FOR PUBLICATION

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

GREAT BASIN RESOURCE WATCH; WESTERN SHOSHONE DEFENSE PROJECT, *Plaintiffs-Appellants*, v. BUREAU OF LAND MANAGEMENT; U.S. DEPARTMENT OF THE INTERIOR; AMY LUEDERS, BLM State Director; CHRISTOPHER J. COOK, BLM Mt. Lewis Field Manager, *Defendants-Appellees*, EUREKA MOLY, LLC, *Intervenor-Defendant-Appellee.*	No. 14-16812 D.C. No. 3:13-cv-00078-RCJ-VPC OPINION

Appeal from the United States District Court
for the District of Nevada
Robert Clive Jones, District Judge, Presiding

Argued and Submitted October 18, 2016
San Francisco, California

Filed December 28, 2016

Before: Susan P. Graber and Mary H. Murguia, Circuit Judges, and Mark W. Bennett,* District Judge.

Opinion by Judge Graber

SUMMARY**

Environmental Law

The panel affirmed in part, reversed in part, and vacated in part the district court's judgment, and remanded for further proceedings in an action brought by plaintiffs challenging the Bureau of Land Management's approval of the Mt. Hope Project, a proposed molybdenum mining operation near Eureka, Nevada.

Addressing plaintiffs' challenge to several aspects of the BLM's analysis of the Project under the National Environmental Policy Act, the panel held that the BLM's selection of baseline levels of certain air pollutants was unreasonable, that the BLM's analysis of cumulative air impacts was deficient, that the BLM took the required "hard look" at the potential impacts of poor pit-lake water quality on ground water, and that the BLM's discussion of long-term mitigation and reclamation in the Final Environmental Impact Statement was "reasonably complete."

* The Honorable Mark W. Bennett, United States District Judge for the Northern District of Iowa, sitting by designation.

** This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

The panel declined to address plaintiffs' claim that the BLM violated its duty to protect lands "withdrawn from settlement, location, sale or entry" under Executive Order Public Water Reserve No. 107 (Apr. 17, 1926). First, the panel held that the BLM should be given an opportunity to fix the errors in its analysis of the Project under NEPA before challenges to the approval of the Project itself are entertained. Second, the panel held that the proper analysis of the claim turned in large part on whether four springs in the area of the Project were "covered" by the Executive Order, but the BLM's position on that question was unclear. The panel remanded for clarification.

COUNSEL

Roger Flynn (argued) and Jeffrey C. Parsons, Western Mining Action Project, Lyons, Colorado; Julie Cavanaugh-Bill, Cavanaugh-Bill Law Offices LLC, Elko, Nevada; for Plaintiffs-Appellants.

Robert J. Lundman (argued) and Mark R. Haag; John C. Cruden, Assistant Attorney General; Environment & Natural Resources Division, United States Department of Justice, Washington, D.C.; Luke Miller, Office of the Solicitor, United States Department of the Interior, Washington, D.C.; for Defendants-Appellees.

Francis M. Wilkstrom (argued), Salt Lake City, Utah, for Intervenor-Defendant-Appellee.

OPINION

GRABER, Circuit Judge:

Plaintiffs Great Basin Resource Watch and the Western Shoshone Defense Project challenge Defendant Bureau of Land Management's ("BLM") approval of the Mt. Hope Project ("Project"), a proposed molybdenum mining operation near Eureka, Nevada. Plaintiffs argue that the BLM's review of the Project under the National Environmental Policy Act of 1969 ("NEPA") was inadequate and that the approval of the Project violated the Federal Land Policy and Management Act of 1976 ("FLPMA") and the laws governing lands withdrawn under the executive order known as Public Water Reserve No. 107 ("PWR 107"). Because we conclude that the BLM's environmental review of the Project violated NEPA in several ways, we affirm in part the district court's judgment, reverse in part, vacate in part, and remand for further proceedings.

BACKGROUND

A. The Mt. Hope Project

The Mt. Hope Project "will be located in Eureka County, Nevada approximately 23 miles northwest of the town of Eureka . . . and will consist of a proposed molybdenum mine including a power transmission line, a water well field, and all associated facilities to be located on public land administered by the BLM . . . and on private land controlled by [Eureka Moly, LLC, the Project's operator]. The Project will utilize an open pit mining method and will process the mined ore using a flotation and roasting process. A total of 8,355 acres of disturbance is proposed within the 22,886-acre

Project Area." Bureau of Land Mgmt., U.S. Dep't of Interior, Mount Hope Project Record of Decision, Plan of Operations Approval, and Approval of Issuance of Right-of-Way Grants, p. i (Nov. 2012). Of those 22,886 acres, 22,608 are public lands administered by the BLM. *Id.* at 6. "The 80-year project will have an 18- to 24-month construction phase, 44 years of mining and ore processing, 30 years of reclamation, and five years of post-closure monitoring. . . . Additionally, long-term post-reclamation obligations will follow final reclamation." *Id.* at 1.

The active mining phase of the Project will last 32 years, during which time the mine will produce approximately 1.7 billion tons of waste rock. During that phase, pumps will be used to extract water from the open mining pit; at the end of the active mining phase, the pit will be allowed to fill slowly with ground water, forming a mine-pit lake that is expected to reach a depth of 900 feet. Pumping of ground water will also take place in the Kobeh Valley, which is adjacent to Mt. Hope, to provide fresh water for various mining and ore extraction purposes.

B. Environmental Review of the Project

Eureka Moly filed its first plan of operations for the Project with the BLM in June 2006. The BLM determined that approval of the Project was a "major Federal action" under NEPA, 42 U.S.C. § 4332, and thus required the preparation of an environmental impact statement ("EIS"). The BLM released a draft EIS ("DEIS") in December 2011. After receiving nearly 2,000 comments on the DEIS, the BLM prepared a final EIS ("FEIS"), which was released in October 2012.

Throughout the NEPA review process, Plaintiffs raised concerns about several aspects of the Project. Many of those concerns related to the adequacy of the BLM's analysis of environmental impacts in the DEIS and FEIS. In comments on the DEIS, Plaintiffs criticized the BLM's analysis of the Project's cumulative impacts, impacts to water quantity and quality, and impacts to cultural, religious, and historical resources. Plaintiffs renewed those criticisms in their comments on the FEIS, and they offered fresh criticisms concerning, among other things, the FEIS' discussion of funding for long-term mitigation and reclamation.

In addition to criticizing the BLM's analysis of environmental impacts under NEPA, Plaintiffs expressed their view to the BLM that approval of the Project would violate the agency's duties under the FLPMA and PWR 107. In comments on both the DEIS and FEIS, Plaintiffs opined that approval of the Project would violate FLPMA's requirement that the BLM "prevent unnecessary or undue degradation of the lands" that it administers, 43 U.S.C. § 1732(b). Plaintiffs also pointed out that the Project would affect some springs and water holes located on lands that they claimed had been withdrawn by PWR 107.

Plaintiffs were not alone in criticizing the BLM's analysis of the Project's environmental effects. The Environmental Protection Agency ("EPA") reviewed the FEIS and found that the BLM's analyses of air impacts, water quantity impacts, and the funding aspects of long-term mitigation were lacking. Eureka County also criticized several aspects of the BLM's NEPA review, including the agency's analysis of air impacts.

C. Approval of the Project

In November 2012, a little more than a month after releasing the FEIS, the BLM issued a record of decision approving the Project. Plaintiffs petitioned for review of that decision with the BLM's State Director for Nevada, who rejected the petition in January 2013. Plaintiffs then brought this action in the district court under the Administrative Procedure Act, alleging that the BLM's review of the Project under NEPA was deficient and that its approval of the Project violated FLPMA and PWR 107. Soon after Plaintiffs filed suit, the district court granted Eureka Moly leave to intervene on the side of the BLM.

The district court denied Plaintiffs' motion for summary judgment and granted the parties' joint motion for entry of judgment in favor of the BLM. Plaintiffs timely appeal from that judgment.

DISCUSSION

A. NEPA Claim

"A district court's determination on summary judgment that the BLM complied with NEPA is reviewed *de novo*." *Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 992 (9th Cir. 2004) (internal quotation marks omitted). "The agency's actions, findings, and conclusions will be set aside if they are arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." *Id.* (internal quotation marks omitted).

NEPA "is a procedural statute that requires . . . Federal agencies to assess the environmental consequences of their

actions before those actions are undertaken." *Id.* at 993. "For major federal actions significantly affecting the quality of the human environment, the agency is required to prepare an [EIS]. An EIS is a thorough analysis of the potential environmental impacts that provides full and fair discussion of significant environmental impacts and informs decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." *Id.* (citations, internal quotation marks, and alterations omitted).

"[I]n reviewing the adequacy of an EIS, this circuit employs a 'rule of reason' that asks whether an EIS contains a reasonably thorough discussion of the significant aspects of the probable environmental consequences. Under this standard, once satisfied that a proposing agency has taken a 'hard look' at a decision's environmental consequences, the review is at an end." *Or. Nat. Res. Council v. Lowe*, 109 F.3d 521, 526 (9th Cir. 1997) (per curiam) (citations, internal quotation marks, and alterations omitted).

Plaintiffs challenge several aspects of the NEPA analysis. They assert that the BLM's selection of baseline levels of certain air pollutants was unreasonable and that the BLM's analysis of cumulative impacts was deficient. As we will explain below, we agree. Plaintiffs also challenge the adequacy of the BLM's consideration of various mitigation measures. With respect to those arguments, we either are not persuaded or need not reach the issues.

1. Air Pollution Baselines

Plaintiffs first argue that the BLM did not assess adequately the baseline levels of certain air pollutants when

conducting the air impacts analysis. Establishing appropriate baseline conditions is critical to any NEPA analysis. "Without establishing the baseline conditions which exist . . . before [a project] begins, there is simply no way to determine what effect the [project] will have on the environment and, consequently, no way to comply with NEPA." *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988). An agency need not conduct measurements of actual baseline conditions in every situation—it may estimate baseline conditions using data from a similar area, computer modeling, or some other reasonable method. *See Or. Nat. Desert Ass'n v. Jewell*, 840 F.3d 562, 570 (9th Cir. 2016) (holding that it would not necessarily be impermissible for the BLM to estimate baseline conditions in one area by extrapolating from another area). But whatever method the agency uses, its assessment of baseline conditions "must be based on accurate information and defensible reasoning." *Id.*

When determining baseline air pollution levels for the Project, the BLM did not use actual measurements from the Project site because none were available. In the DEIS, the BLM used baseline values taken from measurements in Clark County, Nevada—the county in which Las Vegas is located—for some pollutants, and used the "default values" for unmonitored rural areas suggested by the Nevada Department of Environmental Protection's ("NDEP") Bureau of Air Pollution Control for some other pollutants. The DEIS noted that the baseline numbers drawn from the Clark County measurements were "conservatively high" given the relatively urban character of the monitoring locations.

In preparing the FEIS, the BLM instructed Eureka Moly[1] "to follow NDEP's guidance in selecting the background concentrations for the air quality analysis." A permitting supervisor from the NDEP's Bureau of Air Pollution Control had previously advised (by means of a short email) that the agency "assumed" a baseline of zero for all pollutants other than 10-micron particulate matter, and the FEIS adopts most of those baseline values in place of the "conservatively high" baseline values used in the DEIS. Specifically, the FEIS uses baseline values of zero for carbon monoxide, nitrogen dioxide, one- and three-hour time-averaged sulfur dioxide, and lead, while the DEIS had used measured values from Clark County for those pollutants. The FEIS continues to use the same Clark County data for the two longest time-averaged sulfur dioxide baselines, and it uses measurements taken at Great Basin National Park[2] for 2.5-micron particulate matter baselines.

Plaintiffs first argue that it was unreasonable for the BLM to use data from Great Basin National Park, a pristine area more than 100 miles away from the Project, to establish baselines for 2.5-micron particulate matter. Although it is true that this choice may have caused the agency to underestimate the baselines for 2.5-micron particulate matter, the BLM explained its choice adequately, and its explanation is reasonable. The Project is located in a rural area, and the BLM used data from a different rural area to estimate

[1] Eureka Moly contracted with an air quality consulting firm, Air Sciences, Inc., to conduct the air impacts analysis. That analysis, in turn, was submitted to the BLM, which relied on it when preparing the FEIS.

[2] The FEIS cites a different NDEP official as the source of the baseline values for 2.5-micron particulate matter concentrations.

baseline conditions. Plaintiffs have not shown that this choice rested on inaccurate information or indefensible reasoning. *Or. Nat. Desert Ass'n*, 840 F.3d at 570.

Plaintiffs' arguments concerning the baseline choices for 10-micron particulate matter and the two longest time-averaged sulfur dioxide concentrations are similarly unconvincing. Like the baselines for 2.5-micron particulate matter, the baselines for 10-micron particulate matter relied on measurements taken at Great Basin National Park. The baselines for the two sulfur dioxide concentrations were "conservatively high," as the BLM noted in the DEIS. By acknowledging the shortcomings in its data while using those data to make an estimate of baseline conditions, the BLM complied with NEPA. *See Lands Council v. Powell*, 395 F.3d 1019, 1032 (9th Cir. 2005) (noting that "NEPA . . . requires up-front disclosures of relevant shortcomings in the data or models").

Finally, Plaintiffs argue that the BLM's use of a zero baseline value for the remaining pollutants was unreasonable. The BLM and Eureka Moly respond that the choice of a zero baseline for those pollutants was reasonable because it was "based on recommendations from the [NDEP's Bureau of Air Pollution Control], the agency with Nevada-specific expertise." The FEIS similarly invokes the expertise of the NDEP's Bureau of Air Pollution Control ("BAPC"), prefacing the table of baseline values with the note that "[t]he BAPC was contacted to obtain representative background concentrations for the modeling analysis." And the air impacts analysis prepared for Eureka Moly and submitted to the BLM—the study that underlies the FEIS' air impacts analysis—also notes that the "NDEP-BAPC recommends assuming zero background for" the remaining pollutants.

It turns out, though, that the only "expert recommendation" in the record is a short email from an NDEP official—the email is, in fact, cited in the FEIS as the sole source of the zero baseline value. That email reads, in relevant part, as follows:

> In an un-monitored area, BAPC uses 10.2 µg/m^3 for a 24-hour average background and 9.0 µg/m^3 for an annual average background for PM10. *All other pollutants are assumed to be 0*. If there is on-going quality assured monitoring representative of an area, we can rely on that data to set a different background. I'm not aware of any monitoring being performed by BAPC in the area you propose.

(Emphasis added.) Crucially, this email does not explain *how or why* the NDEP arrived at zero. Such a bare assertion of opinion[3] coming from an expert *within* the BLM, without any supporting reasoning, would not pass muster in an EIS. *See Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1150 (9th Cir. 1998) ("NEPA requires that the public receive the underlying environmental data from which a [reviewing agency] expert derived her opinion."), *overruled on other grounds by Lands Council v. McNair*, 537 F.3d 981 (9th Cir. 2008) (en banc); *see also Tri-Valley Cares v. U.S. Dep't of*

[3] What value to use as a baseline concentration for a particular air pollutant, in the absence of data, is a question of expert judgment, not one of fact. There is no doubt that the baseline pollutant levels are not, as a factual matter, zero; the question is what to use as an *estimate* of baseline levels for purposes of modeling. In fact, the email to the NDEP official asked for "some guidance on what background concentration values . . . *to use for a modeling analysis* in [the] Mount Hope area." (Emphasis added.)

Energy, 671 F.3d 1113, 1124 (9th Cir. 2012) ("At a minimum, an agency must support its conclusions with studies that the agency deems reliable."). The fact that it comes from an expert at a *state* agency is of no significance to the analysis. *Cf. Nat. Res. Def. Council, Inc. v. Herrington*, 768 F.2d 1355, 1412–14 (D.C. Cir. 1985) ("[I]n a rulemaking which must be supported by substantial evidence, [an agency] may not rely without further explanation on an unelaborated order from another agency. Neither we as a reviewing court nor participants in the rulemaking can possibly discover the substantive basis of [the second agency's] edict.").

We might reach a different conclusion had the NDEP official explained *why* an estimate of zero was appropriate, or had the BLM independently scrutinized that estimate and decided that it was reasonable, and then explained why. But none of that happened—the BLM simply used baseline estimates of zero for some pollutants in reliance on one conclusory sentence in an email from an NDEP official, an email that itself contained no supporting reasoning. This important information, which affects the air impacts analysis, was essentially immune from meaningful scrutiny by the public because the BLM never provided any data or reasoning in support of it. A baseline estimate "must be based on accurate information and defensible reasoning." *Or. Nat. Desert Ass'n*, 840 F.3d at 570. The BLM provided neither when it came to its baseline estimates of zero.

Eureka Moly argues that the FEIS' air impacts analysis is nonetheless adequate because it relies in part on the fact that the NDEP's Bureau of Air Pollution Control issued a Clean Air Act permit for the Project. This argument evinces a misunderstanding of the nature of NEPA and its relationship to "substantive" environmental laws such as the Clean Air

Act. *See S. Fork Band Council of W. Shoshone of Nev. v. U.S. Dep't of Interior*, 588 F.3d 718, 726 (9th Cir. 2009) (per curiam) (holding that a failure to discuss mercury emissions from a nearby mining facility in an EIS was not excused by the fact that the facility "operate[d] pursuant to a state permit under the Clean Air Act," because "[a] non-NEPA document . . . cannot satisfy a federal agency's obligations under NEPA"). The failure to explain the zero baseline assumption frustrated the BLM's ability to take a "hard look" at air impacts, and the reference to the Project's Clean Air Act permit did nothing to fix that error.

The BLM argues that it corrected any error in its baseline estimates by conducting a "double check" analysis following the issuance of the FEIS. The BLM conducted this analysis using measured baseline values from an undeveloped area in New Mexico that EPA had suggested might have similar air quality to the Project area. The BLM claims that those measurements confirm that the pollution from the Project would not violate air quality standards. Although that statement may end up being true, a post-EIS analysis—conducted without any input from the public—cannot cure deficiencies in an EIS. *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157, 1169 (9th Cir. 2003). The public never had an opportunity to comment on the "double check" analysis, frustrating NEPA's goal of allowing the public the opportunity to "play a role in . . . the decisionmaking process." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

In conclusion, we hold that the BLM's analysis of air impacts in the FEIS was inadequate because the agency did not provide any support for its use of baseline values of zero for several air pollutants.

2. Cumulative Impacts

Plaintiffs next argue that the BLM's analysis of cumulative impacts was deficient. Plaintiffs point out that, although the FEIS mentions that there will be cumulative impacts stemming from the Project and nearby mining, agricultural, and other activities, "there is no detailed discussion about the . . . impacts," nor is there a "quantified assessment" of those impacts.

The cumulative impact from an action means "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . . . Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7. Accordingly, "[i]n a cumulative impact analysis, an agency must take a 'hard look' at *all* actions" that may combine with the action under consideration to affect the environment. *Te-Moak Tribe of W. Shoshone of Nev. v. U.S. Dep't of Interior*, 608 F.3d 592, 603 (9th Cir. 2010) (emphasis added). Furthermore, simply listing all relevant actions is not sufficient. Rather, "some quantified or detailed information is required. Without such information, neither the courts nor the public . . . can be assured that the [agency] provided the hard look that it is required to provide." *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1379 (9th Cir. 1998).

The BLM completed the first step of the cumulative impacts analysis by identifying the relevant "past, present, and reasonably foreseeable future actions," 40 C.F.R. § 1508.7, that might affect the environment in the area of the Project. And the BLM provided a "useful analysis of the

cumulative impacts" of those actions on some environmental resources. *Klamath-Siskiyou Wildlands Ctr.*, 387 F.3d at 994 (internal quotation marks citation omitted). For instance, the FEIS includes a relatively thorough discussion of cumulative impacts to water quantity, complete with a quantitative analysis.

However, the discussion of cumulative impacts to other resources in the FEIS falls short. In particular, the discussion of cumulative air impacts is insufficient. That discussion reads, in relevant part, as follows:

> Each of the identified individual projects within the [study area], including existing and proposed mining operations, emit air pollutants. With the possible exception of motor vehicle emissions, the existing and proposed mining operations are the major sources of criteria pollutants within the [study area]. The modeling for the Proposed Action, as well as the Ruby Hill Mine . . . , shows that the levels of these pollutants are below the applicable standards. The Proposed Action would not result in a significant cumulative impact to air resources. The [reasonably foreseeable future actions] would result in additional emissions similar to those currently emitted by the existing operations within the [study area]. In addition, the major sources of pollutants (except for motor vehicle emissions) within the [study area] would operate under permit conditions established by the [NDEP BAPC] and therefore would not be significant.

That analysis suffers from many of the same shortcomings as the BLM's analysis in *Great Basin Mine Watch v. Hankins*, 456 F.3d 955 (9th Cir. 2006). There, we faulted the BLM for failing to include "mine-specific or cumulative data" in its analysis of cumulative impacts to air resources. *Id.* at 973. The BLM had "merely stat[ed] that ambient air quality data for the region currently reflects impacts of existing mining operations in the airshed," but did not "identify and discuss the impacts that will be caused by each successive project, including how the combination of those various impacts is expected to affect the environment." *Id.* at 973–74 (internal quotation marks and alterations omitted). For that reason, we held that the FEIS was insufficient. *Id.* at 972–73. Similarly, the BLM in this case did not provide sufficiently detailed information in its cumulative air impacts analysis. The BLM made no attempt to quantify the cumulative air impacts of the Project together with the Ruby Hill Mine and vehicle emissions. Nor did the BLM attempt to quantify or discuss in any detail the effects of other activities, such as oil and gas development, that are identified elsewhere in the FEIS as potentially affecting air resources.

The cumulative air impacts analysis also suffers from the same problem that plagued the air impacts analysis—namely, the choice of a baseline value of zero for certain pollutants. It was impossible for the BLM to take a "hard look" at cumulative air impacts given its unjustified use of a zero baseline for those pollutants.[4]

[4] Counsel for the BLM conceded during oral argument that if we were to conclude that the assumption of a zero baseline for several air pollutants rendered the air impacts analysis deficient, we would necessarily have to

The BLM and Eureka Moly argue that the air impacts analysis contained elsewhere in the FEIS suffices because that other analysis takes into account existing emissions. But, as already discussed, the modeling assumed baseline values of zero for many pollutants and, therefore, the analysis plainly does *not* take into account emissions from other sources in the area. The BLM and Eureka Moly also argue that the reference in the FEIS to the cumulative air impacts analysis conducted in connection with the Ruby Hill Mine—an unrelated mining project—renders the cumulative air impacts analysis in *this* FEIS adequate. But the analysis of the Ruby Hill Mine did not consider the Mt. Hope Project, so its cumulative impacts analysis is of very limited relevance.

The cumulative air impacts portion of the FEIS fails to "enumerate the environmental effects of [other] projects" or "consider the interaction of multiple activities." *Or. Nat. Res. Council Fund v. Brong*, 492 F.3d 1120, 1133 (9th Cir. 2007). Accordingly, we hold that the cumulative impacts portion of the FEIS does not comply with NEPA.

3. Mitigation: Mine-Pit Lake

Plaintiffs' next argument concerns the FEIS' discussion of the lake that will eventually form in the mining pit. Plaintiffs argue that the BLM violated NEPA by failing to consider mitigation measures aimed at reducing the possible adverse environmental effects of poor pit-lake water quality. Under NEPA, "an agency must . . . consider appropriate mitigation measures that would reduce the environmental

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conclude that the cumulative air impacts analysis suffered from the same deficiency.

impact of the proposed action." *Protect Our Cmtys. Found. v. Jewell*, 825 F.3d 571, 581 (9th Cir. 2016). When reviewing an agency's discussion of mitigation measures, "[w]e need only be satisfied that the agency took the requisite 'hard look' at the possible mitigating measures." *Okanogan Highlands All. v. Williams*, 236 F.3d 468, 473 (9th Cir. 2000).

The FEIS states that "[i]nitial pit lake water quality is predicted to be good" but that, "[a]s evaporation from the lake surface concentrates the dissolved minerals, some water quality constituent concentrations would be predicted to increase over time relative to baseline concentrations and to exceed the present Nevada water quality standards." The FEIS further predicts that "[t]here would be a low potential for impacts to ground water quality due to the formation of a ground water sink in the open pit," but that the impact is "not considered significant." The FEIS states that "[a]ccess to the open pit by humans and livestock would be restricted" and that "[t]he lake is not intended to be a drinking water source for humans or livestock or to be used for recreational purposes." Plaintiffs claim that the BLM failed to consider any mitigation measures to address the potential effects of poor pit-lake water quality. They argue that this omission is problematic for two reasons: (1) the FEIS states that there is a "low potential" for impacts to ground water quality, rather than "no potential" for impacts, and (2) the pit-lake water may at some point be needed by "future water users" in the area.

We hold that the BLM complied with NEPA in discussing possible mitigation measures to address the effects that would flow from poor pit-lake water quality. Although the BLM did not include any discussion of possible mitigation measures in the portion of the FEIS discussing pit-lake water quality,

other portions of the FEIS contain discussions of such measures. The listing of "applicant committed practices"—measures that Eureka Moly has promised to take and that are "considered part of the operating procedures" of the Project—states that the company will "periodically review and update . . . pit lake studies to incorporate new information accumulated during operations. . . . These updates would . . . provide quantitative predictions of water quality during the operational and post-closure period." Additionally, the agency responded to a comment on the DEIS[5] by noting that it would rely on future monitoring "to further understand the ground water and surface water hydraulics and any potential impacts to waters of the State. Based on further monitoring and evaluation, additional mitigation measures . . . can be implemented at any time . . . ."

This sort of "wait and see" approach to mitigation does not always suffice under NEPA. Putting off an analysis of possible mitigation measures until after a project has been approved, and after adverse environmental impacts have started to occur, runs counter to NEPA's goal of ensuring informed agency decisionmaking. *See Robertson*, 490 U.S. at 353 ("Without [a reasonably complete] discussion [of mitigation], neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects."). But that approach was reasonable in the circumstances given the relatively low probability and temporal remoteness of adverse impacts to ground water. And though the BLM did not consider any mitigation measures for the potential impact of poor pit-lake water quality on "future water users," it was not required to do so,

[5] The comments on the DEIS and the BLM's responses thereto are included as appendices to the FEIS.

because the existence of any such users is speculative. *See San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm'n*, 449 F.3d 1016, 1030 (9th Cir. 2006) ("[A]n impact statement need not discuss remote and highly speculative consequences.") (internal quotation marks omitted).

To be sure, the BLM's mitigation analysis in this case was not as thorough as that of the agency in *Okanogan Highlands*. In that case, the Forest Service prepared an EIS for a mining project that would produce a mine-pit lake much like the one here. *Okanogan Highlands*, 236 F.3d at 471. The agency concluded in the EIS that "seepage from the open pit is expected to have a low overall impact on ground water quality in the vicinity of the pit," but it nonetheless discussed several mitigation measures, including monitoring. *Id.* at 474–75. We held that the agency had complied with NEPA by considering "extensively the *potential* effects and mitigation processes." *Id.* at 477.

In this case, by contrast, the BLM discussed *only* monitoring. But the disparity in the scope and depth of the agencies' discussions in the two cases reflects important differences between the projects being analyzed, rather than a difference in the adequacy of the agencies' analyses. The mining project in *Okanogan Highlands* was set to last eight to ten years, *id.* at 471, and the pit lake was expected to overflow and discharge water that would exceed pollution standards, *id.* at 474. Here, by contrast, the pit lake will fill slowly, and will not begin to fill *at all* until after the end of open pit mining, some 32 years after the start of the Project. Furthermore, the water quality in the pit lake is expected to be good at first. Faced with an adverse impact that is predicted to be insignificant and that will not occur for decades, the

BLM in this case reasonably decided to rely on a monitoring scheme to develop future mitigation measures.

In short, we are satisfied that the BLM complied with NEPA by taking a "hard look" at the potential impacts of poor pit-lake water quality on ground water.

4. Mitigation: Reclamation Bonding

Plaintiffs argue that the BLM's NEPA review was deficient because the agency "never reviewed the consideration or establishment of [financial guarantees] under NEPA." Plaintiffs argue that this failure rendered the discussion of mitigation in the FEIS inadequate and prevented the public from providing input into the reclamation bonding process. The BLM and Eureka Moly respond that (1) NEPA does not require that "third parties should be able to participate in the process of determining financial guarantees," and (2) in any event, the FEIS contains an adequate discussion of financial guarantees.

The BLM's regulations require that an operator who files a plan of operations must, "[a]t a time specified by BLM, . . . submit an estimate of the cost to fully reclaim [its] operations." 43 C.F.R. § 3809.401(d).[6] Although the "time

[6] Reclamation means taking measures . . . following disturbance of public lands caused by operations to meet applicable performance standards and achieve conditions required by BLM at the conclusion of operations. . . . Components of reclamation include, where applicable:

> (1) Isolation, control, or removal of acid-forming, toxic, or deleterious substances;

specified by BLM" need not be the same as the time at which the plan of operations is filed, the estimate must be submitted and accepted before operations can begin, because "a financial guarantee that meets the requirements of this subpart [must be provided] before starting operations." *Id.* § 3809.500. The regulations instruct operators to "estimate the cost to reclaim your operations as if BLM were hiring a third-party contractor to perform reclamation of your operations after you have vacated the project area." *Id.* § 3809.554(a).[7] The financial guarantee provided by the operator must cover this estimated cost. *Id.* § 3809.552(a). In addition, the BLM may require "a trust fund or other

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> (2) Regrading and reshaping to conform with adjacent landforms, facilitate revegetation, control drainage, and minimize erosion;
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> (3) Rehabilitation of fisheries or wildlife habitat;
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> (4) Placement of growth medium and establishment of self-sustaining revegetation;
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> (5) Removal or stabilization of buildings, structures, or other support facilities;
>
> (6) Plugging of drill holes and closure of underground workings; and
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> (7) Providing for post-mining monitoring, maintenance, or treatment.

43 C.F.R. § 3809.5.

[7] The requirements of 43 C.F.R. § 3809.552 and 3809.554 apply to operators, like Eureka Moly, that plan to use an individual financial guarantee, rather than a "blanket" guarantee covering multiple operations, § 3809.560, or a pre-existing state-approved guarantee, § 3809.570.

funding mechanism . . . to ensure the continuation of long-term treatment to achieve water quality standards and for other long term, post-mining maintenance requirements. The funding must be adequate to provide for construction, long-term operation, maintenance, or replacement of any treatment facilities and infrastructure, for as long as the treatment and facilities are needed after mine closure. BLM may identify the need for a trust fund or other funding mechanism during plan review or later." *Id.* § 3809.552(c).

The BLM and Eureka Moly assert that the details of a long-term funding mechanism and the amount of a financial guarantee (also called a "reclamation bond") need not be discussed in an EIS because they are "regulatory requirement[s] . . . driven by the NEPA-reviewed reclamation plan." For support, they cite the BLM Surface Management Manual, which states that "[a]ny decision concerning the need, amount, acceptability, and/or forfeiture of a financial guarantee . . . do[es] not require an environmental review under NEPA and [is] not to be included in NEPA documents used to review a proposed operation." BLM Surface Management Manual at 2–6 (2012). They also cite our decision in *Center for Biological Diversity v. Salazar*, 706 F.3d 1085, 1096 (9th Cir. 2013), for the proposition that setting an amount for a financial guarantee does not trigger NEPA requirements.

Salazar does not support the position taken by the BLM and Eureka Moly. In *Salazar*, we held that the BLM's approval of an update to an operator's financial guarantee was not a "major Federal action" for NEPA purposes where the reclamation plan being funded by the guarantee had already been approved and was not itself being changed. *Id.* at 1095–96. We characterized the BLM's action as consisting

of "the ministerial tasks of feeding reclamation data from the [reclamation] plan into [a] software program, comparing [the] estimate [from that program] with that of [the operator], and then accepting [the operator's] proposed bond amount, which was greater than" the estimate. *Id.* at 1096. We held that "[s]uch post-project-approval functions are the type of monitoring and compliance activities that . . . do not trigger NEPA's requirements." *Id.*

For two reasons, this case differs from *Salazar*. First, the reclamation plan here is in the process of being approved, and determining the contours of the financial guarantee (particularly the long-term funding mechanism) at this stage is not a mere "ministerial task." Second, Plaintiffs' legal theory for why NEPA requires a discussion of reclamation funding differs from that advanced by the plaintiffs in *Salazar*. In *Salazar*, the plaintiffs argued that the *update to the reclamation bond* was a "major Federal action" requiring the preparation of an EIS. *Id.* at 1095. By contrast, Plaintiffs' argument is that the *approval of a plan of operations* requires an EIS; the EIS should discuss possible reclamation and post-closure mitigation measures; and a reasonably complete discussion of those measures requires some discussion of the long-term funding mechanism and reclamation bond.

We need not address any further the broad argument that reclamation bonding need *never* be discussed in NEPA documents. We assume, without deciding, that long-term mitigation and reclamation funding issues must be "discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated." *Robertson*, 490 U.S. at 352. Making that assumption, we hold that the FEIS contains an adequate discussion of those issues.

The FEIS discusses several specific long-term mitigation measures that the long-term funding mechanism may fund. It also states that the funding mechanism "would be reviewed annually during the operation phase of the Project and potentially increased to meet the monitoring and mitigation needs associated with the Project." Elsewhere, the FEIS discusses some of the long-term mitigation measures in more detail. For instance, the FEIS considers, in several places, the use of evapotranspiration cells to control long-term discharge from mining waste.

The FEIS also contains a relatively thorough discussion of possible reclamation measures, complete with a proposed timeline. As for the reclamation bond, the FEIS states that, "[w]ithin three years following Plan approval and at least every three subsequent years, [Eureka Moly] would update the guarantee to reflect the actual disturbance and whatever additional disturbance is planned for the Project phase anticipated over the next three-year period. Changes to equipment, consumables, and man power costs would also be incorporated during the updates."

The BLM's discussion of long-term mitigation and reclamation in the FEIS is "reasonably complete" and does not violate NEPA. Although the BLM could have discussed its options vis-à-vis the long-term funding mechanism and reclamation bond in more detail, its discussion of those aspects of the long-term mitigation and reclamation plans is not so deficient as to preclude the agency or the public from "properly evaluat[ing] the severity of [the Project's] adverse effects" on the environment. *Robertson*, 490 U.S. at 352. And the reclamation and long-term mitigation discussion, taken as a whole, contains an adequate evaluation of the effectiveness of possible reclamation and long-term

mitigation measures despite the relatively sparse treatment of the funding aspects of those measures. *See S. Fork Band Council*, 588 F.3d at 727 ("An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective.").

5. Mitigation: Surface and Ground Water Quantity

Plaintiffs next challenge the adequacy of the BLM's discussion of mitigation measures to address impacts to surface and ground water quantity. The Project will require a great deal of water to support mining and milling operations. This water will come from two sources: ground water pumped out of wells located in one of the valleys surrounding Mt. Hope and water pumped from the open mining pit. The predicted effects of the pumping on certain stream and spring flows—unlike the predicted effect of the pit lake on ground-water quality—are "potentially significant."

The FEIS discusses several mitigation measures aimed at addressing those impacts, including a monitoring scheme to keep track of the status of spring and stream segments, water hauling, and piping in water from other locations to replace lost surface water. In non-technical—but accurate—terms, many of the mitigation measures amount to measuring how much each spring or stream segment's flow has been reduced and replacing that water. The replacement water—which the BLM estimates at about 302 acre-feet of water, or nearly 100 million gallons, per year—"would at least initially come from [Eureka Moly]'s existing water rights if additional water rights have not yet been secured."

Plaintiffs contend that the discussion of mitigation measures is inadequate because "there is no analysis of where th[e] [replacement] water will come from, or the impacts from its withdrawal."[8] Plaintiffs note that EPA criticized the BLM for this omission during the NEPA process and asked the BLM to prepare a supplemental EIS. Eureka Moly responds that "the FEIS thoroughly analyzed the effect of using water from [its] production wells, [so] the effect of using some of it as substitute water was necessarily analyzed because it is the same water."

Although Eureka Moly's argument is factually incorrect—the analysis of ground water pumping in the FEIS does *not* take into account the roughly 200 gallons per minute needed to replace depleted spring and stream water—that error appears to be quite small, raising questions about whether it might be harmless.[9] *See Idaho Wool Growers Ass'n v. Vilsack*, 816 F.3d 1095, 1104 (9th Cir. 2016) ("The harmless-error analysis asks whether the [agency's error] materially impeded NEPA's goals—that is, whether the error caused the agency not to be fully aware of the environmental consequences of the proposed action, thereby precluding informed decisionmaking and public participation, or otherwise materially affected the substance of the agency's

[8] Plaintiffs also appear to argue that the discussion of mitigation measures is deficient because it puts off the development of a mitigation plan until after monitoring reveals depletion. This argument is factually incorrect—the FEIS includes a map showing the future location of pipelines that could be used to bring water to depleted springs.

[9] The analysis in the FEIS assumes a ground water pumping rate of between 6,540 and 7,000 gallons per minute, so failing to include the additional 200 gallons per minute needed to replace spring and stream flows amounts to a roughly 3% error.

decision."). But no party has briefed the issue of harmlessness. And because the BLM's NEPA analysis is deficient in other respects, the ultimate disposition of this appeal does not depend on the resolution of this portion of Plaintiffs' NEPA claim. Accordingly, we decline to reach this portion of Plaintiffs' NEPA claim.

B. PWR 107 Claim

Plaintiffs' other major claim is that the BLM violated its duty to protect lands "withdrawn from settlement, location, sale or entry" under the executive order known as PWR 107, Public Water Reserve No. 107 (Apr. 17, 1926). Plaintiffs also argue that PWR 107, which withdrew lands surrounding certain springs and water holes, created an implied reservation of water rights to the federal government in some springs in the area of the Project, and that the Project will unlawfully interfere with those water rights.

We decline to address Plaintiffs' PWR 107 claim, for two reasons. First, the BLM should be given an opportunity to fix the errors in its analysis of the Project under NEPA before challenges to the approval of the Project itself are entertained. "Having addressed the problems [with the EIS], the BLM may decide to make different choices. NEPA is not a paper exercise, and new analyses may point in new directions. . . . The problems [with the approval of the Project itself] may never arise once the BLM has had a chance to see the choices before it with fresh eyes." *Or. Nat. Desert Ass'n v. BLM*, 625 F.3d 1092, 1124 (9th Cir. 2010).[10]

[10] For this reason, we also decline to address Great Basin's FLPMA claim.

Second, the proper analysis of the PWR 107 claim turns in large part on whether four springs[11] in the area of the Project are "covered" by PWR 107—that is, whether those four springs are located on lands that were withdrawn by PWR 107—but the BLM's position on that question is unclear.[12] Prudence counsels in favor of remanding to the agency to clarify its position, rather than addressing legal questions that may end up being irrelevant to the disposition of the claim. *Cf. Su Hwa She v. Holder*, 629 F.3d 958, 963–64 (9th Cir. 2010) ("[W]e lack the clairvoyance necessary to confidently infer the reasoning behind the [agency]'s conclusion. Rather than countenance a decision that leaves us to speculate based on an incomplete analysis, we remand the case to the [agency] for clarification." (footnote omitted)).

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[11] The springs at issue are McBride's Spring, also referred to as SP-1 or Spring 612; Mt. Hope Spring, also referred to as SP-4 or Spring 619; Garden Spring, also referred to as SP-2 or Spring 597; and Lone Mountain Spring, also referred to as Spring 742.

[12] The FEIS is internally contradictory, suggesting in some places that the four springs *are* covered by PWR 107 and in other places that they are *not*. We note that the BLM had previously submitted "Notification of Public Water Reserve" forms for the four springs to the State of Nevada. Each of those forms lists an amount of water that the United States wishes to claim as a federal reserved water right and cites PWR 107 as authority for the reservation. The notifications have never been rescinded. If, on remand, the BLM decides that the springs are not important, it should at the very least explain why it has apparently changed its position. *Cf. Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2126 (2016) ("[A]n 'unexplained inconsistency' in agency policy is 'a reason for holding an interpretation to be an arbitrary and capricious change from agency practice.'" (brackets omitted) (quoting *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 981 (2005))).

AFFIRMED in part, **REVERSED** in part, **VACATED** in part, and **REMANDED** with instructions to vacate the record of decision and remand to the BLM. The parties shall bear their own costs on appeal.