with likely impacts to water quality. These impacts are made even more likely – if not virtually certain – if OSM is entirely failing to consider the issue as its specific conclusion that SCR installation will not affect water resources indicates.

As noted above, once an agency chooses to "trumpet" the benefits of an action, it also must disclose the related costs. *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983) ("There can be no hard look at costs and benefits unless all costs are disclosed."). Although SCR is an improvement to current operations, OSM has nevertheless failed to address the related impacts to water quality that it could cause if the Proposed Action is chosen and operations continue for another 25 years.

307.045

Despite the fact that OSM includes the BART decision as part of its "baseline," OSM "trumpet[s]" that decision's benefits. *Id.*; see, e.g., DEIS at 4.1-67, 4.1-69. OSM calculates that arsenic will be reduced by 96 percent, lead by 96 percent, mercury by 81 percent, and selenium by 95 percent, among other heavy metal reductions. DEIS at 4.1-67-69. These figures are striking – both because of the positive impact that these decreases will have on air quality, but in the context of water quality, they are also striking because such massive decreases in air emissions mean that those heavy metals must necessarily go into the coal ash waste stream. Historically, units 4 and 5 contributed 2,412 pounds per year of arsenic to air emissions; post-2014, they will contribute only 124 pounds per year. Consequently, 2,288 pounds per year of arsenic that was not previously in the coal ash waste stream will now be present there. DEIS at 4.1-69. In addition, there will be 2,281 additional pounds of lead per year, 352 pounds of mercury, and 7,083 pounds of selenium per year added to the CCW, as well as numerous other hazardous pollutants. DEIS at 4.1-69-70. OSM's failure to consider these contributions in the context of its hard look at impacts—and consideration of alternatives and mitigation measures for coal ash waste disposal—is arbitrary and capricious and must be remedied.

Response 307.044

Installation of SCR is an already completed action by EPA. The Draft EIS described the installation of the SCR as part of the baseline. The reduction in metal emissions from the FCPP is the result of the shutdown of Units 1, 2, and 3, and not due to the installation of SCR. Installation of the SCR would not change the composition of the CCR that would be disposed. Dry ash would be placed within a lined disposal area. Therefore, the analysis provided in Section 4.5 regarding the potential impacts to groundwater and surface water quality from FCPP operations is correct. Further, there is no water involved in the operation of SCR. Therefore, there would be no impact to water quality as a result of the SCR.

Response 307.045

Installation of SCR is an already completed action by EPA. The Draft EIS described the installation of the SCR as part of the baseline. The reduction in metal emissions from the FCPP is the result of the shutdown of Units 1, 2, and 3, and not due to the installation of SCR. Installation of the SCR would not change the composition of the CCR that would be disposed. Dry ash would be placed within a lined disposal area. Therefore, the analysis provided in Section 4.5 regarding the potential impacts to groundwater and surface water quality from FCPP operations is correct. Further, there is no water involved in the operation of SCR. Therefore, there would be no impact to water quality as a result of the SCR.

COMMENT #307

b. OSM Failed To Analyze Reasonable Foreseeable Actions Under the Clean Water Act

At the public meetings, SJCA raised the question as to why the NPDES permit for FCPP was suspiciously absent from the DEIS. Cardno told SJCA that EPA requested that the NPDES permit for FCPP be separate from the DEIS.⁷⁰

Despite the claim that the NPDES permit for FCPP will be addressed under NEPA separately, the DEIS states:

Should this alternative be implemented, FCPP would continue to operate in accordance with the existing NPDES permit and the SWPPP (Stormwater Pollution Prevention Plan). Therefore, stormwater discharge during continued operations would have no adverse effects on water quality.

DEIS at 4-5-59. For the reasons stated below, OSM must include an analysis of the FCPP NPDES permit reissuance in the DEIS. As we noted above relative to NAAQS and air quality protection, the mere fact that EPA may regulate water quality via a reissued NPDES permit does not obviate OSM's responsibility to take a hard look at direct, indirect, and cumulative water quality impacts. *S. Fork Band Council v. U.S. Dept. of the Int.*, 588 F.3d F.3d 718, 726 (9th Cir. 2009) (citing *Klamath-Siskiyou Wildlands Center v. BLM*, 387 F.3d 989, 998 (9th Cir. 2004)) (BLM's argument that it need not consider impacts because a facility operated under a state permit issued pursuant to the Clean Air Act is "without merit"); *Southern Oregon Citizens Against Toxic Sprays v. Clark*, 720 F.2d 1475, 1480 (9th Cir. 1983) (another agency's consideration of environmental impacts does not relieve BLM of its duty to consider effects; "BLM must assess independently [the impacts]"); see also *Calvert Cliffs' Coordinating Comm., Inc. v. U. S. Atomic Energy Comm'n*, 449 F.2d 1109, 1123 (D.C. Cir. 1971) ("Certification by another agency that its own environmental standards are satisfied involves an entirely different kind of judgment.").

Table ES-2 of the DEIS lists Federal actions to be taken related to the Four Corners Power Plant. Table ES-2 only identifies certain actions to be taken by the EPA under the Clean Air Act. The DEIS fails to identify or analyze upcoming mandated EPA actions required under the Clean Water Act at the Four Corners Power Plant. OSM has a duty to list and analyze "all Federal permits, licenses, and other entitlements which must be obtained in implementing the proposal." 40 C.F.R. §1502.25(b). As discussed more fully below, the owners of the FCPP are under a current and future duty to obtain a re-issued NPDES permit. The DEIS fails to analyze the re-issuance of an NPDES permit for the Four Corners Power plant and also fails to assess the environmental impacts of unpermitted water pollution discharges from the plant. A full analysis of environmental consequences of the continued operation of the FCPP serves as the scientific and analytic basis for the DEIS. 40 C.F.R. §1502.16. Failure to analyze water pollution issues at the FCPP is a significant oversight of the DEIS. As such, OSM must "prepare and circulate a

⁷⁰ Personal communication between Mike Eisenfeld, SJCA, and Dan Torney, Project Manager for DEIS, Cardno, Public Meeting, Durango Colorado, May 3, 2014.

Response 307.046

The NPDES permit for FCPP is treated the same as the NPDES permit for Navajo Mine, which is addressed as a federal action. Based on OSMRE consultation with EPA, the NPDES permit for FCPP has been administratively extended; therefore, the existing permit governs discharges at FCPP. Since the FCPP does not represent a new source, reissuance of the NPDES permit is not considered a major federal action and is not subject to NEPA regulations.

Response 307.047

The owners of FCPP submitted an application for a revised NPDES permit in 2005. EPA has administratively extended the current NPDES indefinitely; therefore, this permit governs discharges at FCPP. Tables ES-2 and 1-1 have been changed to include, "Approve or disapprove a renewed National Pollutant Discharge Elimination System (NPDES) permit under Section 402 of the CWA" within the EPA Authorities and Actions under the FCPP and Associated Facilities. The FCPP is required to comply with the federal Clean Water Act; there are no unpermitted waste discharges from the plant. Impacts to water quality due to continued operation of the FCPP is addressed on page 4.5-57 of the Draft EIS. With regard to recirculation of a revised draft, please see Master Response #6, Recirculation of the Draft EIS.

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revised draft” of the DEIS for public comment that includes this critical and requisite analysis. ↑
40 C.F.R. §1502.9(a).

Moreover, the DEIS states the following:

The Proposed Action, including the continuing operations of Navajo Mine, FCPP, and the transmission lines, would not result in major adverse effects to water resources or hydrology. Therefore, no additional mitigation is recommended.

DEIS at 4.5-64.

As noted above, there is no scientific or analytic basis in the DEIS to conclude that there will be “no major effects to the water resources or hydrology” and that “no additional mitigation is recommended.” The DEIS conducts no such analysis of the Clean Water Act/NPDES permitting issues associated with continued operation of the FCPP for an additional 25 years. For the reasons discussed more fully below, OSM’s conclusion that water resources will not adversely impacted or that no further mitigation is necessary to protect such resources is arbitrary, capricious, and unsupported by the administrative record.

- i. *The DEIS must analyze a re-issued NPDES permit for the FCPP*

EPA Region 9 is the Clean Water Act permitting authority for the FCPP because it is located on Indian lands. On April 3, 2001, EPA Region 9 issued the current NPDES permit for the FCPP, NPDES Permit No. NM0000019.⁷¹ The FCPP discharges pollutants via Morgan Lake to the No Name Wash, a tributary of the Chaco River, which is tributary to the San Juan River.⁷² The current NPDES permit became effective on April 7, 2001 and expired on April 6, 2006. To date, EPA has not issued a renewal NPDES permit for the FCPP for over 13 years. The owners/operators of the FCPP submitted a renewal NPDES permit application to EPA in late 2005.⁷³

Congress has determined that NPDES permits may only be issued “for fixed terms not exceeding five years.” 33 U.S.C. § 1342(b)(1)(B). EPA’s permit program “shall be subject to the same terms, conditions, and requirements as apply to a State permit program and permits issued thereunder” including the maximum 5-year term. 33 U.S.C. § 1342(a)(3). Thus, EPA does not have the statutory authority to administratively extend an NPDES permit beyond the statutory 5-year time period. *ONRC Action v. Columbia Plywood, Inc.*, 286 F.3d 1137, 1146 (9th Cir. 2002, dissent by Reinhardt). Likewise, a continuing shield under 40 C.F.R. §122.6 may in no event last more than five years, the term of a properly issued renewal permit under 33 U.S.C. ↓

307.048

⁷¹ APS’ Current NPDES Permit NM0000019 (attached as Exhibit 35).

⁷² EPA May 8, 2012 Inspection Report at 1 (attached as Exhibit 36).

⁷³ EPA Letter to APS re: NPDES Permitting (attached as Exhibit 37).

Response 307.048

EPA notes that the permit has been administratively extended.

§122.6 Continuation of expiring permits.

- (a) EPA permits. When EPA is the permit-issuing authority, the conditions of an expired permit continue in force under 5 U.S.C. 558(c) until the effective date of a new permit (see §124.15) if:
 - (1) The permittee has submitted a timely application under §122.21 which is a complete (under §122.21(e)) application for a new permit; and
 - (2) The Regional Administrator, through no fault of the permittee does not issue a new permit with an effective date under §124.15 on or before the expiration date of the previous permit (for example, when issuance is impracticable due to time or resource constraints).
- (b) Effect. Permits continued under this section remain fully effective and enforceable.
- (c) Enforcement. When the permittee is not in compliance with the conditions of the expiring or expired permit the Regional Administrator may choose to do any or all of the following:
 - (1) Initiate enforcement action based upon the permit which has been continued;
 - (2) Issue a notice of intent to deny the new permit under §124.6. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operating without a permit;
 - (3) Issue a new permit under part 124 with appropriate conditions; or
 - (4) Take other actions authorized by these regulations.

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§1342(b)(1)(B) and 40 C.F.R. § 122.6. Permit #NM0000019 expired on April 6, 2006 and thus may only be administratively extended by EPA through April 6, 2011. EPA's attempt to administratively extend Permit NM0000019 and the continuing shield beyond 5 years is illegal. EPA has refused to act for almost ten years, and by its inaction, attempted to allow APS and the other FCPP owners to receive not only the equivalent of one additional NPDES permit (until 2011), but the equivalent of two additional permits, with no further or additional review to the ensure the efficacy of the permits terms and conditions. In doing so, EPA has illegally ignored the plain language of Congress limiting the term of NPDES permits to 5 years and risked water quality protections. Thus, Permit NM0000019 became void by operation of law on April 7, 2011. Accordingly, the owners/operators of the FCPP are currently discharging water pollution from the plant without a permit in violation of Section 301(a) of the Clean Water Act, 33 U.S.C. § 1311(a). This underscores the point made above that OSM has an independent duty, pursuant to NEPA, to take a hard look at direct, indirect, and cumulative water quality impacts, as well as reasonable alternatives to mitigate water quality impacts. Regardless, EPA's legal duty to take action on the APS's pending NPDES permit application is a reasonably foreseeable action that the DEIS fails to address or analyze. The DEIS fails to analyze this issue, or any other issue, regarding the discharge of water pollution into receiving waters from the FCPP. Therefore, we request that OSM "prepare and circulate a revised draft" of the DEIS. 40 C.F.R. §1502.9(a).

EPA's failure to timely issue a renewal NPDES permit for the FCPP constitutes an unreasonable delay for rendering its decision under the Administrative Procedures Act, 5 U.S.C. § 558(c). SJCA and the Center for Biological Diversity have issued a notice of intent to sue EPA and/or the owners of the Four Corners Power Plant related to these NPDES permitting issues.⁷⁴ The DEIS fails to evaluate the reasonably foreseeable environmental and financial impacts of a re-issued NPDES permit on the FCPP, and the environmental impacts of FCPP's water pollution discharges resulting from the plant's continued operation for an additional 25 years.

A new NPDES permit could have serious implications for continued operations. For example, NNEPA has indicated that it is conducting assessments of receiving waters around the Navajo Mine and FCPP.⁷⁵ NNEPA indicated that it expects to find that some of those waters are not meeting water quality standards.⁷⁶ The results of the assessments could impact permit limits and thus how FCPP is able to operate. OSM must address address the impacts of more stringent permit limits both on continued operations and with regard to water quality more generally.

Some of the related issues associated with a re-issued NPDES permit are discussed more fully below.

⁷⁴ EPA/APS 60 Day Notice Letter (attached as Exhibit 38).

⁷⁵ Personal communication between Rachel Conn, Amigos Bravos, and Steve Austin, NNEPA (June 23, 2014).

⁷⁶ *Id.*

Response 307.049

Based on OSMRE consultation with EPA, EPA has noted that the NPDES permit has been administratively extended, therefore the existing permit conditions are the ones that govern FCPP discharges.

307.049

COMMENT #307

- ii. *The DEIS must analyze the impacts of new CWA regulations.*

It is important for the Clean Water Act permitting issues to be evaluated in the DEIS because the Clean Water Act regulations affecting coal fired power plants are currently evolving. For example, on May 16, 2014, EPA issued its final cooling water intake structure regulations for coal-fired power plants under Section 316(b) of the Clean Water Act, 33 U.S.C. §1326(b).⁷⁷ Additionally, the EPA is also under a consent decree to issue final rules updating their Effluent Limitation Guidelines (“ELGs”) for coal fired power plants by September 30, 2015. As will be discussed below, the DEIS should evaluate the impact of these reasonably foreseeable current and future regulatory changes on the FCPP, including, but not limited, the economic viability of continuing to operate the FCPP an additional 25 years.

307.050

- a. *The intake structure regulations and their impact on the FCPP.*

The FCPP operates a river station, which pumps water from the San Juan River two miles to Morgan Lake.⁷⁸ The FCPP uses cooling water intake structures utilizing a design flow withdrawal of greater than 50 million gallons/day of water from the San Juan River, of which greater than 25 percent is used exclusively for cooling purposes the power plant.⁷⁹ The FCPP cooling system is a “once through” cooling system in that the water is not re-circulated for use in a closed loop containment system.⁸⁰ Instead, the cooling water passes through the system one-time and then is discharged either to Morgan Lake and/or eventually back to the San Juan River.

The FCPP has an intake structure on its cooling system where surface water is collected from the San Juan River. “The intake in the river is equipped with screens that catch debris to prevent damage to the pump system.”⁸¹ A photograph of the San Juan River intake structure is attached.⁸² The intake velocity from the river is close to 0.5 ft/s.⁸³

⁷⁷ EPA 2014 Cooling Water Intake Structure Regulation (attached as Exhibit 39).

⁷⁸ APS 2013 Revised NPDES Permit Application at 1, section 12 (attached as Exhibit 40).

⁷⁹ APS April 18, 2005 Letter to EPA at 4 (attached as Exhibit 41).

⁸⁰ *Id.*; 2001 NPDES Permit Fact Sheet at 2-3 (attached as Exhibit 42); EPA 2012 Inspection Report at 1-2 (attached as Exhibit 36).

⁸¹ APS 2013 Revised NPDES Permit Application at 1, section 12 (attached as Exhibit 40).

⁸² See EPA 2012 Inspection Report, Figures 23 & 25 (attached as Exhibit 36).

⁸³ APS 2013 Revised NPDES Permit Application at 4.

Response 307.050

EPA has noted that the NPDES permit has been administratively extended, therefore the existing permit conditions are the ones that govern FCPP discharges.

According to the EPA proposed rule for effluent limitation guidelines:

- EPA is not proposing to revise the BPT effluent guidelines or establish BCT effluent guidelines in this notice because the same wastestreams would be controlled at the proposed BAT/BADCT (NSPS) level of control. EPA is proposing to remove FGD wastewater, FGMC wastewater, gasification wastewater, and leachate from the definition of low-volume wastes. As a result, EPA is making a structural adjustment to the text of the regulation at 40 CFR Part 423 to add paragraphs that list these four wastestreams By name, along with their applicable effluent limitations. The reformatted regulatory text for these four wastestreams includes BPT effluent limits, which are the same as the current BPT effluent limits for low volume wastes.
- A description of the proposed rule for effluent limitation guidelines has been added to Section 4.5: On June 7, 2013, EPA proposed a rule to amend the effluent limitations guidelines and standards for the Steam Electric Power Generating category (40 CFR Part 423), within which the FCPP falls. The proposed rule aims to strengthen the existing controls on discharges from these plants; it sets the first federal limits on the levels of toxic metals in wastewater that can be discharged from power plants, based technological advances over the last three decades. The current effluent guidelines were last updated in 1982 and focus on settling out particulates rather than treating dissolved pollutants, as do the proposed rules. The updated regulation is also proposed because new technologies in the industry and implementation of pollution controls have altered wastewater streams.

The proposed rule would establish new or additional requirements for wastewater streams from flue gas desulfurization, fly ash, bottom ash, flue gas mercury control, and gasification of fuels, including coal. The proposed standards are based on data collected from industry and are designed to provide flexibility in implementation; the rules propose phasing in new requirements between 2017 and 2022. It should be noted that the required new technology is already installed at a number of plants. The proposed rule identifies four possible regulatory options that vary in the number of waste streams covered, size of the units controlled, and stringency of controls. EPA will take comment on all of these options, which it will use to help inform the most appropriate final standard (EPA 2013g)

It is beyond the scope of NEPA to forecast the cost of electricity as result of additional regulatory requirements being implemented at FCPP. The economic viability of continuing operation of FCPP with potential regulatory requirements is dependent on the ability to pass costs onto ratepayers; the basis for this decision is discussed in Master Response #13.

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Cooling water is conveyed from Morgan Lake to FCPP Units 4 and 5 via a canal system.⁸⁴ Units 4 and 5 also have their own intake structures located on the cooling water canal. These intake structures consist of four sets of traveling screens and pumps: two for each unit.⁸⁵ The intake velocity for these structures is typically well above 0.5 ft/s.⁸⁶ Fish are frequently observed swimming around the Unit 4 and 5 intake structures. Fish that are impinged on the screens are collected in a bucket, with the contents being disposed of daily.⁸⁷

Cooling water intakes can cause adverse environmental impacts when aquatic organisms are drawn into a power plants cooling system and exposed to heat, pressure, mechanical systems and chemicals. This process is known as “entrainment.” Aquatic organisms can also be harmed when they are trapped against screens protecting the opening of an intake structure. This process is known as “impingement.” Section 316(b) of the Clean Water Act requires that “the location, design, construction, and capacity of cooling water intake structures reflect best technology available for minimizing adverse environmental impacts.” 33 U.S.C. § 1326(b). Under EPA’s final rule, power plants that withdraw at least 2 million gallons of water per day from waters of the United States and use at least 25 percent of that water exclusively for cooling water purposes are subject to new requirements. 76 Fed. Reg. 22174. The re-issued NPDES permit for the FCPP must impose Best Technology Available (“BTA”) requirements to reduce impingement at the FCPP.

The DEIS is grossly deficient because it fails to evaluate the following:

- i. the current baseline, and future environmental impact, of impingement and entrainment of aquatic life in the San Juan River and Unit 4 & 5 intake structures;
- ii. the current baseline, and future environmental impact, on threatened and endangered species resulting from operation of the FCPP cooling water system;
- iii. the current baseline, and future impact, of diverting over 50 million gallons per day of San Juan River surface water from the watershed for use as cooling water at the FCPP.
- iv. whether the “the location, design, construction, and capacity of cooling water intake structures [at FCPP] reflect best technology available (BTA) for minimizing adverse environmental impacts.” If not, the DEIS must identify *mitigation* measures required to be taken that comply with the Section 316(b) BTA requirements and the dates of implementation. 40 C.F.R. § 1502.16(h). The technologies evaluated in the DEIS should include, but not be limited to, dry closed cycle cooling, a true wet closed cycle re-

307.051

⁸⁴ EPA 2012 Inspection Report at 4, 11, Figure 9 (attached as Exhibit 36).

⁸⁵ *Id.* at 4.

⁸⁶ *Id.* at 2.

⁸⁷ *Id.* at 10-11, Figures 9 & 10.

Response 307.051

A discussion of the effects of water withdrawals from the San Juan River has been added to the EIS pursuant to the new EPA rules, which were not in effect at the time the Draft EIS was published. These new rules have been reviewed during the Section 7 consultation process with USFWS, and the EIS has been made consistent with those findings.

See also Master Response #13, Cost of Electricity.

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circulated cooling system that relies on cooling towers, rather than Morgan Lake, as the means to cool the high temperature cooling water generated by the FCPP. A true closed cycle cooling system (wet or dry) would greatly reduce water consumption at the FCPP and alleviate many of the environmental impacts of water withdrawal from the San Juan River. True wet closed cycle systems use only 2-5% of the water of a once-through system, such as FCPP's. A dry system consumes only *de minimis* water. The DEIS should also consider capacity factor reductions and/or retirement of Units 4 & 5 as a means of compliance. The DEIS should include a binding requirement to promptly implement BTA as a mandatory mitigation measure in the DEIS to reduce harm to aquatic life. In the event OSM attempts to defer this analysis to EPA's future NPDES permit re-issuance, it should withdraw its DEIS until such time that EPA has conducted its analysis and allowed for public comment so that the DEIS is being prepared "concurrently with and integrated with" EPA's CWA Section 316(b) analysis. 40 C.F.R. §1502.25.

v. the financial impact on the price of coal fired electricity generated at the FCPP resulting from compliance with the recently promulgated Section 316(b) Clean Water Act intake structure regulations. The DEIS should also conduct a comprehensive analysis of the total cost of all reasonable foreseeable regulatory requirements, the future price of electricity generated by the FCPP as a result of compliance with these reasonable foreseeable future regulatory requirements, and an analysis of whether the electricity generated by FCPP remains price competitive and dispatchable in lieu of the costs of future upgrades.

On April 18, 2005, APS submitted a Proposal for Information Collection (PIC), which was a component of a Comprehensive Demonstration Study required for compliance with Section 316(b) of the Clean Water Act.⁸⁸ The PIC states that a one-year impingement study was performed by APS in 2005.⁸⁹ OSM must acquire the 2005 APS impingement study and make it publicly available for comment prior to finalizing the EIS. APS's April 18, 2005 letter also references technologies to reduce such impacts, a list of impingement studies performed in the vicinity of the structures and the associated physical and biological conditions, and consultations with fish and wildlife agencies. These documents must be made publicly available for comment prior to finalizing the EIS. All entrainment studies or data for the FCPP must also be made publicly available for comment prior to finalizing the EIS. Once these studies are obtained, we request that OSM re-issue the DEIS for public comment including a complete analysis of the environmental and socioeconomic impacts associated with compliance with the CWA issues identified herein. Alternatively, if OSM is unable or unwilling to obtain the requested studies, OSM should postpone the NEPA process until all impingement/entrainment studies are performed by OSM or the owners of the FCPP and the BTA alternative is selected.

⁸⁸ See Exhibit 41 at 4.

⁸⁹ *Id.* at 12.

Response 307.052

This study was initiated in Morgan Lake, but was not completed, as the proposed 316b rule that prompted the study was withdrawn. No studies were ever conducted on entrainment/impingement effects on the San Juan River. However, a qualitative evaluation of entrainment/impingement has been included in the Final EIS at Section 4.7.4.1.

307.052

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b. The ELG regulations and their impact on FCPP

EPA is also in the process of revising its effluent limitation guidelines (“ELGs”) for coal fired power plants. Effluent limitation guidelines set enforceable pollution discharge limitation for water pollution discharges. The current ELGs applicable to Steam Electric Power Generating Point Sources are found at 40 C.F.R. Part 423. On June 7, 2013, EPA published a proposed rule to revise the power plant ELGs. 78 Fed. Reg. 34432. EPA is under a consent decree to issue a final rule on the ELGs on or before September 30, 2015. Thus, final revised ELGs are a reasonable foreseeable action that must be evaluated by OSM in the DEIS. These revised ELGs will likely govern water pollution discharges from the FCPP during at least a portion of the 25-year time period contemplated by the DEIS. As such, the DEIS should evaluate the likely impact of the new ELGs on the environment, the economics of operation of the FCPP, the cost of electricity generated by the plant and its marketability.

307.053

Steam electric power plants contribute over half of all toxic pollutants discharged to surface waters by all industrial categories currently regulated in the United States.⁹⁰ These toxic pollutants include metals, mercury, arsenic, lead, selenium, and others. Exposure to these toxic pollutants are linked to cancer, neurological damage, and ecological damage.⁹¹ EPA’s proposed ELG rule will likely impose new pollution discharge limits on various waste streams at existing coal plants, including flue gas desulfurization waste, fly ash transport water, bottom ash transport water, flue gas mercury controls, and non-chemical metal cleaning.⁹²

Again, the DEIS fails to analyze the impact of the reasonable foreseeable proposed ELGs on operation of the FCPP. The DEIS also fails to undertake an analysis of the likely and more stringent case-by-case effluent limits that would be imposed in a re-issued NPDES permit.

It is crucial that the DEIS fully evaluate the potential risks to the public health and the environment from the current, past, and future discharges from the FCPP into Morgan Lake, No Name Wash, the Chaco River, and the San Juan River. For example, local residents utilizing surface and groundwater live within 2,000 feet of Morgan Lake.⁹³ There is a publicly accessible boating dock located on Morgan Lake.⁹⁴ Consumptive fishing is commonly practiced in Morgan Lake.⁹⁵ Primary contact recreation, such as windsurfing, is not only allowed, but encouraged in

307.054

⁹⁰ EPA ELG Powerpoint at 6 (attached as Exhibit 43).

⁹¹ *Id.*

⁹² *Id.* at 11.

⁹³ EPA May 8, 2012 Inspection Report at 20, Figure 25 (attached as Exhibit 36).

⁹⁴ *Id.*

⁹⁵ *Id.*

Response 307.053

A description of the proposed rule for effluent limitation guidelines has been added to Section 4.5: On June 7, 2013, EPA proposed a rule to amend the effluent limitations guidelines and standards for the Steam Electric Power Generating category (40 CFR Part 423), within which the FCPP falls. The proposed rule aims to strengthen the existing controls on discharges from these plants; it sets the first federal limits on the levels of toxic metals in wastewater that can be discharged from power plants, based technological advances over the last three decades. The current effluent guidelines were last updated in 1982 and focus on settling out particulates rather than treating dissolved pollutants, as do the proposed rules. The updated regulation is also proposed because new technologies in the industry and implementation of pollution controls have altered wastewater streams.

The proposed rule would establish new or additional requirements for wastewater streams from flue gas desulfurization, fly ash, bottom ash, flue gas mercury control, and gasification of fuels, including coal. The proposed standards are based on data collected from industry and are designed to provide flexibility in implementation; the rules propose phasing in new requirements between 2017 and 2022. It should be noted that the required new technology is already installed at a number of plants. The proposed rule identifies four possible regulatory options that vary in the number of waste streams covered, size of the units controlled, and stringency of controls. EPA will take comment on all of these options, which it will use to help inform the most appropriate final standard (EPA 2013g).

It is worth noting that EPA has extended its deadline to publish a final rule to September 30, 2015. As stated in the Final CCR rule published December 2014, EPA plans to harmonize the implementation of the CCR rule with the ELG and other pending related EPA rules and guidance.

The costs associated with implementation of the effluent limitation guidelines if finalized, are summarized in the draft EPA rule. The additional marginal costs of operations are addressed through the

ratemaking processes of each state's utilities commission (e.g., Arizona Corporation Commission, New Mexico Public Regulation Commission). Please see Master Response #13, Cost of Electricity.

Response 307.054

As discussed in Section 4.5 and shown in Figure 4.5-6, based on a review of monitoring data collected between 2002 and 2010, water quality in Morgan Lake meets the Navajo Nation standards for secondary human contact and fish consumption. These standards are representative of the results of public health studies and are meant to be protective of public health. As stated on page 4.5-42 of the Draft EIS, "the analysis of potential impacts to water quality is based on a comparison of water quality monitoring data at the FCPP and Navajo Mine to NNEPA standards. These standards, although not legally enforceable at the FCPP, provide a consistent metric against which to evaluate potential changes to water quality as a result of the project alternatives. Further, the NPDES permit includes monitoring for some constituents for which NNEPA standards exist; these permit limits match the NNEPA standards." Based on this comparison, designated beneficial uses of the lake for recreation purposes are protected and there is no human health risk associated with contact with surface water at Morgan Lake.

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Morgan Lake.⁹⁶ APS has admitted that Morgan Lake is a “water of the U.S.” and thus the beneficial uses of the lake must be protected from pollution discharges at the FCPP.⁹⁷ Therefore, we request that OSM perform a complete public health study evaluating the human health risk associated with contact with surface and groundwater in the vicinity of the FCPP.

c. OSM Failed To Take A Hard Look At Documented Water Pollution Problems At FCPP

The DEIS also fails to analyze other documented water pollution problems at the FCPP. For example, the DEIS fails to analyze or otherwise mention the following water pollution issues at the FCPP:

i. An October 4, 2007 EPA Region 9 site inspection report of the FCPP revealed seeps on the eastern bank of the Chaco River.⁹⁸ These seeps have been previously documented and are emanating from the FCPP coal ash dumps. These seeps are more fully described in a letter from APS to OSM dated April 3, 2013.⁹⁹ Thus, OSM was clearly aware of this issue prior to the issuance of the DEIS. The DEIS should collect the following information on these coal ash seeps and make it available to the public for comment prior to finalizing the DEIS: flow rate of the seeps; all water quality sampling of the seeps; immediate upstream and downstream water quality and quantity sampling of the Chaco River; an upstream and downstream biological assessment of the Chaco River; sediment samples along the path of the seeps; all assessments of remediation alternatives to eliminate/collect/treat the seep prior to discharge into the Chaco River. OSM should also explain why its DEIS failed to address this issue, as well as the other CWA issues identified in this comment letter.

ii. An EPA Region 9 site inspection report of the FCPP on May 8, 2012 states:

Total Dissolved Solids are built-up in Morgan Lake before being discharged to the receiving water. Elevated TDS may adversely impact downstream beneficial uses, however there is no criterion for TDS in the Navajo Nation Water Quality Standards.¹⁰⁰

The DEIS should collect the following information on this TDS issue and make it available to the public for comment prior to finalizing the DEIS: flow rate of the discharge; all water quality sampling of the discharge; immediate upstream and downstream water quality and quantity

⁹⁶ Windsurfing Conditions Website (attached as Exhibit 44).

⁹⁷ See Exhibit 41 at 4.

⁹⁸ EPA Inspection Report (October 4, 2007) (attached as Exhibit 45).

⁹⁹ APS letter to OSM (April 3, 2013) (attached as Exhibit 46).

¹⁰⁰ EPA 2012 Inspection Report at 4 (attached as Exhibit 36).

Response 307.055

Discussion of the inspection of the coal ash disposal areas is provided on page 4.5-58, which reiterates the conclusion of the inspection that no substantial seepage was identified. The seepage intercept trenches are displayed on Figure 4.5-2. Groundwater seepage beneath the ash disposal areas is found on page 4.5-57. EPA and their consultants' assessment of the seepage from the embankments is discussed on page 4.5-58.

Water quality data in Chaco River upstream and downstream of the FCPP is presented in Figure 4.5-9. However, the following sentence has been added to the discussion: Flow rate of the seep, as measured during the latter half of 2011, was 0.0 gallons per minute (i.e. no seepage) from July to August, peaked at 0.60 gallon per minute at the beginning of August 2011 and then steadily decreased to 0.0 gallons per minute by the beginning of October, where it remained dry through the rest of the year.

A BA was conducted for the entire project in accordance with Section 7 of the ESA. Chaco River is included within the area of effect evaluated in the BA. The USFWS used the BA to develop its Biological Opinion, which is included as an appendix to the Final EIS. For this particular issue, our assessment indicates there is no exposure pathway to Chaco River.

As described in the Draft EIS, APS has installed extraction wells to remove water from the seeps and return it to the ash ponds or evaporation ponds. EPA has indicated that they are considering how to address the seeps in the future; however, OSMRE's review of the data provided indicates that the trench system, as described in Section 4.5 of the Draft EIS is the best available technology for preventing groundwater flows into the Chaco River (see page 4.5-57) and based on this assessment and construction of trench to shale, it is effective.

All data used in the preparation of the Draft EIS is part of the Administrative Record and available upon request.

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sampling of No Name Wash and the Chaco River; an upstream and downstream biological assessment of the No Name Wash and Chaco River; sediment samples along the path of the discharge; all assessments of remediation alternatives to treat the discharge.

iii. The May 8, 2012 EPA Inspection Report also states:

Sanitary, fly ash and FGD blowdown wastewater is not regulated in the NDPEs Permit. Although there is no discrete outfall from the fly ash ponds, the ponds do have a potential to discharge to Waters of the U.S. through subsurface leaching.¹⁰¹

The DEIS should collect the following information on the ash pond discharge issue and make it available to the public for comment prior to finalizing the DEIS: all studies on the hydrological connection of the coal ash dumps with all waters of the United States; flow rate of any discharge; all water quality sampling of the discharge; immediate upstream and downstream water quality and quantity sampling in any water of the United States, including, but not limited to No Name Wash, the Chaco River, the San Juan River, and Morgan Lake; an upstream and downstream biological assessment of these waters of the United States; sediment samples in the coal ash dumps; and, all assessments of remediation alternatives to treat the discharge.

iv. 2013 Report of petroleum discharge

A February 2013 report prepared for APS by Mogollan Environmental Services documents continuing and ongoing releases of petroleum, benzene, and other petroleum byproducts from the FCPP Garage Fueling Area into soil, groundwater, and Morgan Lake.¹⁰² The FCPP Garage Fueling Area is immediately adjacent to, and nearly surrounded by, Morgan Lake.¹⁰³ In the mid-1980's it was reported that "diesel was bubbling up" to the surface of Morgan Lake.¹⁰⁴ It was found that there were releases of petroleum substances from the FCPP Garage Fueling Area into Morgan Lake.¹⁰⁵ The results of the 2013 investigation revealed that petroleum substances are still present in the soil and groundwater at the FCPP Garage Fueling Area.¹⁰⁶

The DEIS fails to adequately evaluate whether there is a continuing discharge of petroleum substances from the FCPP Garage Fueling Area into Morgan Lake or other surface waters

¹⁰¹ *Id.* at 5.

¹⁰² 2013 Petroleum Spill Report (attached as Exhibit 47).

¹⁰³ *Id.* at Figure 1. See also, 2013 FCPP Field Sampling Plan at Figure 1 and 2 (attached as Exhibit 48).

¹⁰⁴ *Id.* at 1.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

Response 307.056

Please see response to Comment 307.055.

Response 307.057

The investigation of discharge from the FCPP garage fueling area is discussed in Section 4.15.2.2.

The following text has been copied from Section 4.15 and added to Section 4.5: As discussed in more detail in Section 4.15, an ongoing investigation is underway at FCPP analyzing potential impacts to groundwater in the vicinity of a potential fuel release near the garage storage facility. The initial investigation found that groundwater near the garage storage facility is 6 feet below ground surface and flows northwest at a gradient of 0.009 foot per foot, away from Morgan Lake. The groundwater grab sample contained 170 mg/L of TPH (Mongollan 2013).

In addition, data from a more recent site assessment has been added to the section as follows:

- A limited Phase II Environmental Site Assessment of the garage fueling area was conducted in December 2013 to identify volatile organic compounds (VOCs) to soil and groundwater. Analytical results in groundwater monitoring results indicate detections of benzene and TCE exceeding the maximum contamination level of 5 µg/L in the samples collected from one of the monitoring wells (FCPP-GF-3). Vinyl chloride and 1,1-DCE were detected in excess of maximum contaminant levels of 2 and 7 µg/L, respectively, in the samples collected in FCPP-GF-2. All other analytes were either detected below the respective maximum contaminant levels, where established, or below the lower reading limit. These data indicate the petroleum levels are not continuing to be released into soils or groundwater.

- APS has committed to fully characterize the impacts at the site in the groundwater, identify the source of the impacts, evaluate remedial measures and, if appropriate, initiate remediation. The objective of any proposed remedial action is to reduce contaminant concentrations in the soil to levels below appropriate risk-based cleanup criteria and to remove source material that may potentially impact or further impact the groundwater, to the extent technically feasible. To achieve the objective, the site will be remediated in a manner that ensures concentrations remaining in the soil and groundwater are protective of human health and the environment and will restore the site, to the extent necessary, to support existing and proposed future uses (APS 2014).

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requiring an NPDES Permit and, at the least, fails to take a hard look at past, present, and future direct, indirect, and cumulative impacts from this discharge pursuant to NEPA. The DEIS also fails to consider or impose mitigation measures to remediate the site and prevent future releases of petroleum substances into Morgan Lake. The DEIS should consider and impose mitigation measures, including but not limited to: a complete investigation into the extent of the contamination with evidence of whether petroleum substances are still be released from soils or groundwater into Morgan Lake; a complete removal and remediation of soils at the site to prevent current or future releases of petroleum products from the FCPP Garage Fueling Area into Morgan Lake; imposition of a pump and treat groundwater treatment system to completely remediate the contaminated groundwater at the site; and a requirement that APS immediately apply for an NPDES permit with EPA Region 9 for the discharge of petroleum products from the FCPP Garage Fueling Area into Morgan Lake.

v. The DEIS states “NNEPA water quality standards do not apply to the facilities or operations of the FCPP, only Navajo Mine.” The DEIS fails to identify the water quality standards that apply to discharges from the FCPP into Morgan Lake, No Name Arroyo, Cottonwood Wash, Chaco River and the San Juan River. By failing to identify these water quality standards, any hard look analysis, to the degree it even exists, is deficient because OSM provides itself with no benchmarks to measure significance and to inform its consideration of alternatives and mitigation measures, as well as its assessment of the propriety of allowing post-2016 operations, period. OSM should therefore clearly state whether State of New Mexico water quality standards apply to discharges from the FCPP or which federal, state, local or tribal government’s water quality standards apply and identify all such water quality standards that apply to such discharges, using those standards as a benchmark for the NEPA analysis in terms of impact analysis, consideration of alternatives, consideration and imposition of mitigation measures, and to inform OSM’s decision whether to allow post-2016 operations. If no water quality standards apply to discharges from FCPP, please state as such.

vi. The DEIS states that during construction of the new coal ash facilities at the FCPP at least one water of the United States will be permanently filled. DEIS at p. 4.5-59. The DEIS states that APS “would avoid impacts to this portion of the drainage and maintain a 300-foot buffer from it during construction of the proposed ash pond.”¹⁰⁷ However, the DEIS then summarily concludes that “no impacts to waters of the US would result from the Proposed Action.”¹⁰⁸ The DEIS is deficient because it fails to produce evidence in support of this conclusion. First, the DEIS fails to state its legal authority for allowing APS to fill a portion of a waters of the U.S. without a Clean Water Act Section 404 permit. Second, the DEIS fails to explain how a portion of a watershed could be filled with material without affecting the hydrology and water quality of the remaining portion of the watershed that has been determined to be a “water of the United States” under the Clean Water Act. By failing to provide such an explanation or evidence to support it, OSM’s conclusion of “no impact” to this water of the United States is without support in the administrative record and is thus arbitrary and capricious.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

Response 307.058

As described in the Draft EIS, discharges from FCPP into Morgan Lake and No Name Wash are regulated by the EPA through the facility’s NPDES permit. Page 4.5-50 of the EIS has been updated to state, “Further, the NPDES permit includes monitoring for some constituents for which NNEPA standards exist; these permit limits match the NNEPA standards.” While the Navajo Nation has identified beneficial uses of No Name Wash, Chaco River, San Juan River, and Morgan Lake and has tribal water quality standards, per the APS lease, these standards are not enforceable with regard to discharges from the FCPP. The following sentence has been added to page 4.5-40 of the EIS, “No tribal, state, or federal water quality standards apply to discharges from FCPP or water quality in Morgan Lake; comparison to NNEPA standards is for context only.” The EIS compares the results of surface water quality monitoring to tribal standards as shown in Figures 4.5-8 and 4.5-9 of the Draft EIS.

Response 307.059

The following language has been added to Section 4.5 to clarify the discussion of waters of the U.S.:

USACE reviewed and accepted APS/FCPP’s delineation materials and approved jurisdictional request showing one isolated exhibit of OHWM and one isolated wetland; USACE moved forward with an isolated-and-not-jurisdictional determination for those isolated waters under current regulations governing isolated waters. As such, USACE has determined that a permit is required for the Pinabete SMCRA Permit Area, but not the FCPP.

Further, as discussed on page 4.5-59, APS would avoid all delineated waters of the U.S. and maintain a 300-foot buffer from it during construction of the ash pond. Therefore, no impacts to waters of the U.S. would result from the proposed action. Based on a review of the delineation and the Project plans, removal of the non-jurisdictional drainages would not alter stormwater runoff and hydrology.

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In addition to fully explaining OSM's rationale for its conclusion, the Conservation Groups also request that prior to finalizing the EIS, OSM produce all evidence in support of OSM's conclusion of "no impact" including a specific identification of the waters of the US that will be filled, the location of the fill relative to the remaining portion of the water of the US, whether the portion that has been designated a water of the US is located upstream or downstream of the proposed fill; and all evidence relied upon or reviewed by OSM for its conclusion that there will be no impact to this portion of the water of the US.

4. OSM Failed To Take A Hard Look At The Project's Impacts To Air Quality

a. Decision-makers have assumed that the Regional Haze Program BART determinations have dictated an approval of continuing operations at FCPP for 25 years from 2016-2014

At the public meetings May 2-5, 2014, the EIS contractors (primarily Cardno) and agency representatives (OSM) kept referring to the FCPP BART alternative allowing for the closure of Units 1, 2, & 3 as the driving regulatory decision allowing the continued operation of Units 4 & 5 for an additional 25 years. Contractor Cardno stated that at the public hearings that they had quickly inserted the three-unit closure BART FIP determination in the Draft EIS. OSM appears to be assuming that the native and non-native communities have agreed with this approach. As outlined in this comment letter, the undersigned Conservation Groups are opposed to the continued operation of FCPP Units 4 and 5 for an additional 25 years. EPA is the cooperating agency with direct regulatory responsibility for air quality and air emissions at the FCPP; EPA does not make the ultimate choice regarding whether the mine or power plant should actually continue for another 25 years. EPA also did not attend any of the public meetings and therefore could not be adequately consulted on their decision-making processes within the Draft EIS. EPA's comments on the Draft EIS are not expected until the June 27, 2014 deadline,¹⁰⁹ and thus could not be reviewed to provide the public with a basis for comment and public involvement.

b. The DEIS's characterization of "good" air quality is factually incorrect, arbitrary, and capricious.

The FCPP is located on tribal land within the borders of San Juan County, New Mexico. The DEIS states, "San Juan Basin air quality is generally good and meets EPA ambient air quality standards." DEIS at 4.1-1. For the reasons stated below, OSM's characterization of air quality standards in the San Juan Basin is factually incorrect, arbitrary, and capricious.

As noted in the DEIS, "ambient concentrations of ozone and particulate matter have sometimes approached, but not exceeded, Federal standards in the three most recent years for which validated data are available." DEIS at 4.1-6. As will be discussed more fully below and in the expert reports of Victoria Stamper¹¹⁰ and Howard Gebhart¹¹¹, the San Juan County is either

¹⁰⁹ Mike Eisenfeld conversation with Karen Vitulano, NEPA contact for EPA for Draft EIS.

¹¹⁰ Expert Report of Victoria Stamper (attached as Exhibit 29).

Response 307.060

EPA established NAAQS for criteria pollutants that threaten human health and the environment (40 CFR Part 50). The CAA established primary standards to protect public health and secondary standards that set limits to protect the environment (e.g., decreased visibility, damage to animals, crops, vegetation, and buildings). The ambient air quality standards are intended to protect the public health and welfare and specify the concentration of pollutants (with an adequate margin of safety) to which the public may be exposed without adverse health effects. The standards are designed to protect those segments of the public most susceptible to respiratory distress (known as sensitive receptors). The Four Corners area is designated attainment for all NAAQS. The air quality is therefore considered protective of human health and the environment.

The Stamper Report acknowledges that regional air quality does not exceed NAAQS. Projected future exceedances of ozone result from The Stamper Report deriving conclusions from a different set of data inputs than the EIS (see Comment 307.074).

On December 17, 2014, EPA published a proposal to revise the NAAQS standard for O₃ from the current 75 parts per billion (ppb) to 65 - 70 ppb (Fed. Reg. 75234). The EPA proposal was published 9 months after the release of the Draft EIS; therefore, the analysis contained within the Draft EIS pre-dates the NAAQS proposal. The purpose of publishing a draft proposal is to solicit comment from the public and industry; EPA will consider comments in promulgating a final rule. In response to comments on this proposal the EPA may decide on a final primary standard of anywhere from 60 to 70 ppb, or may come to a different conclusion altogether. Because of the uncertainty in the final decision timing, uncertainty as to the final determination of primary and secondary standards, and the uncertainty related to implementation of any new standards, the Final EIS impact analysis has been conducted against the current O₃ standards. In addition, EPA in their source-specific FIP for BART addressed NO_x emissions from the FCPP, the primary O₃ precursor compound emitted

from the stacks. In this final action, EPA required FCPP to reduce NO_x emissions, a primary O₃ precursor compound. This settled EPA action was included in the Draft EIS analysis of potential FCPP O₃ emissions impacts, and is unchanged in the Final EIS analysis.

With regard to regional haze, please see Response 307.072.

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exceeding or on the verge of exceeding National Ambient Air Quality Standards for both ozone and PM. As such, OSM's characterization of air quality being "good" is factually false, arbitrary and capricious. ↓

Further, San Juan County is the worst county in New Mexico for release of toxic materials to the environment, and is ranked in the top 10 percent of worst counties in the United States for toxic releases to the environment.¹¹² Moreover, San Juan County is in the top 10% of the worst counties in the United States for particulate matter (2.5 microns in diameter (PM-2.5) emissions, PM-10 emission, and sulfur dioxide emissions. Area power plants are the major contributor to these three pollutants. The neighboring coal mines and oil and gas operations also contribute to air pollution problems. In 2006, monitoring stations reported individual readings in excess of the NAAQS for ozone.¹¹³

Not surprisingly, San Juan County suffers higher rates of chronic lower respiratory disease than the average rate in New Mexico or the United States more broadly.¹¹⁴ "Ozone levels, particulate matter pollution and mercury are all recognized concerns in San Juan and the Four Corners in General."¹¹⁵ Therefore, a full and complete assessment of the air quality impacts – in particular relative to public health, discussed elsewhere in these comments – various DEIS alternatives is essential to a complete understanding of the implications of implementing the alternatives. As noted in the comments below, and in the expert reports of Howard Gebhart and Victoria Stamper, the DEIS fails to accurately assess both the baseline and future air impacts from the FCPP. As such, the Conservation Groups request that OSM correct the deficiencies noted by Howard Gebhart and Victoria Stamper and reissue the DEIS for public comment prior to finalization of the EIS.

307.061

c. **The DEIS fails to adequately assess the environmental impacts of the installation of SCR and related PSD permit application.**

The DEIS states:

APS is planning to install SCR NOX control equipment on FCPP Units 4 and 5 in compliance with 40 CFR 49 BART requirements. Preliminary engineering calculations have shown that this would result in byproduct emissions of sulfuric

¹¹¹ Expert Report of Howard Gebhart (attached as Exhibit 49).

¹¹² Salvatore & Dee, *San Juan Community Health Profile*, COMMUNITY HEALTH IMPROVEMENT COUNCIL, at 28 (January 2010) (attached as Exhibit 104 to the Conservation Groups' scoping comment letter).

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.*

Response 307.061

The Draft EIS includes a full and complete analysis of potential impacts to air quality and public health in Section 4.1, 4.17 and cumulative impacts of these resource areas in 4.18. Specific comments noted in the expert reports appended to the comment letter are addressed in the bracketed responses below. See also Master Response #14, Baseline and Master Response #6, Reissuance of the Draft EIS.

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acid gas (H₂SO₄) in excess of the 7 ton per year threshold. APS has prepared the PSD permit application for the Proposed Action, including PSD increments modeling. The PSD permitting action is exempt from NEPA; but not from Endangered Species Act (ESA) Section 7 reviews. As such, APS is also preparing an ESA impacts analysis (discussed in detail in Section 4.8 Special Status Species). Engineering estimates for NO_x and H₂SO₄ emissions used in the impacts analyses were done prior to installation of the SCR equipment. These estimated values were conservative and subsequent analyses are expected to result in lower values and lower impacts once actual SCR performance is known. The PSD permit will ultimately contain actual values determined after the SCR equipment is installed and operating. For Section 7 ESA compliance, EPA has its own permitting process, commencing with publication of the draft PSD permit and the public comment period. Before EPA can take further action on the PSD permit, it must comply with ESA requirements.

DEIS at 4.1-13 - 4.1.14.

The DEIS fails to note that APS is projecting a future increase in heat input to both Units 4 & 5 in the future.¹¹⁶ This will result in an increase of emissions of all pollutants.¹¹⁷ By failing to account for this increase in heat input and the corresponding increase in pollution emissions from Units 4 and 5, the DEIS fails to accurately characterize the impact of future emissions from these units. The Conservation Groups request that OSM recalculate all future emissions from these units and re-issue of the DEIS for public comment prior to finalizing the EIS.

307.062

d. The FCPP Title V must be reissued.

The DEIS discloses that the current Clean Air Act, 42 U.S.C. § 7661, et seq. Title V operating permit for FCPP (NN-R0P-05-07) expired August 1, 2013. DEIS at 4.1-15. The Title V permit must be reissued and must include all emission limitations and monitoring requirements to ensure continuous compliance with the Clean Air Act. The DEIS fails to acknowledge that the FCPP may be subject to additional monitoring requirements upon issuance of a new DEIS. The DEIS should list the Title V permit as a mandatory federal permit that must be obtained for continued operation of the FCPP and evaluate the full implications of the new Title V permit.

307.063

e. The DEIS fails to adequately assess airborne deposition issues associated with emissions from the FCPP.

The FCPP emits significant pollution from its smokestacks resulting from the combustion of coal as a fuel source. Some of these emissions are deposited in the soils and watersheds in the vicinity of the FCPP. This is particularly true for heavier metals such as mercury and selenium. The DEIS concludes that “[d]eposition impacts within 50 kilometers of FCPP would be

¹¹⁶ Expert report of Victoria Stamper, pp. 7-9 (attached as Exhibit 29).

¹¹⁷ *Id.*

Response 307.062

The Stamper Report derives conclusions from a different set of data inputs than does the EIS. Stamper used data from the PSD application, which is based on the power plant units' potential to emit; whereas, the EIS analysis was performed using historical performance data. PTE is determined by assuming maximum (i.e., 100 percent) design capacity operating 8,760 hours per year, which is not possible in reality due to required downtime for maintenance and repairs. The historical data provide a more accurate representation of how the plant operates in the real world.

For a power plant, annual capacity factor is calculated by dividing actual process throughput by PTE throughput, whether generation (MW-hrs/yr) or heat input (mmBTU/yr). For FCPP base load, annual capacity factors determined from certified Part 75 data during the 12-year historical data period were 74.9 to 92.5 percent (generation basis) and 60.7 to 76.9 percent (heat input basis). This range of capacity factors was taken into account in the Draft EIS in order to realistically project maximum future emissions in a non-speculative manner.

Response 307.063

The EIS was modified to include clarification on the Title V permit provided by the Navajo Nation EPA as a footnote on page 4.1-1:

In 2005, the Nation and owners of the FCPP entered into a VCA under which FCPP agreed to apply for and obtain a CAA Title V operating permit from NNEPA provided, among other things, that permit requirements would be no more stringent than federal requirements unless FCPP agreed to more stringent requirements and the administration and enforcement of the permit would be no more stringent than what EPA would do and that would be required under federal court decisions. The current Part 71 permit for FCPP expired August 1, 2013. FCPP submitted a timely permit renewal application on January 25, 2013. FCPP may operate according to their present permit terms and conditions until NNEPA either issues a new permit or denies their renewal application.

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negligible.” DEIS at 3-58, Table 3-12. For the reasons stated below, the DEIS fails to adequately assess the deposition impacts of emissions from the FCPP. As such, the Conservation Groups request that OSM correct the deficiencies identified below and re-issue the DEIS for public comment prior to finalization of the EIS.

The DEIS states:

When elemental mercury from the air reaches surface waters via direct and indirect deposition, microorganisms can convert it into methylmercury, a highly toxic form that bio-accumulates in fish. Humans are primarily exposed to mercury by eating contaminated fish. Methylmercury exposure is a particular concern for women of childbearing age, fetuses, and young children because studies have linked high levels of methylmercury to damage to the developing nervous system, which can impair children’s ability to think and learn. Mercury and other power plant emissions also damage the ecological environment (EPA 2013a).

DEIS at 4.1-8.

The Four Corners area experiences significant deposition of mercury and other airborne emissions resulting in the establishment of fish consumption advisories in nearby watersheds, such as the San Juan River, Navajo Reservoir, Lake Farmington, and Morgan Lake at FCPP.¹¹⁸

The DEIS ignores the immense historic and current impacts to the region from mercury emissions and deposition. The DEIS at page 4.1-61 discloses:

According to the EPRI (Electric Power Research Institute) baseline scenario modeling results, the maximum contribution of FCPP mercury emissions to mercury total deposition is about 28 percent in San Juan County near the FCPP and contributions range from 2 to 28 percent in the vicinity of the plant; however, the contribution from FCPP are less than 2 percent over the remainder of the San Juan basin (EPRI 2013).

The DEIS neglects to mention the 50-year legacy of FCPP mercury emissions that have taken a toll on San Juan basin waterways. Since mercury is a known bio-accumulative neurotoxin that works its way up the food chain, the attempt of the DEIS to restrict mercury analysis to a narrow snippet of current mercury contributions is meaningless and renders a scientific analysis of mercury in the region as a result of past, current and projected FCPP operations insufficient. The Conservation Groups request that OSM conduct a complete analysis of the direct, indirect, and cumulative impacts of mercury deposition from the FCPP since it began operations to the present. We also request that the DEIS analyze the direct, indirect, and cumulative future

307.064

¹¹⁸ <http://www.nmenv.state.nm.us/swqb/advisories/>. See also, <http://www.navajohopiobserver.com/main.asp?SectionID=8&SubSectionID=8&ArticleID=4321&TM=45374.5>

Response 307.064

Please refer to Master Response #14 regarding the baseline setting. Regional surface water quality conditions, which account for historic, ongoing power plant emissions, are described in Section 4.5.2.2. Potential impacts of mercury deposition on fish species within the San Juan Basin waterway is discussed on Page 4.8-69. Further, this topic is described in detail in the Biological Assessment submitted to the USFWS in support of the Section 7 consultation process under the ESA. The USFWS Biological Opinion based on this Biological Assessment is included as an appendix to the Final EIS. Page 4.18-43, Section 4.18.3.5 identifies mercury deposition cumulative impacts as potentially major impacts to water quality. Section 4.18.3.8 discusses in detail the potential cumulative effects to species due to mercury deposition, evaluating both current conditions (which accounts for the 50 year operation of the plant and mine) and future conditions.

COMMENT #307

impacts of mercury deposition from the FCPP in the event Units 4 and 5 are authorized to operate an additional 25 years.

The DEIS only conducted minimal and unacceptable deposition analysis in the vicinity of the FCPP. For example, the DEIS fails to establish significance threshold for deposition. DEIS at 4.1-77.

In addition, a November 6, 2012 Memo from OSM to the project proponents describes significant deficiencies with the deposition analysis in the vicinity of the FCPP.¹¹⁹ These deficiencies include:

- Inadequate sampling densities;
- Lack of identification of soil maps sampled;
- Failure to include erodible outcrops and badlands soils in sampling;
- Failure to follow standards and accepted soil sampling methodologies;
- Failure to sample deeper depths of soil;
- Failure to use standard and accepted analytical procedures.¹²⁰

Accordingly, the Conservation Groups request that OSM reissue the DEIS with a full explanation of how the deposition sampling deficiencies were resolved and allow further public comment on this matter prior to finalization of the EIS.

f. Significant deficiencies in the air quality modeling require that OSM issue a supplemental EIS with public comment.

The Conservation Groups retained the services of air quality modeling expert Howard Gebhart to review the air quality modeling performed by OSM. Mr. Gebhart's review identified several significant errors with the SO₂ and PM modeling.¹²¹ More specifically, Mr. Gebhart identified the following significant deficiencies with OSM's air quality modeling:

1. The AERMET/AERMOD modeling applies a "non-guideline" beta version of the USEPA dispersion model, without securing regulatory agency approval or documenting the scientific applicability of the non-guideline beta options as required by 40 CFR 51

¹¹⁹ OSM November 6, 2012 Memo to APS and AECOM (attached as Exhibit 50).

¹²⁰ *Id.* All deficiencies noted this memo are fully incorporated herein by reference.

¹²¹ *See*, Expert Report of Howard Gebhart (attached as Exhibit 49 and is fully incorporated herein by reference).

Response 307.065

OSMRE critically reviewed the workplans for soil sampling methods, in part to characterize air deposition. OSMRE required more extensive sampling, both geographically and with depth, in order to adequately characterize the existing environment. As a result, the Proponents modified the soil sampling workplan, based on OSMRE comments. The soil analysis was conducted according to the modified workplan, representing a robust dataset on which to base EIS impact analysis.

No significance threshold exists for the deposition of metals itself. Thresholds are stated for air emissions (NAAQS) in Section 4.1. For impacts to biological resources, an ecological risk assessment was conducted and results were incorporated as appropriate into Sections 4.6, 4.7 and 4.8 of the Draft EIS.

Response 307.066

At the time the Draft EIS was developed, the Applicants' air quality modeling was on hold, pending the EPA approval of changes to the AERMET/AERMOD model. Mr. Gebhart is correct in pointing this out; however, EPA ultimately supported this option for the EIS after EPA experts, having the benefit of further information, expressed support for the use of the non-guideline option in 2014 because this option is based upon peer-reviewed literature and due to favorable evaluation results. A non-guideline model justification was included in the NAAQS modeling report in Appendix C, which documented the scientific applicability of the non-guideline options. Presentations at a May 2014, EPA workshop showed superior model evaluation performance for this option with applications involving tall stack releases such as those occurring at the FCPP. EPA Region 9, the agency reviewing this approach for the FCPP EIS, agreed to its use.

Regarding the initially suggested sensitivity study, the availability of a current version of AERMOD had been delayed until May 2014. During that time, additional evaluation studies, most notably involving a North Dakota database, indicated that the default approach without the low wind speed option is clearly over-predicting, so use of the default

approach, even in a sensitivity study, would be misleading. Thus, in addition to EPA's explicit approval of the non-guideline option, it was determined that the sensitivity study would serve little or no purpose.

COMMENT #307

Appendix W. Any meaningful analysis documenting compliance with NAAQS standards needs to follow the applicable USEPA modeling guidelines, without exception. ↑

2. The SO₂ modeling demonstration relies on actual emissions data from Four Corners Units #4 and #5 without any documentation that such emissions would be representative of the 2016-2041 period under consideration in the Draft EIS. Such documentation is required and/or the modeling needs to be revised to reflect a more representative SO₂ emissions rate. Also, OSM should adopt enforceable mitigation measures in the Final EIS to ensure that future operations are consistent with the SO₂ emissions data and other operating assumptions used in the EIS air quality modeling. 307.067

3. The plume visibility modeling shows some cases where degraded visibility is expected over the 2016-2041 period based on higher primary sulfate emissions associated with “ammonia slip” from the planned SCR emissions control equipment. OSM should adopt enforceable mitigation measures to minimize any “ammonia slip” from Units #4 and #5, which would help mitigate the adverse plume visibility impact predicted in the Draft EIS. 307.068

4. The air quality modeling analysis in the Draft EIS relies on assumptions for certain equipment that limits operations for some power plant and mine emission units, especially at night. OSM should adopt enforceable mitigation measures that limit operating hours for such sources consistent with the assumptions used in the air quality modeling analysis. 307.069

5. The air quality modeling in the Draft EIS contains significant errors in the specification of particle size information for the PM-10 and PM-2.5 modeling. Because of these data input errors, neither the PM-10 nor PM-2.5 modeling results in the Draft EIS are reliable or accurate. In fact, the Draft EIS likely significantly underreports the PM-10 and PM-2.5 concentrations expected from the project. The modeling needs to be revised such that the particle size inputs used for the AERMOD deposition algorithms are consistent with the underlying emissions inventory. The only viable solution to correct this type of significant analytical error is to present the updated modeling results in a Supplemental Draft EIS for review by interested parties and the public. 307.070

The Conservation Groups request that OSM correct the air quality modeling deficiencies identified by Mr. Gebhart and issue a supplemental EIS for review and comment.

g. The Stamper report identifies numerous significant deficiencies with the air quality analyses in the DEIS.

The Conservation Groups also retained the services of air quality technical expert Victoria Stamper to review and critique the air quality components of the DEIS. Ms. Stamper identified numerous technical problems with the air quality analysis, including the following significant issues: 307.071

1. The DEIS only included air quality data through 2011. Air quality data is available through early 2014 and the most recent data should be used in OSM’s analysis. By failing ↓

Response 307.067

For the SO₂ NAAQS demonstration modeling, AECOM assumed a maximum emission rate of 2,816 lbs/hr for Units 4 and 5 operating simultaneously or 12,334 tons/yr, which is 2.6 percent greater than the Part 75 maximum of 12,022 tons/yr for the 2005-11 timeframe. Thus, the SO₂ demonstration modeling is conservative and realistic because it assumed an SO₂ emission rate, which is consistent with Part 75 actual historic maxima. As such, EPA-approved quantifications were used for SO₂ modeling input.

Regarding the comment on mitigation measures, based on the results of the impact analysis which identified no major impacts, no mitigation measures were recommended.

Response 307.068

When sulfur dioxide (SO₂) is present in stack gas, excess ammonia (NH₃) from SCR operation (slip) can react in the presence of water vapor and oxygen to form ammonium sulfate ((NH₄)₂SO₄), which is a white crystalline compound that can contribute to plume visibility under certain atmospheric and lighting conditions.

The Draft EIS contained estimated quantities of SCR reagent that APS would need to operate Units 4 and 5 in the future (either 29.4% aqueous ammonia solution; dry urea as 56.67% NH₃ pellets; or 45% aqueous urea “NOxAMID” solution). A chemical mass balance analysis was conducted, which assumed 5 ppmv ammonia slip @ 3% O₂ slip as BART (mitigated) in lieu of a more conventional 10 ppmv slip @ 3% O₂ (unmitigated).

The results of the chemical mass balance showed that for 5 ppmv slip (BART), about 285,000 lbs/yr (142.5 tons/yr) of ammonia would be emitted as slip, or about 1.7 percent of ammonia used (injected).

If slip were 10 ppmv, about 285 tons/yr of ammonia would be emitted as slip; thus, BART is a 50 percent reduction in ammonia slip.

Regarding the comment on mitigation measures, based on the results of the impact analysis which identified no major impacts, no mitigation measures were recommended.

Response 307.069

The air quality modeling included conservative assumptions that would provide conservative conclusions on air quality impacts. Even with the conservative analysis, impacts were not determined to be significant, therefore not requiring mitigation measures beyond the proponent-proposed measures.

Response 307.070

No change to the EIS was necessary based on the comment, because the methods used in the underlying AECOM NAAQS modeling report (2013a) follow EPA-approved methodology. As shown in Table 2-2 of the AECOM NAAQS modeling report used EPA-approved emission factors and speciation data (AP-42, Fifth Edition Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources; EPA report EPA 68-D-98-046; also a source test elsewhere combined with EPRI data) to characterize PM₁₀ and PM_{2.5}. This information is summarized below:

1. Filterable Particulate (PM) of 0.015 lb/mmBTU is based on the 40 CFR 49 BART Rule (i.e., the objective requirement of the Action)
2. Total Filterable PM₁₀ of 0.0138 lb/mmBTU is based on EPA AP-42 Table 1.1-6; 92% of filterable PM
3. "Coarse" Filterable PM₁₀ of 0.00585 lb/mmBTU is the difference of total filterable (#2 above) minus fine filterable (#4 below)
4. Fine Filterable PM_{2.5} of 0.00795 lb/mmBTU is based on EPA AP-42 Table 1.1-6; 53% of filterable PM
5. Fine "Soil" PM_{2.5} of 0.00766 lb/mmBTU is the difference of fine filterable (#4 above) minus fine elemental carbon (#6 below)
6. Fine Elemental Carbon PM_{2.5} of 0.00029 lb/mmBTU is based on EPA Report No. 68-D-98-046 Table 25. Summary of Available Emissions Measurements for Particulate Elemental and Organic

Carbon; 3.7% of PM_{2.5} resulting from AECOM's interpretation of table data.

7. Total Condensable PM₁₀/PM_{2.5} of 0.00835 lb/mmBTU is the sum of sulfuric acid mist (#8 below) plus condensable organics (#9 below)
8. Condensable sulfuric acid mist of 0.00435 lb/mmBTU from SCR operation is based on a source test elsewhere and EPRI removal efficiency (%)
9. Condensable organics of 0.004 lb/mmBTU is based on EPA AP-42 Table 1.1-5; 20% of 0.02 lb/mmBTU
10. Grand Total PM₁₀ of 0.02215 lb/mmBTU is the sum of total filterable (#2 above) plus total condensable (#7 above)
11. Grand Total PM_{2.5} of 0.01630 lb/mmBTU is the sum of fine filterable (#4 above) plus total condensable (#7 above)

As shown above, except for the BART Rule and EPRI/test data, the PM₁₀ and PM_{2.5} speciations used in the NAAQS modeling report are per EPA guidelines:

- AP-42 Table 1.1-5. Condensable Particulate Matter Emission Factors for Bituminous and Subbituminous Coal Combustion
- AP-42 Table 1.1-6. Cumulative Particle Size Distribution and Size-Specific Emission Factors for Dry Bottom Boilers Burning Pulverized Bituminous and Subbituminous Coal
- EPA Report No. 68-D-98-046 Table 25. Summary of Available Emissions Measurements for Particulate Elemental and Organic Carbon (AECOM's interpretation of table data).

In general, AP-42 default emission factors (guidelines) are inherently conservative and tend to nominally overestimate emissions in most circumstances. In many cases, source testing can show that actual emissions from stationary sources may be less than emissions calculated using AP-42 factors. Thus, since EPA default emission factors – in combination with the BART upper limit for filterable PM (item 1 above) – were used for characterization, PM₁₀ and PM_{2.5}

emissions were not likely underestimated for NAAQS modeling purposes.

Response 307.071

The EPA and the National Park Service (NPS) approved the study approach used for air quality modeling and the draft modeling studies were evaluated by EPA and NPS air quality experts. The agency experts' recommendations were taken into account in the final modeling and EPA and NPS signed off on the final methodologies. Additionally, the Stamper Report derives conclusions from a different set of data inputs than does the EIS. Stamper used data from the PSD application, which is based on the power plant units' potential to emit; whereas, the EIS analysis was performed using historical performance data. The historical data provide a more accurate representation of how the plant operates, because it includes planned and unplanned outages. The historic operational history is described by a "capacity factor". Using the total "potential to emit", as in the Stamper report, overestimated actual emissions because it relies on the "nameplate" capacity, which in fact is never achieved by operating power plants. Additionally, Stamper used different years of data than the EIS did (see Comment 307.074).

Regarding use of annual data, in order to adequately assess historic emissions and trends, the Draft EIS air quality data analysis uses data from 2000 through 2011, an inclusive period of 12 complete 4-season years. The Draft EIS air quality data acquisition and analysis was performed in the fall of 2012 and winter of 2013 according to the Draft EIS project schedule. At the time of the analysis, the most recent full year of certified (quality assured) Part 75 emissions data and SLAMS ambient data available from the EPA was 2011. The EPA does not typically release certified data for a calendar year before the spring of the following year; thus, 2012 and 2013 data were not available in time for the Draft EIS analysis. Also, IMPROVE data only through 2010 was available, while most NADP data was available through 2011.

The data set represents a sufficient historic timeframe from which to project general future trends, and adding one or two more years to the historic data period would not substantially affect projections of future emissions – which are based on broad assumptions about future

capacity factors – or substantially affect any general conclusions about the overall magnitudes of those emissions.

Additionally, analysis was based on averaging the 2 years from 2000 to 2011 with highest emissions. The average of the two “peak” years is approximately 9 percent higher than the 12-year average, indicating reasonable consistency across the years. The average of two peak years was carried through the analysis as a conservative correction factor. Therefore, adding new data to the analysis will not change the air quality analysis or the conclusions drawn.

Due to seasonal variations in power plant utilization, only complete years should be used to assess long-term trends. Partial years (e.g., early 2014) should not be used due to the risk of biasing results with seasonal anomalies, e.g., cold winters and hot summers.

COMMENT #307

to include the most recent data, OSM did not identify air quality issues, such as rising ambient ozone concentrations approaching the NAAQS.

2. The DEIS fails to disclose that many Class I areas impacted by the FCPP are not projected to meet natural background conditions by 2064. The Colorado Regional Haze plan projects that Mesa Verde National Park will not achieve natural background visibility conditions until 2168 which is 104 years later than required by the EPA's Regional Haze rules. Arizona's Regional Haze Plan projects that Petrified Forest National Park, Mount Baldy Wilderness Area, and Grand Canyon National Park won't achieve natural background visibility conditions for 258 years, 234 years, and 125 years, respectively.
3. The DEIS fails to analyze APS's planned future increase of heat input into Units 4 & 5 which will result in an increase of emissions of criteria pollutants, toxic pollutants, and greenhouse gases over the next 25 years.
4. The DEIS greatly overstates the historical particulate matter (PM) emissions from the Four Corners Power Plant Units 1-5.
5. The ozone analysis in the DEIS is significantly flawed.
6. The sulfur dioxide analysis is significantly flawed.
7. The PM analysis does not use accepted modeling methodologies.
8. The DEIS fails to impose mitigation measures to offset air quality impacts.¹²²

The Conservation Groups request that OSM correct the deficiencies identified in the Stamper report and reissue the DEIS for public comment prior to finalization of the EIS.

5. OSM Failed To Take A Hard Look At The Project's Use, Production, Storage, and Disposal of Coal Combustion Waste and Hazardous Materials

For the reasons discussed below, the DEIS fails to adequately address the environmental impacts associated with the past, present, and future disposal of Coal Combustion Waste ("CCW") generated by the FCPP.¹²³ The DEIS also fails to adequately examine the impact of reasonably likely future regulatory requirements, alternatives to the current CCW disposal practices, and reasonable mitigation measures.

¹²² Expert Report of Victoria Stamper (attached as Exhibit 29). The Stamper report is incorporated by reference into this comment letter.

¹²³ See Images of CCW at Navajo Mine and FCPP (attached as Exhibit 69).

Response 307.072

Visibility degradation is caused by diffraction, refraction, phase-shift, and absorption of light by atmospheric particles, aerosols, and gases that are nearly the same size as the wavelengths of the visible light spectrum. Without the effects of anthropogenic air pollution, maximum natural visual range in the western United States is about 120 miles or 6.9 deciviews (dV) (CIRA 1999). The Draft EIS identified the 16 Class I areas within a 300 kilometer (186 mile) radius of FCPP, ten of which host IMPROVE sites and ten other Class I areas (outside 300 km) in the general vicinity.

The Draft EIS ranked historic dV data for the 15 IMPROVE sites into the lowest 20 percent of days (good visibility), the highest 20 percent of days (poor visibility), and the average of all days (typical visibility) for 2000 through 2010. The Draft EIS aggregated visibility data for the 10 IMPROVE site within 300 kilometers of FCPP. The aggregate data represent regional averages and trends. Mean (average) and median (mid-point) values were shown for comparison purposes. As was shown by the data, means and medians were in reasonable agreement. The Draft EIS shows that overall dV improvements are about 1.2 to 1.4 for the lowest 20%, highest 20%, and average of all days in a year. This correlates to approximately 30%, 10%, and 15% visibility improvements, respectively, over the 11-year period.

The Draft EIS shows that regional visibility has improved during the 11-year period, apparently due to improved control of air pollution from sources such as power plants. Thus, progress is apparent toward the future goal of the Regional Haze Rule, i.e., achieving natural conditions by 2060. If the historic trend continues into the future, average dV could improve at a rate of about -0.12 per year. Thus, during the first half of the 25-year relicensure period (2014 to 2026), an average improvement of about -1.5 dV could be possible, as stated in the Draft EIS.

The Draft EIS assessed (trended) 11 years of historic data, and it would be speculative to "forecast" future trends beyond a similar timeframe (i.e., 13 years as the first half of the relicensure period). If

approved, the relicensure period would extend to 2041, 27 years from now. The goal of the Regional Haze Rule is to achieve natural conditions by 2060, 46 years from now. Prediction within that timeframe would be highly speculative, hence the hypothetical label. Given the limited amount of monitoring data available and uncertainty about future emissions sources in the region, the near-term analysis is adequate for the timeframe of the Proposed Action.

Response 307.073

For a power plant, the annual capacity factor is calculated by dividing actual process throughput by PTE throughput, whether generation (MW-hrs/yr) or heat input (mmBTU/yr). For FCPP base load, annual capacity factors determined from certified Part 75 data during the 12 year historical data period were 74.9 to 92.5 percent (generation basis) and 60.7 to 76.9 percent (heat input basis). This range of capacity factors was taken into account in the EIS in order to realistically project maximum future emissions in a non-speculative manner. FCPP is base loaded. There is very limited load reduction related to demand. Load reduction is largely the result of forced or planned maintenance outages. Because the plant is base loaded, the 9 percent increase in capacity assumed in the Draft EIS is not likely to occur. Therefore, the emission projections in the Draft EIS still overstate impacts and underestimate emission reductions.

Response 307.074

Regarding particulate emissions modeling, particle size inputs are used only for deposition and depletion of particulate matter. All results show NAAQS compliance.

Regarding ozone analysis, ozone concentration is variable due to many factors, including the economic downturn between 2008 and 2010. This variability might result in the appearance of an upward trend after 2010 when looking at a short period of time. However, the general trend in ambient concentration in the area is decreasing over the entire period modeled.

Regarding sulfur dioxide modeling, the modeling is consistent with EPA's proposed approach to evaluate SO₂ NAAQS compliance for areas not yet designated (the SO₂ Data Requirements Rule), the SO₂ modeling analysis used 3 years of actual emissions to demonstrate modeled compliance with the NAAQS. The 3-year period used, 2009 – 2011, appears to represent a conservatively high characterization of emissions relative to more recent years (2012 – 2013), based on optimization of SO₂ controls on FCPP Units 4 and 5.

Regarding the comment on mitigation measures, please see Master Response #12, Placement of Conditions on Lease and Permit. Additionally, mitigations measures beyond the applicant proposed measures and compliance with the FIP for BART are not included because impacts are not significant.

COMMENT #307

First, the DEIS fails to identify whether ash disposal at the FCPP is regulated by federal, state, local, or tribal law. The Conservation Groups request that OSM issue a revised DEIS for public comment clearly identifying all federal, state, local, and tribal laws regulating ash disposal and ash disposal units at the FCPP.

307.075

CCW consists of fly ash, scrubber sludge and bottom ash from the combustion of coal at the FCPP. At least seventeen potentially toxic elements are commonly present in CCW: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, hexavalent chromium, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium, zinc and radionuclides.¹²⁴ When CCW becomes exposed to water, leaching of these toxic elements may occur.¹²⁵ The U.S. Environmental Protection Agency recently determined that coal ash, due to the potential presence of numerous toxics, can pose a "substantial present or potential hazard to human health and the environment when improperly treated, stored, transported, disposed of."¹²⁶ Additionally, "the cancer risk associated with arsenic ingestion via [the groundwater ingestion and fish ingestion pathway] emerged as a principal factor in the [EPA's CCW human health risk assessment] report's conclusion that there are 'potentially significant risks to human health from CCW disposal in landfills and surface impoundments.'"¹²⁷ Cancer risks associated with exposure to CCW constituents are as high as smoking a pack of cigarettes per day, breathing air with a radon concentration 20 times the safe level, and consuming water contaminated with vinyl chloride 10 times the EPA MCL.¹²⁸

In addition, CCW wastes often generate a complex mixture of compounds that can have adverse

¹²⁴ See Hazardous and Solid Waste Management: Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities, 63252 Fed. Reg. 17,197 (Oct. 12, 2011) (attached as Exhibit 90 to the Conservation Groups' scoping comment letter); Physicians for Social Responsibility and Earthjustice, *Coal Ash The Toxic Threat to Our Health and Environment*, vii (Sept. 2010) (attached as Exhibit 91 to the Conservation Groups' scoping comment letter); Earthjustice, *EPA's Blind Spot: Hexavalent Chromium in Coal Ash* (Feb. 1, 2011) (attached as Exhibit 92 to the Conservation Groups' scoping comment letter); Environmental Integrity Project, *Toxic Waters Run Deep* (June 23, 2011) (attached as Exhibit 93 to the Conservation Groups' scoping comment letter).

¹²⁵ See 63252 Fed. Reg. 17,197 (attached as Exhibit 90 to the Conservation Groups' scoping comment letter).

¹²⁶ EPA, *Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities*, 75 Fed. Reg. 35128, 35168 (June 21, 2010) (attached as Exhibit 89 to the Conservation Groups' scoping comment letter).

¹²⁷ Letter from Doctors Smith and Vahter re. coal ash to Lisa Jackson (November 14, 2010) (attached as Exhibit 51).

¹²⁸ Dr. Foran coal ash comment letter (attached as Exhibit 52).

Response 307.075

EPA published its Final Rule for Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electrical Utilities on December 19, 2014. Under the Final Rule, EPA has determined that CCR will be regulated under Subtitle D (non-hazardous) as a solid waste. The regulation is self-implementing and applies to the disposal of CCR generated from coal-fired generating stations, including tribal lands. The rule includes provisions for dust control and groundwater monitoring. The regulation does not extend to placement of CCR in mines. The Final EIS has been updated accordingly to reflect the Final Rule and its applicability to CCR disposal at the FCPP. A comprehensive discussion of the rule, its provisions, and enforceability is provided in Section 4.15, Hazardous Materials and Wastes. Section 4.15.1.2 of the EIS includes a section titled Regulation of Coal Combustion Residue at FCPP, which provides the following detailed explanation of the regulatory framework for CCRs at FCPP:

The EPA published the Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014. The final rule regulates CCR as a RCRA Subtitle D solid waste. FCPP is required to comply with EPA's Final Rule, which provides specific deadlines for compliance. EPA issued minimum national criteria, including requirements for composite liners, groundwater monitoring, structural stability requirements, corrective action, and closure/post-closure care. The final rule addresses the risks from structural failures of CCR surface impoundments, groundwater contamination from the improper management of CCR in landfills and surface impoundments, and fugitive dust emissions. The rule includes location restrictions and requirements for liner design criteria; impoundment structural integrity; operating criteria regarding air, run-on, run-off, hydrologic and hydraulic capacity, surface impoundments, and inspections; groundwater monitoring and corrective action; closure and post-closure requirements; and record keeping, notifications, and posting on publicly accessible internet sites.

The rule has also been designed to provide electric utilities and independent power producers generating CCR with a practical approach for implementation of the requirements and has established implementation timelines that take into account, among other things, other upcoming regulatory actions affecting electric utilities and site specific practical realities. In order to ease implementation of the regulatory requirements for CCR units with state programs, EPA is also providing the opportunity for states to secure approval of its CCR program through the State Solid Waste Management Program.

When coal is burned as a fuel source, the solid by-products of the process are different types of ash collectively known as CCR, coal combustion residue, or in the mining industry, they are collectively known as coal combustion by-product (CCBs). This EIS consistently refers to them as CCRs. The types of CCRs that are generated at the FCPP are fly ash, bottom ash, and FGD materials (predominantly calcium sulfate compounds):

- Fly ash is a product of burning finely ground coal in a boiler to produce electricity. Fly ash is removed from the exhaust gases primarily by electrostatic precipitators or baghouses and secondarily by wet scrubber systems.
- Bottom ash is composed of agglomerated coal ash particles that are too large to be carried in the flue gas. Bottom ash is formed in pulverized coal furnaces and is collected by impinging on the furnace walls or falling through open grates to an ash hopper at the bottom of the furnace.
- FGD material is produced through a process used to reduce sulfur dioxide emissions from the exhaust gas system of a coal-fired boiler. The physical nature of these materials varies from a wet sludge to a dry powdered material, depending on the process.

In addition, prior to burning, coal contains various metals and other contaminants. When coal is burned, these elements are concentrated in the ash that remains.

CCR can be either wet or dry. The wet material can either be generated wet, such as FGD, or generated dry and water is then added to the dry material to transport or “sluice” the material through pipes to a surface impoundment or “pond.” In dry systems, CCR is transported in its dry form to landfills for disposal.

CCR can either be disposed of as waste, or it may be used in some capacity commonly referred to as beneficial use. The EPA encourages beneficial use of CCR rather than disposal. Examples of beneficial use are as a component in concrete, cement, gypsum wallboard, or as structural or embankment fill. Depending on market conditions and other cost factors, approximately 20 percent of the CCR from the FCPP is transported off-site as a beneficial use while the remaining CCR is disposed of in the on-site dry ash landfills (Ash Ponds 1 and 2 have been out of service since 1976 and Ash Ponds 3 and 6 are inactive). Prior to 2008, some of the CCR generated at the FCPP was transferred to and used at the Navajo Mine SMCRA Permit Area for mine backfill.

The two primary concerns related to disposal of CCR have to do with how it is stored after disposal. The first issue is the storage of wet CCR in ponds or impoundments. The wet coal ash is contained by earthen dams, and a breach or failure of the impoundment dam could result in a release of the wet CCR, which has environmental and public safety implications downstream of the release. An earthen dam contains the CCR impoundment at the FCPP and is regulated by the New Mexico Office of the State Engineer, Dam Safety Bureau.

The second concern is related to the metals and other compounds found in CCR. These metals are potentially toxic and have the potential to leach into the groundwater. Two factors increase this leaching risk from disposal units: the use of wet surface impoundments instead of dry landfills, and unlined disposal units have a higher risk of leaching than do disposal units with composite liners to prevent leaking and leaching.

Regulatory History of Coal Combustion Residue

By far the largest waste stream currently generated and disposed of at the FCPP and in the past within the Navajo Mine SMCRA Permit Area

is CCR. To appreciate the issues surrounding CCR disposal at the FCPP and in the past at the Navajo Mine, it is worthwhile to go through a brief overview of the long and sometimes complex history behind the current and proposed future regulations for disposal of CCRs.

The disposal of CCR has been controversial for many years, beginning as early as 1978 when the EPA first proposed hazardous waste management regulations. At that time, the EPA excluded the regulation of CCR from its final hazardous waste regulations until data regarding the materials' potential hazard to human health or the environment could be analyzed; this is known as the Bevill Exclusion. After performing a study on the potential for CCR to cause adverse effects to human health and the environment, the EPA published the required regulatory determinations, one in 1993 and one in 2000 (EPA 1993; EPA 2000) and both times continued to exempt CCR from being regulated as a hazardous waste. However, in the 2000 determination (EPA 2000), EPA stated that national regulations under Subtitle D were needed for CCR disposal in landfills and surface impoundments because of new data about the potential risks to human health and the environment (EPA 2010a) and because of EPA's concerns about the adequacy of state regulatory programs (DOE and EPA 2006).

In 2008, in response to an ash dike rupture at a coal ash impoundment at the Tennessee Valley Authority's facility in Kingston, Tennessee, the EPA reexamined its previous determination that CCR should not be regulated as a hazardous waste. The EPA cited findings and analyses from a revised risk assessment and an updated documentation of damages from CCR management practices and ultimately proposed to list the material as a hazardous waste (EPA 2009a). The final draft proposal, published on June 21, 2010 (EPA 2010b), proposed two regulatory options for consideration. Under the first option, EPA would draw on its existing authority to list a waste as hazardous and regulate it. The second option would keep the Subtitle C exclusion in place, but would establish national criteria applicable to landfills and surface impoundments under RCRA's Subtitle D nonhazardous solid waste requirements (EPA 2010b).

In October 2012, the EPA announced that the final rule would be delayed due to new data and the subsequent need to complete revisions of toxicity characteristics and toxicity characteristic leaching procedures (EPA Test Method 1311 – Toxicity Characteristic Leaching Procedure). The EPA considered a new series of tests that would replace existing leaching testing; the new methods are known as the Leaching Environmental Assessment Framework (Kosson 2011).

On December 19, 2014, the EPA issued the Final Rule on Hazardous and Solid Waste Management Systems; Disposal of Coal Combustion Residuals from Electric Utilities. The rule regulates the disposal of CCR as solid waste under Subtitle D of RCRA, not as a hazardous waste under Subtitle C of RCRA. The rule applies to existing and new CCR landfills and existing and new CCR surface impoundments and all lateral expansions. The rule includes location restrictions, design and operating criteria, groundwater monitoring and corrective action, closure requirements and post-closure care, and recordkeeping, notification, and internet posting requirements. The rule requires any existing unlined CCR surface impoundment that is contaminating groundwater above a regulated constituent's groundwater protection standard to stop receiving CCR and either retrofit or close, except in limited circumstances. It also requires the closure of any CCR landfill or CCR surface impoundment that cannot meet the applicable performance criteria for location restrictions or structural integrity. Finally, those CCR surface impoundments that do not receive CCR after the effective date of the rule, but still contain water and CCR will be subject to all applicable regulatory requirements, unless the owner or operator of the facility dewater and installs a final cover system on these inactive units no later than 3 years from publication of the rule. EPA deferred its final decision on the Beville Regulatory Determination because of regulatory and technical uncertainties that cannot be resolved at this time.

The rule becomes effective 6 months after the publication date, and establishes timeframes for certain technical criteria based on the amount of time determined to be necessary to implement the requirements (e.g., installing the groundwater monitoring wells and establishing the groundwater monitoring program), extending to 42

months in some cases. In establishing these timeframes, EPA accounted for other Agency rulemakings that are anticipated to also affect the owners or operators of CCR units, including the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category (78 Federal Register 34432; proposed rule issued June 7, 2013) and the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (79 Federal Register 34830; proposed rule issued June 18, 2014). Specifically, EPA developed implementation timeframes that would ensure that owners or operators of CCR units would not be required to make decisions about those CCR units without first understanding the implications that such decisions would have for meeting the requirements of all applicable EPA rules. Thus, under the final timeframes in this rule, any such decision will not have to be made by the owner or operator of a CCR unit until well after the Effluent Limitations Guidelines rule is final and the regulatory requirements are well understood. EPA's approach is consistent with Executive Order 13563, Improving Regulation and Regulatory Review, issued on January 18, 2011, which emphasizes that some "sectors and industries face a significant number of regulatory requirements, some of which may be redundant, inconsistent, or overlapping," and it directs agencies to promote "coordination, simplification, and harmonization." EPA's goal is to ensure that the two rules work together to effectively address the discharge of pollutants from steam electric generating facilities and the human health and environmental risks associated with the disposal of CCRs, without creating avoidable or unnecessary burdens.

The rule is designed to be self-implementing, meaning that the requirements were such that facilities could comply with the regulatory requirements without the need to interact with a regulatory authority. The rule would apply on tribal lands. EPA sought to enhance the protectiveness of the proposed option by requiring certified demonstrations by an independent registered professional engineer to provide verification that the regulatory requirements were being adhered to. In addition, the option provided for state and public notification of the certifications, as well as required posting of certain

information on a website maintained by the facility and in the operating record.

The earliest date that a CCR surface impoundment may be triggered into a retrofit or closure decision is approximately February 2017 (the exact date would be 24 months following publication of this final rule), which would apply to a CCR surface impoundment that fails to achieve minimum safety factors for the CCR unit. This is due to the fact that the owner or operator must complete the initial safety factor assessment within 18 months of the publication of this rule plus an additional 6 months to initiate closure of the CCR unit if the minimum factors or safety are not achieved. The Effluent Limitations Guidelines rule is scheduled to be finalized in September 2015 and its effective date is 60 days following its publication. Thus, there is ample time for the owners and operators of CCR units to understand the requirements of both regulations and to make the appropriate business decisions.

In addition, specific provisions of the rule that apply to other resource areas (i.e., water and air) are included in Sections 4.1, 4.5, 4.11, and 4.18.

COMMENT #307

synergistic effected on those exposed to the mixed wastestream.¹²⁹ As a result, risk assessments often underestimate the risk to human health from exposure to CCW waste because the entire effect of exposure to each compound is not accounted for.¹³⁰ The DEIS suffers from this same deficiency by failing to assess the risk to human health from a multitude of toxic pollutants via multiple pathways.

Recent studies also show that groundwater contaminated by CCW can migrate quickly and extensively – during the lifetime of operations at a coal plant rather than on the order of hundreds to thousands of years.¹³¹

Until 2008, the majority of CCW generated by the FCPP was disposed of in mine pits at the Navajo mine. This practice was discontinued in 2008, resulting in the disposal of the majority of CCW at the FCPP site beginning on 2008 and continuing to the present and throughout the remaining life of FCPP. From 1962 to the present, approximately 33.5 million tons, or 20,800 acre-feet, of fly ash, bottom ash, and Flue Gas Desulfurization (FGD) solids have been placed into the FCPP ash disposal areas. DEIS at 2-24.

There have been at least two studies conducted concerning the impacts of CCW disposal at the FCPP and/or Navajo mine: *A Preliminary Evaluation of the Potential for Surface water Quality Impacts from Fly Ash Disposal at the Navajo Mine, New Mexico, Zimmerman 2005* and *Effects of Four Corners Power Plant Coal Combustion Waste Disposal on Surface and Groundwater Quality, Ross, 2007*.¹³² In addition, in 2010 Earthjustice and the Environmental Integrity Project (EIP) conducted an analysis of numerous coal ash disposal sites throughout the county. The Earthjustice EIP report found:

At the Four Corners Power Plant, boron and selenium downstream from the plant's coal ash ponds are much higher than upstream levels and approximately twice the levels established to protect aquatic life.¹³³

In addition, the Zimmerman study found that CCW constituents, including selenium, are migrating into the San Juan River ecosystem.¹³⁴ More specifically, the Zimmerman Report

¹²⁹ Dr. Mary Fox coal ash comment letter (attached Exhibit 53.).

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² Attached as Exhibits 94 and 63 to the Conservation Groups' scoping comment letter.

¹³³ Environmental Integrity Project and Earthjustice, *Out of Control: Mounting Damages From Coal Ash Waste Sites. Thirty-one New Damage Cases of Contamination from Improperly Disposed Coal Combustion Waste* (February 24, 2010). <http://earthjustice.org/sites/default/files/library/reports/ei-eipreportout-of-control-final.pdf> (attached as Exhibit 95 to the Conservation Groups' scoping comments).

Response 307.076

The EPA's oral cancer slope factor (CSF) of 1.5 (mg/kg/d)-1 is based on the studies of Tseng et al. (1968) and Tseng (1977) which reported elevated incidence of skin cancers in a Taiwanese population exposed to arsenic in drinking water. EPA's assessment was conducted in 1988 and was last updated in their Integrated Risk Information System (IRIS) in 1998. The current EPA (2014) Regional Screening Level (RSL) tables also present an oral CSF of 1.5 (mg/kg/d)-1 for arsenic. Thus, the Ferreccio et al (2000) and Chiou et al. (2001) studies referred to by Dr. Fox were clearly not considered when EPA derived their oral CSF for arsenic. However, in the EPA (2010) proposed CCR rule, EPA acknowledged that:

"The risk estimates for arsenic presented in the revised risk assessment are based on the existing cancer slope factor of 1.5 (mg/kg/d)-1 in EPA's Integrated Risk Information System (IRIS). However, EPA is currently evaluating the arsenic cancer slope factor and it is likely to increase. In addition, the National Resources Council (NRC) of the National Academy of Sciences (NAS) made new recommendations regarding new toxicity information in the NRC document, "Arsenic in Drinking Water, 2001 Update." Using this NRC data analysis, EPA calculated a new cancer slope factor of 26 (mg/kg/d)-1 which would increase the individual risk estimates by about 17 times."

OSMRE notes that in their data analysis, the NRC (2001) quantitatively considered both the Ferreccio et al (2000) and Chiou et al. (2001) studies and although both studies have limitations, the NRC considered both studies to be significant contributions to the quantitative dose-response assessment of arsenic carcinogenicity. In the their quantitative assessment of arsenic's cancer potency, the California Office of Environmental Health Hazard Assessment (OEHHA) also considered the Ferreccio et al. (2000) and Chiou et al. (2001) studies resulting in the derivation of an oral CSF of 9.5 (mg/kg/d)-1, which is about 6 times higher than EPA's current oral CSF.

Although EPA has yet to formally update their assessment of arsenic's carcinogenic potency, it appears likely that based on their discussion in EPA (2010) and the NRC (2001) and OEHHA assessments, that their oral CSF would be revised to a more stringent value in the future. Nevertheless, EPA (2010) took this into consideration during their development of the CCR rule. For the purpose of the EIS, OSMRE evaluated arsenic carcinogenicity using the current EPA CSF as published in IRIS given that EPA has not yet completed their re-evaluation of arsenic carcinogenicity.

CCR disposal at FCPP and historic disposal at the Navajo Mine is analyzed in detail in Section 4.15 of the EIS. Analysis of potential impacts of CCR disposal on Water Resources is presented in Section 4.5 of the EIS.

With regard to CCR Placement at the Navajo Mine, as described on page 4.5-44 of the Draft EIS, impacts to groundwater from historic placement are negligible due to both the very slow groundwater movement and the attenuation of contaminants of concern as they percolate through the subsurface. Further detail regarding the potential impact of historic CCR disposal at the Navajo Mine can be found in OSMRE's Cumulative Hydrologic Impact Assessment of the Navajo Mine and Pinabete Permit Areas at Section 5.3.5.3.1 and at Appendix G.

With regard to FCPP, statistical analyses of groundwater monitoring data described on page 4.5-57 of the Draft EIS showed no correlation between TDS concentration and time indicating little to no seepage beneath lined ash ponds. Further, page 4.5-57 describes intercept trenches and analysis of data showing the continued operation of wet ash ponds would have less potential to contaminate local groundwater.

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found: “[t]he Chaco Basin surface water quality data collected and analyzed in this study are strongly indicative that CCW disposal practices at the mine and power plant have adversely impacted the water quality of the Chaco River.”¹³⁵

a. The DEIS fails to examine the impact of impending federal coal ash regulations

OSM has a duty to analyze “all Federal permits, licenses, and other entitlements which must be obtained in implementing the proposal.” 40 C.F.R. § 1502.25(b). Within six months, EPA will promulgate final regulations governing the disposal of coal combustion waste at coal plants. On June 21, 2010, EPA proposed regulations for disposal of coal ash. *See*, 75 Fed. Reg. 35128. EPA is under a consent decree to finalize these regulations by December 19, 2014, in all likelihood prior to the issuance of a final EIS/Record of Decision in this matter. These proposed regulations would require all surface impoundments built after finalization of the regulations to install a liner and conduct comprehensive groundwater monitoring. *Id.* For surface impoundments built before finalization of the regulations, all coal ash must be removed and the impoundment must be retrofitted with a liner. *Id.* The coal ash dumps at the FCPP would qualify as a “surface impoundment” and be subject to the requirements of the proposed rule.

The DEIS acknowledges that the EPA’s “new regulatory requirements dictate that [the lined ash impoundment] be discontinued.” DEIS at 3-15. However, the DEIS fails to adequately evaluate the full impact of the nearly final coal ash regulations on the FCPP. Instead, the DEIS simply states that, “FCPP would comply with EPA’s Final Rule, irrespective of which CCR management option is selected.” DEIS at ES-xiii. This conclusory statement does not fulfill OSM’s duty to analyze the foreseeable impact of the rule on CCW disposal activities at the FCPP including, the future costs of CCW disposal, the full remedial effect of the impending rules on historic CCW disposal practices, and reasonable alternatives to future CCW disposal at the FCPP. In addition, the brief discussion of the proposed coal ash rule contained in the DEIS does not describe the financial implications of the rule on the existing or future coal ash impoundments at the FCPP, including the cost to remediate existing coal ash impoundments, the cost to construct future coal ash structures, the costs to conduct monitoring, and an assessment of the collective impact of these costs on the cost to produce electricity at the FCPP in comparison with other existing or alternative generation sources. DEIS at 4.15-27, 4.15-32. The Conservation Groups request that OSM disclose this information for public comment prior to finalizing the EIS.

b. The DEIS fails to analyze the whether the CCW disposal practices at FCPP violate the open dumping prohibition of RCRA.

The DEIS fails to analyze whether the current and past CCW practices violate the “opening dumping” prohibition of the Resource Conservation and Recovery Act, 42 U.S.C. §6945(a), and

¹³⁴ Zimmerman Report (attached as Exhibit 94 to Conservation Groups’ scoping comments).

¹³⁵ *Id.* at 35.

Response 307.077

40 CFR 1502.25(b) states that the EIS shall “list all Federal permits, licenses, and other entitlements which must be obtained in implementing the proposal”. This list is provided in Table 1-1 and the Regulatory Framework subsections of each resource area description further describe the regulatory permits and compliance applicable to the project. EPA published its Final Rule for Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electrical Utilities on December 19, 2014. Under the Final Rule, EPA has determined that CCR will be regulated under Subtitle D (non-hazardous) as a solid waste. The regulation is self-implementing and applies to the disposal of CCR generated from coal-fired generating stations, including tribal lands. The rule includes provisions for dust control and groundwater monitoring. The regulation does not extend to placement of CCR in mines. The Final EIS has been updated accordingly to reflect the Final Rule and its applicability to CCR disposal at the FCPP. A comprehensive discussion of the rule, its provisions, and enforceability is provided in Section 4.15, Hazardous Materials and Wastes. In addition, specific provisions of the rule that apply to other resource areas (i.e. water and air) are included in Sections 4.1, 4.5, 4.11, and 4.18.

The costs associated with implementation of the rule are summarized in the final rule. The additional marginal cost of operations are addressed through the ratemaking processes of each states’ utilities commission (e.g., Arizona Corporation Commission, New Mexico Public Regulation Commission). Please see Master Response #13, Cost of Electricity.

Response 307.078

CCR has been classified as solid waste and was not regulated under RCRA; therefore, disposal practices at FCPP did not violate the open dumping prohibition of RCRA.

Section 4.15.1.2 of the Draft EIS includes a section titled Regulation of CCR at FCPP, which provided a detailed explanation of the regulatory framework for CCRs at the time of publication. Further, this section included the sentence, “CCR disposal for the FCPP has no direct

regulatory oversight. The FCPP has no permitting process, waste characterization, groundwater monitoring, leachate collection system, dust control management, agency inspections or closure requirements specific to the ash disposal sites.” Therefore, FCPP has operated legally and exposure to civil penalties is not applicable to the proposed project.

Since publication of the Draft EIS, EPA published its Final Rule for Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electrical Utilities on December 19, 2014. Under the Final Rule, EPA has determined that CCR will be regulated under Subtitle D (non-hazardous) as a solid waste. The regulation is self-implementing and applies to the disposal of CCR generated from coal-fired generating stations, including tribal lands. The rule includes provisions for dust control and groundwater monitoring. The regulation does not extend to placement of CCR in mines. The Final EIS has been updated accordingly to reflect the Final Rule and its applicability to CCR disposal at the FCPP. A comprehensive discussion of the rule, its provisions, and enforceability is provided in Section 4.15, Hazardous Materials and Wastes. In addition, specific provisions of the rule that apply to other resource areas (i.e. water and air) are included in Sections 4.1, 4.5, 4.11, and 4.18.

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if so, the remedial measures that must be employed to achieve compliance with the Act. For the reasons set forth below, the CCW waste disposal practices at both the FCPP and Navajo mine violate the opening dumping provisions of RCRA and the DEIS must acknowledge this fact and analyze immediate remedial measures that must be undertaken to achieve compliance with the Act. The DEIS must also impose enforceable mitigation measures to ensure compliance with the Act.

One of the primary concerns of RCRA is that "open dumping is particularly harmful to health, contaminates drinking water from underground and surface supplies, and pollutes the air and land." 42 U.S.C. § 6901(b)(4). The EPA published final regulations, Criteria for Classification of Solid Waste Disposal Facilities and Practices, on September 13, 1979 to define the practices that distinguish "open dumps" from sanitary landfills. See 44 Fed. Reg. 53,438. Disposal sites not meeting the standards set forth in 40 C.F.R. Part 257 are classified as "open dumps" and are prohibited under RCRA section 4005(a). 42 U.S.C. § 6945(a). The term "open dump" is defined as "any facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 6944 of this title and which is not a facility for disposal of hazardous waste." 42 U.S.C. § 6903(14). The term "solid waste" includes "any...other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations." 42 U.S.C. § 6903(27). The term "disposal" is defined as "the discharge, deposit, injection, dumping, spilling, leaking, or placing any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters." 42 U.S.C. § 6903(3). From these provisions of RCRA, CCW practices of discharging its coal ash onto land at the FCPP and Navajo mine constitute illegal open dumping under RCRA. The DEIS is deficient for failing to analyze whether activities at the FCPP and Navajo mine have violated this federal law and the remedial measures that must be immediately employed to achieve compliance with the Act. The DEIS also fails to analyze APS's exposure to civil penalties under RCRA for its 30 years of illegal CCW disposal practices.

RCRA's part 257 subpart A regulations require that all dumping practices comply with general environmental performance standards addressing: floodplains, endangered species, surface water, ground water, land application, disease, air and safety. 40 C.F.R. Part 257, subpart A. The existing and proposed coal ash dumps at the FCPP fail to comply with these criteria and thus are illegal open dumps under RCRA. The DEIS fails to consider the open dump prohibition under RCRA and whether the coal ash dumps at the FCPP and Navajo mine comply with the performance standards in 40 C.F.R. Part 257. The DEIS must assess whether the current, past, and future CCW disposal practices comply with applicable law.

The existing coal ash dumps at FCPP pose a threat to public health and the environment. As is discussed more fully in the expert comments of Geo-Hydro Inc., coal ash dumping practices at FCPP and Navajo mine have contaminated groundwater with pollutants such as TDS, metals, nutrients and organic and inorganic compounds.¹³⁶ Pollutants found in the groundwater

¹³⁶ See, Expert Report of Geo-Hydro, Inc (attached as Exhibit 54).

Response 307.079

With regard to CCR Placement at the Navajo Mine, as described on page 4.5-44 of the Draft EIS, impacts to groundwater from historic placement are negligible due to both the very slow groundwater movement and the attenuation of contaminants of concern as they percolate through the subsurface.

With regard to FCPP, statistical analyses of groundwater monitoring data described on page 4.5-57 of the Draft EIS showed no correlation between TDS concentration and time indicating little to no seepage beneath lined ash ponds. Further, page 4.5-57 describes intercept trenches and analysis of data showing the continued operation of wet ash ponds would have less potential to contaminate local groundwater.

Threats to aquatic life, birds, mammals, and plant-life would occur if constituents of concern were transported via groundwater to surface water resources. The surface water resources nearest the FCPP are Chaco River and Morgan Lake. As shown on Figures 4.5-8 and 4.5-9, water quality monitoring conducted by both APS and NNEPA show that water quality in Morgan Lake generally meets Navajo Nation standards for aquatic and wildlife habitat, and that there is no statistical difference in water quality in Chaco River upstream and downstream of the FCPP. Evaluation of potential impacts to biological resources is evaluated in Sections 4.6 and 4.7 of the Draft EIS.

307.079

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pollution at the FCPP contain metals, selenium, and other compounds that pose a threat to aquatic life, birds, mammals, and plant-life.

c. The DEIS fails to analyze an off-site disposal and re-use alternatives for CCW.

The DEIS Alternative D evaluates a slightly different CCW on-site disposal configuration to the preferred alternative. As is discussed below, the DEIS is deficient for failing to analyze other reasonable CCW disposal alternative.

Adoption of either CCW alternative will result in significant environmental impacts, including: massive disturbance of native ground for construction of 5 additional dry ash disposal areas each being 60 acres in size totaling 385 acres; additional ground disturbance at 5 borrow sites that would be used to generate 4.8 million cubic yards of soil materials for the proposed evapotranspiration “cover” for each closed dry ash disposal area totaling 731 acres; and construction of a surge pond to dispose of FGD waste and seepage from the existing coal ash dumps. DEIS at xiii and Table ES-7. In addition to these impacts, construction of five new coal ash dumps and a surge pond would also increase the risk of groundwater and surface water contamination from CCW byproducts and increase the risk of windblown fugitive ash air pollution. FCPP is running out of room at the site to construct CCW disposal areas because the preferred alternative would continue the current practice of constructing new coal ash facilities adjacent to or on top of existing ones. The only alternative considered in the DEIS is a slight modification to the preferred plan that would reduce the size of the new ash dumps from 385 acres to 350 acres. Otherwise, the two alternatives are nearly identical.

Despite the fact that the preferred alternative and Alternative D would disturb over 1,000 acres of land, the DEIS concludes, “impacts to landforms and topography would be considered minor” and “impacts to soils would be considered minor.” DEIS at xxvi, Table ES-12. OSM’s conclusion that disturbance of over 1,000 acres of land is “minor” is not logically consistent with the facts and thus is arbitrary and capricious. The DEIS also attempts to defer an assessment of the effect on cultural resources by admitting that the proposed alternative and Alternative D would have “potential impacts to 20 archeological resources and 7 TCPs” but “OSMRE is consulting with the Navajo THPO and SHPO for determination of Project effects.” OSM has a duty to present the project effects in the DEIS. “NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.” 40 C.F.R. § 1500.1(b). This includes, “[u]rban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.” 40 C.F.R. § 1502.16(g).

OSM has a duty to “[r]igorously explore and objectively evaluate all reasonable alternatives” to the preferred alternative. 40 C.F.R. § 1502.14. Moreover, OSM has a duty to “[u]se the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.” 40 C.F.R. § 1500.1(e).

Response 307.080

With regard to beneficial reuse, beneficial reuse of CCRs is currently occurring at FCPP, as described in Section 2.2.6.3. In 1997, a vendor began purchasing and transporting 240,000 tons per year (or approximately 20% of total CCRs) for creating concrete. Therefore, this action is already considered as part of the existing environment and accounted for in the EIS. Further, this is the only vendor that has expressed interest in purchasing fly ash and it is presumed that market demand for beneficial reuse of CCRs from FCPP is being met. Otherwise it is technically infeasible for APS to dispose of FCPP CCRs without another buyer or proposed reuse (i.e. gypsum board plant).

As per NEPA guidelines, OSMRE evaluated an appropriate range of alternatives developed through the scoping process and consultation with cooperating agencies and the project proponents. Alternative disposal configurations were considered directly as a result of the above-mentioned consultations, but offsite disposal was not considered as an alternative because the FCPP lease area was designed to store CCR on-site and the Lease specified that this was an allowable use of the land.

Response 307.081

The quote provided is from the Executive summary which provides just the conclusions from each resource area. The full analysis with regard to landforms and topography is included in Section 4.3 of the Draft EIS. Page 4.3-14 states that “under the Proposed Action, impacts to landforms and topography as a result of mining operations within the Navajo Mine Permit Area would be extensive and would continue for the proposed life of the mine (25 years) or until reclamation was completed.” The analysis continues until the final conclusion on page 4.3-17 which states, “Following reclamation, impacts to landform and topography would be considered minor”.

With regard to FCPP, page 4.3-20 states that the DFADA “would permanently alter topography through both the creation of borrow pits on flat areas of the lease and construction of impoundments as high as

80 feet. These alterations would permanently change the surface relief of the fly ash disposal area; although due to the limited aerial extent of the DFADA, impacts are considered minor.” This paragraph has been amended to also note that the proposed DFADA area is within the same area of the FCPP lease as the existing ash disposal area and would be consistent with the topography in that portion of the lease.

Response 307.082

As stated on page 4.4-18, the regulations that govern NHPA implementation allow for a parallel NEPA and Section 106 process for the proposed Project. Specifically, 36 CFR Part 800.4(b)(2), states that an agency may defer final identification and evaluation of historic properties if it is specifically provided for in a PA or documents used by an agency to comply with NEPA.

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The DEIS fails to examine obvious alternatives to onsite CCW disposal. For example, the DEIS fails to consider an offsite CCW disposal alternative. This alternative could include disposal of CCW either at an existing landfill or at a newly created RCRA compliant landfill located offsite in a location that that would present a smaller risk of groundwater and surface water contamination and a reduced risk of exposure to air born contamination. The current CCW disposal areas at the FCPP are surrounded by surface waters, including Morgan Lake, Chaco Wash, and the San Juan River. The DEIS suggests that the CCW disposal areas at FCPP could adversely impact ground water and surface water. Disposal at an off-site existing or new landfill could obviate the need for the extensive land disturbance at the FCPP site and would reduce the present and future risk of exposure to CCW from water and air pollution. OSM's DEIS is deficient for failing to closely examine an off-site disposal alternative and for failing to carry forward such an alternative as a viable option for CCW disposal.

307.083

The DEIS also notes that "[a] portion of the fly ash [from Units 4 & 5] is also sold for beneficial reuse." DEIS at 2-24, 2-26, 2-27. The DEIS also fails to adequately examine an alternative of increasing the re-use of coal ash from Units 4 & 5 as an alternative to on-site disposal.

The DEIS also fails to adequately examine a conversion of Units 4 and 5 to natural gas as an alternative to future CCW disposal. Conversion of Units 4 and 5 to natural gas would eliminate virtually all coal ash waste and SO₂ scrubber waste by eliminating coal as the fuel source. The DEIS admits that "[i]t is technically feasible to convert the FCPP to a natural gas plant" and that such conversion is "economically feasible." DEIS at 3-49. The DEIS then arbitrarily dismisses the gas conversion option by stating, "it is not cost-effective because more commercially viable sites are available in Arizona that are closer to major load centers, which would reduce the potential for line losses." DEIS at 3-49. This statement by OSM is illogical, arbitrary and capricious. If "line losses" between the FCPP and Arizona load centers makes a gas plant "not cost effective" then these same line losses would make the coal burning FCPP "not economic." OSM's dismissal of the gas conversion option is arbitrary, capricious, and unsupported by the administrative record. The Conservation Groups request that OSM "prepare and circulate a revised draft" of the DEIS and include fully analyzed alternatives to on-site CCW disposal, such as an offsite CCW disposal alternative, an increased reuse coal ash alternative, and a gas conversion alternative. 40 C.F.R. § 1502.9(a).

307.084

d. The DEIS fails to submit complete scientific information on the effects of CCW disposal practices at the FCPP.

Conditions have changed at FCPP/Navajo Mine since 2008 concerning CCW processing and storage. BHP no longer accepts CCW for dumping at Navajo Mine; all CCW is now the responsibility of FCPP owners and the Federal government, with siting of CCW on the FCPP lease site in closer proximity to perennial waters. The DEIS describes the On-site Ash/Flue Gas Desulfurization (FGD) Disposal System in Section 2.2.6.1:

Units 1, 2, and 3 ash/FGD waste slurry historically was sluiced to impoundments in the Ash Disposal Area located approximately 1 mile west of the power plant. Prior to 2008, ash and FGD wastes generated by Units 4 and 5 were hauled to the adjacent mine for placement in mined-out areas regulated by the OSMRE. Since

Response 307.083

With regard to beneficial reuse, beneficial reuse of CCRs is currently occurring at FCPP, as described in Section 2.2.6.3. In 1997, a vendor began purchasing and transporting 240,000 tons per year (or approximately 20% of total CCRs) for creating concrete. Therefore, this action is already considered as part of the existing environment and accounted for in the EIS. Further, this is the only vendor that has expressed interest in purchasing fly ash and it is presumed that market demand for beneficial reuse of CCRs from FCPP is being met. Otherwise it is technically infeasible for APS to dispose of FCPP CCRs without another buyer or proposed reuse (i.e. gypsum board plant).

As per NEPA guidelines, OSMRE evaluated an appropriate range of alternatives developed through the scoping process and consultation with cooperating agencies and the project proponents. Alternative disposal configurations were considered directly as a result of the above-mentioned consultations, but offsite disposal was not considered as an alternative because the FCPP lease area was designed to store CCR on-site and the Lease specified that this was an allowable use of the land.

Response 307.084

Please see Draft EIS Section 3.3 and Master Response #2 for explanation on why the conversion of Units 4 and 5 to natural gas powered does not meet the Purpose and Need of the project.

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2008, fly ash generated by Units 4 and 5 has been trucked to a lined DFADA located within the onsite Ash Disposal Area. A portion of the fly ash is also sold for beneficial reuse. FDG slurry from Units 4 and 5 scrubbers is pumped to thickeners. The thickeners underflow is pumped to the Lined Ash Impoundment in the Ash Disposal Area where the solids settle and the liquid is decanted to the Lined Water Impoundment. The liquid is pumped back to the scrubbers for reuse, and the bottom ash is trucked to the Dry Fly Ash Disposal Area (DFADA). From 1962 to the present, approximately 33.5 million tons, or 20,800 acre-feet, of fly ash, bottom ash, and FGD solids have been placed into the Ash Disposal Area.

OSM has never adequately analyzed the placement of ash and FGD wastes generated by Units 4 and 5 on the FCPP lease sit and has no current permits allowing disposal. The NPDES permit for FCPP does not contemplate permanent storage of CCW on the FCPP lease site nor does it contemplate impacts to perennial waterways from discharges (including slurried materials). The DEIS discloses that Units 4 and 5 are expected to produce 40 tons per hour of furnace bottom ash and 150 tons per hour of fly ash during full load conditions. Using the stated historic annual average capacity factor at FCPP of 86 percent, DEIS at 2-124, the annual estimate for total bottom ash and fly ash generated at FCPP is 1.43 million tons:

Ash produced in the combustion process consists of bottom ash and fly ash (also known as coal combustion residuals or CCR). Bottom ash accumulates along the inside walls and floors of the boiler units. The bottom ash inside the boiler is directed to the bottom ash hopper. The total production rate of furnace bottom ash for Unit 4 and Unit 5 is approximately 40 tons per hour during full load conditions. The total bottom ash production rate for Units 1, 2, and 3 was 20 tons/hour. The furnace bottom ash is collected and removed by means of a hydraulic-vacuum system and delivered via sluice water pipelines to dewatering bins. In the bins, the sluice water is decanted and the bottom ash is unloaded to trucks for disposal. Two dewatering bins are each 35 feet in diameter with a storage capacity of approximately 21,600 cubic feet, or 400 tons, with a bottom ash density of 37 pounds per cubic foot. Each bin is elevated for 20-foot truck clearance, with trucks periodically hauling the ash from the dewatering bins to the Dry Fly Ash Disposal Area (DFADA) or to construction sites for the buttresses of the dams and access roads.

Fly ash constitutes approximately 80 percent of the FCPP's total ash output. Units 1, 2, and 3 produced fly ash at a total rate of approximately 70 tons/hour. Fly ash is produced by Units 4 and 5 at a total rate of approximately 150 tons per hour during full load conditions. The fly ash from the boiler passes through the flue gas draft system to the fabric filter dust collectors ("baghouses"), which remove fly ash from the flue gas. A fly ash handling system then removes the fly ash from the baghouse hoppers and conveys it to silos for storage. The ash is mixed with scrubber process water for dust control and to aid in compaction. Trucks then transport the dry fly ash (no free liquid) to a lined DFADA on site for disposal. The baghouse system for Units 4 and 5 is designed to remove not less than 99.87 percent of fly ash from the flue gas.

Response 307.085

Section 4.15.1.2 of the Draft EIS included a section titled, Regulation of Coal Combustion Residue at FCPP, which provided a detailed explanation of the regulatory framework for CCRs at the time of publication. EPA published its Final Rule for Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electrical Utilities on December 19, 2014. Under the Final Rule, EPA has determined that CCR will be regulated under Subtitle D (non-hazardous) as a solid waste. The regulation is self-implementing and applies to the disposal of CCR generated from coal-fired generating stations, including tribal lands. The rule includes provisions for dust control and groundwater monitoring. The regulation does not extend to placement of CCR in mines. The Final EIS has been updated accordingly to reflect the Final Rule and its applicability to CCR disposal at the FCPP. A comprehensive discussion of the rule, its provisions, and enforceability is provided in Section 4.15, Hazardous Materials and Wastes. In addition, specific provisions of the rule that apply to other resource areas (i.e. water and air) are included in Sections 4.1, 4.5, 4.11, and 4.18.

The potential impacts of placement of coal combustion residue are evaluated in Sections 4.3, 4.5, and 4.15 of the Draft EIS.

Response 307.086

The NPDES permit for FCPP is treated the same as the NPDES permit for Navajo Mine, which is addressed as a federal action. The NPDES permit for FCPP has been administratively extended; therefore, the existing permit governs discharges at FCPP. Reissuance of the NPDES permit is not considered a "new source" permit and therefore approval of the permit is not subject to NEPA analysis.

A map of the supercell alternative is provided in Figure 3-5 of the Draft EIS.

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The immense volume of CCW created by FCPP illuminates the flawed logic and deficiencies in not including the essential NPDES permit for the FCPP as part of the proposed action of the DEIS and undermines OSM's analysis by ignoring the public health and environmental impacts from this unregulated site (under EPA jurisdiction). The Ash Disposal Areas contemplated in the DEIS are very poorly located in proximity to Chaco and San Juan Rivers. The DEIS discusses the project component of constructing five additional DFADAs each approximately 60 acres in size and approximately 120 feet high. See DEIS at ES-xii. These DFADAs would be constructed in the area to the west of FCPP adjacent to Chaco River and perennial water where existing CCW problem remain unresolved (potential contamination to San Juan River from saturation and immense fugitive dust control problems). The DEIS then discloses that another alternative is a CCW Supercell but provides no map on the DEIS showing the facility. The concept of DFADAs and borrow areas in to the west of FCPP would exacerbate existing significant problems to groundwater and surface water.

A 2010 Report by Earthjustice and Environmental Integrity Project discussed contamination issues at FCPP:

For more than thirty years fly ash, bottom ash and scrubber sludge from the Four Corners Power Plant was placed in unlined impoundments and backfilled into the Navajo Mine, which has supplied coal to the plant since 1968. The Power Plant and coal combustion waste (CCW) disposal areas are within the Navajo Nation. Full evaluation of the impacts of the CCW on groundwater is hampered by the lack of public availability of data, but two separate statistical analyses of surface water quality data in the Chaco River Basin have documented significant degradation of water quality downstream from the CCW impoundments, for which contamination by seepage and groundwater inflow is the only reasonable explanation. In one study concentrations of boron were nearly twelve times higher than upstream concentrations, and total dissolved solids (TDS), sulfates and selenium were more than three times higher in the downstream segment of the river basin. The second study also found higher downstream levels of copper, lead, mercury and zinc.

The Navajo Nation water quality standards list the Chaco Wash as used for wildlife and livestock watering and aquatic habitat. For these uses, the elevated concentrations of boron, selenium and zinc are approximately twice recommended levels for freshwater aquatic organisms, and the concentrations of copper and lead slightly exceed levels recommended in New Mexico for livestock.

This case focuses primarily on surface water contamination of Chaco Wash by coal combustion waste (CCW) from the Four Corners Power Plant. As discussed in the additional narrative, contamination of groundwater downgradient from the Navajo Mine ash disposal areas is well documented, but groundwater data for the CCW surface impoundments has not been made available for independent review

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and analysis.¹³⁷

A 2014 report by Sierra Club, "Dangerous Waters: America's Coal Ash Crisis," highlights the continued lack of federal standards for CCW, the public health impacts of exposure to CCW and the continuing problems at FCPP. As Sierra Club stated in its press release for the report:

Coal ash, which is a toxic substance created when coal is burned, has been generated in the millions of tons at the Arizona Public Service (APS) owned Four Corners Generating Station. According to the report, APS has already stored 50 to 55 million tons of coal ash in unlined pits near the San Juan River and more recently are believed to be storing it in stockpiles. Improper storage of coal ash leaves water resources, the environment, and neighboring Navajo communities vulnerable as it has been known to seep into groundwater and blow on to their lands. Without federal regulation of coal ash, there is little known about how the plant's storage is being handled.

"The major concerns for Navajo tribal members are the continued health impacts and the financial burden of health care. Additionally, there are concerns on what would happen if the 100 million tons of toxic coal ash is released or floods the rivers nearby," said Lori Goodman, Boardmember and Coordinator for Dine' Citizens Against Ruining our Environment. "Tribal members are worried about the looming financial burden of future clean up of coal ash and its impact on their health."

To better understand how the coal ash is impacting health and the environment, testing has been done on the Chaco River both downstream and upstream stream from the coal ash storage sites. The most recent available testing downstream on the Chaco River, which runs 50 feet from where the bulk of the coal ash is stored, has shown dangerously high levels of toxic constituents found in coal ash. The Chaco River flows directly into the San Juan River basin, which is one of the Navajo's main sources for drinking water. Without restrictions on how to dispose of coal ash, the Navajo people are at risk of breathing and drinking toxic contaminants that have been linked to cancer and other chronic illnesses that many Navajo people in the region suffer from today.¹³⁸

¹³⁷ Environmental Integrity Project and Earthjustice, *Out of Control: Mounting Damages From Coal Ash Waste Sites. Thirty-one New Damage Cases of Contamination from Improperly Disposed Coal Combustion Waste* (February 24, 2010). <http://earthjustice.org/sites/default/files/library/reports/ej-eipreportout-of-control-final.pdf> (attached as Exhibit 95 to the Conservation Groups' scoping comment letter).

¹³⁸ Sierra Club, Press Release: *Sierra Club Releases Report Showing The Dangers Of Coal Ash At The Four Corners Power Plant Sierra Club cites Arizona Public Service coal ash storage sites among the worst in the country* (May 15, 2014) (available at: <http://content.sierraclub.org/press-releases/2014/05/sierra-club-releases-report-showing-dangers->

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The report demonstrates the vast problem of unregulated CCW disposal at FCPP. The DEIS must be completely revised to address the historic, current and future impacts from CCW. In recognition of the EPA's requirement to finalize new federal standards for the disposal of coal ash by the end of 2014, the DEIS must be updated. The DEIS must also evaluate the financial implications and liabilities associated with the standards for the disposal of coal ash at FCPP – APS and other owners at FCPP should have complete financial responsibility.

Under the Environmental Justice heading, the DEIS takes the extraordinary step in claiming that under the Proposed Action and all Action Alternatives:

If a breach of the ash disposal impoundments occurred, potential impacts to tribal lands would be minor.

DEIS at 3-69. This conclusion is disturbing and negligent given that a breach of the ash disposal impoundments could have potentially significant impacts on the San Juan River and Navajo Nation lands/communities. The DEIS must define the legal responsibilities and liabilities of the ash disposal impoundments before jumping to a baseless, misguided conclusion on impacts to tribal lands. OSM is ignoring the regulatory responsibility to truly evaluate impacts associated with CCW disposal. The fact that OSM has included this discussion of CCW breaches under Environmental Justice suggests that OSM would place the financial burden on the Navajo Nation to contend with breach impacts.

Although the DEIS discloses some of the problems associated with CCW, it fails to address the potential impacts:

The two primary concerns related to disposal of CCR have to do with how it is stored after disposal. The first issue is the storage of wet CCR in ponds or impoundments. The wet coal ash is contained by earthen dams, and a breach or failure of the impoundment dam could result in a release of the wet CCR, which has environmental and public safety implications downstream of the release. An earthen dam contains the CCR impoundment at the FCPP and is regulated by the New Mexico Office of the State Engineer, Dam Safety Bureau.

The second concern is related to the metals and other compounds found in CCR. These metals are potentially toxic and have the potential to leach into the groundwater. Two factors increase this leaching risk from disposal units: the use of wet surface impoundments instead of dry landfills, and unlined disposal units have a higher risk of leaching than do disposal units with composite liners to prevent leaking and leaching. (DEIS at 4-15.4)

The admission by OSM that metals in CCR are potentially toxic and the interaction between CCR and NAPI return flows point to very serious problems that must be resolved in a revision of

[coal-ash-four-corners-power-plant](#) (last accessed June 26, 2014); Sierra Club, *Dangerous Waters: America's Coal Ash Crisis* (2014) (attached as Exhibit 55).

Response 307.087

CCR disposal at FCPP and historic disposal at the Navajo Mine is analyzed in detail in Section 4.15 of the EIS. Analysis of potential impacts of CCR disposal on Water Resources is presented in Section 4.5 of the EIS. Further detail regarding the potential impact of historic CCR disposal at the Navajo Mine can be found in OSMRE's Cumulative Hydrologic Impact Assessment of the Navajo Mine and Pinabete Permit Areas at Section 5.3.5.3.1 and at Appendix G.

Section 4.15.1.2 of the EIS includes a section titled Regulation of Coal Combustion Residue at FCPP, which provides a detailed explanation of the regulatory framework for CCRs at FCPP.

EPA published its Final Rule for Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electrical Utilities on December 19, 2014. Under the Final Rule, EPA has determined that CCR will be regulated under Subtitle D (non-hazardous) as a solid waste. The regulation is self-implementing and applies to the disposal of CCR generated from coal-fired generating stations, including tribal lands. The rule includes provisions for dust control and groundwater monitoring. The regulation does not extend to placement of CCR in mines. The Final EIS has been updated accordingly to reflect the Final Rule and its applicability to CCR disposal at the FCPP. A comprehensive discussion of the rule, its provisions, and enforceability is provided in Section 4.15, Hazardous Materials and Wastes. In addition, specific provisions of the rule that apply to other resource areas (i.e., water and air) are included in Sections 4.1, 4.5, 4.11, and 4.18.

The costs associated with implementation of the rule are summarized in the final rule. The additional marginal cost of operations are addressed through the ratemaking processes of each states' utilities commission (e.g., Arizona Corporation Commission, New Mexico Public Regulation Commission). Please see Master Response #13, Cost of Electricity.

The DFADAs are proposed in the FCPP Lease Area, per Amendment #3. This discussion is included in the Environmental Justice analysis because it represents a potential effect to an Environmental Justice population. Furthermore, the potential of a breach failure at an ash impoundment is discussed throughout the EIS and adequately addressed. If a breach of ash disposal impoundments led to a release of ash material into waters of the U.S., including the San Juan River, such failure would fall under the purview of the Clean Water Act and would be regulated by the EPA. We have added the following clarification to section 4.5, Water Resources/Hydrology: Although as discussed in Section 4.15, failure of the impoundments is unlikely, if an impoundment failed, the potential exists for wet ash to enter Chaco River. If this were to occur, it would be regulated under the Clean Water Act and EPA would have regulatory oversight.

This issue is also addressed in Section 4.15 (Hazardous and Solid Wastes). The analysis is included in Environmental Justice because it was a potential environmental consequence. However, there was no intention to ascribe liability. The following clarification has been added to Section 4.11: Based on the rated condition of the dam and regulatory compliance requirements, the likelihood of a release is low and therefore the impacts would be minor.

Response 307.088

Analysis of the potential for impact from a breach of the impoundment dams is found in Section 4.15. In addition, the following language has been added to Section 4.5.4.1: Although as discussed in Section 4.15, failure of the impoundments is unlikely, if an impoundment failed, the evacuation map indicates that material could be moved down the Chaco River 11 miles to the San Juan River. However, the area of inundation is expected to be smaller than the evacuation area shown. In the event of a dam failure at the LAI, the dry material would result in the dry ash contents slumping downslope. This material is unlikely to extend much past the angle of repose. As such, if there were a release, the material is unlikely to reach the Chaco River. This may result in some slight increase in turbidity in the Chaco River, if there

were flow in the river at the time of the failure (the area where the ash would enter the river is upstream of the area that is perennially wetted). In the event of a dam failure at the LDWP, a maximum of 517 acre feet of water would be released, although the normal operating level is 135 to 435 acre feet. This water would likely carry some ash with it, as well as material from the dam. This would result in increased flow, turbidity and sedimentation in the Chaco River. Most of the solid materials would settle close to the dam, and the amount of material carried along would attenuate with distance from the breach.

Potential impacts regarding leaching of compounds from CCR into groundwater are addressed in Section 4.5 of the Draft EIS.

In regard to SCR impact on CCR see Response 307.045.

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the DEIS. This issue is only exacerbated by the fact that SCR installation at units 4-5 will only increase the toxicity of CCW. ↑

The Conservation Groups retained the services of a hydrology consulting firm, Geo-Hydro Inc., to conduct a critical review of the DEIS's analysis of the environmental effects of CCW disposal practices at the FCPP.¹³⁹ Geo-Hydro's report identified numerous deficiencies with the DEIS' analysis, including:

- Characterization of the extent of groundwater contaminants migrating in groundwater from coal combustion residue (CCR) at FCPP is inadequate. 307.089
- Background groundwater chemistry has yet to be adequately characterized at FCPP after 40 years of operation. Only two rounds of high quality groundwater sampling data have been generated over that period. 307.090
- Portions of the DEIS appear to rely upon general descriptions of planned groundwater monitoring and remediation systems provided to OSMRE by Arizona Public Service (APS) in a data summary document (APS, 2013). No detailed designs, construction plans, or operational details are provided or even referenced in the DEIS. It is unclear how the environmental impacts of CCR disposal at FCPP can be adequately evaluated with the little available information. 307.091
- Many sections of the DEIS make the statement that groundwater within and adjacent to the permit area is of poor quality and is only marginally suitable for livestock watering use. Despite this, groundwater has been and is currently being used for livestock watering. The marginal quality of the water for this purpose indicates that there is very little room for degradation of water quality related to mine or FCPP operations without causing material damage to the hydrologic balance by eliminating livestock watering as a future use of groundwater outside the permit area. 307.092

Id.

Geo-Hydro's report is entirely incorporated into this comment letter by reference. The Conservation Groups request that OSM address each of the technical deficiencies of the DEIS outlined in the Geo-Hydro report and re-issue the DEIS for public comment after addressing these deficiencies and disclosing the relevant information requested. 307.093

e. The DEIS fails to accurately present the risk of harm from coal ash dam failures.

The DEIS states, "[o]ne of the potential impacts from the disposal of CCR is an accidental release of the ash disposal surface impoundments at the FCPP. Based on this assessment of the dam, impacts from the potential accidental release would be minor." DEIS at p. 4.11-23. This conclusion is arbitrary and capricious because it fails to present a complete and accurate assessment of the risk of dam failure. In 2008, the New Mexico Office of the State Engineer 307.094

¹³⁹ Expert Report of Geo-Hydro Inc. (attached as Exhibit 54).

Response 307.089

The relatively constant or slightly decreasing groundwater levels described on page 4.5-10 are an indication of a lack of contribution from the ash ponds. Furthermore, Morgan Lake is over 2,000 feet from the ash ponds and is a known groundwater mounding location. Groundwater beneath Morgan Lake would be recharged by the lake itself, which meets Navajo Nation water quality standards for designated beneficial uses. Therefore, Morgan Lake would not lead to impairments beneath the ash disposal area. The ash disposal area has a voluntary groundwater monitoring program and a seepage collection system to identify and address impairments. In addition, the following language regarding future management of CCR disposal at the FCPP has been added to Section 4.5.4.1: In accordance with the Final Rule for Disposal of CCR at Electric Utilities, APS will continue groundwater monitoring at the ash disposal area at FCPP, on at least a semi-annual basis and data will be analyzed to detect potential leaching. If sample analysis determines the presence of leaching, APS will take implement appropriate corrective measures, as outlines in the Final Rule. Groundwater monitoring records will be kept in the FCPP operating records and posted on a public website, as specified in the Final Rule.

Response 307.090

CEQ guidance suggests that agencies use the "best available scientific and technical information available". The data used to evaluate impacts to groundwater at FCPP is site-specific monitoring data over a 25-year period. This is the best available scientific information on groundwater quality conditions at the site that is available.

Response 307.091

As discussed on page 4.5-57 impacts of CCR disposal at FCPP were evaluated based on a statistical analysis of 25 years of groundwater monitoring data and a comparison of monitoring well data both upstream and downstream of existing intercept trenches. The analysis

shows this design is effective. The expansion of this system is expected to follow this successful design. The analysis states that APS is currently in the process of installing a new trench as well.

Response 307.092

As stated in the Draft EIS, the groundwater quality within the Navajo Mine lease area (in both areas that are actively mined and those that have not yet been mined and which are upgradient of all current and historic mining activity) exceed the criteria for livestock watering; however, as shown on Figure 4.5-1, there are no livestock watering wells within Areas I and II where historic CCR disposal occurred on the Navajo Lease Area.

As described in the EIS, historic and current livestock watering in the vicinity of the permit area has been limited to surface and alluvial systems. Groundwater monitoring data does not indicate that CCR disposal has compromised groundwater quality for livestock use in Area I or II. Rather groundwater monitoring data shows that baseline/background Fruitland and PCS water quality has never meet livestock criteria and has never been used for livestock watering. There are no current economic uses of the Fruitland Formation in or adjacent to this area and no foreseeable uses other than oil and gas extraction. Additionally, the limited data available in the Bitsui alluvium which has been used historically for livestock watering indicates that water quality upgradient of all historic mining and CCR placement was of marginal quality for livestock use. The EIS has been revised to provide this explanation as well. In addition, review of baseline monitoring wells in Areas IVN and IVS indicate that water quality in the PCS and Fruitland Formation is not suitable for livestock watering and that alluvial water is only marginally suitable for livestock watering.

Response 307.093

Please see Master Response #6, Recirculation of the EIS. Responses to each of the Specific Comments listed in the Geo-Hydro report are provided below.

1. Page 2-23, Section 2.2.4 states that approximately 4,826 acre-feet per year is discharged from Morgan Lake to Chaco River. The water balance is provided in the Draft EIS. We've determined no impact that would further affect the analysis.
2. The following description of material has been added to Section 3.2: Suitability of the material for evapotranspiration cover was determined through boring test pits at each proposed area within the APS lease. Only those areas with suitable soil types were considered for use.
3. No water quality standards apply to Morgan Lake. Water quality standards are applicable to water bodies, not facilities. Designated beneficial uses and associated water quality standards for those uses have been applied to Chaco River.
4. Data for water supply and livestock wells in the area for the Navajo Mine Permit Area and Pinabete Permit Area were gathered from the SMCRA permit applications which contain the most up-to-date information available.
5. Groundwater level contour maps were used to inform the analysis and are available as part of the Administrative record.
6. The relatively constant or slightly decreasing groundwater levels are more likely an indication of a lack of contribution from the ash ponds. Furthermore, Morgan Lake is over 2,000 feet from the ash ponds and would not lead to groundwater impairments beneath the ash disposal area. The ash disposal area has a groundwater monitoring system and seepage collection system to identify and address impairments.
7. The text has been corrected to state that monitoring wells at the FCPP are in the alluvial aquifer and lewis shale.
8. Analysis regarding impacts to livestock watering is provided on pages 4.5-44 and 4.5-45.
9. The text has been corrected to state that monitoring wells at the FCPP are in the alluvial aquifer and lewis shale. There are no NNEPA groundwater standards. The EPA MCL is for drinking

water whereas the beneficial use of groundwater in the area is livestock water. Our conclusion is based on evaluation of data which shows no discernible effect.

With regard to the quality of groundwater monitoring data, OSMRE used the best available site-specific data to evaluate impacts, as per CEQ guidance. With regard to boron, the paragraph has been revised, but these changes do not affect the analysis. The Lewis Shale is a different zone but unimpacted. There are five wells in the alluvium that are clearly background wells (MW-21, MW-22, MW-42, MW-41, MW-43). The comparison to downgradient wells indicates no statistical difference. Also there are wells upgradient and downgradient of the trenches to analyze whether the ash ponds are affecting groundwater quality. There is no statistical differences. The two wells completed in the Lewis Shale were not used for our statistical analysis. However, their depth and location indicate that they also measure background water quality but in a deeper zone.

10. The discussion of poor suitability for livestock water is found on pages 4.5-44 through 4.5-45 of the Draft EIS. As discussed in the Draft EIS, evaluation of potential impacts found that mining would not materially affect the suitability of alluvial groundwater for livestock use.
11. OSMRE reviewed the data provided by APS and conducted the statistical evaluation. More detail regarding the well data compared has been added to the EIS.
12. NEPA requires the use of best available information for analysis and 40 CFR 1502.2 states that if information is incomplete the EIS should use methods that are generally accepted by the scientific community. The statistical analysis conducted is a suitable method for analyzing the data available. The discussion of the Mann-Kendall tests have been expanded to provide greater information, including the wells included, the data sets tested and each specific test result.
13. OSMRE conducted an analysis of the data. The expansion of the DFADA would be lined and contain dry ash. The seepage intercept trenches is for the already existing wet ash ponds. Our

analysis of the existing trenches indicates they are effective. The new trench design would be similar; therefore, our analysis indicates that it too would also be effective.

14. The impoundment in question contains dry fly ash. The GEI report states that although the cut-off trench in the northwest corner is terminated in fly ash, the report also states that the trench provides 12 foot deep and several hundred foot long compacted clay protection as described in Section 4.5 of the Draft EIS. Any water in the LAI is pumped to the power plant for use. As such, a driving force for seepage is temporary and the addition of 10 feet of head would not appreciably change that.
15. Same response as for 9.
16. The efforts for control were undertaken due to NPDES conditions. OSMRE used best available site-specific data for our analyses.
17. The submittal by APS referenced in the text states that boron is naturally -occurring element in sedimentary rock, coal, and shale. However, the text on page 4.15-27 compares groundwater monitoring results from wells both upgradient and downgradient of the existing ash ponds.
18. The Final CCR rule includes specific provisions for location restrictions of CCR impoundments. The Final EIS has been updated to incorporate a description of the Final CCR rule.
19. Groundwater monitoring is part of reclamation permitted through SMCRA. The oversight of the monitoring program is dynamic and allows for adaptive management and adjustments to be made based on the results within each monitoring well, as part of the permit oversight by OSMRE. Groundwater monitoring will continue until such time that OSMRE determines that all bond conditions have been met.
20. Thank you for your comment. OSMRE has submitted data requests to MMCo for clarification on the Pinabete permit application. All revisions to the application resubmitted by MMCo have been incorporated as applicable into the Draft EIS. The Draft

EIS analyzes the impacts of the action as proposed to the environment.

21. All wells would be sampled quarterly so this would describe an unusual situation. A well dry during one quarter could provide data the following quarter. In any event, SMCRA allows for dynamic monitoring, such that OSMRE may suggest new monitoring locations based on review of quarterly monitoring reports. Adaptive management and adjustments to the program are within the purview of OSMRE in administering the SMCRA permit.
22. Reference has been corrected to Table 4.5-5. Cottonwood and No Name data has been added to Table 4.5-5.
23. The Draft EIS used the best available site-specific data to evaluate potential impacts.
24. see response to 307.097
25. The Navajo Nation does not have groundwater quality standards. The surface water quality standards are compared to the monitoring results to provide a point of comparison. As stated in the Final EIS impact analysis, potential impacts to current and future water uses from CCR placement at the Navajo Mine are minor.
26. Reclamation includes post-mining groundwater monitoring. The bond would be released only upon satisfactory completion of all SMCRA requirements. As stated in the comment, it is likely decades (or event centuries) before the groundwater begins to flow out of the mine spoils. This length of time allows for the natural attenuation of contaminants of concern. Further, at the point that the groundwater does begin flowing outward, any remaining contaminants would be attenuated to levels well below any concentrations that would be harmful; therefore, impacts would be minor.
27. see above response

Response 307.094

The citation from 4.11-23 (Environmental Justice) does not adequately summarize the analysis in Section 4.15.1 (Hazardous and Solid Waste) from which it is drawn. In the primary chapter for this topic, 4.15, the EIS summarizes an EPA site assessment of the dam safety of FCPP's LAI embankment dam. The dam was given a hazard potential classification, which is a rating for a dam based on the potential consequences of failure. The FCPP was given a hazard potential classification of significant hazard potential in the report. Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, or disruption of lifeline facilities, or can result in other concerns.

In addition to the hazard potential classification the EPA inspection rated the condition of the impoundments as "satisfactory," "fair," "poor," or "unsatisfactory," terms commonly used in the field of dam safety. The site assessment for the FCPP rated all of the ash impoundments as satisfactory, which states, "no existing or potential management unit safety deficiencies are recognized. Acceptable performance is expected under all applicable loading conditions (static, hydrologic, seismic) in accordance with the applicable criteria.

Because the condition was satisfactory and acceptable performance is expected under all applicable loading conditions, the analysis found that compliance with the developed plans and all regulatory requirements would address the potential for an accidental release. Therefore, the analysis concluded that the impacts would be minor.

The citation from 4.11-23 has been re-written to improve clarity as follows:

"[o]ne of the potential impacts from the disposal of CCR is an accidental release of the ash disposal surface impoundments at the FCPP. Based on the rated condition of the dam and regulatory compliance requirements, the likelihood of a release is low and therefore the impacts would be minor."

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commented that the coal ash dams at the FCPP should be classified as High Hazard Potential dams.¹⁴⁰ APS responded by acknowledging that at least three residences were identified for evacuation because they were located within close proximity of the inundation area that would be affected by a breach of the coal ash dams.¹⁴¹ These facts were not identified in the DEIS. DEIS at 4.15-15. OSM's characterization of the impact of dam failure as "minor" is arbitrary and capricious in light of the admissions by APS that three residences are at risk for death and destruction in the event of coal dam failure. This risk will only increase as the volume of coal ash waste increase over the next 40 years thus expanding the area of inundation and increasing the risk of death and destruction. The DEIS fails to assess this reasonably foreseeable risk.

f. The DEIS fails to submit complete scientific information on the effects of CCW disposal practices at Navajo Mine.

From 1971 until 2008, CCW was disposed of in unlined pits at the Navajo Mine. DEIS at 4.15-7. As noted above, CCW includes numerous toxins; OSM has calculated the "Navajo Mine On-site Land Disposal Release of Toxic Release Inventory Chemicals," to include at least between 1,532,872 and 2,147,990 pounds each year of toxic chemicals in CCW between 2002 and 2007, including arsenic, barium, lead, mercury, selenium, and thallium. DEIS at 4.15-7-8. OSM admits that the impacts of the placement of CCW in Navajo Mine are "unknown." DEIS at 4.15-31. OSM does know, however, that at two of the pits where CCW was placed have become saturated with groundwater. DEIS at 4.15-31. Despite the fact that OSM does know that CCW contains large amounts of toxic materials, but admits that the impacts of storage of these toxins in unlined pits saturated with groundwater are unknown, OSM nevertheless comes to the conclusion that "potential impacts of CCRs in Navajo Mine were minor." DEIS at 4.15-18. OSM's unsupported conclusion about an issue of such great magnitude does not constitute the hard look required by NEPA.

The DEIS claims that springs and seeps in the Region of Influence (ROI) are associated with Navajo Agricultural Products Industry (NAPI) and discounts the presence of natural springs/seeps based on BHP studies.

No springs or seeps have been observed during hydrologic investigations conducted within or adjacent to the ROI (BNCC, 2012a). However, springs and seeps do occur along upper Chinde Wash, above the Navajo Mine Lease boundary. These springs and seeps are due to Navajo Agricultural Products (NAPI) irrigation return flows

DEIS at 4.5-9. The DEIS then states that:

Unsaturated conditions currently exist at CCR backfill placement locations except for two locations at the northern end of Area 1. CCR materials placed in the

¹⁴⁰ URS letter to NM OSE at 1 (June 23, 2011) (attached as Exhibit 56).

¹⁴¹ *Id.*

Response 307.095

The comment is addressing two separate issues. With regard to the Navajo Mine CCR placement, the data and analysis shows that impacts are minor see response . The recommended mitigation measure described on page 4.15-31 is in reference to CCR disposal at the FCPP; however this mitigation measure has been removed following publication of the Final Rule for CCR in December 2014. The regulation is self-implementing and applies to the disposal of CCR generated from coal-fired generating stations, including tribal lands. The rule includes provisions for dust control and groundwater monitoring. The regulation does not extend to placement of CCR in mines. The Final EIS has been updated accordingly to reflect the Final Rule and its applicability to CCR disposal at the FCPP. A comprehensive discussion of the rule, its provisions, and enforceability is provided in Section 4.15, Hazardous Materials and Wastes. In addition, specific provisions of the rule that apply to other resource areas (i.e. water and air) are included in Sections 4.1, 4.5, 4.11, and 4.18.

Response 307.096

As discussed on pages 4.5-9 and 4.5-10, little groundwater is present beneath the Navajo Mine lease area. To further clarify a sentence has been added stating that groundwater that is present is perched (not connected to a regional aquifer). It is for this reason that the Draft EIS states that "impacts to groundwater flow within the permit area would be expected to be moderate due to the long rate of groundwater recovery" on page 4.5-43. Further, with regard to groundwater quality, as stated on page 4.5-44 "modeling...showed it is unlikely that any detrimental future effect will occur from past CCR placement. This is due to the very slow groundwater movement and the attenuation of contaminants of concern as they percolate through the subsurface."

As such, by the time the groundwater flows rebound to natural conditions in these perched areas, any contaminants of concern from the coal combustion residue would have naturally attenuated. Therefore, additional groundwater monitoring beyond the bond release

period of the SMCRA permit was not recommended in the Draft EIS. Please see Master Response #4, Mercury Deposition and Mercury in Fish in Nearby Lakes.

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Bitsui Pit are saturated as are an isolated location of basal saturation of CCR material around the Watson-4 well. Current groundwater flow directions from the Bitsui Pit are toward the subcrop of the Fruitland Formation along the alluvium of the San Juan River (BNCC 2011a). Any groundwater flow in the future from Area I and portions of Area II is also expected to be to the northeast toward Fruitland Formation subcrop along the alluvium of the San Juan River. Consequently, groundwater from CCR placement locations and associated mine backfill within Areas I and II are not expected to affect the alluvium of the Chaco River.

OSM's assertion that groundwater is not affecting Chaco River alluvium is contradicted by impacts seen in the San Juan River, which the Chaco River feeds. The DEIS discloses that the San Juan River is listed as impaired for sedimentation and turbidity between the Animas River and Largo Canyon and that the Navajo Lake on the San Juan River is impaired for mercury in fish tissue. DEIS at 4.5-21. The DEIS fails to disclose many more waterways on the Navajo Nation that have mercury contamination.

The DEIS does not dispute the presence of heavy metals in the project area and provides evidence of spotty insufficient monitoring:

The NNEPA maintains a number of water quality monitoring sites along surface waterbodies in the Navajo Nation. In the vicinity of the ROI, monitoring locations are located along the Chaco River, Chinde Wash, Bitsui Wash, and the San Juan River. Monitoring data for all sample locations for all years collected was compared to NNEPA surface water quality standards for designated uses (NNEPA 2008). The Chaco River had the longest dataset of record with sampling from 1998 to 2011. Chinde Wash data covered the period 2009-2011, Bitsui Wash only had data for 2010 and 2011 and data collected in the San Juan River was for the years 2006, 2011, and 2012. Based on the data collected, nearly all sample sites met the standards for the designated beneficial uses. The exceptions are listed below:

- Mercury levels in Chaco River in all samples in which it was detected are above the standards for acute and chronic wildlife habitat and fish consumption. Concentrations detected range from 0.000001 mg/L to 0.002 mg/L.
- Two samples in 2005 and two in 2011 in the Chaco River were above the acute and chronic wildlife habitat standards for cadmium
- A sample collected during one sample event in the Bitsui Wash in 2011 was above the standards for secondary human contact and acute wildlife for lead.
- Samples collected during a sample event in the San Juan River in 2011 were above the standard for acute wildlife for cadmium and lead. One sample collected in 2006 was above the standard for acute wildlife habitat for mercury (NNEPA 2013).

DEIS at 4.5-22.

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OSM relies upon several assumptions to reach its faulty conclusion that CCW disposal does not present any potential impacts. First, it asserts that unsaturated conditions exist in most of the CCW disposal areas. However, as noted by the report done by Geo-Hydro, the unsaturated conditions may not exist permanently:

groundwater modeling conducted in support of the Navajo Mine SMCRA permit indicates that groundwater gradients are expected to inward toward the mine pit for many decades following mine closure. Adverse impacts of CCR disposal will not likely become evident until groundwater within the mine spoil has rebounded to the point that lateral migration of impacted groundwater out of the spoil and into surrounding areas is reasonably expected.¹⁴²

Thus, OSM's assumption that there will be no impacts rests on the conceit that just because there are no impacts presently, there will be no impacts in the future. OSM must consider future conditions in its analysis of impacts from the disposal of huge amounts of toxic materials. As noted by Geo-Hydro:

Unfortunately for the residents of the Navajo Nation groundwater modeling performed in support of the Area IV North mine plan significant revision application (BNCC, 2011) showed that groundwater gradients will be inward toward the mine backfill for as long as 80 years before resaturation of the mine spoils will progress to the point that groundwater will possibly begin to flow out of the mine spoils. Since environmental monitoring programs are routinely terminated and bonds released soon after completion of mine reclamation, the monitoring system needed to evaluate whether predictions of minimal impacts to water quality are correct will no longer be in place at the time and place where data will be needed.¹⁴³

OSM's next attempt to explain away any impacts rests on a supplemental groundwater study program and laboratory batch testing (performed by BHP) that was implemented to assess possible impacts to groundwater from historic CCW disposal. However, Geo-Hydro's report again reveals the problems with reliance upon this study:

The DEIS concludes that TDS and sulfate concentrations do not increase in concentration and that other metals are attenuated in water that flows from CCR placement areas through spoils. The conclusions of this section of the DEIS are at best speculative and likely wrong for the following reasons.

The supplemental groundwater study consisted of installation and monitoring of wells completed upgradient, downgradient, and within CCR that has been disposed in the mine. The DEIS states that TDS and sulfate concentrations do not increase in CCR that become saturated with spoil water. The analytical results

¹⁴² Expert Report of Geo-Hydro (attached as Exhibit 54).

¹⁴³ *Id.*

Response 307.097

The Geo-Hydro report is correct that groundwater modeling indicates groundwater gradients are expected to flow inward toward the mine pit following reclamation. As discussed on pages 4.5-9 and 4.5-10, little groundwater is present beneath the Navajo Mine lease area. To further clarify a sentence has been added stating that groundwater that is present is perched (not connected to a regional aquifer). It is for this reason that the Draft EIS states that "impacts to groundwater flow within the permit area would be expected to be moderate due to the long rate of groundwater recovery" on page 4.5-43. Further, with regard to groundwater quality, as stated on page 4.5-44 "modeling...showed it is unlikely that any detrimental future effect will occur from past CCR placement. This is due to the very slow groundwater movement and the attenuation of contaminants of concern as they percolate through the subsurface."

As such, by the time the groundwater flows rebound to natural conditions in these perched areas, any contaminants of concern from the CCR would have naturally attenuated. Therefore, additional groundwater monitoring beyond the bond release period of the SMCRA permit was not recommended in the Draft EIS.

Response 307.098

OSMRE conducted a technical review of the National Research Council Report and provided the following response to the suggestion that there should be improvements to the current leachate protocol: It is the responsibility of the permit applicant to demonstrate that the operational handling plan, reclamation plan, and monitoring program provide sufficient technical support so that the State Regulatory Authority can make the finding that all SMCRA water quality performance standards will be met. The State Regulatory Authority must determine whether certain leachate criteria must be met in order to ensure that the SMCRA water quality performance standards can be met. Because of the broad range of climatic and geologic settings and mining technologies where these materials are placed, the author believes that general statements like "Samples that exceed pre-

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from sampling of both spoil and CCR wells show very high concentrations of TDS and sulfate. These results do not indicate that CCR does not leach these parameters to water when saturated, rather it shows that the concentrations of TDS and sulfate are so high in the spoil wells that they approach those of CCR leachate.

Analytical results from monitoring points completed in CCR showed increased concentrations of arsenic, boron, fluoride and selenium. The study cites dispersion and bacterially mediated sulfate reduction to explain why the concentrations of the elevated metals is lower in wells located downgradient of the ash. Missing however is any discussion of the distance and depth of the downgradient wells relative to the CCR, the site specific rate and direction (lateral and vertical) of groundwater flow between the CCR source and downgradient wells; and the size, location, and orientation of the migrating CCR contaminant plumes. Sample analyses only document groundwater quality changes if wells are located and constructed in the correct location and screened intervals are set at the correct depth to intercept the contaminant plume. It is not clear from the provided discussion whether the CCR-derived contaminants had sufficient time to travel the distance to the downgradient monitoring wells. The ability of the monitoring system to detect and characterize the range of contaminants migrating downgradient of the mine spoils must be evaluated and discussed if conclusions drawn from the data are to be relied upon.

Application of short duration, low solid-ratio (dilute) leaching tests like those cited in this section of the DEIS and discussed more fully in Area IV North Permit Application (BNCC, 2011) routinely underestimate the concentration of contaminants in flyash-derived leachate. The procedure does not allow ash constituents sufficient time to come into equilibrium with the fluid, the solid-water ratio is far more dilute than under disposal conditions, and the laboratory conditions do not represent the disposal conditions under which leachate will actually form. The National Research Council warned of the inadequacy of laboratory characterization tests as surrogates for determining field leachate composition specifically with respect to CCR in their investigation of coal combustion ash disposal in mined settings (National Research Council, 2006). These tests were not designed or intended to represent predictions of leachate that will form in the field, and to use them as such is inappropriate (National Research Council, p. 123 et seq.). Citing decades old results from outmoded tests that are widely acknowledged to be ineffective at predicting leachate concentrations from saturated CCR calls into question the validity of the entire evaluation of current and potential future environmental impacts.¹⁴⁴

¹⁴⁴ *Id.*

determined leaching criteria should be rejected for mine placement” ignore the need for State specific expertise and responsibility for determining the measures necessary to meet SMCRA performance standards. The leaching tests referred to in the analysis provided on page 4.5-45 of the Draft EIS is analyzing the potential for impacts from mine spoils, not placement of CCR at the mine. At this mine, this leaching test is predictive and compares well with the data for the wells within the CCR placement area; therefore, it does effectively measure leaching at this mine.

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OSM also tries to explain away impacts by asserting that dilution of groundwater flow will alleviate impacts. DEIS at 4.5-17. Again, however, Geo-Hydro explains that OSM's conclusions are in error:

The DEIS cites dilution by the larger volume of groundwater flow in river alluvium to support the claim of no adverse impacts to surface water quality from CCR or mine spoil constituents that eventually discharge from the Fruitland Formation to the alluvium along the San Juan River. The marginal quality of the water for its current use indicates that there is very little room for addition of Navajo Mine or FCPP-related contaminants without causing material damage to the hydrologic balance by eliminating livestock watering as a future use of groundwater in areas surrounding the permit area.¹⁴⁵

This point is of particular importance given the concerns enumerated above that we simply do not have water to spare to pollution in New Mexico presently, and certainly not with drought conditions becoming more frequent with changes in our climate.

Although groundwater now may be used only for livestock watering, that water may become necessary to treat for higher uses, including agricultural, domestic, and other uses in the future. Dismissing adding additional pollution to groundwater just because it is not being used now is irresponsible and illegal. "[I]f the existing concentration of any water contaminant in groundwater exceeds the [groundwater] standards . . . no degradation of the groundwater beyond the existing concentration will be allowed." NMAC 20.6.2.3101.A.2. As the New Mexico Court of Appeals found: "[c]ertainly, the legislature meant to capture the concept that clean water that is currently being withdrawn for use, or clean water that is likely to be used in the reasonably foreseeable future, must be protected." *Phelps Dodge Tyrone, Inc. v. New Mexico Water Quality Control Comm'n*, 143 P.3d 502, 509 (NM Ct. App. 2006). A Commissioner on the Water Quality Control Commission put it more simply: "we are damn sure obligated to make sure that the water that isn't contaminated outside of [the currently contaminated] area is protected." *Id.* The Commissioner's comment seems to state the obvious, and yet OSM has ignored this obvious obligation by failing to take a hard look at whether historic CCW disposal will cause further deterioration of groundwater, regardless of whether that groundwater is presently of the highest quality, or if it is presently used only for livestock watering.

In sum, OSM has failed to take a hard look at the disposal of enormous amounts of hazardous materials into unlined mine pits. OSM must obtain additional information about current conditions, and present further modeling of future conditions before it can reach any conclusions about impacts.

6. OSM Failed To Take A Hard Look At The Project's Impacts To Endangered Species

The Endangered Species Act ("ESA") implements a Congressional policy that "all Federal Departments and agencies shall seek to conserve endangered species and threatened species." 16 U.S.C. § 1531(c)(1). An "endangered species" is a species of plant or animal that is "in danger

¹⁴⁵ *Id.*

Response 307.099

As stated in the Draft EIS, the groundwater quality within the Navajo Mine lease area (in both areas that are actively mined and those that have not yet been mined) exceed the criteria for livestock watering (which is based on surface water quality standards since the Navajo Nation does not have groundwater quality standards or designated beneficial uses for groundwater); however, as shown on Figure 4.5-1, there are no livestock watering wells within Areas I and II. As described in the EIS, historic and current livestock watering in the vicinity of the permit area has been limited to surface and alluvial systems. Groundwater monitoring data does not indicate that CCR disposal has compromised groundwater quality for livestock use in Area I or II. Rather groundwater monitoring data shows that baseline/background Fruitland and PCS water quality has never meet livestock criteria and has never been used for livestock watering. Additionally, the limited data available in the Bitsui alluvium which has been used historically for livestock watering indicates that water quality upgradient of all historic mining and CCR placement was of marginal quality for livestock use. Therefore, the only anticipated future use of groundwater in the area is for oil and gas purposes. The EIS has been revised to provide this explanation as well. In addition, review of baseline monitoring wells in Areas IVN and IVS indicate that water quality in the alluvium and Fruitland Formation is not suitable for livestock watering.

As described in Section 4.5 of the Draft EIS, the slow movement of groundwater would allow for the attenuation of contaminants of concern from mine spoil constituents and CCR over time. As such, modeling conducted for the project has indicated that there would be little to no change in existing groundwater quality as a result of the project. OSMRE has reviewed the modeling methods and results presented and agrees with the conclusions. Site-specific groundwater monitoring has directly demonstrated that there is no contamination attributable to CCR storage at the mine, thus validating the model results.

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of extinction throughout all or a significant portion of its range,” while a “threatened species” is one which is likely to become endangered within the foreseeable future. 16 U.S.C. § 1532(6), (20). The operative core of the ESA is a list maintained by the Secretary of the Interior of threatened and endangered species, and the ESA permits citizens to petition the Secretary to add species to that list. 16 U.S.C. § 1533(b)(3)(A).

At the heart of Congress’s plan to preserve endangered and threatened species is Section 7 of the ESA, which places affirmative obligations upon federal agencies. Section 7(a)(1) provides that all federal agencies “shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species.” 16 U.S.C. § 1536(a)(1). The mandate of section 7(a)(2) is even clearer:

Each Federal agency shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined ... to be critical, unless such agency has been granted an exemption for such action ... pursuant to subsection (h) of this section.

16 U.S.C. § 1536(a)(2). Thus, section 7(a)(2) imposes two obligations upon federal agencies. The first is *procedural* and requires that agencies consult with the FWS to determine the effects of their actions on endangered or threatened species and their critical habitat. *See* 16 U.S.C. § 1536(b). The second is *substantive* and requires that agencies insure that their actions not jeopardize endangered or threatened species or their critical habitat. *See* 16 U.S.C. § 1536(a)(2); *see also, Florida Key Deer v. Paulison*, 522 F.3d 1133, 1138 (11th Cir. 2008).

The requirements of the ESA are triggered by “any ‘agency action’ which may be likely to jeopardize the continued existence of the species or its habitat.” 16 U.S.C. § 1536(a). By this process, each federal agency must review its “actions” at “the earliest possible time” to determine whether any action “may affect” listed species or critical habitat in the “action area.” 50 C.F.R. § 402.14; 50 C.F.R. § 402.02. When there exists a chance that such species “may be present,” the agency must conduct a biological assessment (“BA”) to determine whether or not the species “may be affected” by the action. *See* 16 U.S.C. § 1536(c). The term “may affect” is broadly construed by FWS to include “[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character,” and is thus easily triggered. 51 Fed. Reg. at 19926. If a “may affect” determination is made, “formal consultation” is required and a biological opinion (“BiOp”) must be prepared.

Section 9 of the ESA prohibits the unlawful “take” of an endangered species, 16 U.S.C. § 1538(a)(1)(B), a term that is broadly defined to include harassing, harming, pursuing, wounding, or killing such species. 16 U.S.C. § 1532(19). The term “harm” means “an intentional or negligent omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.” 50 C.F.R. § 17.3. The ESA’s legislative history supports “the

Response 307.100

The Navajo Nation does not have groundwater quality standards or designate beneficial uses for groundwater on the Navajo Nation. As stated on page 4.5-17, “water derived...in the vicinity of the FCPP and Navajo Mine is predominantly used for livestock watering, therefore, alluvial water quality is compared to the applicable livestock water [surface water] criteria. The criteria are not enforceable standards with respect to groundwater and are included only as a reference for the suitability of the groundwater quality for livestock use.”

With regard to a hard look, please see Master Response #1. Analysis of potential impacts to groundwater quality in the vicinity of the Navajo Mine is addressed on pages 4.5-43 and 4.5-57. As stated in the Draft EIS, the groundwater quality within the Navajo Mine lease area (in both areas that are actively mined and those that have not yet been mined) exceed the criteria for livestock watering; however, as shown on Figure 4.5-1, there are no livestock watering wells within Areas I and II.

As described in the EIS, historic and current livestock watering in the vicinity of the permit area has been limited to surface and alluvial systems. Groundwater monitoring data does not indicate that CCR disposal has compromised groundwater quality for livestock use in Area I or II. Rather groundwater monitoring data shows that baseline/background Fruitland and PCS water quality has never meet livestock criteria and has never been used for livestock watering. Additionally, the limited data available in the Bitsui alluvium which has been used historically for livestock watering indicates that water quality upgradient of all historic mining and CCR placement was of marginal quality for livestock use. Therefore, the only anticipated future use of groundwater in the area is for oil and gas purposes. The EIS has been revised to provide this explanation as well. In addition, review of baseline monitoring wells in Areas IVN and IVS indicate that water quality in the alluvium and Fruitland Formation is not suitable for livestock watering.

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Please see Master Response #1, Deficient Analysis

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broadest possible" reading of "take." *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 704-05 (1995). "Take" includes direct as well as indirect harm and need not be purposeful. *Id.* at 704; *see also Nat'l Wildlife Fed'n v. Burlington No. R.R.*, 23 F.3d 1508, 1512 (9th Cir. 1994).

If an action constitutes a take under Section 9 of the ESA, a party must apply for and be granted an "incidental take permit" ("ITP") from FWS pursuant to Section 10 of the ESA. 16 U.S.C. § 1539(a)(1)(B). If such a party takes a listed species without an ITP, the ESA authorizes civil and criminal penalties against that party. *See* 16 U.S.C. § 1540.

The DEIS states at several points that consultation with the FWS under section 7 has begun or is imminent. DEIS at 4.8-1, 5-4. The analysis of special status species issues in Sections 4.8 and 4.18 of the DEIS, however, appear to rely on erroneous legal and factual assumptions and methodologies in an effort to obscure or downplay the effects of continued FCPP operations on listed species and their critical habitat. For OSM to meet its obligations under section 7(a)(2) to ensure that federal actions do not jeopardize listed species or adversely modify their critical habitat, it must address and rectify these errors and omissions, as detailed below.

In particular, as will be discussed in detail below the DEIS relies improperly on two arguments to contend that FCPP mercury and selenium emissions are "insignificant" or "minor" in their impacts to listed fish and birds. First, it contends, misleadingly, that FCPP emissions alone are insufficient to cause risk to listed individuals or populations, ignoring the fact that those emissions, and resulting deposition of mercury and selenium, impact waterways and aquatic food webs already sufficiently impacted to cause harm to substantial proportions of listed fish within the San Juan River. DEIS 4.8-69. This overly-narrow definition of risk ignores the fact that Section 7 analyses must consider baseline conditions in the action area – "[t]he baseline includes State, tribal, local, and private actions already affecting the species or that will occur contemporaneously with the consultation in progress,"¹⁴⁶ and that, by its own admission, "metals concentrations under current conditions alone appears to pose a risk to ecological receptors within the deposition area as well as in the San Juan River downstream of the deposition area," DEIS 4.18-48.

Second, the DEIS, where it does discuss endangered fish toxicity, in its discussion of cumulative impacts, it dismisses the risk from FCPP emissions because toxicity risks to aquatic species such as the Colorado pikeminnow and razorback sucker are predicted to remain high from other sources, "but this risk would remain with or without the future operation of FCPP." DEIS 4.18-49. It then goes on to argue that because pollution controls would reduce FCPP toxic metals emissions from current levels, FCPP's incremental contribution to the species' impairment is only "moderate."

As a result of the past, present, and reasonably foreseeable emissions from power plants in the region, as well as other sources of emissions (e.g., coal burned in private homes), the potential exists for cumulatively major impacts to aquatic

¹⁴⁶ United States Fish and Wildlife Service, Endangered Species Consultation Handbook 4-22.

Response 307.102

Additional information has been added in numerous places in the EIS to clarify the role of future emissions from FCPP to species within the deposition area and in the San Juan River watershed, based on the completion of consultation with the USFWS. At the project level, impacts are minor based on the ecological risk assessments conducted. Ecological risks are present under existing conditions and would remain and increase, with or without the project. The future operation of FCPP would not substantially increase these risks. The conclusions of the Final EIS are based on comparison of the project effect to the existing baseline, as present at the time the NOP for the EIS was published. ESA consultation was conducted as a separate but parallel process to the NEPA process, with a separate biological assessment and biological opinion that address ESA requirements. The results of the ESA consultation have been incorporated into the Final EIS and the Biological Opinion is added as an appendix to the EIS.

Response 307.103

The analysis in the Draft EIS is based upon the NEPA definition of baseline conditions, not those under ESA Section 7. Under NEPA, the baseline concentrations of mercury, selenium and other chemicals of potential concern (COPECs) are those already present in the environment when the EIS NOP was published. As noted in the Draft EIS, those concentrations were at levels that indicate that there may be some risk from these COPEC to listed or candidate species. This risk already exists whether or not the FCPP NMEP continues to operate into the future. The effects of the ongoing operation of the project (the action being considered in the EIS) were evaluated based on its future contributions of COPECs to the environment. The ERA models project that these future contributions will be very small, relative to baseline conditions (three to five orders of magnitude less than existing concentrations), and that these future contributions will not substantively affect the risk these baseline chemical concentrations plus future contributions from sources other than FCPP pose to sensitive species in the future.

The discussion of the risks posed by COPECs has been expanded to clarify how future operations would affect concentrations of COPECs and the risk they pose to listed species. The conclusion in the Draft EIS that these risks are minimal is supported by the available data.

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Tables showing the risk associated with COPECs under baseline conditions and with and without the future operation of FCPP were added to the EIS. These tables show that the contributions of COPECs from future operation of the plant are several orders of magnitude lower than those already in the environment or those expected to be contributed over the life of the project from other sources. As such, future contributions of COPECs from the plant will not appreciably increase risks of these COPECs to biological resources over the life of the project.

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species, such as the pike minnow and razorback sucker. However, as modeled in the two ERAs described above, the contribution of FCPP to this potential cumulative effect would be significantly less than historic conditions, and still represent a decline over baseline emissions. Consequently, the long-term contribution of FCPP to cumulative impacts to threatened and endangered species is considered moderate.

DEIS 4.18-49. What is missing from this analysis is any support for the “consequently.” The fact that FCPP mercury emissions will likely decrease with the addition of best available retrofit technology does not excuse the DEIS from providing sufficient information to allow the public and decision-makers to compare continued FCPP operation (even with emissions reductions) with the no-action alternative (no FCPP operation). The unsupported conclusion that FCPP’s contribution will be only “moderate” appears to represent an effort to excuse FCPP’s adverse impacts, not to meet the agency’s NEPA and ESA Section 7 obligations to take a hard look at what the incremental and cumulative effects of its actions will actually be.

a. The DEIS Incorrectly and Inconsistently Defines the Action Area

OSM must prepare a Biological Assessment for the EIS that accurately determines the “action area” for the entire project. According to ESA implementing regulations, the “action area” is defined as “all areas to be affected directly and indirectly by the Federal action and not merely the immediate area involved in the action.” 50 C.F.R. § 402.02.¹⁴⁷ The court in *Wilderness Society v. Wisely*, 524 F.Supp.2d 1285, 1305 (D. Colo. 2007), provided: “it is clear from the definition of ‘action area’ that the agencies must consider the effects that occur beyond ‘the immediate area involved in the action,’ i.e., those known to have incidences of the [protected species].” In *Wilderness Soc.*, the informal consultation between BLM and FWS was specifically limited to parcels known to contain a protected species, and did not consider the entire “action area.” In that case, the Court provided that, “[a]lthough the [agency] believes that such consequences are localized or can be adequately mitigated, it is not clear [from the conferral] whether the FWS agrees” because the “action area” was ill-defined. *Id.* at 1305. Accordingly, the Court concluded that “the agencies’ conferral under the ESA was insufficient to encompass all potential adverse effects resulting from development in the action area, and thus, their concurrence that no further consultation was necessary was arbitrary and capricious.” *Id.* By generally confining its “action area” to a “one mile buffer” around the mine and half-mile buffer around transmission lines, OSM arbitrarily limits its analysis of impacts to listed species – in contravention to its ESA mandate.

¹⁴⁷ “Effects of the action” means “direct and indirect effects of an action on the species or critical habitat together with the effects of other activities that are interrelated or interdependent with that action.” 50 C.F.R. § 402.02. “Cumulative impacts” are those effects of future State or private activities ... that are “reasonably certain to occur within the action area.” *Id.*; see also, *Sierra Club v. U.S.*, 255 F.Supp.2d 1177, 1187 (D. Colo. 2002). Further, “interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration.” *Id.*

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The ROI for biological resources includes the FCPP and Navajo Mine Lease Areas, including a 1 mile buffer around those lease areas, the transmission line ROWs, and a ½ mile buffer around those ROWs. These areas capture the physical disturbance to species associated with activities in those project areas, with the buffers providing protection for individuals living in proximity to those areas.

The effects of emissions from FCPP are considered within the area where a baseline concentrations would be increased by more than 1 percent by the cumulative future emissions from FCPP over the life of the project (referred to as the Deposition Area), as predicted by CALPUFF and described in the Deposition Area ERA. CALPUFF was applied within a 300 km radius of the FCPP. Also included is the portion of the San Juan River from the upstream boundary of the Deposition Area, downstream to and including the San Juan Arm of Lake Powell, which may be affected by transport of COPECs by the San Juan River to these downstream areas. This has been clarified in the EIS.

Based on the atmospheric models used, and the subsequent ERAs, the ROI defined for atmospheric emissions encompasses the area for which the project has any likelihood of increasing the risk posed by chemicals in the environment.

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The DEIS defines its “Region of Influence” (“ROI”) as “the lease boundary for the Navajo Mine and FCPP, with an additional 1-mile buffer. For the transmission lines, the ROI is a one-half mile buffer outside each side of the ROW boundary.” DEIS 4-8.1. It also includes an additional area of analysis for FCPP emissions deposited on land or water outside this limited ROI. At one point, the DEIS states that “For the FCPP, the ROI also includes the deposition area around the plant within which 99 percent of all [constituents of potential ecological concern] emitted from the plant are projected to the ground or water.” *Id.* This definition of the analysis area, however, does not appear to find any support either elsewhere in the EIS or in the two APS-generated “Ecological Risk Assessments” on which it heavily relies for its conclusions. Those analyses look instead at “the area identified by air dispersion modeling as having a 1 percent future increase in soil metals concentrations above current condition (baseline) metals concentrations,”¹⁴⁸ or “the aquatic environment of the San Juan River basin, both within the deposition area and downstream of the deposition area into the San Juan River arm of Lake Powell.”¹⁴⁹ It appears that the Deposition ERA limited its analysis of deposition impacts to a 50 km radius around FCPP based on the following reasoning:

The ERA Deposition Area, shown with the red outline in Figure 2-1, was determined by delineating the area where the predicted incremental increase in soil concentration of any of the metals due to 25 years of future full load plant operations is projected to be more than 1% of current concentrations (based on the PLUTO data). Beyond this area, the very small increase in soil concentration associated with the Proposed Action would be sufficiently low to be considered discountable.

Deposition ERA 2-5 (citation omitted). These predicted increases in soil concentration, used to limit the area of analysis, appear to be derived from estimates of EPA’s CALPUFF model for large-scale atmospheric deposition, compared to general soil samples from San Juan county from the 1960s through 1990s. See Deposition ERA at 2-4 to 2-5. This method of limiting the analysis area, however, fails to take into account either the Fish and Wildlife Service’s use of a 300 km radius for assessing coal plant deposition impacts,¹⁵⁰ or the existence of a detailed site-

¹⁴⁸ DEIS 4.8-69, citing AECOM, Four Corners Plant and Navajo Mine Energy Project Ecological Risk Assessment (2013) (“Deposition ERA”).

¹⁴⁹ DEIS 4.8-69, citing AECOM, San Juan River Ecological Risk Assessment Conducted in Support of the Four Corners Power Plant and Navajo Mine Energy Project (2013) (“San Juan River ERA”).

¹⁵⁰ See U.S. Dep’t of the Interior, U.S. Fish and Wildlife Service, *Draft Biological Opinion for the Desert Rock Energy Project, U.S. Bureau of Indian Affairs, Gallup, New Mexico* at 9-10 (Oct. 2009) [hereinafter “Desert Rock BiOp”] (attached as Exhibit 163 to Conservation Groups’ scoping comments).

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specific study showing that sources of mercury deposition at Mesa Verde National Park include coal-fired power plants between 55 and 321 km from the Park.¹⁵¹

In determining the “action area” for air emission-related impacts from FCPP, the FWS and OSM should include, at a minimum, a 300 km radius from FCPP just as FWS employed in the Desert Rock Biological Opinion (“Desert Rock BiOp”). This is because FCPP and the proposed Desert Rock Energy Project would have been located adjacent to one another, they would have burned coal from the same mine, and similar impacts to the same listed species and critical habitats could be anticipated from both facilities’ operations. The Desert Rock BiOp describes and justifies its 300 km radius action area as follows:

The action area encompasses the San Juan River watershed and eight sub-basins of the Rio Grande–Elephant Butte watershed (separated by the Continental Divide), including the 300 kilometer (km) radius of the proposed DREP power station. This action area is defined based on infrastructure and modeled atmospheric emissions from the plant. It includes the northwestern portion of New Mexico west of the Rio Grande and north of Elephant Butte Reservoir and extends generally northeast to include portions of southwestern Colorado, southeastern Utah, and northeastern Arizona.

The Rio Grande originates in southwestern Colorado and bisects the eight sub-basins of the Rio Grande–Elephant Butte watershed within the action area. The upper Rio Grande is fed by several streams, including the Rio Chama, Rio Hondo, and El Rito, which all flow into Cochiti Reservoir, located about half way between Santa Fe and Albuquerque. The Rio Chama and Rio Grande originate in the lower San Juan Mountains of southwestern Colorado, which extend into northern New Mexico south to near Chama. This portion of the action area is characterized by the high elevation San Juan Mountains and the Jemez Mountains with elevations ranging from 5,000 to 10,000 feet (ft).

The middle Rio Grande (below Cochiti Reservoir to Elephant Butte) is bounded on the east by the Sandia and Manzano Mountains, which are outside of the action area, and on the northwest by the volcanic steep-walled canyons and mesas of the Jemez Mountains. Topographically, the middle Rio Grande within the action area decreases in relief to the south with lower elevation mesas, cuestas, and buttes located west of the broad river valley.

The San Juan River watershed is within the Navajo Section of the Colorado Plateau physiographic province. Topographically, the area is characterized by broad, rolling plains, sandstone capped cuestas, and high mesas bisected by broad canyons. The San Juan River watershed is the second largest of three sub-basins

¹⁵¹ See Mountain Studies Institute, *Sources of Atmospheric Mercury Concentrations and Wet Deposition at Mesa Verde National Park, Southwestern Colorado, 2002-08, Report 2010-03* at 4, 19 (2010) [hereinafter “MSI Report”] (attached as Exhibit 168 to Conservation Groups’ scoping comments).

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of the upper Colorado River basin. The San Juan River originates in the San Juan Mountains of southwestern Colorado and flows approximately 50 km (31 miles [mi]) south to the Colorado/New Mexico border, 305 km (190 mi) westward to the New Mexico/Arizona border, and then continues another 219 km (136 mi) into Lake Powell, which is the western extent of the action area. The San Juan River has few perennial tributaries (the Animas River is the largest), and it receives substantial seasonal flows from a number of ephemeral drainages. In 1962, Navajo Dam was constructed just south of the Colorado border in New Mexico to store flows from the San Juan, Los Piños, and Piedra Rivers.

Desert Rock BiOp at 9. 10. In addition to the 300 km air emission radius, the action area should include all lands directly, indirectly and cumulatively affected by all facets of the proposed action, including coal mining, coal combustion, transportation and transmission corridors.

307.106

b. The DEIS Understates Impacts to Threatened and Endangered Species

Threatened, endangered and candidate species are known to occur within the action area, all of which “may” be affected directly, indirectly, and/or cumulatively by the proposed action. Listed and candidate species and critical habitats that may be affected in the FCPP/Navajo Mine ROI include but are not limited to the endangered Colorado pikeminnow (*Ptychocheilus lucius*) and its designated critical habitat; the endangered razorback sucker (*Xyrauchen texanus*) and its designated critical habitat; the listing-candidate roundtail chub (*Gila robusta*); the endangered southwestern willow flycatcher (*Empidonax traillii extimus*) and its designated critical habitat; the listing-candidate yellow-billed cuckoo (*Coccyzus americanus*); the threatened Mesa Verde cactus (*Sclerocactus mesae-verdae*); the threatened Little Colorado spinedace (*Lepidomeda vittata*) and its designated critical habitat; the endangered Mancos milkvetch (*Astragalus humillimus*); the endangered Rio Grande silvery minnow (*Hybognathus amarus*) and its designated critical habitat; the threatened Mexican spotted owl (*Strix occidentalis lucida*) and its designated critical habitat; and, the endangered California condor (*Gymnogyps californianus*) (collectively referred to herein as “Imperiled Species and Critical Habitats”).¹⁵² See also 50 C.F.R. § 402.02 (defining “indirect effects” as “those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.”). In consulting under ESA Section 7, and formulating Biological Opinions, action agencies and the Service are required to consider not only direct and indirect but also cumulative effects. 50 C.F.R. § 402.14(g)(3)-(4).

The DEIS goes to considerable effort, however, to try to minimize the reasonably foreseeable impacts to listed species, particularly aquatic and avian species, adversely affected by toxic emissions from the FCPP, both from stack air emissions and from the leaching of coal combustion waste into ground and potentially surface water. In its cumulative effects analysis, the DEIS acknowledges that “metals concentrations under current conditions alone appears to pose a risk to ecological receptors within the deposition area as well as in the San Juan River downstream of the deposition area.” DEIS 4.18-48. It then declines to quantify or even

307.107

¹⁵² See Desert Rock BiOp.

Response 307.106

The ROI for biological resources includes the FCPP and Navajo Mine Lease Areas, including a 1 mile buffer around those lease areas, the transmission line ROWs, and a ½ mile buffer around those ROWs. These areas capture the physical disturbance to species associated with activities in those project areas, with the buffers providing protection for individuals living in proximity to those areas.

The effects of emissions from FCPP are considered within the area where a baseline concentrations would be increased by more than 1 percent by the cumulative future emissions from FCPP over the life of the project (referred to as the Deposition Area), as predicted by CALPUFF and described in the Deposition Area ERA. CALPUFF was applied within a 300 km radius of the FCPP. Also included is the portion of the San Juan River from the upstream boundary of the Deposition Area, downstream to and including the San Juan Arm of Lake Powell, which may be affected by transport of COPECs by the San Juan River to these downstream areas. This has been clarified in the EIS.

Based on the atmospheric models used, and the subsequent ERAs, the ROI defined for atmospheric emissions encompasses the area for which the project has any likelihood of increasing the risk posed by chemicals in the environment.

Response 307.107

The Final EIS includes tables showing the concentrations of COPECs whose cumulative concentrations result in a hazard quotient exceeding 1. These tables include concentrations and HQs from baseline, future FCPP contributions, and future contributions from other regional and global sources.

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characterize the role of FCPP emissions in this risk, though, apparently relying either on predicted declines in emissions under BART controls, or on potential increases in mercury from Chinese emissions, to dismiss the significance of FCPP's contribution. These excuses are not consistent with the fundamental purpose of the cumulative effects analysis. A cumulative effects analysis is intended to ensure that agencies cannot ignore significant impacts from a collection of sources by analyzing each source individually and dismissing its contribution as relatively minor. See 40 C.F.R. § 1508.7; *Northwest Envtl. Advocates v. Nat'l Marine Fisheries Serv.*, 460 F.3d 1125, 1134 (9th Cir. 2006) (an environmental impact statement must "catalogue adequately past projects in the area" and provide a "useful analysis of the cumulative impact of past, present, and future projects") (citing *City of Carmel-by-the-Sea v. United States DOT*, 123 F.3d 1142, 1160 (9th Cir. 1997) and *Lands Council v. Powell*, 395 F.3d 1019, 1027 (9th Cir. 2005)); *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379-80 (9th Cir. 1998) ("In accord with NEPA, the Forest Service must "consider" cumulative impacts. 40 C.F.R. § 1508.25(c). To "consider" cumulative effects, some quantified or detailed information is required. Without such information, neither the courts nor the public, in reviewing the Forest Service's decisions, can be assured that the Forest Service provided the hard look that it is required to provide."); *Mountaineers v. United States Forest Service*, 445 F.Supp. 1235, 1248 (W.D. Wash. 2006) ("It is the additive effect of both agency and other actions taken together that constitutes the gravamen of appropriate cumulative impacts analysis under NEPA.").

Despite these efforts in the special status species section to minimize the contribution of FCPP to adverse effects on listed species, other portions of the DEIS, and the EPRI study, make clear that its role is substantial. According to the EPRI baseline scenario modeling results, the maximum contribution of FCPP mercury emissions to mercury total deposition is about 28 percent in San Juan County near the FCPP and contributions from FCPP range from 2 to 28 percent in the vicinity of the plant; however, the contributions from FCPP are less than 2 percent over the remainder of the San Juan basin (EPRI 2013)." DEIS 4.1-61. What the DEIS and ERAs fail to disclose, however, is the relative contribution of FCPP to mercury deposition, bioavailability, and bioaccumulation within the San Juan's aquatic ecosystems and food web. Without this basic information, there is no way to assess whether the DEIS's claims of "minor" "moderate" or "insignificant" impacts are validated.

c. **Baseline Mercury Levels and Additional Mercury Deposition Jeopardize Endangered Species**

The U.S. Fish and Wildlife Service ("FWS") has determined that baseline mercury levels in the San Juan River basin are causing reproductive impairment in 64 percent of pikeminnow, a number which it expected to rise to 72 percent by 2020. Desert Rock BiOp at 96. Even with the shutdown of Units 1-3 and the anticipated installation of pollution controls on Units 4-5, the FCPP is a major source of these mercury concentrations in the San Juan River basin, and its emissions of mercury are significantly contributing to these effects. The San Juan River basin is

Response 307.108

As reported in Section 4.8, EPRI reports that their modeling indicates that under baseline conditions, FCPP contributed from 2 to a maximum of 28% southeast of the plant of the total mercury deposition in the basin. Their modeling indicated that their post-2014 scenario indicated a reduced area of deposition, with a maximum contribution of up to 15% of the total deposition in some areas. Note that these maximum contributions are only for some areas southeast of FCPP (away from the San Juan River) and not across the entire watershed. They go on to say that total mercury contributions from the three plants they model (FCPP, San Juan Generating Station and Navajo Generating Station) contribute to total mercury deposition at four locations, Lake Powell (AZ and UT), Shiprock, and Navajo Lake range from 1% at Navajo Lake to 4% at the other stations. EPRI further reports that contributions of the three plants to selenium deposition is "negligible". From this deposition, EPRI goes on to model the fate and transport of mercury through the watershed and into the San Juan River, and into Colorado pikeminnow and razorback sucker. This analysis includes various physical and biological processes, including bioaccumulation. The ERAs then use the values predicted by the EPRI models to determine potential effects to biological resources. For mercury in Colorado pikeminnow and razorback sucker, the ERAs rely on EPRI's modeling for those species. For other species, the ERAs used the EPRI model's predicted concentrations in soils, sediment and water along with peer-reviewed uptake factors (e.g., bioaccumulation factors) to determine endpoint concentrations of mercury and selenium and assess the risk to those biological resources. The results of this modeling is incorporated into Sections 4.6, 4.7, 4.8, and 4.18, as appropriate.

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one of only three sub-basins where pikeminnow still survive, and it is critical to their long-term recovery from the brink of extinction.¹⁵³

Mercury is an element that occurs naturally, but it is also a local, regional, and global pollutant that is harmful to wildlife and human health.¹⁵⁴ Atmospheric mercury is produced from, among other things, combustion of coal at power plants, which releases mercury into the air where it is then deposited by precipitation water bodies, where micro-organisms convert it to methyl mercury – a particularly toxic form – at which point it becomes biomagnified through the food chain.¹⁵⁵ A recent study by the Mountain Studies Institute reports that coal-fired power plants are the largest human source of mercury emissions in the United States, and atmospheric deposition appears to be the dominant source of mercury contamination in North America.¹⁵⁶

There are high mercury levels in southwestern Colorado and northwestern New Mexico. The state of Colorado has posted advisories warning against eating fish from McPhee, Totten, Narraguinne, and Vallecito reservoirs and Navajo Lake due to mercury accumulation.¹⁵⁷ Nine water bodies in northwestern New Mexico have mercury consumption advisories.¹⁵⁸ Sediment cores at four high-elevation lakes in the San Juan Mountains show mercury concentrations that are up to six times above pre-industrial times. San Juan County, New Mexico is among the highest emitters of mercury among U.S. counties due to its coal-fired power plants including FCPP.¹⁵⁹ Data collected from Mesa Verde National Park show mercury deposition levels that are among the highest in the western U.S.¹⁶⁰ Modeling of 47 single storm events from 2002 to 2008 and subsequent identification of storm source direction indicate that 87 percent of mercury deposition came from south of the Park – in particular, from air-pollution plumes from FCPP and the San Juan Generating Station (“SJGS”), another coal-fired power plant located nearby.^{161 162}

¹⁵³ See United States Fish and Wildlife Service, Colorado pikeminnow (*ptychocheilus lucis*) recovery goals: amendment and supplement to the Colorado squawfish recovery plan (2002) (attached as Exhibit 57).

¹⁵⁴ MSI Report.

¹⁵⁵ See Desert Rock BiOp.

¹⁵⁶ See MSI Report.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Id.*

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FCPP is a “significant source” of mercury deposition at the Park.¹⁶³ FCPP has installed air pollution measures for sulfur dioxide and nitrogen oxides, and these emission reductions correlate with decreasing trends of sulfate, nitrate, and chloride, and an increasing trend in pH in precipitation, at the Park.¹⁶⁴ Unlike SJGS, however, FCPP has not installed mercury pollution control measures, and there has been no change in mercury concentrations and deposition in the Park.¹⁶⁵ Current rates of mercury deposition in the San Juan River basin from FCPP are expected to be unchanged over the next decade.¹⁶⁶

The Colorado pikeminnow is a critically-endangered fish and top natural predator in the Colorado River that has been federally protected since 1967. The pikeminnow is imperiled due to widespread destruction and modification of the Colorado River basin, including its tributaries, where it once occurred. It currently survives as a result of stocking programs in some areas of the upper and lower Colorado River basins, and in a limited stretch of the San Juan River. The San Juan River is critical to the long-term survival and recovery of the Colorado pikeminnow.

In considering the effects of the Desert Rock Energy Project (“Desert Rock”) – a coal-fired plant that was proposed to be sited on the Navajo Nation within 20 km of FCPP – FWS considered the effects of atmospheric mercury deposition to endangered and threatened species including the Colorado pikeminnow.¹⁶⁷ Using a threshold for adverse effects of 0.2 mg/kg WW, 64 percent of

¹⁶² Public Resources New Mexico (“PNM”), the operator of SJGS, recently installed new pollution controls at SJGS as part of a court-ordered Consent Decree. These new improvements include mercury removal on Units 3 and 4 of SJGS. The improvements were completed in early 2009, and are expected to reduce mercury emissions by 62 percent. APS has not taken steps to install any such improvements at FCPP.

¹⁶³ MSI Report.

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ *See* Desert Rock BiOp, Appendix A.

¹⁶⁷ *See* Desert Rock BiOp at 106; The Desert Rock BiOp was prepared by FWS pursuant to section 7(a)(2) of the ESA, which imposes a “substantive duty on federal agencies” to “insure” that any action they undertake or authorize is “not likely to jeopardize the continued existence of any endangered species or threatened species”; it is each agency’s duty to “insure no jeopardy.” 16 U.S.C. § 1536(a)(2); 51 Fed. Reg. at 19926. The ESA’s implementing regulations set forth a process by which an action agency ensures that its affirmative duties under section 7(a)(2) are satisfied. 50 C.F.R. § 402.14(a); *Sierra Club v. Babbitt*, 65 F.3d 1502, 1504-05 (9th Cir. 1995). By this process, each federal agency must review its “actions” at “the earliest possible time” to determine whether any action “may affect” listed species or critical habitat in the “action area.” 50 C.F.R. § 402.14. If the biological assessment concludes that the action is “likely” to adversely “affect listed species,” the agency must enter into “formal consultation,” with FWS.

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Colorado pikeminnow experience reproductive impairment due to mercury presently.¹⁶⁸ By 2020, the Desert Rock BiOp finds that mercury deposition in the San Juan River basin is expected to increase by 35.4 percent without or 35.5 percent with the construction of the proposed Desert Rock Energy Project.¹⁶⁹ For this reason, FWS's draft biological opinion predicts that 72 percent of Colorado pikeminnow in the San Juan River basin will experience mercury-induced reproductive impairment by 2020 – which “is likely to *jeopardize* the continued existence of the Colorado pikeminnow.”¹⁷⁰ Neither the DEIS nor either of the ERAs even attempts to provide such quantitative assessment of probable levels of reproductive impairment. The Deposition ERA, acknowledging risks to fish from mercury and selenium, goes on to state that “Although risks to mobile adult fish are likely overestimated by the [critical body residues “CBRs”], and in particular by the [No Observed Effect Concentration] CBRs, the potential for risks to sensitive life stages and listed species cannot be ruled out.” Deposition ERA at 7-4 (emphasis added).

Given OSM's and FWS's obligations to avoid jeopardy and contribute to the recovery of listed species under the ESA, it is not sufficient for the DEIS to conclude that “risks exist with or without continued FCPP operation.” Rather, it must actually take a hard look at what the levels of harm, including reproductive and other sublethal effects, under all scenarios (including comparing FCPP operation and closure), against a baseline that includes existing conditions and other local, regional, and global sources and in full light of the direct, indirect, and cumulative impacts to species over the full 50-year lifetime of the power plant, and the additional 25 years of operations contemplated by the DEIS. Furthermore, while risks may certainly exist with or without continued FCPP operation, the DEIS should consider, via comparative analysis of the impacts of various alternatives, including an alternative that would consider the consequences of not allowing post-2016 coal operations, what the reduction in risk to the species would be. That reduction in risk may warrant retirement of the coal complex well before 25 years are up.

In 2009, FWS determined that Desert Rock would jeopardize the continued existence of the Colorado pikeminnow and would adversely modify its critical habitat. FWS reached this determination, which is set forth in the peer-reviewed Desert Rock BiOp, in part due to existing

Id. §§ 402.14(a), 402.01(b), 402.12(k); *Gifford Pinchot Task Force v. U.S. Forest Service*, 378 F.3d 1059, 1063 (9th Cir. 2007). In formal consultation, after evaluating all relevant information, FWS prepares a “biological opinion,” which considers the current status of the species, the environmental baseline, and the effects of the proposed action, and concludes “whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species. . . .” *Id.* § 402.14(g)(2)-(4). If “jeopardy” is likely to occur, FWS must prescribe in the BiOp “reasonable and prudent alternatives” to avoid that result. 50 C.F.R. § 402.14(i)(1)(ii).

¹⁶⁸ *Id.*

¹⁶⁹ *Id.* at 3.

¹⁷⁰ *Id.* at 120 (emphasis added).

Response 307.109

As described in the response to Comment 307.116, modeling conducted indicates that these future operations will not contribute substantially to the risks from mercury and other COPECs. Cumulatively, the concentrations of mercury and selenium are expected to increase over the baseline, which is already at levels that may cause harmful effects to listed species. These increases are due in small part to FCPP emissions, as discussed in the EIS and described above, but in greater part due to contributions from other regional and global sources. As discussed in a previous response and in the Draft EIS, the future operation of FCPP would not add substantively to this risk. If FCPP were to shut down in 2016, the risk to species from these contaminants would be nearly identical to that posed by continued operation of the plant.

Response 307.110

Tables showing the risk associated with COPECs under baseline conditions and with and without the future operation of FCPP have been added to the Final EIS. These tables show that the contributions of COPECs from future operation of the plant are several orders of magnitude lower than those already in the environment or those expected to be contributed over the life of the project from other sources. As such, future contributions of COPECs from the plant would not appreciably increase risks of these COPECs to biological resources over the life of the project. The No Action Alternative address the consequences of not allowing post 2016 coal operations. With regard to other alternatives considered, please see Master Response #3, Shorter Lease Term.

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coal-fired power plants, including FCPP, which have degraded the environmental baseline to such a degree that the emissions from an additional coal plant, Desert Rock, would have driven the pikeminnow to extinction in the San Juan River, one of only three sub-basins where it still survives.¹⁷¹ FWS determined that 64 percent of Colorado pikeminnow currently experience reproductive impairment due to mercury.¹⁷² FWS also determined that by 2020, mercury deposition in the San Juan River basin is expected to result in 72 percent of pikeminnow being reproductively impaired.¹⁷³

The Desert Rock BO and its conclusions are based on *conservative* estimates. Among other things, the Desert Rock BO does not specifically consider the significant contribution of mercury from CCW disposal at the Navajo Mine. According to EPA's TRI, which provides BHP reported data from 2000-2007, thousands of pounds of mercury have been disposed of in the Navajo Mine annually as "minefill."¹⁷⁴ The CCW is not treated prior to disposal and a liner system or other control mechanism is not used, *i.e.*, to prevent saturation and migration of the mercury or other constituents into surface or ground waters which flow directly into the San Juan River. The DEIS acknowledges, but does not analyze at all, the fact that releases are occurring from CCW disposal sites and that CCW leachate contains selenium. DEIS 4.5-14, 4.5-57. "Previous studies found two primary areas of groundwater seepage beneath the ash disposal areas, the "north seep" and "south seepage area" (APS 2013)."^{307.111}

In addition to the Colorado pikeminnow and razorback sucker, as reflected in the attached maps, there are many endangered and threatened species, and some designated critical habitats, that occur within 300 km of FCPP and/or NGS.¹⁷⁵ In addition to the Colorado pikeminnow and razorback sucker, such species include the humpback chub, desert tortoise, Little Colorado River

¹⁷¹ The Desert Rock Energy Project has been on hold following the EPA's Environmental Appeals Board ("EAB") remand of a Prevention of Significant Deterioration permit to EPA, in part due to violations of ESA in connection with the analysis of Desert Rock's effects to endangered and threatened species. *See In re Desert Rock Energy Company, LLC*, 2009 EPA App. LEXIS 28 (EPA App. 2009).

¹⁷² Desert Rock BiOp.

¹⁷³ *Id.* Adult fish with diets high in mercury do not typically experience associated mortality; rather, they deposit excess mercury or selenium in the yolks of developing eggs that fry then use as an energy and protein source; it is at this stage that developmental anomalies occur. *Id.* at 120-21. The deformities are either lethal or cause the fry to be more susceptible to predators or other environmental stressors. *Id.*

¹⁷⁴ See Environmental Protection Agency, *Toxics Release Inventory*, available at: <http://www.epa.gov/tri/>.

¹⁷⁵ See Center for Biological Diversity, *Map, Endangered Species Habitats and Observations Near the Navajo Generating Station* (attached as Exhibit Exhibit 164 to Conservation Groups' scoping comments).

Response 307.111

The Draft EIS evaluates potential impacts from groundwater seepage on page 4.5-57 based on a statistical analysis which is described. Based on this analysis the Draft EIS states on page 4.5-57, "with operation of the intercept trenches, continued operation and expansion of the DFADAs would have less potential to contaminate local groundwater and water quality in Chaco Wash."

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spinedance, Southwestern willow flycatcher, Navajo sedge, and Mexican spotted owl, as well as each these species' designated critical habitats. Each of these species also occur within a 300 km radius of the FCPP, SJGS, and NGS in some locations.

In reaching its conclusions in the Desert Rock BO, FWS relied on (1) muscle tissue samples ("plugs") collected from Colorado pikeminnow collected throughout the Upper Colorado River Basin, including within the San Juan River,¹⁷⁶ (2) estimates of brain-tissue population-scale mercury concentrations derived from muscle-brain mercury tissue concentration ratios established in peer-reviewed literature,¹⁷⁷ (3) peer-reviewed brain tissue mercury concentration thresholds for reproductive impairment derived.¹⁷⁸ The DEIS should have been supported by similar reliance on actual physical evidence which the Desert Rock BO demonstrates are feasible and practical and essential to a reasoned choice among alternatives, not merely statistical models. See 40 C.F.R. §§ 1502.22(a), 1502.24. Moreover, although the ERAs advocate consideration of "alternative" and more permissive thresholds for toxic exposure, the nevertheless acknowledge that the scientific-consensus exposure levels used in the Desert Rock BiOp are appropriate for listed species and sensitive life stages. Deposition ERA at 7-4.

307.112

307.113

Because, even under conservative estimates baseline mercury levels already exceed thresholds for reproductive impairment in a majority of individuals within Colorado pikeminnow, FCPP's past and ongoing mercury emissions already jeopardize Colorado pikeminnow by polluting the fish's critical habitat and preventing its survival and recovery. Because already-deposited mercury that has bio-accumulated in the San Juan River ecosystem will persist for decades, any future mercury emissions from FCPP will only worsen conditions for Colorado pikeminnow and other listed species. The fact that these species are already at risk does not excuse OSM from taking a hard look and disclosing the extent of, intensity of, and comparative effects of various alternatives on those risks.

307.114

d. The DEIS Mischaracterizes APS's Own Ecological Risk Analyses

As a threshold matter, we object to the DEIS's decision to obscure the reasoning behind its conclusions by citing repeatedly and in a conclusory fashion to proprietary studies that are not disclosed to the public in the DEIS or its appendices. Failure to make public the assumptions and methodologies underlying its conclusions makes it very difficult – if not impossible – for the

¹⁷⁶ Environmental Contaminants Data Management System (ECDMS) Catalogs, *Hg in San Juan River Colorado Pikeminnow Muscle* (obtained from Desert Rock BiOp record) (attached as Exhibit Exhibit 165 to Conservation Groups' scoping comments).

¹⁷⁷ See Appendix E, *Mercury concentrations in both brain and muscle tissues from fish toxicity studies* (obtained from Desert Rock BiOp record) (attached as Exhibit 16g to Conservation Groups' scoping comments).

¹⁷⁸ Raw data on effects to Pikeminnow (obtained from Desert Rock BiOp record) (attached as Exhibit 167 to Conservation Groups' scoping comments).

Response 307.112

Under NEPA, the primary analysis is the effect of the Proposed Action relative to the environmental baseline, followed by the cumulative impact analysis. Under Section 7 of ESA, the primary focus is on cumulative impact analysis. The data noted in the comments were used in the development of the Biological Assessment and supporting studies for the project.

Response 307.113

The evaluation of impacts relied primarily on the scientific-consensus values described in the Desert Rock Energy Project BO, as identified in previous literature, where available, or on toxicity reference values approved by EPA when scientific consensus values were not available. This was clarified in Section 4.6 of the EIS where additional description of the EPRI model and ERA models was added.

Response 307.114

A more complete discussion of the risks posed by the continued operation of FCPP is provided in the Final EIS. As described above, modeling conducted indicates that these future operations will not contribute substantially to the risks from mercury and other COPECs. Cumulatively, the concentrations of mercury and selenium are expected to increase over the baseline, which is already at levels that may cause harmful effects to listed species. These increases are due in small part to FCPP emissions, as discussed in the EIS and described above, but in greater part due to contributions from other regional and global sources. As discussed in a previous response and in the Draft EIS, the future operation of FCPP would not add substantively to this risk. If FCPP were to shut down in 2016, the risk to species from these contaminants would be nearly identical to that posed by continued operation of the plant.

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general public to understand or comment on OSM's analysis. Moreover, review of the two Ecological Risk Assessments reveals that the DEIS, at several points, either mischaracterizes their significance or omits critical conclusions and/or uncertainties in order to minimize the adverse affects of continued FCPP operations.

The DEIS, in its analysis of cumulative impacts on special status species, states:

In summary, regardless of the source of emissions, metals concentrations under current conditions alone appears to pose a risk to ecological receptors within the deposition area as well as in the San Juan River downstream of the deposition area. Because of the considerable uncertainty in predicting future regional and global metals emissions, future cumulative impacts to ecological resources may be best described by bounding potential impacts within the range of HQs reported for "Current Conditions + FCPP Only Contributions" and "Scenario 8 Contributions". Even at the lower range of HQs that assume status quo current conditions in combination with future FCPP emissions, several highly elevated HQs (e.g., HQ of 190 for selenium exposure to generic San Juan River aquatic receptors; HQs as high as 12 for mercury exposure to Colorado pikeminnow in the San Juan River; HQs as high as 71 for selenium exposure to early life stage fish in the San Juan River) indicate the potential for adverse effects to individual receptors, as well as potential for population level effects. Cumulative impacts associated with past, present, and future conditions may be substantial regardless of whether China mercury emissions increase in the future, but this risk would remain with or without the future operation of FCPP, and as indicated in the ERAs, its future operation would not meaningfully increase those risks. Therefore the contribution of future FCPP operations would not be cumulatively substantive with respect to these ecological risks.

DEIS 4.18-48-49. This conclusion – that FCPP future operation would not meaningfully increase risks – is not supported by the actual methods and conclusions cited ERA. The "HQ" cited in the DEIS refers to a "hazard quotient," a method of determining whether a particular constituent of potential ecological concern ("COPEC") poses a risk to a specified biological receptor. San Juan ERA at 4-5. The actual quotient in question refers to an exposure point concentration ("EPC") divided by an ecological screening value ("ESV"). *Id.* at 4-1, 4-5. The DEIS relies on the fact that hazard quotients for mercury and selenium exposure would be extremely high even without future FCPP emissions to avoid engaging in any quantitative or even qualitative analysis of the incremental effects of either FCPP emissions or cumulative emissions on pikeminnow and sucker toxicity, mortality, reproduction, or recovery. The ERA makes clear, however, that the hazard quotient method is designed only to determine whether or not a risk exists (i.e. whether or not the HQ is greater than 1), and that it does not quantify or describe the scope or severity of that risk. *See* San Juan ERA at 6-19 to 6-20 ("The simple "HQ" approach provides a conservative measure of the potential for risk based on a "snapshot" of conditions and the hazard quotient approach has no predictive capability. HQs are measures of levels of concern, not measures of risk.) ("The HQ is not a measure of risk . . . the HQ is not a population-based measure, HQs do not refer to the number of individuals or percentage of the exposed population that is expected to be impacted . . . HQs are not linearly scaled, the level of

307.115

Response 307.115

With regard to disclosure to the public, all references used in development of the EIS are part of the administrative record and available upon request.

The Final EIS has been updated to provide greater description of the risks associated with the baseline conditions and how much the project will add to those risks. Section 4.18.3 has been revised to clarify how future contributions from other sources will add to that risk.

The EPRI study and ERAs, habitat evaluations and other materials prepared by the applicants or their consultants underwent critical review by various entities including OSMRE, USFWS and other cooperating agencies prior to their acceptance for use in the EIS.

The EIS has been revised to provide greater clarification of the reasoning behind its conclusions, as described for previous comments.

The Draft EIS accurately characterizes the results of the ERA. The ERA shows that the FCPP, by itself does not result in HQs > 1 for mercury or selenium, and in fact the HQs resulting from future operations of FCPP several orders of magnitude less than one, as previously described. Both the ERAs and the Draft EIS also identify that HQs resulting from the baseline condition indicate that levels of mercury and selenium are above the levels that may indicate risk to these species.

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concern for a receptor with a HQ of 10 may not be twice the concern over a HQ of 5.” Because risk does not scale linearly with HQ nor does HQ quantify the extent of potential population effects, the existence of extremely high HQs alone does not excuse OSM from at least making some reasoned attempt to quantify or otherwise describe the numbers of endangered fish that will be adversely affected both with and without FCPP, and to assess the resulting impacts on species survival and/or recovery.

Interestingly, the DEIS’s discussion of vegetation impacts does acknowledge the significant limits of the ERAs approach, limits that are not acknowledged in its discussion of special status species nor cumulative impacts thereon:

It is important to recognize that these ERAs do not directly address potential impacts to communities or populations, but rather address potential impacts to individuals. For generic ecological receptors population-level effects may be of greater relevance than impacts to individuals. Thus, potential risks to individuals are likely not representative of risks to populations; in general, for the same exposures, population risk tends to be lower than individual risk. However, for special status species, and in particular, federally listed species, potential effects to individuals may be relevant, especially for immobile early life stage individuals.

DEIS 4.6-15. Despite this acknowledgment, the DEIS’s treatment of listed species, including the Colorado pikeminnow, razorback sucker, and southwestern willow flycatcher, fails to undertake any informed analysis of population-level effects or effects on sensitive life stages.

e. The EIS Must Address Reactive Gaseous Mercury Deposition

OSM must take a proper hard look at FCPP/Navajo Mine Complex’s impact on endangered Colorado pikeminnow, the razorback sucker and their critical habitat. Both fish would be exposed to mercury emissions through surface and groundwater contamination and ambient air exposure, deposition, and runoff into aquatic habitats, and subsequent bioaccumulation through the food chain.¹⁷⁹ Upon entering the San Juan River ecosystem, microorganisms convert mercury to methylmercury, a highly toxic form of mercury.¹⁸⁰ Because methylmercury is stable and accumulates through the food chain, the highest mercury concentrations are found in top predators, such as the Colorado pikeminnow, causing reproductive impairment, behavioral changes, and brain damage.¹⁸¹ The FWS and OSM must evaluate the relative contribution of reactive gaseous mercury deposition from FCPP and other coal-fired power plants in the action area. The Desert Rock BiOp notes that “[t]he reactive form of mercury is often deposited to land or water surfaces much closer to their sources due to its chemical reactivity and high water

¹⁷⁹ Desert Rock BiOp, at 120.

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

Response 307.116

The EPRI WARMF model, which was the basis of the San Juan River ERA includes a detailed fate and transport model that includes the deposition and re-emission of gaseous mercury (gaseous elemental and reactive gaseous mercury) as well as particulate mercury within the San Juan watershed. This study considered the accumulation of various species of mercury from all known sources and modeled the fate of this mercury from its deposition to land and waters within the San Juan watershed, and its movement through the food chain.

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solubility” and that “[p]articulate mercury is transported and deposited at intermediate distances depending on aerosol diameter or mass.”¹⁸²

Data from Mesa Verde National Park show mercury concentrations in precipitation that are “among the highest measured in the United States” and “have trajectories that trace back to within 50 km of the FCPP and SJGS,” supporting the theory that “air masses passing from south Arizona and near these coal - fired power plant facilities [FCPP and SJGS] are contributing to high deposition of mercury there.”¹⁸³ There is also a “clear increase” in mercury deposition in lake bottoms in southwestern Colorado that correlates with the construction of FCPP and SJGS between 1963 and 1977.¹⁸⁴ These two plants “are among the largest sources of mercury emissions in the western U.S.”¹⁸⁵ The BiOp suggests but does not explicitly link the reactive form of mercury presumably coming from FCPP and SJGS and the fact that pikeminnow are experiencing reproductive impairment due to mercury.

f. Analysis of Mercury in Muscle Plugs and Emissions Sources

The EIS and Section 7 consultation should undertake an analysis to determine whether and how much of the tissue-bound mercury in endangered Colorado pikeminnow is derived from mercury deposited by FCPP and other regional coal-fired power plants. The DEIS does not answer this question. The ERAs, by focusing solely on the narrow question of whether a hazard quotient is greater or less than 1 (whether a risk exists or not) under various scenarios, also fail to address the relative contribution of FCPP and other four corners plants to mercury accumulation in fish tissues. In order to determine the sources from which mercury in endangered fish muscle tissue samples is derived, OSM, USFWS and USGS must, as part of the EIS and Biological Opinion process, undertake a study to compare isotopic signatures of mercury in endangered fish tissue samples to isotopic signatures of mercury from FCPP and other regional and pan-regional mercury sources. Short of undertaking of this or another such analyses, neither OSM nor USFWS can ensure that FCPP’s past, ongoing and future mercury deposition is not significantly responsible for elevated mercury and corresponding jeopardy in endangered San Juan River fish.

g. Consideration of Recovery Plans

The DEIS, in its abbreviated consideration of impacts to the Colorado pikeminnow and razorback sucker, fails to give any consideration to the recovery plans for those species adopted pursuant to ESA Section 4(f).¹⁸⁶ In particular, the DEIS fails to assess whether continued

¹⁸² *Id.* at 74.

¹⁸³ *Id.* at 75; see also MSI Report.

¹⁸⁴ *Id.*

¹⁸⁵ *Id.* at 76.

¹⁸⁶ See United States Fish and Wildlife Service, Colorado pikeminnow (*ptychocheilus lucis*) recovery goals: amendment and supplement to the Colorado squawfish recovery plan (2002)

Response 307.117

Information about the relative contribution of mercury in tissue plugs from Colorado pikeminnow from various sources, including the FCPP is not available. Peer-reviewed site-specific modeling by EPRI shows that the future contributions of mercury from FCPP will be quite small relative to other sources, as previously discussed. NEPA regulations require that agencies insure the professional integrity, including scientific integrity, of the discussions and analyses in an EIS.

The commenter requests that mercury isotope studies be used to compare isotopic signatures of mercury in fish to those from the FCPP and other regional and pan-regional mercury sources, to determine the sources from which mercury in endangered fish is derived. Such isotopic studies are currently still in the research and development phase, and substantial uncertainty still exists with regard to the certainty of the results of such studies.

Response 307.118

The impacts of the proposed action on listed species would be negligible as discussed throughout the Final EIS, and thus would not affect the recovery of these species. This will be evaluated in detail in the ESA Section 7 consultation. The following text was added to the fisheries effects analysis in the FCPP section of Section 4.8.4.1.

The effects of the Proposed Action, including the BMPs, conservation measures, and RPAs would not affect the potential for recovery of the Colorado pikeminnow or razorback sucker. The recovery plan for these species identify the recovery of populations in the San Juan Basin as essential (USFWS 2002a, b). The Proposed Action is a continuation of activities that were currently in effect when the recovery plans were written, with the same effects with regard to entrainment, passage impairment, and potential for release of non-native fish from Morgan Lake, and greatly reduced emissions of mercury and selenium. While mercury and selenium would continue to be released, it would be released in very low amounts that would not perceptibly increase the risk these species face under baseline conditions. The overall effect on

the recovery of the species would be negligible. This effect would be offset by applicant proposed conservation measures including development of the Colorado pikeminnow PVA, which provides a tool to better assess the potential effects of management actions in the future, and the proponent's ongoing participation in the SJRRIP, whose focus is recovering these two species.

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operations at the mine and power plant would undermine or conflict with these recovery plans. Both these plans include the San Juan River as an integral part of the downlisting or delisting strategy for the species. For the pikeminnow, the San Juan is one of only three subbasins supporting the species, and downlisting requires a population of at least 1000 age 5+ fish.¹⁸⁷ “In the Recovery Goals for the Razorback Sucker (Service 2002b), the San Juan River system is one of two that must show stable or increasing trends in order to achieve downlisting or delisting.”¹⁸⁸ In the Desert Rock BiOp, however, the Service concluded that these delisting goals could not be met due to the toxic and reproductive impacts of mercury on the pikeminnow and selenium on the razorback sucker. Desert Rock BiOp at 121. Neither the DEIS nor the ERAs give any consideration whatsoever to these recovery goals or how FCPP contributions to mercury and selenium loads will affect the possibility of achieving those goals.

h. Impacts of Climate Change

OSM and FWS must consider the impacts that climate change will have on candidate and listed species and their critical habitat, in particular relative to existing non-climate impact vectors, like mercury deposition. Adding stress upon stress upon stress to these vulnerable species invariably pushes them one step closer to extinction. According to experts at the GAO, federal land and water resources are vulnerable to a wide range of effects from climate change, some of which are already occurring. These effects include, among others, “(1) physical effects, such as droughts, floods, glacial melting, and sea level rise; (2) biological effects, such as increases in insect and disease infestations, shifts in species distribution, and changes in the timing of natural events; and (3) economic and social effects, such as adverse impacts on tourism, infrastructure, fishing, and other resource uses.”¹⁸⁹ There is a growing consensus within the scientific community that climate change will:

[C]omponent existing threats to declining species and lead to an acceleration of the rate at which biodiversity is lost. The species that are most vulnerable to

(attached as Exhibit 57); United States Fish and Wildlife Service, Razorback sucker (*Xytracuchen texanus*) recovery goals: amendment and supplement to the razorback sucker recovery plan (2002) (attached as Exhibit 58).

¹⁸⁷ See Desert Rock BiOp at 121.

¹⁸⁸ *Id.*

¹⁸⁹ GAO Report, *Climate Change: Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources* (2007) (attached as Exhibit 169 to Conservation Groups’ scoping comments); see also Committee on Environment and Natural Resources, National Science and Technology Council, *Scientific Assessment of the Effects of Global Climate Change on the United States* (2008) (attached as Exhibit 170 to Conservation Groups’ scoping comments); Melanie Lenart, et al., (attached as Exhibit 50 to Conservation Groups’ scoping comments) (describing impacts from temperature rise, drought, floods and impacts to water supply on the Southwest).

Response 307.119

Climate change will occur and affect organisms and their habitat over the life of the Proposed Action and beyond, whether or not the Proposed Action occurs. Climate change has the potential to change precipitation patterns, including the timing, intensity, and type of precipitation received; runoff patterns based on the amount of precipitation falling as snow and when snowmelt occurs; and atmospheric temperatures, which exhibit a strong influence on water temperatures. Climate change models generally agree that the southwest will get drier in the next century, with runoff decreasing 8 to 25 percent (Seager et al. 2007), resulting in decreased water availability to meet all demands, including those of fish.

This reduction in precipitation will make it increasingly challenging to meet the flow recommendations for the San Juan River, established to protect listed fish and other native fish species, especially the high-flow requirements that provide for channel maintenance and create habitat for listed fish and which have a strong influence on the riparian habitats upon which southwestern willow flycatcher and yellow-billed cuckoo rely.

Native fish in the San Juan River cannot move upstream in response to climate changes because their migration is blocked by Navajo Dam (USFWS 2002a,b), which precludes migration to more favorable upstream areas as a behavioral adaptation to changing climate conditions. However, Navajo Dam currently releases water that is colder than what would naturally be present during the summer and fall months (USFWS 2006). Thus, the temperature effect of climate change could be offset by the dam’s operation.

Change precipitation patterns an atmospheric warming would likely affect the distribution of suitable habitat for Mexican spotted owl, as terrestrial landscapes adapt to these changes. Fire frequency and severity may increase as a result of these changes, which may further affect the distribution of the habitats that Mexican spotted owl depend upon. Mexican spotted owl will likely change their distribution in response, selecting alternate nesting and migratory stopover habitats.

The listed plant species would also be affected by climate change and associated changes in precipitation and atmospheric temperatures. Populations of Mesa Verde cactus and Mancos milk-vetch have been observed to decrease during periods of drought. Because these species are endemic to a restricted set of geological formations and have limited dispersal ability, climate change may threaten the long term persistence of these species. Fickeisen plains cactus and Zuni fleabane are also highly specialized with a narrow endemic range that may be similarly affected by climate change.

The Final EIS has been amended to be consistent with the findings of the Section 7 consultation, including the effects of climate change. The additional text does not change the conclusions from the Draft EIS.

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extinction from whatever cause are those with restricted ranges, fragmented distribution within their range, low populations, reducing range, decreasing habitat within the range, and/or which are suffering population declines. Species with quite restrictive habitat requirements are most vulnerable to extinction. Where climate change is projected to reduce habitats of such species there are likely to be the greatest extinction risks.¹⁹⁰

Not surprisingly, “[a]quatic and wetland ecosystems display high vulnerability to climate change. Changes in water temperature and shifts in timing of runoff will change aquatic habitats, resulting in species loss or migration as well as novel and unpredictable interactions of new combinations of species.”¹⁹¹

Impacts from climate change are anticipated to acutely affect New Mexico, and include the “dewatering of rivers and streams,” as well as “[i]ncreased drying of soils and significant reductions in soil moisture” – all of which are “likely with climate change as potential evapotranspiration rises with increasing temperatures.”¹⁹² These effects will “compound the adverse effects of changes in the hydrology of runoff and water availability throughout New Mexico.”¹⁹³ Water availability has the potential to significantly impact endangered and threatened species. For example, “[s]ubstantial changes in the natural hydrograph and intensification of managed uses will severely disrupt stream ecology and health, which may have additional implications for managing endangered [fish species],”¹⁹⁴ as well as those species – like the Southwestern willow flycatcher – which “rely on riparian vegetation for nesting and food resources.”¹⁹⁵

The direct, indirect, and cumulative impacts to threatened and endangered species and their critical habitats must be analyzed as a result of the proposed FCPP/Navajo Mine/Transmission Corridor project area, per compliance requirements with Section 7 of the ESA, 16 U.S.C. § 1536, ↓^{307.120}

¹⁹⁰ Agency Technical Work Group, State of New Mexico, *Potential Effects of Climate Change on New Mexico* (2005), at 24-25 (attached as Exhibit 171 to Conservation Groups’ scoping comments).

¹⁹¹ John R. D’Antonio, *The Impact of Climate Change on New Mexico’s Water Supply and Ability to Manage Water Resources* (2006), at 45 (attached as Exhibit 172 to Conservation Groups’ scoping comments).

¹⁹² Brian H. Hurd, et al., *Climate Change and Its Implications for New Mexico’s Water Resources and Economic Opportunities* (2007), at 18 (attached as Exhibit 173 to Conservation Groups’ scoping comments).

¹⁹³ *Id.*

¹⁹⁴ Hurd, et al. at 19.

¹⁹⁵ See Agency Technical Work Group, State of New Mexico, at 25, 26.

Response 307.120

ESA compliance is being addressed through a separate Section 7 process with the USFWS. As part of this process, OSMRE has prepared a biological assessment and submitted that document to the USFWS for their review, thus initiating Section 7 consultation. The findings of the USFWS will be provided in their Biological Opinion for the project, which will include any reasonable and prudent measures and reasonable and prudent alternatives the USFWS deems necessary to reduce, eliminate and offset any impacts to listed species and designated critical habitat. The NEPA process has a different environmental baseline than the ESA process, and the EIS addresses the requirements under NEPA. No changes were made to the document specifically to address this comment, but additional information regarding the potential ecological risks associated with baseline, future FCPP, and future contributions of globally transmitted COPECs was added to the EIS.

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and its implementing regulations, at 50 C.F.R. § 402. Those impacts include but are not limited to the impacts of mercury and selenium pollution resulting from coal mining, combustion, waste disposal and climate change on all the listed species and critical habitat in question. In addition, the Navajo Nation Fish and Wildlife Department and Hopi Tribe must be consulted on any potential action concerning the Navajo Nation and potential impacts to species listed under the Navajo Endangered Species List (“NESL”), and Hopi Land crossed by transmission corridors, and impacted by FCPP emissions.

7. **OSM Failed To Take A Hard Look At The Project’s Impacts To Environmental Justice**

As noted in our scoping comments and above, there can be no real dispute that the Navajo people have been disproportionately affected by the extensive energy development – including coal, oil and gas, and uranium – that has occurred on the Navajo Nation.¹⁹⁶ Adverse social, economic, and health effects are associated with the Project. DEIS at 4.11-21-24. Continued operation of the Project would cause additional, and cumulative impacts on Navajo communities surrounding the Project; the Project would continue to emit SO₂, NO_x, PM₁₀, PM_{2.5}, VOCs, CO, arsenic, lead, mercury, selenium, among other hazardous materials, and would therefore contribute to “ambient air quality deterioration, visibility impairment, and dry and wet deposition in the ROL.” DEIS at 4.11-14-15. Continued operation of the Project would increase ecological risks to terrestrial and aquatic habitats due to “deposition of metal emissions.” DEIS at 4.11-25. In addition, the Project “would result in extensive adverse impacts to landforms and topography during mining.” DEIS at 4.11-15. Continued operation and expansion of the coal ash disposal areas “would have the potential to contaminate local groundwater and water quality in Chaco Wash.” DEIS at 4.11-18. Stock ponds used to sustain livestock in the area would also be adversely affected. DEIS at 4.11-18. More glaringly, residents in the area would be relocated, and access to grazing areas on Navajo land would be restricted.” DEIS at 4.11-19. Accidental release of the ash disposal impoundments could occur, and off-site contamination from historical coal combustion waste “could occur as a result of seepage in groundwater.” DEIS at 4.11-23. Due to air quality deterioration, the Project will continue to affect public health. DEIS at 4.11-24. “Impacts would primarily affect Navajo populations.” DEIS at 4.11-15; *see also* 4.11-15-24.

Despite these impacts, OSM glosses over the disproportionate impact that the Project has had and will continue to have if it continues to operate. For example, although the DEIS mentions that “San Juan County has a higher incidence of chronic lower respiratory disease comprised of chronic bronchitis, asthma, and emphysema compared to New Mexico or the rest of the United States,” DEIS at 4.11-13, it does not address this situation in any detail. OSM notes that impacts to air quality “would be greatly reduced” under the No Action alternative compared to the Proposed Action, OSM nevertheless fails to consider the Project’s contribution to air quality impacts, in particular on the Navajo Nation, in any real detail. Instead, it summarily concludes that impacts would be minor, even while conceding that “elevated levels of ozone in San Juan County were linked to incidence of asthma-related medical visits (NMDH 2007). DEIS at 4.11-13. Indeed, “[a]t least one patient made an asthma-related visit on 350 (63.4%) of the 552 study days.” NMDH 2007. The New Mexico Department of Health study determined that the ozone

¹⁹⁶ See Conservation Groups’ Scoping Comments at 62-70.

Response 307.121

Please see Master Response #1, Deficient Analysis. The Environmental Justice analysis included in the Draft EIS discusses each resource category addressed in the Draft EIS, and also considers multi-media and cross-media effects. Many of the potential effects referenced in your comment would be either minor, or abated by applicant proposed measures to result in minor effects. OSMRE prepared the Environmental Justice analysis in accordance with CEQ guidance and Executive Order 12898, and in doing so took a hard look at potential effects.

Response 307.122

Please see response to comment 307.043.

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levels in the county “were among the highest among EPA regional sites in the Southwest including Arizona, Utah, Colorado, New Mexico and Texas,” and were likely caused by NOx, a pollutant emitted from FCPP. NMDH 2007. The New Mexico Department of Health concluded “high values [of ozone] in San Juan County are of concern. The San Juan County Community Health Profile echoed this concern noting, “[o]zone levels, particulate matter pollution and mercury are all recognized concerns in San Juan and the Four Corners in general,” noting in particular the “documented connection of ozone with emergency visits for asthma.” San Juan County 2010.

As noted, deposition of heavy metals including mercury is also of concern. The San Juan County Community Health Profile states: “According to the Four Corners Air Quality Task Force, mercury is a pollutant that is of particular concern in the Four Corners region. Mercury is released into the environment from coal-fired power plants and from mining.” San Juan County 2010. As noted in the health profile:

Mercury is a heavy metal that builds up and remains in the ecosystem and can be found in toxic levels in fish in many areas in San Juan County. Even in small amounts, mercury can cause a variety of physiological problems, illness, and even death, according to Dr. Grossman, a Durango physician researching the effects of mercury on pregnant women and their newborn infants.

The DEIS notes that “[m]ercury and other contaminants may be deposited in the soil due to power plant operations, and humans may ingest these contaminants through consumption of farm products grown in these soils, or fish harvested from local waters.” DEIS at 4.11-13. Despite the Project’s contribution to the problem, and the documented toxicity even in small amounts, OSM again glosses over the problem, summarily concluding – without any citation to support its conclusion – that according to risk assessments, it should not be a problem. DEIS at 4.11-13.

307.123

Given OSM’s responsibility to address environmental justice concerns, it is unclear why OSM did not include additional information about the impacts to the Navajo. This failure is especially apparent given Conservation Groups’ repeated request for a public health study.

307.124

Additional environmental justice concerns regarding OSM’s failure to provide for effective community participation and free, informed, and prior consent are discussed below in section III(G).

8. OSM Failed To Take A Hard Look At The Project’s Impacts to Trust Assets

Historically, Navajo Mine is Federal land held in trust for Navajo Nation. Department of the Interior oversees the lease and FCPP is a Federal facility. Secretarial responsibilities need to account for leasing, bonding, liabilities and the entire financial implications of mine ownership within the context of the coal complex. The FCPP Lease site is definitely Federal land held in trust for Navajo Nation with connectivity to Navajo Mine. Trust assets sections in DEIS are deficient (example, potential breach at CCW impoundments would result in “minor” impact to Navajo Nation according to DEIS). The DEIS suggest that there is some credence given to protecting the United States from liability, “DOI/BIA reviews each proposed trust-related project

307.125

307.126

Response 307.123

The Draft EIS contains both human health and ecological risk assessments, conducted according to EPA and other appropriate regulatory guidance. These assessments were reviewed by OSMRE, experts in the field, and with technical support from the cooperating agencies. These sources are cited in the Draft EIS, and provide a thorough analysis of this issue.

Response 307.124

The Environmental Justice analysis contains a comprehensive discussion of potential effects to the Navajo Nation, which is recognized as an Environmental Justice population (i.e. minority population) in Section 4.11. Potential environmental justice effects to human health are founded on the findings of Section 4.1, Air Quality, Section 4.17, Health and Safety, and references cited therein.

Response 307.125

The Secretary of the Interior has not yet signed Amendment #3, which authorizes continued operation of FCPP. The Secretary’s decision is based on the findings and completion of the NEPA process. The Secretary’s trust responsibilities on this project do include ensuring that the Navajo Nation are being fairly compensated for the use of trust resources (i.e. coal), as well as that the project does not create an extraordinary liability for the US Federal Government. Section 4.12, Indian Trust Assets. contains detailed analysis of how each alternative would potentially affect all trust assets involved in the project. This Draft EIS Section also provides the regulatory framework applied to measure potential effects (i.e. American Indian Trust Fund Management Reform Action; PL 103-412) and the role of the US Federal Government as the trustee.

Response 307.126

Please see Section 4.12.1 for a discussion of US Federal Trust policy, the Secretary’s role in authorizing projects that include trust assets, and BIA’s role to ensure that projects include appropriate management, development, and protection of trust assets.

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with the intent to approve only those projects found beneficial to the Tribe and do not create a liability for the US (see Section 4.12.2) DEIS at 4.18-50. Yet, current conditions associated with coal could result in less than profitable outcomes for the Navajo Nation. Although it is being pitched that Navajo Nation's purchase of Navajo Mine will be profitable, there is a chance that liabilities could quickly be imposed on Navajo Nation wiping out their economy. This is why requests to see due diligence reports and requests to Sally Jewell are important. These requests have been ignored and the DEIS fails to adequately assess the Trust Assets component of the analysis. The DEIS continues the pattern of minimizing responsibilities when it claims:

In January 2014, BIA received a request for Secretarial approval on a mortgage between BHP and NMCC for the Navajo Mine lease area. BIA is reviewing this business transaction for compliance with federal trust policies. The action will undergo NEPA review per the requirements provided in the BIA NEPA Guidebook as Categorical Exclusion for the approval of a mineral lease adjustment or transfer (516 DM 1.5 G[3]).

DEIS at 2-34.

A Categorical Exclusion by BIA is unacceptable and the DEIS is inaccurate as we can only assume that the transfer here is between BHP and NTEC, as BHP and NMCC are basically the same company. We also remind OSM that BHP/NMCC intend to depart by 2016 so any mortgage analysis is a significant fiduciary transition for Navajo Nation taking over ownership of Navajo Mine. BIA is a Cooperating Agency to the DEIS and has to clarify the Trust Responsibility obligations that are obfuscated throughout the DEIS. BIA in no way resolves the bigger Trust Assets issues which should be in the DEIS concerning the Federal government involvement for the facilities/complex and the multitude of financial oversight issues, which are summarily dismissed through the DEIS.

9. OSM Failed To Take A Hard Look At The Project's Impacts to Cultural Resources

The DEIS sections on cultural resources are deficient. Appendix B. 1 of the DEIS Volume 2 – Appendices includes a list of cultural resources in the APE (“Area of Proposed Effect”) that have no compliance with Section 106 of National Historic Preservation Act (“NHPA”), with incomplete surveys, incomplete and deferred consultations and conclusions, and pending Programmatic Agreements (“PA”).

The DEIS takes the unlawful position that:

The Proposed Action, including the continuing operations of Navajo Mine, FCPP and the transmission lines, would not result in major adverse effects to cultural resources. Therefore, no additional mitigation is recommended.

DEIS at 4.4-35. OSM makes this determination while readily admitting that PAs are being developed, DEIS at 4.4-35, many sites are awaiting pending state and tribal Historic Preservation Officer concurrence with OSM findings, see Appendix B.1 of DEIS, and some properties have

Response 307.127

The Navajo Nation made a business decision to create NTEC which acquired Navajo Mine and will function as the management/owner of that operation. That decision very likely included a consideration of the potential liabilities the Navajo Mine could impose. It is beyond the scope of NEPA to assess business decisions negotiated by a Tribe and another entity. However, the Draft EIS does clearly state in Section 4.10 that the Nation will experience greater than historical revenue streams due to the removal of certain taxes that BHP was responsible for paying.

Response 307.128

The request for Secretarial approval on the mortgage between BHP and NMCC is considered a separate action. The Draft EIS has been clarified as follows: The action will undergo NEPA review, as appropriate, per requirements provided in the BIA NEPA Handbook.

Response 307.129

The Navajo Nation made a business decision to create NTEC which acquired the Navajo Mine and entered into a mortgage with BHP to finance that acquisition. It is beyond the scope of NEPA to assess potential effects from a business decision negotiated by a Tribe and another entity. However, BIA will consider potential effects to ITAs as part of the Agency's review of the action's compliance with federal trust policies. Please see Section 4.12.1 for a discussion of US Federal Trust policy, the Secretary's role in authorizing projects that include trust assets, and BIA's role to ensure that projects include appropriate management, development, and protection of trust assets.

Response 307.130

On pages 4.4-20 through 4.4-24, the Draft EIS states repeatedly that OSMRE is consulting with the appropriate agencies under Section 106 and that the PAs for the project will provide procedures to minimize damage to historic properties that are evaluated. This is also summarized in the Executive Summary Table summarizing potential project effects (Table ES-11).

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simply not been surveyed yet, see Attachment G-1 of the DEIS Volume 2-Appendices, where reports are forthcoming.¹⁹⁷ In addition, Class I surveys noted in the DEIS are not adequate to evaluate the extents of archaeological resources in the project areas (including transmission lines).

This is a classic example of an agency predetermination. Without knowing what the impacts are, or indeed even where all of the relevant sites, OSM simply cannot make the claim that there will be no adverse effects. Moreover, OSM cannot rely on mitigation measures to minimize impacts that have not even been established in the DEIS.

NEPA “requires ... that an agency give a ‘hard look’ to the environmental impact of any project or action it authorizes.” *Morris v. U.S. Nuclear Regulatory Commission*, 598 F.3d 677, 681 (10th Cir. 2010). This examination “must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.” *Forest Guardians*, 611 F.3d at 712 (quoting *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000)); see also 40 C.F.R. § 1502.2(g) (“Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.”); *id.* § 1502.5 (“The statement shall be prepared early enough so that it can serve practically as an important contribution to the decision-making process and will not be used to rationalize or justify decisions already made.”).

Without such reasoned consideration, BLM’s reliance on mitigation measures merely skirts BLM’s duty to take a hard look at impacts *before* allowing impacts to occur.

Mitigation measures may help alleviate impact *after* construction, but do not help evaluate and understand the impact before construction. In a way, reliance on mitigation measures presupposes approval. It assumes that – regardless of what effects construction may have on resources – there are mitigation measures that might counteract the effect without first understanding the extent of the problem. This is inconsistent with what NEPA requires. NEPA aims (1) to ensure that agencies carefully consider information about significant environmental impacts and (2) to guarantee relevant information is available to the public.

N. Plains Res. Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1084-85 (9th Cir. 2011). By failing to perform the necessary analysis, the agency, in effect, is presupposing that any site-specific impacts from coal development can be mitigated without significant, unacceptable impacts before even knowing what those site-specific impacts are. Without analyzing impacts from to cultural resources itself, any subsequent analysis intrinsically shifts from *preventing* impacts (and managing lands for other resource values) to merely *mitigating* impacts (and allowing coal entities to exercise their surface use rights to the lease at the expense of other resource values). This approach is fundamentally incongruous with NEPA’s mandate.

The DEIS also relies on data recovery as an acceptable treatment for cultural resources instead of avoidance. Preservation in place should always be the first option for treatment and should be so

¹⁹⁷ See Diné Citizens Against Ruining Our Environment, *History of Area IV Site Disturbance* presentation (Sept. 2013) (attached as Exhibit 72).

Response 307.131

Maps of cultural resources are confidential and kept in as part of a separate confidential appendix for cultural resources in accordance with the National Historic Preservation Act.

COMMENT #307

stated. The DEIS does not have a map showing the distribution of significant cultural resources sites in the APE. Without this map, the reader is unable to evaluate whether the proponent has considered the feasibility of avoidance. Some sites may be significant primarily for their landscape relationships or “setting”(for instance rock art and tower observatory/kivas).

The linkage of cultural resources, visual resources and recreation sources is not made in the DEIS; this failure negates the *interdisciplinary* analysis, which is fundamental to NEPA, and the requirement to consult under Section 106 of NHPA. The DEIS fails to include landscape assessments which are critical to archeological analysis. The types of sites in the “catchment” of the Navajo Mine direct effects should be evaluated for how representative of the region they are. If we have no terrace Pueblo II unit pueblos left because that landform has been completely mined, then the sites of that type that are left have a higher priority for preservation in place and should not be subject to data recovery.

OSM cannot issue a proper DEIS until it has taken a hard look and included relevant information so that decision-makers and the public can review the impacts of the Proposed Action. OSM has failed to perform this hard look and thus the DEIS is incomplete and must be reissued.

10. OSM Failed To Take A Hard Look At The Project’s Cumulative Impacts

NEPA requires agencies to include “a full and fair discussion” of cumulative impacts, defined as the “incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes other such actions.” 40 C.F.R. §§ 1502.1, 1508.7, 1508.8, 1508.9; *see also Resources Limited, Inc. v. Robertson*, 35 F.3d 1300, 1306 (9th Cir. 1994). An agency’s duty to consider cumulative impacts is one of NEPA’s most important mandates because it prevents a “tyranny of small decisions.” *Kern v. BLM*, 284 F.3d 1062, 1078 (9th Cir. 2002) (quoting Council on Environmental Quality, *Considering Cumulative Effects Under the National Environmental Policy Act* at 1, Jan. 1997). A NEPA analysis therefore “must give a realistic evaluation of the total impacts, and cannot isolate the proposed project, viewing it in a vacuum.” *Grand Canyon Trust*, 290 F.3d at 342.

OSM’s treatment of cumulative impacts in the DEIS is abysmal. As OSM knows well, the Project is not proposed in a vacuum. The Navajo Mine and FCPP sit within an area rife with energy development. Just across the San Juan River sit the San Juan Mine and 1800-MW San Juan Generating Station. Less than 200 miles to the West, the Navajo Generating Station emits additional pollution. Lee Ranch and El Segundo coal mines are about 125 miles to the South. Oil and gas development – thousands of oil and gas wells, associated compressor stations, processing facilities, and other infrastructure, as assessed by the Bureau of Land Management’s Farmington Field Office through a Resource Management Plan and Environmental Impact Statement – are, interspersed almost everywhere in this region.¹⁹⁸ In addition, BLM is

¹⁹⁸ See U.S. Dep’t of the Interior, Bureau of Land Management, Farmington Field Office GIS Dep’t, *Federal Oil and Gas Wells San Juan Basin* (Sept. 2008) (attached as Exhibit 59). Please note that this map is now 8 years old, with a great deal of development occurring since this time.

Response 307.132

As stated on page 4.16-9, modifications to the project area site topography as a result of the mining operations could result in changes to the visual character of the region and potential changes in the recreational setting and experience within viewing distance of the project. Further page 4.15-11 discusses the potential impacts to recreation that could occur as a result of changes in emissions from the FCPP and thereby visual resources in the area.

Response 307.133

In the Draft EIS, OSMRE properly considers the cumulative impacts of the Proposed Action and alternatives “when added to other past, present, and reasonably foreseeable future actions.” 40 C.F.R. §1508.7. The Draft EIS uses reasonable temporal and spatial criteria to select the actions for inclusion in the cumulative effects analysis, screening them against the criteria to be included in that analysis. See Draft EIS at Table 4.18-1. An action meets the spatial criteria if it could have an environmental effect in the same region of influence as the Proposed Action for each resource category. Id. at 4.18-2. An action meets the temporal criteria for inclusion in the Draft EIS’s cumulative impacts analysis if it has already occurred, is ongoing, or is reasonably foreseeable within the Proposed Action’s timeframe, extending until 2041 plus the reclamation period for the Pinabete permit. Id. The Draft EIS explains the rationale for excluding approximately a dozen projects from the cumulative effects analysis because they do not meet the parameters of a “cumulative impact” under NEPA. See id. at Table 4.18-1. The Draft EIS reasonably concludes that certain projects are not reasonably foreseeable because an evaluation of those projects would be entirely speculative, and, therefore, would not constitute cumulative impacts, as defined for NEPA purposes. See, e.g., id. at 4.18-5, 4.18-7. “[C]umulative impacts that are too speculative or hypothetical to meaningfully contribute to NEPA’s goals of public disclosure and informed decision-making need not be considered.” See *Wyoming v. U.S. Dep’t of Agriculture*, 661 F.3d 1209, 1253 (10th Cir. 2011). For instance, OSMRE determined that several proposed projects and

suspended projects are not reasonably foreseeable because project details are not yet sufficiently defined. See, e.g., Draft EIS at 4.18-5, 4.18-30. Therefore, the potential impacts are too speculative to meaningfully contribute to NEPA's goals of public disclosure and informed decision-making, and need not be considered, consistent with Tenth Circuit precedent. See *Wyoming v. U.S. Department of Agriculture*, 661 F.3d at 1253.

COMMENT #307

considering, through another Resource Management Plan amendment, increasing the level of oil and gas development through authorization of leasing and drilling in the Mancos Shale formation.¹⁹⁹ The Desert Rock Energy Project and Gallup to Farmington Freight Rail Line are also under consideration, and would add significant, additional impacts to the region. Indeed, OSM spends 28 pages for a table listing “Projects Considered in the Cumulative Impacts Analysis.” DEIS at 4.18-3 – 4.18-31. The cumulative impacts analysis itself, however, is less than 20 pages. Although the length of analysis does not always reveal its quality, here, unfortunately, it does.

Conservation Groups brought many of the cumulative impacts of the Project to OSM’s attention in our scoping comments, in particular the combined effects on climate change, air quality, public health, and impacts to endangered species caused by the myriad projects and activities within the region. Although OSM touts the importance of scoping in its cumulative impacts section, DEIS at 4.18-1, we do not see the suggestions we made incorporated into the DEIS. We therefore refer you to those comments for a discussion of the cumulative impacts to communities and the environment in the region. In this section of our comments, we focus specifically on the errors in OSM’s analysis of cumulative impacts in the DEIS.

As discussed in more detail above, OSM’s consideration of cumulative impacts is flawed from the start in that it attempts to sweep all past impacts into what it calls the baseline. *See, e.g.*, DEIS at 4.18-1. Although that approach would not necessarily be problematic if OSM then added the present and future impacts to that baseline, and then considered the impacts as a whole, OSM does not do that. Instead, anything that OSM includes part of this baseline, OSM either ignores or discounts so that OSM effectively considers only the impacts of the Project itself, thus completely eliminating any legitimate discussion of cumulative impacts. OSM even goes so far as to claim that “[i]n general, the environmental analysis under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering.” DEIS at 4.18-1. This confined view – effectively, a vacuum from reality – of the NEPA process forgets the requirement for cumulative impacts, which requires “a full and fair consideration” of the “incremental impact of the action *when added* to other past, present, and reasonably foreseeable future actions.” 40 C.F.R. §§ 1502.1, 1508.7, 1508.8, 1508.9. Moreover, it fails to recognize that CEQ’s NEPA regulations clearly warn that the mere fact that a project may provide some benefits does not mean that impacts are insignificant and does not justify an agency taking a blind eye at adverse impacts. 40 C.F.R. § 1508.27(b)(1). OSM also fatally errs in segmenting cumulative impacts into resource area, and thus failing to consider the cumulative impact of the myriad impacts on, for example, public health or the environment. DEIS at 4.18-1 (“The integration of the effects must be within each resource category.”). CEQ Guidance on Cumulative Impacts specifically notes as a guiding principle that an agency must “[a]ddress additive, countervailing, and synergistic effects.” CEQ 1997 at 37.

BLM notes that “New Mexico has one of the largest oil and gas programs in the Bureau.” *See* http://www.blm.gov/nm/st/en/prog/energy/oil_and_gas.html.

¹⁹⁹ 79 Fed. Reg. 10548 (Feb 25, 2014).

Response 307.134

Section 1.5 reviews the Scoping process and the role of comments in the EIS process. OSMRE carefully reviewed all comments to inform the breadth of issues and alternatives to be included in the Draft EIS. As with all comments received, OSMRE reviewed the Conservation Group’s scoping comments on cumulative effects and considered them in the formulation of that analysis.

Response 307.135

Please see Master Response #14, Baseline. With specific regard to air quality and GHG, Sections 4.18.3.1 and 4.18.3.2 include an annual breakdown of historic emissions from all power plants in the region beginning in 2000.

Response 307.136

As discussed in Section 4.18, the cumulative effects analysis considers past, present, and reasonably foreseeable future actions. This approach offers a structured and consistent method for all NEPA documents to assess cumulative effects. Also, as provided in Master Response #14 Baseline, past and present effects of the Navajo Mine and FCPP are generally captured as part of the existing environment and baseline.

Response 307.137

As provided in Section 4.18, the technical approach for assessing cumulative effects is derived from CEQ and EPA guidance. The Draft EIS cumulative effects analysis considers potential project effects in relation to 83 past, present, and future actions. This list of projects was developed in coordination with all cooperating agencies to this NEPA process. The incremental effect to the cumulative environment from project related actions is discussed for each resource area, and was given equal consideration when measuring effects.

Response 307.138

CEQ's definition of an "effect" (40 CFR 1508.8) states that "[e]ffects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial." Furthermore, CEQ's definition of "significantly" (40 CFR 1508.27(b)(1)) states that "[i]mpacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial." This definition is provided by CEQ to recognize that a project can have both positive and negative effects, and not simply adverse, but also significant beneficial impacts. OSMRE abided by this guidance in framing potentially significant effects and discusses the both project's beneficial and adverse effects.

Response 307.139

Impacts within the cumulative effects analysis are evaluated by resource area in order to facilitate a more organized section; however, within each resource area as applicable, discussions of related effects are provided. For instance, Section 4.18.3.5, Water Resources discusses the impacts to surface water quality from emissions and deposition within the region, similarly 4.18.3.8, Special Status Species discusses the effects of water quality changes due to deposition of air emissions on aquatic and riparian habitats, Section 4.18.3.9, Land Use, discusses the changes in land use and the potential effects due to increased noise, traffic, dust, and light pollution, Section 4.18.3.17 Public Health and Safety discusses the Human Health Risk Assessment which analyzes effects to human health due to dispersion and deposition of air impacts, as well as ingestion of fish affected by deposition, and ingestion of soil affected by deposition. OSMRE closely abided by the CEQ Guidance on Cumulative Impacts, and performed integrated analysis, as referenced above, on those resource areas with related effects.

The cumulative impacts of health and safety addresses impacts within the dispersion area of air emissions from the FCPP because that is the area by which impacts from the Project may overlap with other projects considered in the analysis.

With regard to thresholds of significance, within each resource area section a description (either qualitative or quantitative) is provided which OSMRE used to identify major impacts. These same criteria are used in the analysis of cumulative impacts.

COMMENT #307

OSM's cumulative impact section fails most fundamentally, however, in its overall lack of analysis. Put simply, it does not constitute a hard look at cumulative impacts. CEQ notes some of the basic steps in a proper cumulative impacts analysis, including identify[ing] the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities," and then "determin[ing] the magnitude and significance of cumulative effects." CEQ 1997 at 37 (emphasis added). Here, although OSM provides some limited information about the magnitude of effects, the analysis is almost entirely lacking as to the significance of those effects—i.e., an assessment of their true scope, magnitude, and duration.

307.140

For example, with regard to climate change, OSM merely notes that GHG emissions are cumulative, and quantifies GHGs to be emitted. OSM fails to address the significance of those effects by assessing the incremental impacts of those GHGs relative to other fossil fuel activities—such as coal operations at SJGS and NGS, and oil and gas development in the San Juan Basin—and relative to the anticipated consequences of climate change to the region, period. To do so, OSM would need to determine what level of GHG emissions would be significant, instead of dismissing any level as "relatively small," and at least acknowledge that even incremental emissions, when understood in the proper context and relative to the intensity of climate change, may be significant—information critical to assess the propriety of allowing coal operations to continue beyond 2016. DEIS at 4.18-36. Moreover, this failure to take a hard look at impacts, versus just quantifying emissions then dismissing such emissions as "relatively small," underscores OSM absolute failure to "modify, or add alternative to avoid, minimize, or mitigate significant cumulative effects." CEQ 1997 at 37; 40 C.F.R. § 1502.14. Moreover, even if it is reasonable to conclude that impacts are "relatively small," there are clearly "unresolved conflicts" concerning the mine and power plant complex compelling the consideration of alternatives that would eliminate or reduce GHG emissions. 42 U.S.C. § 4332(2)(E). As discussed below, OSM fails to include any alternatives, other than the required No Action alternative, that would reduce cumulative impacts to climate change.

307.141

OSM's analysis of cumulative impacts to public health is even more troublesome. Instead of considering the contribution of past, present, and reasonably foreseeable impacts to public health, OSM appears to consider only future effects of the Project, and within those impacts, only the impacts from deposition of toxics, and air pollution. DEIS at 4.18-53-54. Thus, OSM completely fails to consider impacts to public health due to water pollution, changes in climate, and other stressors. Instead, as CEQ recommends, OSM should establish a threshold of significance, and consider whether past impacts have already brought impacts close to that threshold:

307.142

Ideally, the analyst can identify a threshold beyond which change in the resource condition is detrimental. More often, the analyst must review the history of that resource and evaluate whether past degradation may place it near such a threshold. For example, the loss of 50% of historical wetlands within a watershed may indicate that further losses would significantly affect the capacity of the watershed to withstand floods. It is often the case that when a large proportion of a resource is lost, the system nears collapse as the surviving portion is pressed into service to perform more functions.

Response 307.140

OSMRE consistently describes and defines intensity and duration of effects in the Cumulative Effects analysis (i.e. negligible, minor, moderate, significant, short-term, long-term). The Cumulative Effects analysis draws on analysis and setting discussions from the individual resource categories. The text of Section 4.18 of the Draft EIS has been modified in order to more explicitly include the analyses presented in the specific resource sections. OSMRE closely abided by CEQ guidance for describing effects (40 CFR 1508.8) and significance (40 CFR 1508.27).

Response 307.141

Impacts from changes in FCPP GHG emissions and cumulative impacts from regional, national, and global GHG emissions are addressed in Master Response #5. With regard to alternatives, please see Master Responses #2 and #3.

Response 307.142

As discussed in Master Response #14, Baseline, past and present effects of the Navajo Mine and FCPP are generally captured as part of the existing environment and baseline. Furthermore, the existing cumulative environment took into account the past or ongoing operations of 63 projects. It is worth noting that there is no requirement/recommendation by CEQ, or the OSMRE NEPA Handbook, to assign thresholds of significance for assessing cumulative effects; therefore the Draft EIS did not. In regards to cumulative public health and safety issues, Draft EIS Section 4.17 (Health and Safety) includes a detailed analysis of the potential effects to human health from FCPP emissions, as well as discussion on the technical approach and human health risk models developed for the EIS, and references to other public health studies prepared for the area. The cumulative analysis used these project related effects and considered the integral effect when added to reasonably foreseeable future actions.

COMMENT #307

CEQ 1997 at 41. OSM's cumulative impacts analysis must include this sort of analysis for it to be meaningful. This, in turn, should be used to inform OSM's identification, consideration, and comparative evaluation of alternatives and mitigation measures. "unresolved conflicts" concerning the mine and power plant complex compelling the consideration of alternatives that would eliminate or reduce public health impacts. 42 U.S.C. §§ 4332(2)(C)(iii); 4332(2)(E); 40 C.F.R. § 1502.14. As we noted above, to perform this level of analysis, it is likely that OSM will need to perform a public health study given the significant period and extent of stressors to public health.

Furthermore, OSM cannot dismiss impacts as minor merely because "there would be no measureable change to ambient air quality compared to baseline conditions," or because "there would be a reduction in FCPP emissions as a result of compliance with EPA's BART rule." DEIS at 4.18-54. As noted above, a continuation of the status quo – in particular when the status quo involves continuous emissions of various types of pollution to the air, land, and water – does not necessarily equate to a finding of minor impacts.

For OSM's proposition to hold water, OSM must make several assumptions that are inherently flawed. First, it must assume that there is no difference between a power plant and mine that operate for fifty years and a power plant and mine that operate for seventy-five years. This argument has already been rejected. In a similar case, BLM claimed because the proposed action would not cause a change to existing operations, and therefore those operations did not need to be considered. *South Fork Band*, 588 F.3d at 725-26. The court rejected that idea, stating: "the mine expansion will create ten additional years of such transportation that is, ten years of environmental impacts that would not be present in the no-action scenario." *Id.* at 725. As such, the court held that BLM's attempt to avoid addressing the direct, indirect, and cumulative impacts was inconsistent with NEPA's mandates. *Id.* Here too, even if the Project will not change existing operations, it will allow for continued operation of the mine and power plant, and thus allow for additional pollution – with attendant impacts to public health – for the life of the project.

Second, to reach its finding that impacts will be minor, OSM must also assume that past impacts do not exist; OSM must look at incremental impacts without considering those impacts "when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. § 1508.7. Considering impacts out of context, however, misses the point of a cumulative impacts analysis. "[E]ven a slight increase in adverse conditions that form an existing environmental milieu may sometimes threaten harm that is significant. One more factory . . . may represent the straw that breaks the back of the environmental camel." *Grand Canyon Trust*, 290 F.3d at 342 (quoting *Hanly v. Kleindienst*, 471 F.2d 823, 831 (2d Cir. 1972)).

The cursory analysis of cumulative impacts the EIS did provide is also, on its face, inadequate, providing only a "perfunctory" analysis that does not "provide a useful analysis of the cumulative impacts of past, present, and future projects." *Te-Moak*, 608 F.3d at 603-08 ("A cumulative impact analysis must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects." (internal citations omitted)). The

Response 307.143

Ambient air quality meets all federal NAAQS, emissions from FCPP would be reduced and would not contribute to exceedance of NAAQS; therefore, impacts would be minor.

Response 307.144

The Draft EIS is transparent in its disclosure of effects and offers a comparison of effects between alternatives in Table ES-11. The Draft EIS includes three different temporal periods (i.e. historical, baseline/existing, and future) in describing potential effects. The Draft EIS discusses in detail the potential effects resulting from another 25 years of operation and quantifies effects, where feasible, of continued operations.

Response 307.145

As discussed in Master Response #14, Baseline, past and present effects of the Navajo Mine and FCPP are generally captured as part of the existing environment and baseline. Furthermore, the existing cumulative environment took into account the past or ongoing operations of 63 projects. As provided in Section 4.18, the technical approach for assessing cumulative effects is derived from CEQ and EPA guidance. Potential incremental effects to the cumulative environment from project related actions are discussed for each resource area in Section 4.18.

Response 307.146

In the Draft EIS, OSMRE properly considers the cumulative impacts of the Proposed Action and alternatives "when added to other past, present, and reasonably foreseeable future actions." 40 C.F.R. § 1508.7. The Draft EIS uses reasonable temporal and spatial criteria to select the actions for inclusion in the cumulative effects analysis, screening them against the criteria to be included in that analysis. See Draft EIS at Table 4.18-1. An action meets the spatial criteria if it could have an environmental effect in the same region of influence as the Proposed Action for each resource category. *Id.* at 4.18-2. An action

meets the temporal criteria for inclusion in the Draft EIS's cumulative impacts analysis if it has already occurred, is ongoing, or is reasonably foreseeable within the Proposed Action's timeframe, extending until 2041 plus the reclamation period for the Pinabete permit. *Id.* The Draft EIS explains the rationale for excluding approximately a dozen projects from the cumulative effects analysis because they do not meet the parameters of a "cumulative impact" under NEPA. See *id.* at Table 4.18-1. The Draft EIS reasonably concludes that certain projects are not reasonably foreseeable because an evaluation of those projects would be entirely speculative, and, therefore, would not constitute cumulative impacts, as defined for NEPA purposes. See, e.g., *id.* at 4.18-5, 4.18-7. "[C]umulative impacts that are too speculative or hypothetical to meaningfully contribute to NEPA's goals of public disclosure and informed decision-making need not be considered." See *Wyoming v. U.S. Dep't of Agriculture*, 661 F.3d 1209, 1253 (10th Cir. 2011). For instance, OSMRE determined that several proposed projects and suspended projects are not reasonably foreseeable because project details are not yet sufficiently defined. See, e.g., Draft EIS at 4.18-5, 4.18-30. Therefore, the potential impacts are too speculative to meaningfully contribute to NEPA's goals of public disclosure and informed decision-making, and need not be considered, consistent with Tenth Circuit precedent. See *Wyoming v. U.S. Department of Agriculture*, 661 F.3d at 1253.

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cumulative impacts section provided in the DEIS fails to provide a useful analysis of the cumulative impacts, and must be supplemented. ↑

F. OSM Has Failed To Adequately Consider Reasonable Alternatives To The Proposed Action

An EIS's alternatives section should be "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. This section should present alternatives in "comparative form" so that the issues are "sharply defin[ed]" and there is "a clear basis for choice among options by the decisionmaker and the public." *Id.*; see also *Westlands Water Dist. v. U.S. Dept. of Interior*, 376 F.3d 853, 872 (9th Cir. 2004) (quoting *California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982) (The "touchstone" of the alternatives analysis is "whether [the] selection and discussion of alternatives fosters informed decision-making and informed public participation."). OSM's treatment of alternatives fails to provide this clarity; the similarity of the alternatives forecloses the possibility that their comparison will define the issues or provide a clear basis for choice. Although the No Action alternative normally would help to ameliorate this flaw, OSM muddles the situation even more by failing to analyze the No Action alternative in the same way as it discusses the action alternatives. These deficiencies are exacerbated by OSM's failure to take a hard look at direct, indirect, and cumulative impacts—in particular relative to the context and intensity of not only the projected 25 years of continued coal mining, coal combustion, and coal ash disposal operations, but relative to the context and intensity of the prior 50 years of coal activity.

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307.149

OSM must consider "alternatives to the proposed action," and "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. §§ 4332(2)(C)(iii), 4332(2)(E). OSM must "[r]igorously explore and objectively evaluate all reasonable alternatives" and must "[i]nclude the alternative of no action." 40 C.F.R. §§ 1502.14(a), (d).

As an initial matter, OSM failed to ensure that the No Action alternative served its purpose to illustrate the impacts of the Proposed Action as compared to a No Action alternative. As the Ninth Circuit has explained:

The goal of the statute is to ensure "that federal agencies infuse in project planning a thorough consideration of environmental values." The consideration of alternatives requirement furthers that goal by guaranteeing that agency decisionmakers "[have] before [them] and take [] into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance."

307.150

Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228 (9th Cir. 1988) (citations omitted). "Informed and meaningful consideration of alternatives-including the no action alternative-is thus an integral part of the statutory scheme." *Id.* (emphasis added).

Response 307.147

OSMRE considered a range of alternatives to carry forward for detailed analysis in Section 3.2 that included a reasonable range of alternatives viewed as meeting the selection criteria described in Section 3.1. Section 3.3 discussed other alternatives that were considered during project development and through the scoping process (conversion of FCPP to non-coal fired energy options; solar thermal/ coal hybrid; carbon capture and storage; alternative mining techniques; and off-site coal supply). OSMRE's evaluation of the alternatives discussed in Section 3.3 determined that they did not meet all of the selection criteria, and based on this evaluation, OSMRE did not carry these alternatives forward for detailed analysis in the Draft EIS.

Response 307.148

Per 40 CFR Part 1502.14(d) OSMRE carried forward the No Action alternative for detailed analysis in the Draft EIS along with 4 action alternatives. Under the No Action alternative, the following actions were analyzed:

- OSMRE would deny the SMCRA permit for the Pinabete Permit Area
- OSMRE would not renew the SMCRA permit for the Navajo Mine Permit Area
- BIA would not approve the lease amendment for the FCPP
- BIA would not approve the realignment of Burnham Road
- BIA and/or BLM would not renew the leases for the four subject transmission line ROWs
- All other agency approvals described under the action alternatives would not occur

Response 307.149

Please see Master Response #1. OSMRE closely abided by CEQ and the OSMRE NEPA Handbook in framing direct, indirect, and cumulative effects. With specific reference to taking a hard look at past and ongoing operations, please see Master Comment #6 Baseline.

Response 307.150

OSMRE analyzed a no action alternative at an equivalent level of detail to the other action alternatives, and there is a comparative analysis of the alternatives, including no action, in the Draft EIS. However, the No Action alternative does not represent the environmental baseline for the impact analysis, as discussed in detail in Section 4.0, Approach to Environmental Analysis. OSMRE compared the effects of the No Action and the Action alternatives to the environmental baseline as defined in Section 4.

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However, throughout the DEIS, OSM fails to use the No Action alternative to analyze impacts in comparative form. Instead, OSM downplays benefits of the No Action alternative and highlights the negative consequences of the No Action alternative that would actually be common to all alternatives. For example, in the discussion of air quality impacts, the DEIS lists emissions under the No Action alternative for years 2014 and 2015 when under any alternative the mine and power plant would continue operations, instead of discussing the benefits of reduced emissions in future years, other than a limited discussion of ozone. DEIS at 4.1-104. OSM's analysis of the No Action alternative for climate change is similar. DEIS at 4.2-23-24. Even more egregiously, OSM highlights impacts to paleontological resources that would occur with the No Action alternative, but again, these impacts would occur with any alternative and thus should be discussed accordingly. DEIS at 4.3-27. Similarly, OSM fails to consider or analyze the benefits of the No Action alternative and shutdown of FCPP with regard to deposition of heavy metals: "since the FCPP is only one of a number of power plants in the area, potential metal uptake by plants would not be eliminated and it is unknown if any beneficial impacts to vegetation would occur as a result of FCPP shutdown." DEIS at 4.6-21. This argument is odd given the weight OSM places, elsewhere, on the reduced magnitude of impacts of post-2016 operations given the retirement of units 1-3. In short, OSM seems to want to downplay the benefits of the No Action alternative as much as it wants to downplay the costs of the Proposed Action. This type of analysis is directly contrary to NEPA's goal that alternatives – including the no action alternative – sharply define the issues and present a comparison of costs and benefits of choices. 40 C.F.R. § 1502.14. "Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made." 40 C.F.R. §1502.2(g).

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307.154

OSM also fails to consider reasonable alternatives. The Conservation Groups' scoping comments included several alternatives for consideration in the DEIS:

- (1) An alternative that considers retirement of units 1-3 as anticipated, and retirement of units 4-5 by 2027. As a result of this earlier retirement date, this alternative would exclude the Pinabete Expansion, and instead would consider winding down operations at the Navajo Mine. This alternative would need to fully assess liabilities of FCPP/Navajo Mine/Transmission corridors and initiate an economic development scenario that the U.S. Department of the Interior should facilitate, in the role of trust responsibility oversight. This alternative would also require analysis of the significant reclamation/restoration required at the project site with financial assurance mechanisms for owners/operators.
- (2) An alternative that considers the impacts of all potential retirement scenarios the Four Corners, including installation of Selective Catalytic Reduction on units 4 and 5, early retirement of unit 4, and early retirement of units 4 and 5.
- (3) Proposed Action analysis of the 1,500 MW FCPP/Navajo Mine Expansion/Transmission Corridor renewal 2016-2041, which requires full analysis of liabilities incurred by all owners of facilities and contractual/leasing obligations covering future operations/liabilities and financial assurance mechanisms (for example, for CCW).
- (4) Transitioning the proposed action facilities to development of economic opportunities for

307.155

Response 307.151

OSMRE analyzed a no action alternative at an equivalent level of detail to the other action alternatives, and there is a comparative analysis of the alternatives, including no action, in the Draft EIS. The Air Quality consequences of the No Action Alternative has been revised as follows:

"Under the No Action alternative, criteria emissions would continue through 2015 until the FCPP shuts down; after this time, stack emissions would cease."

This meaning was implied by the statement, but the modification makes this more clear. Furthermore, in section 4.2.4.5 the Draft EIS clearly states that GHG emissions would cease after 2016.

Response 307.152

The text has been revised for each action alternative to include localities 30 and 42.

Response 307.153

Section 4.6.4.5 states that "FCPP shutdown would eliminate deposition of air emissions from the power plant, which would reduce potentially adverse indirect effects of mercury and selenium and other metal uptake by plants in the ROI over the long term." This is the sentence directly before the one referenced in the comment and clearly acknowledges the beneficial effect of reducing the deposition mercury and selenium in the region. The uncertainty in this conclusion stems from the technical difficulty in allocating a proportion of responsibility to specific emission sources.

Response 307.154

40 CFR 1502.14 states that an EIS “should present the environmental impacts of the proposal and the alternatives in a comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-makers and public.” Table ES-11 provides a comparison of effects for each alternative; thus, providing a clear comparison of the issues and effects. Furthermore, each alternative underwent an equal level of analysis, where technical frameworks were uniformly applied to the alternatives.

Response 307.155

See Master Comment #2, Renewable Energy Alternatives and Master Comment #3, Alternatives with Shorter Lease Terms.

COMMENT #307

Navajo Nation and region, including potential for manufacturing and incorporating renewable energy opportunities on the FCPP Lease and Navajo Mine sites. This alternative would acknowledge the U.S. Department of the Interior's obligation to assist the region in identifying that the 50-year historic legacy of the FCPP/Navajo Mine/Transmission Corridors projects will come to end at some point, but, at any rate, within the next 25 years. In preparation for this inevitable transition, the EIS provides the appropriate template to analyze and incorporate diverse agency expertise necessary to develop and evaluate these transition opportunities. This alternative would also account for fair market value of the contractual costs of coal, water, land, royalties, and leasing, which have historically been low, abetting coal development at the expense of resource damages and human public health problems in the region.

(5) Analysis of different alternatives for the disposal of coal combustion waste ("CCW"), including alternatives for storage at FCPP, permanent disposal at FCPP, and/or disposal off-site. This analysis must include specifics about how CCW will be handled, and what the storage and/or disposal facilities will look like, with details about pond and/or landfill liners, transportation to facilities, dust suppression techniques and alternatives, water and air monitoring, impacts of the various alternatives, and cumulative impacts of the alternatives. This analysis also must include examination of the legal authority for the various storage and/or disposal options.

(6) Alternatives at the Navajo Mine, including an alternative that includes no expansion at the mine, or allowing only the expansion of Area IV North, but not the Pinabete Expansion. This alternative should consider the amounts of coal available to FCPP and whether alternate sources of coal would be needed for various scenarios at FCPP.²⁰⁰

OSM failed to consider these reasonable alternatives, or really any alternatives that deviated from "business as usual." The only alternative considered for FCPP was a slight reduction of the size of the coal ash disposal area from 385 acres to 350 acres. DEIS at ES-xvii. Other than this insignificant change, no other alternative was considered other than the mandated "no action alternative." For Navajo Mine, the only alternatives included were slight variations to continued mining. DEIS at ES-xv-xvi. By failing to consider any significant alternative to "business as usual" at the FCPP, the DEIS fails to comply with the purpose of the Act—namely to consider alternatives to the proposed action.

Moreover, a recent FERC ruling prohibited a contractual sale of Southern California's transmission rights to Arizona Public Service related to the Four Corners Power Plant.²⁰¹

²⁰⁰ Conservation Groups' Scoping Comments at 23-24.

²⁰¹ Federal Energy Regulatory Commission, Order Rejecting Agreement and Tariff, Southern California Edison Company, 146 FERC 61,136, Docket No. ER14-897-000 (Feb. 27, 2014) (attached as Exhibit 70); see also *FERC Shoots Down SCE Plan to Transfer Ariz. Transmission Rights to APS*, Energy Prospect (March 18, 2014) (attached as Exhibit 71).

Response 307.156

Please see Master Comment #13 for a discussion on the effects of regulation on the price of electricity. It is difficult to discern the connection between the potential use of the transmission line capacity formerly used by Southern California Edison to deliver FCPP-generated power to its service territory and the screening criteria for the selection of alternatives (i.e. renewable energy generation); therefore, OSMRE does not change its decision that renewable energy generation would not meet the purpose and need of the EIS.

307.156

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Instead, FERC ruled that such transmission rights must be subject to open access bidding. The DEIS is deficient for failing to consider the impacts of this FERC decision, including:

- The economic impact the FERC decision on operation of FCPP and the transmission of electricity.
- Whether the FERC decision alters OSM's conclusion that renewable energy alternatives are not economic at the FCPP.

The DEIS should have considered the Conservation Groups' recommended alternatives, or similar alternatives that considered accelerated retirement schedules, increased use of energy efficiency and renewable energy, storage of CCW off-site and other related alternatives. Not only are these alternatives reasonable and even wiser courses of action, their consideration would be consistent with NEPA's requirement that alternatives "sharply define" the issues, and provide a "clear basis for choice" for decision-makers and the public. 40 C.F.R. § 1502.14.

Although the scope of "reasonable alternatives" is delimited by the purpose and need statement articulated by that agency, that statement cannot "define the agency's objectives in unreasonably narrow terms." See *Ilio 'loakalani Coal. v. Rumsfeld*, 464 F.3d 1083, 1098, n.5 (9th Cir. 2006). Conservation Groups thus requested that OSM "test the assumption that 'ongoing operations' at these facilities best 'provide for long-term, reliable, continuous and uninterrupted base load electrical power' relative to a range of renewable energy alternatives and balance that assumption against the agency's obligation to protect the environment and, in particular, account for climate change."²⁰² Instead, OSM dismisses the alternatives from the DEIS with conclusory and unsupported assertions that they are not feasible. DEIS at 3-48-56.

"The existence of reasonable but unexamined alternatives renders a [NEPA analysis] inadequate." *Friends of Southeast's Future v. Morrison*, 153 F.3d 1059, 1065 (9th Cir. 1998) (citation omitted). The DEIS must be rewritten to include the reasonable alternatives discussed above.

G. OSM Failed To Guarantee That Relevant Information Is Available To The Public By Failing To Prepare An Adequate DEIS, By Failing To Provide Adequate Opportunity For Public Comment, And By Failing To Allow For Meaningful Public Participation In Public Meetings.

NEPA requires that OSM "make diligent efforts to involve the public in preparing and implementing their NEPA procedures." 40 C.F.R. § 1506.6(a). Indeed, one of NEPA's twin goals is "to guarantee relevant information is available to the public." *NPRC*, 668 F.3d at 1072. OSM has failed to comply with its duties to inform and involve the public in numerous ways.

²⁰² Conservation Groups' Scoping Comments at 15-16.

Response 307.157

See Master Comment #2, Renewable Energy Alternatives and Master Comment #3, Alternatives with Shorter Lease Terms.

Response 307.158

The Draft EIS considered a wide range of alternatives, that included non-coal and renewable energy alternatives. These alternatives were evaluated from the perspective of technical and economic feasibility, as well ability to meet the purpose and need. An alternative that would not be implemented by the Applicants (due to feasibility or cost) would be functionally the same as the No Action alternative, as the Applicants would shut down operations. Thus alternatives that do not include mining of coal, or renewing the lease of a coal-fired power plant would essentially be the same as the No Action alternative. See also Master Response #2, Renewable Alternatives.

Response 307.159

See Master Comment #2, Renewable Energy Alternatives and Master Comment #3, Alternatives with Shorter Lease Terms.

Response 307.160

Section 1.5.1 provides information on the approach to Scoping that OSMRE employed. Nine scoping meetings were conducted throughout the region and a total of 539 comment letters were received via hard-copy, email, and transcript. Furthermore, OSMRE maintains a project website (<http://www.wrcc.osmre.gov/initiatives/fourCorners.shtm>) that is regularly updated with information on the EIS process. In addition, a summary video was produced in English, Navajo, and Hopi to convey the information in the EIS to non-English speakers, or to those wishing an alternate to reading the document. Please also see Master Response #9, Public Meeting Format.

COMMENT #307

First, as discussed in detail above, the DEIS fails to include adequate information about the Project's impacts to communities and the environment, and consequently has failed to ensure that the public even can be involved in the NEPA process in a meaningful and informed manner. 307.161

Second, OSM has failed to allow for sufficient time to comment on the DEIS. The DEIS itself is over 1500 pages. The references OSM uses to support it are thousands more pages of information. In addition to the length itself, the DEIS addresses numerous aspects of the Project, and a consideration of cumulative impacts in the area encompasses significantly more. Despite the complexity and length of the DEIS, OSM initially provided only a 60-day comment period, and then, after multiple requests,²⁰³ extended that only by 30 days.

To be clear, the Conservation Groups appreciate that OSM is analyzing these connected actions in one EIS; the actions analyzed are part of an interconnected project, and analyzing them separately disallows a cohesive look at the entire project. The consequence of such a large Project, however, is complexity that takes time to address, in particular for the public reviewing the DEIS for the first time and, until now, without OSM ever having provided analysis addressing the mine, power plant, and associated facilities in a single environmental review.

Instead of recognizing the magnitude of the task presented to the public and interested parties, and "mak[ing] diligent efforts to involve the public," 40 C.F.R. § 1506.6(a), and ensuring that the public had the time and resources to review the DEIS, OSM constrained ability of the public to participate by making participation a race against the clock. First, OSM allowed only a 60-day comment period. Even if members of the public and staff of the Conservation Groups could have dropped everything else to focus entirely on the DEIS, 60 days would have been an insufficient amount of time to review the DEIS, supporting documents, and draft meaningful comments. Recognizing the obvious fact that no one could focus so intensely, the time provided was entirely inadequate. 307.162

OSM pointed to the CEQ regulations as justification for the time provided, noting that CEQ regulations only required 45 days for public comment.²⁰⁴ CEQ regulations, however, are based on the idea that an EIS "shall normally be less than 150 pages and for proposals of unusual scope or complexity shall normally be less than 300 pages." 40 C.F.R. § 1502.7. Conservation Groups complaint is not that the EIS should have been shorter – indeed, as noted in these comments, Conservation Groups believe that critical information was missing from the DEIS. Rather, Conservation Groups note "normal" page limits to highlight that CEQ regulations anticipate a 45-day comment period for an EIS of 300 pages or less. By that logic, the Project DEIS, which spans over 1500 pages, or 5 times what CEQ regulations project, deserves a comment period 5 times the normal public comment period, or 225 days. Conservation Groups requested only an

²⁰³ Letter from Conservation Group Request to Marcelo Calle, OSM RE: Request for Extension of Comment Deadline for Four Corners-Navajo Mine Draft Environmental Impact Statement (April 7, 2014) (attached as Exhibit 60).

²⁰⁴ Letter from Marcelo Calle, OSM, to Megan Anderson, Western Environmental Law Center (April 10, 2014) (attached as Exhibit 61).

Response 307.161

The Draft EIS gathered and utilized the best available information in characterizing the existing environment and assessing effects. Where site specific and/or recent data was not available, field work was performed to gather qualified data. Furthermore, please see Section 1.5.1 for information on the exhaustive approach to Scoping that OSMRE employed. Nine scoping meetings were conducted throughout the region and a total of 539 comments were received via hard-copy, email, and transcript. Many of the meeting attendees and commenters were local residents of the Navajo Nation and surrounding communities.

Response 307.162

Please see Master Comment #8, Public Review Period.

COMMENT #307

additional 60 days, for a total of 120 days, but even that was finally limited only to 90 days by OSM.

Furthermore, the limited extension finally granted by OSM came, once again, at the last minute. Conservation Groups sent their request for an extension to OSM on April 7, 2014, just 10 days after OSM released the DEIS. Instead of making a timely decision on the request, OSM strung everyone along, noting that it was considering the request and would make a final decision until after the public meetings, or after May 9, 2014.²⁰⁵ OSM did not actually grant the limited extension until May 16, 2014 – over a month after Conservation Groups’ request, and only seven business days before the original deadline. 79 Fed. Reg. 28549 (May 16, 2014). OSM made a similar last-minute response to an extension request for the scoping comments, granting a limited extension to that request only six business days before the deadline, and again over a month after Conservation Groups’ request. These delayed responses have been completely inadequate in ensuring that the public can participate fully in the process and suggest gamesmanship by OSM to undermine effective public involvement. Without knowing whether the deadline will be granted, the public must rush to complete comments in the original time provided, rearranging schedules, and pushing other obligations back. Although the extensions are ultimately helpful, their efficacy is limited by OSM’s last-minute decisions. Moreover, OSM has not provided, nor can Conservation Groups think of a reason, why OSM would need to postpone its decision on these reasonable requests. OSM’s responsibility as lead agency of the DEIS is to provide for meaningful public involvement, rather than fast-tracking a schedule driven analysis, and leveraging its power as a federal agency to ultimately weaken the ability of the public to participate effectively in this decision-making process – action that only reduces the agency’s credibility as an objective agency faithfully implementing and complying with its legal responsibilities, in particular relative to the broad public, rather than the project proponent. 40 C.F.R. § 1506.6.

Third, the open house format for the nine public meetings (April 30-May 9, 2014) for the DEIS was deficient. OSM opted for resource stations manned primarily with third party consultants with some of the Cooperating Agency personnel available (however, EPA and Navajo EPA were absent from all meetings). The absence of Federal agencies with technical expertise (primarily EPA), and the failure of OSM to include NOAA and USGS as Cooperating Agencies, marginalized the open house meetings. At the Public Meetings, the contractors (Cardno) claimed that they have been constrained by the idea that GHGs are not currently regulated and, as writers of the DEIS to be adopted by OSM and Cooperating agencies, they cannot assert regulatory authority.²⁰⁶ Mr. Tormey pointed members of Conservation Groups towards EPA to answer our questions on climate change, but EPA unfortunately did not attend any of the Public Meetings on the DEIS. Moreover, OSM cannot consciously or legally allow this DEIS to circumvent climate change impact and/or mitigation. In addition, Navajo EPA was not at any of

²⁰⁵ See, e.g., *id.*; Letter from Marcelo Calle to Colleen Cooley, Diné C.A.R.E. (April 28, 2014) (attached as Exhibit 62).

²⁰⁶ Personal communication, Mike Eisenfeld SJCA with Dan Tormey, Project Manager for DEIS, Cardno, Public Meeting, Durango, Colorado, May 3, 2014.

Response 307.163

Please see Master Response #9, Public Meeting Format.

Response 307.164

Federal agencies that will issue a decision/permit or are providing technical support to OSMRE to develop the EIS are involved as Cooperating Agencies (see Section 1.4.2). NOAA and USGS do not meet these criteria. OSMRE, BIA, USACE, Navajo Nation EPA, had staff members at the scoping meetings. Each alternative, resource area, Agency decision was represented by either a federal agency employee or a contractor assisting DOI in the preparation of the EIS. In regards to GHG regulation, EPA does not currently regulate GHG emissions and therefore, there is no established regulatory framework to apply to this issue. Dr. Tormey told the questioner that the authors of the Draft EIS do not have the authority to develop GHG rulemaking in advance of EPA action on the matter. However, GHG emissions and global climate change is discussed in detail in Section 4.2. EPA issued its Final Rule (August 2012) on the Federal Implementation Plan for BART at FCPP. While EPA is the administering agency for the Clean Air Act, EPA effectively already issued its decision regarding Clean Air Act compliance in the Federal Implementation Plan. Therefore, the Federal Implementation Plan is considered as part of the baseline since it is already being implemented (i.e. shutdown of Units 1-3) and as the lead agency, OSMRE was well informed and prepared to discuss the Federal Implementation Plan and its role in the Draft EIS.

Response 307.165

OSMRE, BIA, USACE, the Navajo Nation EPA, had staff members at the scoping meetings and public review meetings. Each alternative, resource area, Agency decision was represented by either a federal agency employee or a contractor assisting DOI in the preparation of the EIS. In regards to the statement of Dr. Tormey, he referred the questioner to the EPA regarding their jurisdiction over the development of GHG regulation, not regarding questions on the climate change analysis in the Draft EIS. GHG regulation, EPA does not currently

regulate GHG emissions and therefore, there is no established regulatory framework to apply to this issue. OSMRE does not avoid discussing GHG emissions or climate change, as Section 4.2 provides a comprehensive discussion of these exact issues.

COMMENT #307

the nine Public Meetings. As a result, many questions went unanswered. Similarly, OSM, BIA, and the contractors were unable to adequately respond to questions concerning Indian Trust assets, financial issues, due diligence, and bonding. Cardno erroneously claimed that this analysis covered in the Navajo Mine Transfer EA.

The open house format was not conducive for the public to obtain relevant information, as the third party consultants were imprecise, vague, quick to minimize impacts, and quick to point out their limitations in deferral to agency actions and regulations. The format of public meetings was intimidating to the public. The open house format restricted the value of public hearings where communities can increase knowledge of the issues by listening to diverse vantage points. Although OSM had personnel to record comments in the corner of the meeting rooms, no effort was made by OSM to document individual questions/comments presented to consultants/agency personnel, or answers provided, at any of the public meetings.²⁰⁷

The open house format was particularly daunting for non-English speaking members of the public. On May 30, 2014, Diné C.A.R.E. filed a formal complaint with OSM. The complaint states the following:

On behalf of the Diné people, Diné Citizens Against Ruining Our Environment (Diné C.A.R.E.) is filing a complaint on the process of the Four Corners Power Plant/Navajo Mine Environmental Impact Statement (EIS) public meetings that occurred between April 30-May 9, 2014. We are filing this complaint because it is an environmental justice issue and a serious concern to the Diné people.

The EIS public meetings that were hosted by the Office of Surface Mining Reclamation & Enforcement (OSM) was conducted in a poster style format, which was unfamiliar to the Diné public who are used to an open-mic forum seen at Chapter meetings, Council meetings, and other meetings/forums across the Navajo Nation. This EIS process was intimidating and inadequate as there were 20+ OSM staff and third-party consultants, mostly English-speaking individuals standing next to 20+ poster boards. This format was confusing for the Diné people to fully comprehend, especially for the non-English speaking community members. Some experienced harassment, racial profiling, and intimidation by the OSM staff and consultants during these meetings.

Attached are several reports by Diné community members portraying their experiences at the EIS public meetings. In addition, Diné C.A.R.E. is awaiting a response from your office on whether OSM can host two additional hearings on the Navajo Nation before the June 27th comment period deadline for the Draft EIS.

We hope the Diné people's concerns are taken with careful and serious

²⁰⁷ See, e.g., Video of Public Meeting (available at: <https://www.youtube.com/watch?v=TZcDBZsON94> (last accessed June 26, 2014)).

Response 307.166

Please see Master Response #8.

Response 307.167

Please see Master Response #9, Public Meeting Format.

Response 307.168

Please see Master Response #9, Public Meeting Format and Master Response #10, Translation of the EIS.

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consideration.²⁰⁸



The May 30, 2014 letter from Diné C.A.R.E. mentions attached reports from Diné community members relating their experiences at the public meetings.²⁰⁹ The Reports by Diné Community Members at the EIS Public Meetings were included in the May 30, 2014 complaint letter to OSM and relate experiences of Diné citizens concerning cultural insensitivity, harassment, profiling and a general tone of disdain for many of the questions asked by the public at the meetings. Despite Diné C.A.R.E.'s documentation, OSM denied Diné C.A.R.E.'s request for the two additional meetings on June 20, 2014, and refuted any cultural insensitivity, harassment, racial profiling and/or intimidation claims:

In your May 30, 2014, letter of complaint with attached reports by community members you allege Dine community members experienced "...harassment, racial profiling, and intimidation by OSM staff and consultants..." during public meetings hosted by OSM. For your information all agency representatives and consultants attending the meetings have completed public communication training and were instructed to interact with the public in a professional and culturally sensitive manner. OSM regrets that statements or actions of agency and consultant personnel were misinterpreted by members of the community, but based on OSM's observations and participation at the meetings, and internal discussions afterwards, OSM does not agree that agency representatives and consultants attending the meetings acted in an unprofessional or culturally insensitive manner as you allege. To date, OSM has not received any other complaints of this nature.²¹⁰

OSM's response does not address Diné C.A.R.E.'s or Conservation Groups' concerns. As iterated in Diné C.A.R.E.'s complaint letter, the Diné people are used to an open-microphone forum primarily used in Chapter meetings and community meetings across the Navajo Nation. Thus, OSM's assertion that an open house format is sufficient due to people's fear of public speaking is not an adequate response.

307.169

²⁰⁸ Letter from Diné C.A.R.E. to Marcelo Calle, Department of the Interior, OSM (May 30, 2014) (attached as Exhibit 63); *see also* Letter from Diné C.A.R.E to Jared Blumenfeld EPA Region 9 Administrator Re. Office of Surface Mining EIS Public Meetings (May 20,2014) (attached as Exhibit 64).

²⁰⁹ Reports by Diné Community Members at the EIS Public Meetings, Attachment to Letter from Diné C.A.R.E. to Marcelo Calle, Department of the Interior, OSM, May 30, 2014 (attached as Exhibit 65); *see also* Diné C.A.R.E. Press Release: *"Inadequate and Intimidating" Navajo community members speak up for limiting Navajo public input on a Four Corners EIS that's severely deficient on health, renewables, climate, and environmental justice* (May 8, 2014) (attached as Exhibit 66).

²¹⁰ Letter from Rick Williamson, Manager, United States Department of the Interior, Indian Program Branch, Office of Surface Mining Reclamation & Enforcement to Dine Citizens Against Ruining Our Environment, NM-0042-A-S-01, June 20, 2014 (attached as Exhibit 67).

Response 307.169

Please see Master Response #9, Public Meeting Format.

COMMENT #307

OSM's cursory denial regarding the Diné community members' complaints about the unprofessional manner in which they acted at the EIS public meetings is also disappointing. On behalf of the Diné people, Diné C.A.R.E. filed a formal complaint to OSMRE by organizing and compiling the community members' experiences into one document, which was attached with the complaint letter.²¹¹ Thus, for OSM to say that they "have not received any other complaints of this nature" is misleading because the attachment of eight community members' experiences were provided. OSM's response that they did not receive other complaints of this nature is therefore inaccurate. Further, a Diné community member who attended the Navajo Mine/FCPP EIS hearings alone may not know the process of filing a formal complaint.

307.170

Tellingly, however, a similar process is happening with the Kayenta Mine/Navajo Generating Station (NGS) EIS Scoping Hearings. Several community members have attended the scoping hearings in the last two weeks and a similar open house format was displayed. Concerns from two Diné community members about this format and requests to change this format to a public hearing format were discussed in a meeting between concerned Diné community members and BIA's Regional Director, Sharon Pinto on June 23, 2014. Ms. Pinto stated she would call the OSM office and request for a public hearing format at the remaining Kayenta Mine/NGS EIS scoping meetings.

Our hope is that in the future, the concerns expressed by Diné community members will be taken more seriously. The open house format and denial of unprofessionalism continues to illustrate OSM's disregard for the Diné people because it seems Diné people are portrayed as misinformed, unaware of our rights to speak and file a complaint, and fear of public speaking. Ultimately this conduct presents an issue of environmental justice as it seems that OSM is abandoning its duties to ensure "effective community participation in the NEPA process." DEIS at 4.11-1 (citing BIA NEPA Handbook). Moreover, OSM's dismissal of these concerns, and failure to provide adequate opportunities for participation from Diné community members violates the principles of free, prior, and informed consent. See DEIS at 4.11-3 (quoting the EPA National Environmental Justice Advisory Council, *Fostering Environmental Justice for Tribes and Indigenous People* (Jan. 15, 2013) and *United Nations Declaration on the Rights of Indigenous Peoples*).

307.171

Other community members had similar experiences. San Juan Citizens Alliance's Executive Director discussed his experience at the Durango public meeting on May 3, 2014, in a column for the Durango Herald:

The majority of the dialogue in the room transpired between community members and consultants one-on-one with no record of objections raised or concerns aired. Yes – there was a courtroom recorder hidden in a corner should someone like to lodge formal comments. That poor soul was by far the loneliest person in the room. With all of the venting going on in private dialogues, most of the exchanges went unrecorded – off the record. Effectively, the public was not heard. Well-intentioned though they were – citizens were talking to a wall that pretended to

307.172

²¹¹ See Exhibit 64.

Response 307.170

OSMRE categorically denies inappropriate behavior of its staff or any participating project personnel. All personnel participating in the scoping and Draft EIS public comment meetings partook in training sessions on cultural sensitivity and public engagement. These training sessions were focused on making all people feel welcome and comfortable, so that attendees would feel free to ask questions and develop informed comments.

All OSMRE representatives acted in a professional manner at all times during the public meetings. No accusations were made to anyone at any time. The OSMRE representatives were particularly accommodating to the Diné Care representatives who set up a table at the various public meetings. No change to the Draft EIS.

Response 307.171

Please see Master Response #9, Public Meeting Format and Master Response #10, Translation of the EIS.

Response 307.172

Please See 307.175, and Master comment # 6, Public Meeting Format.

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care, emptying their concerns into hollow vessels that would be tossed aside en route to the next “public meeting.”

The wonderful thing about government malfeasance these days is how subtle it has become. After years of learning that breaking skulls is a bad long-term strategy for advancing political goals, political disenfranchisement went and got all grown up. If you participated in the “public meeting,” you probably feel that you were heard. And you probably weren’t, not in a way that matters. How sophisticated. So to my much-maligned tea party brethren – I concede that you are absolutely right to be mad. Sometimes, the government really doesn’t care what you or I think.

The question, though, becomes: What do we do with our disappointment in obviously, if not purposefully, flawed government processes? And this is where my fleeting dalliance with the tea party begins to sour. The answer, in my humble opinion, is not to eviscerate government. It’s to own it. With rights comes responsibility. Democratic institutions are painfully, lovingly maintained – or lost – based on the public’s acceptance of responsibility for their stewardship. I don’t want the DOI to go away. I want the people who work there to care about public input and best available science.²¹²

In sum, instead of presenting a forum for community discussion of the Project, the public meetings were marginalized. It appeared that the OSM and the DEIS contractors had convinced themselves that the reduction in emissions as a result of the BART determination and closing of the three older units at FCPP (560 MW) should satisfy the public, thus cutting off additional discussion about other concerns or alternatives. The Conservation Groups request that the DEIS be re-issued and that additional public meetings be held on the amended DEIS that allow for an open and informed public discussion of the Project.

IV. CONCLUSION

For the reasons discussed above, the DEIS prepared by OSM is deficient, and must be redone. As noted above, we ask OSM and the Cooperating Agencies to correct the inadequacies in the DEIS’s analysis of impacts, and to provide consideration of additional alternatives, including alternatives that include transition away from continued operation of Navajo Mine and FCPP. Once OSM and the Cooperating Agencies have made the necessary corrections, we request that OSM and the Cooperating Agencies re-issue the DEIS for public comment. It is only when these deficiencies are corrected, the impacts and costs of the plant are properly assessed, and appropriate alternatives considered, that OSM and the Cooperating Agencies will have a rational basis for making any decision regarding the mine and plant. Further, it is our sense that a robust analysis may demonstrate that the continued operation of the FCPP and Navajo mine for an

²¹² Dan Olson, *We can’t allow government to ignore our voices*, Durango Herald, Thinking Green, May 15, 2014 (available at: <http://www.durangoherald.com/article/20140514/COLUMNISTS37/140519757/0/FRONTPAGE/We-can-t-allow-government-to-ignore-our-voices> (last accessed June 23, 2014)).

Response 307.173

Please see Master Response #9, Public Meeting Format.



307.173

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additional 25 years will result in significant environmental impacts that cannot be acceptably mitigated.

Sincerely,



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Senior Campaign Representative
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6/30/2014

DEPARTMENT OF THE INTERIOR Mail - In support of FCPPNavajoEnergyEIS

COMMENT #308



FCPP-Navajo-Energy-EIS, OSMI <osm-fcpp-navajo-energy-eis@osmre.gov>

In support of FCPPNavajoEnergyEIS

1 message

O.R.E. Systems Zane Galloway [REDACTED] Fri, Jun 27, 2014 at 12:10 PM
To: FCPPNavajoEnergyEIS@osmre.gov

I am supporting Alternative A for the Four Corners & Navajo Mine Energy Project. It makes good sense for the area.

Thank you

Zane Galloway

[REDACTED]
[REDACTED]

<https://mail.google.com/mail/tv/349/u/0/?ui=2&ik=6ac25a16cb&view=pt&search=inbox&th=146de85960cdfc2a&siml=146de85960cdfc2a>

1/1

Comment Letter 308.....Galloway, Z.

Response

Thank you for your comment.

COMMENT 309

Ramona Blaber [REDACTED]

From: Ramona Blaber [REDACTED]
Sent: Mon Jun 30 2014 06:15:21 GMT-0600 (MDT)
To: mcalle@osmre.gov
Subject: Comments for Four Corners-Navajo Mine DEIS

Hi Mr. Calle --

I apologize for directing responders to the Sierra Club action alert to your personal email address rather than fcppnavajoenergyeis@osmre.gov -- my mistake when I set up the alert. Please forward the responses to the correct address for Four Corners-Navajo Mine DEIS comments. Let me know if you have any question or need anything.

Thanks,
Mona Blaber
[REDACTED]

**Comment Letter 309.....Blaber, M.
Sierra Club Rio Grande Chapter**

Response
Thank you for your comment.

Sent: Sun Jun 29 2014 20:51:58 GMT-0600 (MDT)
To: mcalle@osmre.gov
Subject: Consider alternatives to 25 more years of coal
COMMENT 310 - 440

Jun 29, 2014

Marcelo Calle

Dear U.S. Office of Surface Mining, Calle,

I appreciate the recognition you are providing to the Four Corners area via the environmental impact statement you have issued, however the environmental impact statement does not give adequate coverage to the serious negative impacts to both the environment and the people of the region that are caused by both the Navajo Mine and the Four Corners Power Plant. 001

Under the current proposal, the Four Corners Power Plant would continue, because of its use of coal to pollute for 25 more years in a region that has long suffered the ill effects of dirty-energy extraction.

The Department of Interior is charged with assessing the full environmental, public-health and economic impacts of prolonging these coal operations and thoroughly investigating alternatives to prolonging coal production in light of rapidly shifting energy economics and the full scope of likely coal costs that loom.

I urge the Office of Surface Mining to require the consideration of additional alternatives, including alternatives for transition away from continued operation of Navajo Mine and Four Corners Power Plant. 002

After OSM has made these corrections, the Environmental Impact Statement should be reissued for public comment. Only when the impacts and costs of the plant are properly spelled out and appropriate alternatives are considered will OSM have a rational basis for making

Comment Letter 310–440..... Sierra Club Rio Grande Chapter
(see Section 3 for individual names representing this organization)

Response 001

Please see Master Response #1, Deficient Analysis.

Response 002

Please see Master Response #2, Renewable Energy Alternatives and Master Response #6, Reissuance of the Draft EIS.

COMMENT 310 - 440

any decision regarding the mine and plant.

The closure of the oldest three units and planned improvements to its two biggest units would still leave 80 percent of the Four Corners Power Plant pumping carbon and other pollutants far into the future, further delaying the necessary and urgent transition to cleaner-energy technologies.

Global warming poses a major threat to national security, our economy and water and food availability. Coal-fired power plants are the largest source of carbon emissions, the most significant human contribution to warming.

Approval of the mine expansion and 25 more years of coal at Four Corners Power Plant will stall for too long the significant reduction of greenhouse gases that scientists and the EPA tell us is necessary to avoid the most catastrophic effects of climate change.

Many residents of the Navajo Nation do not have electric power even as they suffer the health and safety consequences of living near two coal-fired power plants and a coal mine.

You have an opportunity to help the Navajo Nation and other Southwest communities reap the benefits of clean energy and break free of the destructive impacts of coal pollution. Significant clean-energy investment in the Four Corners would create new jobs for those displaced by scaled-back coal power.

Please consider forward-looking alternatives rather than risking the well-being of the Navajo Nation, the Four Corners region and the planet on the continued viability of coal for decades into the future.

003

Response 003

Thank you for your comment. A summary of the reduction in emissions as a result of the Federal Implementation Plan is provided in Table 4.1-28 of the Draft EIS. For clarification, shutdown of Units 1, 2, 3 reduced the overall electrical generation capacity of the FCPP by approximately 30%. The Federal Implementation Plan is considered as part of the baseline environmental setting in the EIS.

COMMENT 441

Regina Dello Russo [REDACTED]

From: Regina Dello Russo [REDACTED]
Sent: Sat Jun 28 2014 21:19:47 GMT-0600 (MDT)
To: mcalles@osmre.gov
Subject: Seriously consider alternatives to 25 more years of coal

Jun 28, 2014

Marcelo Calle

Dear U.S. Office of Surface Mining, Calle,

I would like to express my concern that the EIS your agency prepared doesn't acknowledge the national and international importance of the impacts to clean air, climate and our regional health from the Four Corners region's coal fired power plants.

The EIS needs to assess the full public-health, economic, and climate change impacts to these coal operations from the perspective of our nation's newly emphasized move to cleaner energy. Just allowing another 25 more years of dirty-energy extraction in a region does not constitute an environmental impact statement. 441.001

I urge the Office of Surface Mining to require the consideration of additional alternatives, including alternatives for transition away from continued operation of Navajo Mine and Four Corners Power Plant. 441.002

After OSM has made these corrections, the Environmental Impact Statement should be reissued for public comment. Only when the impacts and costs of the plant are properly spelled out and appropriate alternatives are considered will OSM have a rational basis for making any decision regarding the mine and plant.

The closure of the oldest three units and planned improvements to its two biggest units would still leave 80 percent of the Four Corners Power Plant pumping carbon and other pollutants far into the future, further delaying the necessary and urgent transition to cleaner-energy technologies. 441.003

Comment Letter 441..... Ello-Russo, R.

Response 441.001

Please see Master Response #1, Deficient Analysis.

Response 441.002

Please see Master Response #2, Renewable Energy Alternatives and Master Response #6, Reissuance of the Draft EIS.

Response 441.003

Thank you for your comment. A summary of the reduction in emissions as a result of the Federal Implementation Plan is provided in Table 4.1-28 of the Draft EIS. For clarification, shutdown of Units 1, 2, 3 reduced the overall electrical generation capacity of the FCPP by approximately 30%. The Federal Implementation Plan is considered as part of the baseline environmental setting in the EIS.

COMMENT 441

Global warming poses a major threat to national security, our economy and water and food availability. Coal-fired power plants are the largest source of carbon emissions, the most significant human contribution to warming.

Approval of the mine expansion and 25 more years of coal at Four Corners Power Plant will stall for too long the significant reduction of greenhouse gases that scientists and the EPA tell us is necessary to avoid the most catastrophic effects of climate change.

Many residents of the Navajo Nation do not have electric power even as they suffer the health and safety consequences of living near two coal-fired power plants and a coal mine.

You have an opportunity to help the Navajo Nation and other Southwest communities reap the benefits of clean energy and break free of the destructive impacts of coal pollution. Significant clean-energy investment in the Four Corners would create new jobs for those displaced by scaled-back coal power.

Please consider forward-looking alternatives rather than risking the well-being of the Navajo Nation, the Four Corners region and the planet on the continued viability of coal for decades into the future.

Sincerely,

Regina Dello Russo

A black rectangular redaction box covering the signature of Regina Dello Russo.

COMMENT 442

Tara Bloyd [REDACTED]

From: Tara Bloyd [REDACTED]
Sent: Sat Jun 28 2014 20:19:37 GMT-0600 (MDT)
To: mcalle@osmre.gov
Subject: We don't need 25 more years of coal!

Jun 28, 2014

Marcelo Calle

Dear U.S. Office of Surface Mining, Calle,

Thank you for recognizing the regional environmental impact of the Four Corners Power Plant and Navajo Mine operations on the Four Corners region by issuing an Environmental Impact Statement.

However, your agency's Environmental Impact Statement does not adequately address the power plant and mine's major negative impacts on our climate and on health in the Four Corners region. 442.001

Under the proposal, Four Corners Power Plant would continue to produce coal pollution for 25 more years in a region that has long suffered the ill effects of dirty-energy extraction.

The Department of Interior is charged with assessing the full environmental, public-health and economic impacts of prolonging these coal operations and thoroughly investigating alternatives to prolonging coal production in light of rapidly shifting energy economics and the full scope of likely coal costs that loom.

I urge the Office of Surface Mining to require the consideration of additional alternatives, including alternatives for transition away from continued operation of Navajo Mine and Four Corners Power Plant. 442.002

After OSM has made these corrections, the Environmental Impact Statement should be reissued for public comment. Only when the impacts and costs of the plant are properly spelled out and appropriate alternatives are considered will OSM have a rational basis for making

Comment Letter 442.....Bloyd, T.

Response 442.001

Please see Master Response #1, Deficient Analysis

Response 442.002

Please see Master Response #2, Renewable Energy Alternatives and Master Response #6, Reissuance of the Draft EIS.

COMMENT 442

any decision regarding the mine and plant.

The closure of the oldest three units and planned improvements to its two biggest units would still leave 80 percent of the Four Corners Power Plant pumping carbon and other pollutants far into the future, further delaying the necessary and urgent transition to cleaner-energy technologies.

442.003

Global warming poses a major threat to national security, our economy and water and food availability. Coal-fired power plants are the largest source of carbon emissions, the most significant human contribution to warming.

Approval of the mine expansion and 25 more years of coal at Four Corners Power Plant will stall for too long the significant reduction of greenhouse gases that scientists and the EPA tell us is necessary to avoid the most catastrophic effects of climate change.

Many residents of the Navajo Nation do not have electric power even as they suffer the health and safety consequences of living near two coal-fired power plants and a coal mine.

You have an opportunity to help the Navajo Nation and other Southwest communities reap the benefits of clean energy and break free of the destructive impacts of coal pollution. Significant clean-energy investment in the Four Corners would create new jobs for those displaced by scaled-back coal power.

Please consider forward-looking alternatives rather than risking the well-being of the Navajo Nation, the Four Corners region and the planet on the continued viability of coal for decades into the future.

Sincerely,

Tara Bloyd



Response 442.003

Thank you for your comment. A summary of the reduction in emissions as a result of the Federal Implementation Plan is provided in Table 4.1-28 of the Draft EIS. For clarification, shut-down of Units 1, 2, 3 reduced the overall electrical generation capacity of the FCPP by approximately 30%. The Federal Implementation Plan is considered as part of the baseline environmental setting in the EIS.

COMMENT 443

Lem Powers [REDACTED]

From: Lem Powers [REDACTED]
Sent: Sat Jun 28 2014 10:19:05 GMT-0600 (MDT)
To: mcalle@osmre.gov
Subject: Consider alternatives to 25 more years of coal

Jun 28, 2014

Marcelo Calle

Dear U.S. Office of Surface Mining, Calle,

Thank you for recognizing the regional environmental impact of the Four Corners Power Plant and Navajo Mine operations on the Four Corners region by issuing an Environmental Impact Statement.

However, your agency's Environmental Impact Statement does not adequately address the power plant and mine's major negative impacts on our climate and on health in the Four Corners region. 443.001

Under the proposal, Four Corners Power Plant would continue to produce coal pollution for 25 more years in a region that has long suffered the ill effects of dirty-energy extraction.

The Department of Interior is charged with assessing the full environmental, public-health and economic impacts of prolonging these coal operations and thoroughly investigating alternatives to prolonging coal production in light of rapidly shifting energy economics and the full scope of likely coal costs that loom.

I urge the Office of Surface Mining to require the consideration of additional alternatives, including alternatives for transition away from continued operation of Navajo Mine and Four Corners Power Plant. 443.002

After OSM has made these corrections, the Environmental Impact Statement should be reissued for public comment. Only when the impacts and costs of the plant are properly spelled out and appropriate alternatives are considered will OSM have a rational basis for making

Comment Letter 443.....Powers, L.

Response 443.001

Please see Master Response #1, Deficient Analysis.

Response 443.002

Please see Master Response #2, Renewable Energy Alternatives and Master Response #6, Reissuance of the Draft EIS.

COMMENT 443

any decision regarding the mine and plant.

The closure of the oldest three units and planned improvements to its two biggest units would still leave 80 percent of the Four Corners Power Plant pumping carbon and other pollutants far into the future, further delaying the necessary and urgent transition to cleaner-energy technologies.

443.003

Global warming poses a major threat to national security, our economy and water and food availability. Coal-fired power plants are the largest source of carbon emissions, the most significant human contribution to warming.

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Many residents of the Navajo Nation do not have electric power even as they suffer the health and safety consequences of living near two coal-fired power plants and a coal mine.

You have an opportunity to help the Navajo Nation and other Southwest communities reap the benefits of clean energy and break free of the destructive impacts of coal pollution. Significant clean-energy investment in the Four Corners would create new jobs for those displaced by scaled-back coal power.

Please consider forward-looking alternatives rather than risking the well-being of the Navajo Nation, the Four Corners region and the planet on the continued viability of coal for decades into the future.

Sincerely,

Lem Powers



Response 443.003

Thank you for your comment. A summary of the reduction in emissions as a result of the Federal Implementation Plan is provided in Table 4.1-28 of the Draft EIS. For clarification, shut-down of Units 1, 2, 3 reduced the overall electrical generation capacity of the FCPP by approximately 30%. The Federal Implementation Plan is considered as part of the baseline environmental setting in the EIS.

COMMENT 444

Jun 28, 2014

Marcelo Calle

Dear U.S. Office of Surface Mining, Calle,

When I would face a decision that had an easy, but unethical answer and a hard, but intolerable answer, my mother would say "Find another way."

Reinvesting in the Four Corners Power Plant is just such a decision. The health and well-being of many indigenous populations rest on the closing of that power plant; and easy, convenient life for the majority is what comes from keeping it open. I say, if it is not a health risk, why don't you relocate it to Rio Rancho? or the suburbs of Santa Fe?

444.001

Here is an opportunity for you to say Enough is Enough! Let's take all this money and energy and invest wisely in SOLAR! After all, The Southwestern U.S. has about 300 sun-filled days a year.

Anything less is burying your head in the sand.

Sincerely,

Jeanne Tenorio



Comment Letter 444.....Tenorio, J.

Response 444.001

The location of the FCPP and Navajo Mine are due to the presence of coal resources on the Navajo Nation and agreements between the project proponents and the Navajo Nation government. Since the proposed project is the consideration of continued operations of existing facilities and not siting of a new facility, relocation was not considered as an alternative. With regard to health risks, Section 4.17, specifically pages 4.17-22 through 4.17-24 summarize the results of the human health risk assessment conducted for the project.

COMMENT 445 - 663

Sent: Sat Jun 28 2014 10:19:04 GMT-0600 (MDT)
To: mcalle@osmre.gov
Subject: Consider alternatives to 25 more years of coal

Jun 28, 2014

Marcelo Calle

Dear U.S. Office of Surface Mining, Calle,

Thank you for recognizing the regional environmental impact of the Four Corners Power Plant and Navajo Mine operations on the Four Corners region by issuing an Environmental Impact Statement.

However, your agency's Environmental Impact Statement does not adequately address the power plant and mine's major negative impacts on our climate and on health in the Four Corners region. 001

Under the proposal, Four Corners Power Plant would continue to produce coal pollution for 25 more years in a region that has long suffered the ill effects of dirty-energy extraction.

The Department of Interior is charged with assessing the full environmental, public-health and economic impacts of prolonging these coal operations and thoroughly investigating alternatives to prolonging coal production in light of rapidly shifting energy economics and the full scope of likely coal costs that loom.

Comment Letter 445–663..... Wild Earth Guardians
(see Section 3 for individual names representing this organization)

Response 001

Please see Master Response #1, Deficient Analysis.

COMMENT 445 - 663

I urge the Office of Surface Mining to require the consideration of additional alternatives, including alternatives for transition away from continued operation of Navajo Mine and Four Corners Power Plant.

002

After OSM has made these corrections, the Environmental Impact Statement should be reissued for public comment. Only when the impacts and costs of the plant are properly spelled out and appropriate alternatives are considered will OSM have a rational basis for making any decision regarding the mine and plant.

The closure of the oldest three units and planned improvements to its two biggest units would still leave 80 percent of the Four Corners Power Plant pumping carbon and other pollutants far into the future, further delaying the necessary and urgent transition to cleaner-energy technologies.

003

Global warming poses a major threat to national security, our economy and water and food availability. Coal-fired power plants are the largest source of carbon emissions, the most significant human contribution to warming.

Approval of the mine expansion and 25 more years of coal at Four Corners Power Plant will stall for too long the significant reduction of greenhouse gases that scientists and the EPA tell us is necessary to avoid the most catastrophic effects of climate change.

Many residents of the Navajo Nation do not have electric power even as they suffer the health and safety consequences of living near two coal-fired power plants and a coal mine.

You have an opportunity to help the Navajo Nation and other Southwest communities reap the benefits of clean energy and break free of the destructive impacts of coal pollution. Significant clean-energy investment in the Four Corners would create new jobs for those displaced by scaled-back coal power.

Please consider forward-looking alternatives rather than risking the well-being of the Navajo Nation, the Four Corners region and the planet on the continued viability of coal for decades into the future.

Sincerely,

Response 002

Please see Master Response #2, Renewable Energy Alternatives and Master Response #6, Reissuance of the Draft EIS.

Response 003

Thank you for your comment. A summary of the reduction in emissions as a result of the Federal Implementation Plan is provided in Table 4.1-28 of the Draft EIS. For clarification, shut-down of Units 1, 2, 3 reduced the overall electrical generation capacity of the FCPP by approximately 30%. The Federal Implementation Plan is considered as part of the baseline environmental setting in the EIS.