BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:	)	
Florence Copper, Inc.	)	
	)	Appeal No. UIC 17-03.
UIC Permit No. R9UIC-AZ3-FY11-1	)	

REGION 9 RESPONSE TO PETITION FOR REVIEW

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I. INTRODUCTION

The United States Environmental Protection Agency ("EPA"), Region 9 ("Region") hereby responds to the Petition for Review ("Petition") jointly submitted by Southwest Value Partners ("SWVP") and the Town of Florence, Arizona ("Town of Florence") (together "Petitioners"). On December 20, 2016, the Region issued a Class III Underground Injection Control ("UIC") Area Permit (Permit No. R9UIC-AZ3-FY11-1) ("Permit") to Florence Copper Inc. ("FCI") for an In-Situ Copper Production Test Facility under the UIC Program of the Safe Drinking Water Act ("SDWA"), 42 U.S.C. § 300h *et seq*. Pursuant to 40 C.F.R. § 124.19, Petitioners filed their Petition on January 19, 2017 with the Environmental Appeals Board ("EAB" or "Board") to seek review of the Permit. Four petitions for review of the FCI Permit were filed with the EAB; one was dismissed as untimely. The Region will respond to each of the remaining three petitions separately.[1] Attached to this response are a certified index of the Administrative Record for the challenged Permit and the relevant portions of the Administrative Record.

In the Petition for Review, Petitioners do not challenge the Permit but request Board review of: 1) whether the Region was clearly erroneous in its decision to rely on the existing Aquifer Exemption in the FCI Permit decision; 2) whether, as a matter of policy, the Region's decision to leave the Existing Aquifer exemption in place was justified; and 3) whether the Region provided adequate responses to Petitioners' comments. Petition at 2, 10, 37-38. As set forth below, the Region's permit decision was made in accordance with UIC regulations and is supported by an extensive Administrative Record. Petitioners have not demonstrated how the Region's response to comments was inadequate or otherwise identified any clearly erroneous findings of fact or conclusions of law that would require review by the Board. The Petitioners have failed to meet their burden to obtain review by the EAB, and the Region requests that the EAB deny the Petition.

II. LEGAL AND FACTUAL BACKGROUND

Congress enacted the SDWA in 1974 to ensure that the Nation's sources of drinking water are protected against contamination and "to prevent underground injection which endangers drinking water sources." 42 U.S.C. § 300h(b). The SDWA directs the EPA to promulgate regulations containing minimum requirements for state programs to protect underground sources of drinking water ("USDWs"). 42 U.S.C. § 300(h). The UIC program

[1] The other two extant petitions were filed by John Anderson and the Gila River Indian Community ("GRIC").

regulations cover the construction, operation, permitting and closure of injection wells used to place fluids underground. 40 C.F.R. Parts 144-148. The EPA directly implements the UIC regulations and issues permits in states without an approved UIC program. 40 C.F.R. § 144.1(e). Because the State of Arizona has not received approval to implement the UIC Program, the Region is the permitting authority in Arizona. *See* 40 C.F.R. § 144.1(e); 40 C.F.R. §§ 147.1(a-b), 147.151 (Subpart D).

The SDWA requires a person to obtain a permit to operate an underground injection well, unless the well is authorized by rule. 42 U.S.C. § 300h-3(b), 40 C.F.R. § 144.11. Central to the permitting requirements in UIC regulations is a stringent non-endangerment standard for UIC permits. These regulations prohibit injection activities that allow the movement of fluid containing contaminants into a USDW if the presence of the contaminant may cause a violation of drinking water standards or otherwise adversely affect human health. 40 C.F.R. §§ 144.1(g), 144.12. The regulations define six classes of wells; Class III wells are defined as injection wells for the extraction of minerals, such as copper. 40 C.F.R. § 144.6(c). UIC regulations also allow the EPA to exempt an aquifer or a portion of an aquifer when certain criteria are met and to permit activities such as in-situ mining in exempt aquifers, where it can be done in a manner that is protective of USDWs outside of the exempt portion of the aquifer. 40 C.F.R. § 146.4. Once the EPA approves an aquifer exemption, the exempt portion is no longer considered a USDW as defined in 40 C.F.R. § 144.3, and it is not protected as a USDW under UIC regulations.

The EPA Region 9 Water Division Director has authority to issue permits for underground injection activities under 40 C.F.R. § 144.31 (AR #586, #587). FCI applied for a UIC permit to construct and operate a pilot-scale in-situ copper recovery ("ISCR") facility known as the Production Test Facility ("PTF") on FCI property near the town of Florence, Arizona. FCI will use wells to inject a dilute sulfuric acid solution into the ore-body and recover copper-laden solution to produce copper and to assess the feasibility of future commercial ISCR operations on the FCI property.

Factual Background: Past UIC Class III Permit and Copper Recovery Activity

The EPA issued UIC Permit # AZ396000001 to BHP Copper, Inc. (BHP) in 1997 authorizing BHP to operate an ISCR facility on what is now the FCI property. At the same time, the EPA also approved an aquifer exemption for the proposed mining area ("Aquifer Exemption"). In accordance with requirements at 40 C.F.R. §§ 146.4 and 144.7, the Region determined the federal aquifer exemption criteria were satisfied because the aquifer did not serve as a current source of drinking water and would not in the future serve as a source of drinking water because it contained commercially producible quantities of copper (Statement of Basis ("SOB") at 12-15, AR #18, #24, #238). The Aquifer Exemption includes the Oxide Bedrock Zone, which is approximately 475 to 1,200 feet below ground level and contains the copper ore

body, and a portion of the Lower Basin Fill Unit (LBFU), which is approximately 400-1,600 feet below ground and is the portion of the aquifer immediately above and in contact with the Oxide Bedrock Zone (Permit Appx. A, Figure S-2, AR #596a). The Aquifer Exemption was not challenged under the judicial review provisions of the SDWA and remains in place today. *See* 42 U.S.C. § 300j-7(a)(2).

Pursuant to its UIC Permit, BHP drilled four Class III injection wells, nine recovery wells, and seven observation wells into the Oxide Bedrock Zone. These wells were part of a pilot project to demonstrate hydraulic control, which is a system designed to prevent migration of fluids outside the exempted area. BHP did not develop a full-scale facility and in 2000, sold the property to Merrill Mining, LLC, who sold it in 2010 to Curis Resources (Arizona), Inc., later known as FCI.

Factual Background: UIC Class III Permit for Production Test Facility

FCI initially submitted an application for a Class III UIC Permit in March 2011 to amend and transfer the BHP UIC permit. It sought authority to construct and operate the ISCR project on both a pilot scale and a commercial basis on 212 acres of property it owned or leased under the Arizona State Mineral Lease No. 11-26500. In June 2012, after conferring with the Region, FCI revised the application to seek authorization to construct and operate a PTF operation on 13.8 acres located within the State Mineral Lease. Over approximately two years, FCI provided substantial supplemental information to modify and update the permit application (*See* AR #1-15). Under the revised application, the PTF operations were limited to a small portion of the exempted aquifer below the State Mineral Lease boundary (*See* Permit, Appx. A, Figure S-1, AR #596).

Due to the passage of time since the 1997 Aquifer Exemption, the Region reviewed the existing Aquifer Exemption to determine whether the subsurface area affected by the PTF injection continued to meet the criteria for exemption under the UIC regulations (SOB at 12-15, AR #18). In addition, the Region reviewed the existing Aquifer Exemption and determined that the injected fluids associated with the PTF activity will be fully contained within the existing exempted area (*Id.*). After completing a thorough technical review of all submitted information, the EPA determined that the information provided by FCI was sufficient to prepare a draft permit.

On December 7, 2014, the Region issued a draft UIC permit to FCI, provided an opportunity for public comment and held a public hearing on January 22, 2015 in Florence, Arizona, pursuant to 40 C.F.R. § 124.12. The Region extended the public comment period from the required 30 days to 129 days due to interest from the public and as requested by Petitioner

SWVP (AR #21-22). The Region also provided supplemental data to the public for review and comment regarding historical modeling and field test reports for the BHP facility (AR #22). *See* 40 C.F.R. § 124.10(b). The Region received approximately 300 comments in total during in the public comment process, including testimony at the public hearing (*See* AR #327-579). Comments from Petitioners included a combined over 240 pages of material (#543, #546).

The Region also conducted extensive consultation beginning in 2012 under Section 106 of the National Historic Preservation Act ("NHPA") to identify, assess and resolve potential adverse effects of the PTF on historic properties located on the FCI property.[2] This process included Petitioner Town of Florence, the Advisory Council on Historic Preservation ("ACHP"), FCI, four federally recognized tribes (including the GRIC), the Arizona State Historic Preservation Officer, the Arizona State Land Department, National Park Service, Arizona State Museum and Archaeology Southwest. The consultation included in-person site visits to the FCI property, several conference calls, and numerous communications seeking input from consulting parties at each step of the process. The consultation culminated with a Memorandum of Agreement (MOA), to resolve adverse effects of the PTF, which was executed by signatory parties, including the ACHP in February 2015 (Permit, Appx. G, AR #596g). The EPA also consulted with the GRIC on a government-to-government basis on the Permit.

The Region carefully considered all comments received and as provided in 40 C.F.R. § 124.17, prepared a 48-page Response to Comments (RTC) (AR #581). The Region made 26 changes to the final Permit from the draft permit, mostly to address concerns raised by the commenters (RTC at 1-5, AR #581). The Region's engineers and contractor personnel extensively reviewed the application and draft permit to ensure that they met the requirements of the SDWA and UIC regulations. The broad scope of that review is evidenced by the extensive Administrative Record, which contains close to 600 entries (Appendix A). The Region considered all comments, including the issues identified by the tribes during the consultation on the Permit and the NHPA, before issuing the final Permit to FCI on December 20, 2016.

The Final Permit allows FCI to operate the PTF for the approximate two-year operational life of the project and requires it to conduct five years of post-closure monitoring, which may be extended if the EPA determines it is necessary (Permit Part I, p. 6-7, AR #596). Prior to operating the PTF, FCI must demonstrate that it has satisfied the Permit requirements for well construction, plugging and abandonment of existing wells, financial responsibility, and specific operational parameters (Permit Part II, Sections C, D, E-2, and L, AR #596). For example, FCI must obtain $4,457,000 in financial responsibility to guarantee aquifer restoration, ground water monitoring, and plugging and abandonment activities before the EPA will authorize FCI to proceed with construction and operation of the PTF (Permit Part II.L.1.a, AR #596).

[2] 54 U.S.C. § 306108, 36 C.F.R. Part 800.

The Permit contains specific parameters for mechanical integrity, injection fluid constituents, pressure, and volume, and the Region must approve any modifications to these parameters (Permit Part II.E.1-5, AR #596). The PTF is surrounded by eight monitoring wells located within the 500-foot Area of Review ("AOR"). This area defines a subsurface zone affected by the wellfield injection activities, as described in 40 C.F.R. § 146.6(a)(1)(ii) (*See* Permit Part I, p. 6, AR #596). FCI is required to drill the PTF injection wells deeper than 40 feet below the top of the Oxide Bedrock Zone within the existing EPA-approved Aquifer Exemption area (*Id*.).

FCI must to apply for a new permit should it want to construct and operate a commercial scale ISCR mine on the property, pending the outcome of the PTF operations. The EPA would evaluate any future permit application for a commercial scale ISCR pursuant to the same criteria in the SDWA and implementing regulations. If the Region issued a new draft permit, it would require the same public notice and comment procedures, and commenters would have the ability to seek EAB review if the Region issued a final permit.

III. STANDARD OF REVIEW

The standard of review for appeal of an EPA-issued UIC permit issued is governed by 40 C.F.R. § 124.19. In any appeal from a permit granted under 40 C.F.R. Part 124, the petitioner bears the burden of demonstrating that review is warranted. 40 C.F.R. § 124.19; see *In re Pennsylvania Gen'l Energy Co. LLC*, UIC Appeal Nos. 14-63, 14-64, & 14-65, slip op. at 4 (EAB Aug. 21, 2014); *In re City of Palmdale*, 15 E.A.D. 700 (EAB 2012); *In re Wash. Aqueduct Water Supply Sys*., 11 E.A.D. 565, 573 (EAB 2004); *In re Am. Soda, LLP*, 9 E.A.D. 280, 286 (EAB 2000). To obtain review, the petitioner must identify the contested permit condition and show that the permit condition in question is based on a "clearly erroneous" finding of fact or conclusion of law, or involves an "exercise of discretion or an important policy consideration that the Environmental Appeals Board should, in its discretion, review." 40 C.F.R. § 124.19(a)(4)(i); *See In re Guam Waterworks Auth.*, 15 E.A.D. 437, 443 n. 7 (EAB 2011); *In re Environmental Disposal Sys., Inc*., 12 E.A.D. 254, 263 (EAB 2005).

The petitioner must also demonstrate that each issue raised in the petition was raised during the public comment period, and for each issue that was not raised previously, the petition must explain why it was not required to be raised during the public comment period as required by 40 C.F.R. § 124.13. Additionally, if the petition raises an issue that the EPA addressed in the response to comment document, the petitioner must provide a specific citation to the relevant comment and response, and explain why the EPA's response was clearly erroneous or otherwise warrants review. 40 C.F.R. § 124.19(a)(4)(ii). *See EAB Practice Manual (Aug. 2013)* at 45; *In re City of Attleboro*, 14 E.A.D. 398, 405 (EAB 2009), ("[T]he Board will not entertain vague or unsubstantiated claims."); *In re Westborough,* 10 E.A.D. 297, 305, 311-312 (EAB 2002) (noting

that "a petitioner must demonstrate with specificity in the petition why the Region's prior response to those objections is clearly erroneous or otherwise merits review"). The Board has held that "mere allegations of error" are not enough to warrant review. *See In re City of Attleboro*, 14 E.A.D. 398, 405-406, 418, 432, 440 (EAB 2009). Applying these principles, the EAB denies review where the petitioner merely reiterates or attaches comments previously submitted regarding a draft permit and does not engage the EPA's responses to those comments. *See also In re Cherry Berry B1-25, SWD*, UIC Appeal No. 09-02 (EAB Aug. 13, 2010) (Order Denying Review) at 5 ("This Board has frequently stated that [i]t is not sufficient simply to repeat objections made during the comment period; instead, a petitioner must demonstrate why the permit issuer's response to those objections is clearly erroneous or otherwise warrants review."); *In re Chukchansi Gold Resort*, 14 E.A.D. 260, 264 (EAB 2009) ("Assuming the issues have been preserved, the petitioner must then explain with sufficient specificity why a permit issuer's previous response to those objections [raised during the public comment period on the draft permit] were clearly erroneous, an abuse of discretion, or otherwise warrant Board review.").

The preamble to the original EAB permit appeal provisions at 40 C.F.R. § 124.19 states that "this power of review should only be sparingly exercised," and that "most permit conditions should be finally determined [by the permitting authority]." (Consolidated Permit Regulations) 45 Fed. Reg. 33,290, 33,412 (May 19, 1980). *See In re City of Attlebor*o, 14 E.A.D. 398, 405 (EAB 2009); *In re Environmental Disposal Sys., Inc*., 12 E.A.D. 254, 263-64 (EAB 2005); *In re Scituate Wastewater Treatment Plant*, 12 E.A.D. 708, 717 (EAB 2006); *In re City of Moscow*, 10 E.A.D. 135, 140-41 (EAB 2001); *In re Jett Black, Inc.*, 8 E.A.D. 353, 358 (EAB 1999); *In re Maui Electric Co*., 8 E.A.D. 1, 7 (EAB 1998). Subsequent revisions to Part 124 did not expand the scope of review. *See* Revisions to 40 C.F.R. Part 124, 78 Fed. Reg. 5281, 5284 (Jan. 25, 2013) ("…the revised language is not intended to expand the Board's existing scope of review.").

On matters that are fundamentally technical or scientific in nature, the Board will typically defer to a permit issuer's technical expertise and experience, as long as the permit issuer adequately explains its rationale and supports its reasoning in the administrative record. *In re City of Palmdale*, 15 E.A.D. 700, 705 (EAB 2012); *See also In re Beeland Group, LLC*, 14 E.A.D. 189, 196 (EAB 2008); *In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 510 (EAB 2006); *In re Russell City Energy Ctr*., 15 E.A.D. 1, 66 (EAB 2010), *petition denied sub nom.; Chabot-Las Positas Cmty. Coll. Dist. v. EPA*, 482 Fed. Appx. 219 (9th Cir. 2012); *In re Peabody W. Coal Co*., 12 E.A.D. 22, 41, 46, 51 (EAB 2005); *In re NE Hub Partners, L.P*., 7 E.A.D. 561, 570-71 (EAB 1998). Further, "[w]hen issues raised on appeal challenge a Region's technical judgments, clear error or a reviewable exercise of discretion is not established simply

because petitioners document a difference of opinion or an alternative theory regarding a technical matter." *In re NE Hub* 7 E.A.D. at 567.

In addition, the Board's authority to review a UIC permit does not extend beyond the goals of the UIC program to protect USDWs. *See In re Environmental Disposal Sys., Inc*., 12 E.A.D. 254, 266 (EAB 2005); *See also In re Sunoco Partners Marketing & Terminals, LP*, UIC Appeal No. 05-01, slip op. at 10 (EAB June 1, 2006); *In re Envotech, L.P.*, 6 E.A.D. 260, 264, 286 (EAB 1996) ("[T]he SDWA ... and the UIC regulations ... establish the *only* criteria that EPA may use in deciding whether to grant or deny an application for a UIC permit.") (emphasis in the original).

IV. ARGUMENT

Petitioners do not dispute any specific permit condition in their Petition for Review. Petition at 2. Instead, the issues Petitioners present for review to the Board are: 1) whether the Region was clearly erroneous in its decision to rely on the existing Aquifer Exemption in the FCI Permit decision; 2) whether, as a matter of policy, the Region's decision to leave the Existing Aquifer exemption in place was justified; and 3) whether the Region provided adequate responses to Petitioners' comments. Petition at 2, 10, 37-38. However, the Region's permit decision was made in accordance with UIC regulations and is supported by an extensive record, including thorough responses to comments made during the public comment period. Despite the Region's well documented and responsive analysis of the existing Aquifer Exemption as it relates to the FCI Permit, the Petitioners identified several areas where they attempt to substitute their technical and policy preferences for the Region's decisions and determinations, but they have not demonstrated how the Region's response to their comments was inadequate or otherwise identified any clearly erroneous findings of fact or conclusions of law that would require review by the Board. Instead, they seek review of an existing Aquifer Exemption outside the scope of this permit decision and ask the Board to remand the Permit to require a new aquifer exemption.

Petitioners may not use Part 124's permit appeal provisions to indirectly challenge the underlying Aquifer Exemption that was issued by the Region in 1997. Petitioners acknowledge that the changes the Region made to the Permit in response to the comments addressed many of their concerns, and limit the relief requested to modifying the existing Aquifer Exemption to be consistent with the smaller scope of the PTF activity under the Permit. Petition at 2. As discussed in Section III, the criteria for challenging UIC permits is set forth in 40 C.F.R. § 124.19(a)(4) and provides that "a petition for review must identify the contested permit condition or other specific challenge to the permit decision and clearly set forth, with legal and factual support" why the Permit decision should be reviewed. Because the approval of the existing Aquifer Exemption is not part of the Permit decision before the Board, it is not a proper basis for seeking the Board's

review. Petitioners fail to meet their burden to identify a permit condition or specific challenge to the Permit decision that warrants review.

A. The Region's Reliance on the Existing Aquifer Exemption for the Permit is Not Clearly Erroneous

In accordance with the UIC regulations, the Region issued a Class III permit in an area with an existing and valid Aquifer Exemption, conducted an analysis of the adequacy of the Aquifer Exemption for the proposed PTF injection activity and drafted a protective Permit to meet regulatory requirements and protect USDWs. The Region's examination of the Aquifer Exemption in light of the FCI Permit application is supported by the Region's technical analysis and is well-documented in the record. The Region therefore requests the Board deny review on these grounds.

Petitioners have not challenged a specific permit condition, but to the extent they are challenging the Region's reliance on the existing Aquifer Exemption for the issuance of the FCI Permit, the Region will respond to the substance of that claim. The Petitioners assert that the PTF Permit "should have been accompanied by a new aquifer exemption" but fail to point to any legal requirement supporting their claim or evidence that the Region's reliance on the existing Aquifer Exemption is clearly erroneous or otherwise is an exercise of discretion or policy judgment that would require review. Petition at 13. As described in Section III, above, the Region's technical evaluations are entitled to considerable deference and are subject to a "clearly erroneous" standard of review.

Although not required by EPA regulations or the SDWA, out of an abundance of caution and due to the passage of time since the Aquifer Exemption was granted in 1997, the Region chose to conduct an analysis to ensure that the portion of the existing exempted aquifer area subject to the PTF activities continues to meet the criteria for exemption at 40 C.F.R. § 146.4. Based on this review, the Region concluded that the portion of the aquifer that would be impacted by PTF operations continues to meet the criteria for exemption because: 1) it does not currently serve as a source of drinking water; and 2) it cannot now and will not in the future serve as a source of drinking water because it contains minerals that are expected to be commercially producible. The Region's analysis was reasonable and conservative, and Petitioners fail to point to any conclusion in the record that is clearly erroneous or contrary to law.

i. *The Portion of the Aquifer Exemption Affected by the PTF Does Not Currently Serve as a Source of Drinking Water*

Petitioners claim that the LBFU currently serves as a source of drinking water and will serve as a drinking water source in the future and therefore, should be "excluded" from the

existing Aquifer Exemption due to changed conditions in the area, including increased residential development. Petition at 13. This claim was made during the public comment period and the Region carefully responded to it in the response to comments (RTC at 15-16, AR #581). In raising the same claim, Petitioners fail to point with specificity to any clear error or erroneous determination by the Region or how the Region's response, described further below, was inadequate.

The UIC regulations at 40 C.F.R. § 146.4(a), state that an aquifer or portion of an aquifer may be determined to be an exempted aquifer if "[i]t does not currently serve as a source of drinking water." To ensure that the portion of the existing exempted aquifer area subject to the PTF activities continues to meet the criteria for exemption at 40 C.F.R. § 146.4(a), the Region evaluated whether the portion of the Aquifer Exemption affected by the PTF currently serves as a source of drinking water for wells already in existence. In its technical analysis, the Region analyzed whether the groundwater within the Area of Review is currently withdrawn for drinking water and if such ground water will be withdrawn in the future by drinking water wells currently in existence during the operational lifetime of those wells. The Region confirmed that there are no drinking water wells withdrawing water from the identified portion of the aquifer today, which is consistent with the exempt status of that aquifer (SOB at 12-15, AR #18). Further, considering groundwater flow patterns and using very conservative assumptions, the Region determined that the groundwater in the PTF's Area of Review would take at least 127 to 211 years to travel the distance to the nearest potential (inactive) drinking water well (ADWR No. 55-212512), located approximately 1.2 miles downgradient of the PTF wellfield (RTC at 14-16, AR #581). The Region based this determination on an estimated hydraulic conductivity ranging from an average of 15 feet/day to a maximum of 25 feet/day and a groundwater flow velocity of 30 to 50 feet per year in the LBFU. If tortuosity of pore spaces were considered in the calculation, the travel time would be even longer (RTC at 15-16, AR #581). Further, and as described in the draft Permit Statement of Basis, the travel time from the portion of the LBFU located above the PTF wellfield to the closest active drinking water well (at Merrill Ranch) would be greater than 200 years (SOB at 14, AR #18). The Region reasonably concluded this time period exceeds the reasonable lifetime of any existing drinking water wells and therefore, the exempted portion of the aquifer affected by the PTF does not currently serve as a source of drinking water (*Id.*).

Petitioners attempt to substitute their technical analysis of groundwater flow models for the Region's, but in doing so, they over-generalize observations from the limited BHP injection activities at the FCI property. Petition at 17. The Petitioners reiterate an argument made in their comments on the draft FCI permit about "short circuits" that present "a preferential flow pathway for water to move" in the fractured portion of the Oxide Bedrock Zone (SWVP Comments at 5-6; C-2, C-3, I-16, AR #543). In response to Petitioners' comment, the Region explained:

> EPA agrees that the graphics presented by the commenter as evidence of potential "short circuits" that could result in "acid escapes" in the BHP wellfield indicate heterogeneity of the BHP Pilot Test orebody and the potential for preferential flow paths. However, this heterogeneity is not indicative of a loss of hydraulic control and resultant excursions of ISCR fluids. The commenter describes the short circuit as "a preferential flow pathway for water to move in an east-west direction near the bottom of the project site." The commenter further states that "[w]hen site geology has short-circuits, acid escapes are possible even when water balance and gradients seem to demonstrate hydraulic control." In addition, the commenter asserts that the BHP Pilot Test experienced "failed containment," but presents no facts to support that assertion. Fluids were contained within the wellfield and the "short circuit" was successfully reversed after reconfiguration of injection and recovery wells. EPA is confident that the more stringent monitoring requirements for hydraulic control and excursions at the PTF wellfield will ensure detection and reversal of any ISCR excursions beyond the wellfield.

(RTC at 9, AR #581). Furthermore, the portion of the LBFU that supplies some drinking water wells completely outside the exempted area would not be affected by "short circuits," as suggested by Petitioners, because the LBFU is primarily a fairly homogeneous alluvial deposit (composed of sand, silt, and clay or sand, gravel, and boulders) and not a fractured bedrock aquifer (RTC at 8-9, 40, AR #581, Revised FCI Application, Maps and Cross Sections of Lithology, Attachment F, Figures F-7, F-8, F-9, AR #2e). The Region's modeling was conservative and not clearly erroneous. Moreover, the Region's response to Petitioner's comments on this issue was comprehensive and Petitioners have failed to point out why the response was clearly erroneous or merits Board review.

Petitioners also challenge the Region's analysis of the existing Aquifer Exemption by arguing that the groundwater flow patterns in the subsurface would be substantially accelerated when new drinking water wells are drilled in the area in the future. Petition at 17. However, the "current source" analysis conducted by the Region under 40 C.F.R. § 146.4(a) was reasonable and carried out in accordance with agency guidance. The Region's analysis is consistent with UIC regulations at 40 C.F.R.§ 146.4(a), which require that an aquifer or portion of an aquifer proposed for exemption "does not currently serve as a source of drinking water," and with EPA Guidance 34, which states that existing wells within a minimum of a quarter-mile buffer zone should be examined to determine whether they will draw water from an aquifer to be exempted (AR #585). The approach is also in accordance with EPA's more recent guidance, which states, "EPA has determined that water that currently serves as a source of drinking water includes water that is being withdrawn in the present moment as well as water that will be withdrawn in the future by wells that are currently in existence" (AR #584). The Petitioner did not identify in their Petition or comments to the Region any current sources of drinking water in portions of the aquifer that would be affected by the PTF.

Petitioner's argument that the "current source" analysis must fail due to the fact that it is "reasonably foreseeable" that new drinking water wells will be developed in the area in the future suggests that EPA must apply new criteria not currently found in EPA regulations or guidance for aquifer exemptions under 40 CFR § 146.4(a). The Board should deny review because the Petitioners have failed to identify flaws in the Region's current source analysis that are clearly erroneous and the Region has reasonably applied its technical expertise, in accordance with law and supported by the record, in this discretionary review of the existing Aquifer Exemption.

ii. *The Portion of the Aquifer Exemption Affected by the PTF Will Not in the Future Serve as a Source of Drinking Water*

Likewise, to the extent Petitioners dispute the Region's reliance on the existing Aquifer Exemption, they claim the exempted aquifer area subject to injection from the PTF is a future drinking water source and should not be an exempted aquifer. Petition at 18. However, Petitioners fail to acknowledge the regulatory criteria for aquifer exemption under the SDWA. The UIC regulations at 40 C.F.R. § 146.4(b)(1), state that an aquifer or portion of an aquifer may be determined to be an exempted aquifer if it meets the criteria at § 146(a) and if:

> (b) It cannot now and will not in the future serve as a source of drinking water because:
>
> > (1) it is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.

40 C.F.R. § 146.4(b)(1).

The 1997 Aquifer Exemption was granted because the EPA determined the criterion at §146.4(b)(1) related to "future use" was met through the previous permittee's demonstration that it contains a mineral (copper ore), which due to its quantity and location, was expected to be commercially producible (AR #24, #238). Although not required, in the context of the Permit decision, the Region determined that the area covered by the PTF continues to meet the aquifer exemption criteria because: a) it does not currently serve as a drinking water source; and b) it cannot and will not in the future serve as a drinking water source because it contains minerals that because of their quantity and location are expected to be commercially producible. *See* 40 C.F.R. § 146.4(a) & (b)(1); (RTC at 14-20, AR #581; "NI 43-101 Florence Copper Project, Technical Report, Pre-Feasibility Study," AR #8). Petitioners claim reliance on this criterion is "untenable" but fail to explain why the Region was clearly erroneous in reliance on specific regulatory criteria concerning aquifer exemptions.

Petitioners do not challenge the entire vertical extent of the existing Aquifer Exemption, but request the Board remand it to the Region to exclude the upper limit, which contains a

portion of the LBFU. Petition at 2, 22-26. Petitioners argue that the LBFU is a current source of drinking water and does not meet the aquifer exemption criteria. However, Petitioners' characterization of the Aquifer Exemption as it applies to the LBFU is misleading.

Petitioners assert that "the LBFU contains no producible minerals, only good-quality groundwater relied upon by the Town of Florence and its residents." Petition at 20; 22-26. Petitioners attempt to redefine the exempted area of the aquifer as several separate aquifer units. However, as demonstrated in the record, the Oxide Bedrock Zone and the LBFU are in contact at the LBFU-orebody interface and are not separated by a confining unit or any other geologic mechanism to prevent hydraulic movement (Revised FCI Application, Attachment I, p. 4, AR #2g). They are therefore in direct hydraulic communication with each other and the Region reasonably considered them to be an "aquifer," for the purpose of defining an aquifer exemption zone under the criteria at 40 CF.R. § 146.4. This is consistent with the regulatory definition of "aquifer" at 40 C.F.R. § 144.3: "Aquifer" means a geological "formation," or group of formations or part of a formation that is capable of yielding a significant amount of water to a well or spring." In this case, the exempted aquifer is a "group of formations" that are hydrologically connected (Revised FCI Permit Application, Attachment A, Exhibit 14A-1, "Aquifer Test Data", Appx. E, Table E-1, AR #2a, Attachment S, Figure S-1, AR #2p). The Region's conclusion that this subsurface area is an "aquifer" that contains a commercially producible quantity of minerals is in accordance with law and supported by the record, and therefore is not clearly erroneous.

Petitioners further contend that the hydraulic connection between the LBFU and the copper ore body shown in the record should result in more stringent protection of the LBFU, "since mining contaminants can easily flow from the Oxide Bedrock Zone into what is now and will be a drinking water source." Petition at 22. Petitioners fail to acknowledge that the limited portion of the LBFU within the mining area, into which fluids may migrate from the PTF activity, is not a drinking water source. Nor do they consider that the Permit protects the downgradient portions of the regional LBFU that are USDWs outside the exempted area and limits migration from the PTF Area of Review. Moreover, injected fluids cannot easily flow from the Oxide Bedrock Zone into the lower exempted portion of the LBFU as the Petitioners contend. The Permit provides for protection of existing USDWs through proper permitting conditions within the existing Aquifer Exemption, and it is notable that the Petitioners do not assert otherwise (Permit Part II.C.7, E.1, H.1, I, AR #596).

The Region has issued a highly protective permit with an extensive record to demonstrate that the in-situ copper recovery fluids from the proposed PTF operations will remain within the Area of Review and will prevent migration of fluids to USDWs. The permit requires significant conditions for wellfield construction, hydraulic control, corrective actions, operation, monitoring, aquifer restoration and proper closure of the mining area subject to injection and copper recovery

activities to protect against migration to USDWs (Permit Parts II.C-I, AR #596; SOB at 7-12, AR #18). *See* 40 C.F.R. § 144.12; §§ 146.10(a)(4), 146.32(e).

In addition, Petitioners argue that the review of the existing Aquifer Exemption conducted by the Region is erroneous as the Region did not evaluate the entire LBFU outside the exempted area affected by the PTF and whether it met the criteria at 40 C.F.R. § 146.4(b)(1). Petition at 16-17, 20-21. Notwithstanding the fact that the Region had no legal requirement to conduct this review as part of the PTF permitting process, Petitioners' assertion that such a review is necessary for portions of an aquifer that lie beyond the area to be exempted (or in this case, the area that is exempt) is simply not accurate. When the Agency conducts a review for an aquifer proposed for exemption to demonstrate that it will not in the future serve as a source of drinking water per 40 C.F.R. § 146.4(b), the review is only directed to that portion of the aquifer under consideration for the exemption. The regulatory criteria do not require that a "future source" review be conducted for aquifers, or portions of aquifers, that are not subject to potential exemption. The Region thoroughly evaluated the criteria at 40 C.F.R. § 146.4(b)(1) when it approved the existing Aquifer Exemption and reevaluated the portion of the exempt aquifer potentially affected by the PTF injection as part of the current permitting process.

The Petitioners' concerns over current and future sources of drinking water in the exempted aquifer area outside the PTF are not before the Board in this Permit decision. This area of the exempted aquifer is not affected by the FCI Permit at issue in this appeal. As discussed above, the Permit has requirements for hydraulic control, monitoring, and corrective action and aquifer restoration to protect USDWs outside the exempted area and although not required by UIC regulations, protects the exempted aquifer areas outside the Area of Review for the PTF. The Petitioners have not explained why the aquifer areas outside the area affected by the PTF and within the existing Aquifer Exemption must be considered in the context of this permit action and why the analysis conducted by the Region constitutes clearly erroneous error. Therefore, the Petition has failed to meet the standard for review by the Board.

B. The Region's Decision to Leave the Aquifer Exemption in Place Cannot Be Challenged in the Region's Permit Decision

Petitioners' central contention in their appeal of the FCI Permit is "the decision to leave in place a 20-year old aquifer exemption," which was issued by the Region at the same time as the UIC Class III permit issued to BHP copper in 1997. Petition at 1. Further, the Petitioners argue that the Region has "no choice" but to approve a smaller aquifer exemption as a part of the proposed UIC permit with more limited vertical and lateral boundaries. Petition at 2.

As discussed in Section III, the scope of the Board's review is limited to the Region's permit decision, which was based on the evaluation of the permit application, technical analysis

and consideration of the EPA regulatory requirements. Despite the Region's robust record regarding the FCI Permit decision, including the responsive analysis of the area of the exempted aquifer affected by the PTF, Petitioners request the Board to remand the UIC permit to the Region "with direction to require a new application for an aquifer exemption that is focused on the impacts of the PTF." Petition at 2. Petitioners contend that the analysis the Region would undertake on remand would lead to an aquifer exemption approval that is "laterally limited to the PTF wellfield and a small buffer zone beyond that ends at compliance monitoring wells already provided for in the UIC permit" and "vertically limited to the Oxide Bedrock Zone." *Id.* Petitioners acknowledge that with these changes, "the remaining flaws in the UIC permit do not preclude its reissuance." *Id.*

While Petitioners do not take issue with the permit decision before the Board, they seek review of the existing Aquifer Exemption in connection with the permit decision. However, as explained above, the Region's reliance on the Aquifer Exemption was not clearly erroneous, and Class III permits are a distinct agency action from determinations on aquifer exemptions. The two are linked only to the extent that the EPA regulations prohibit injection activities that allow the movement of fluid containing contaminants into a USDW if the presence of the contamination may cause a violation of drinking water standards or otherwise adversely affect the health of persons. 40 C.F.R. §§ 144.1(g), 144.12. Aquifer exemption decisions are based on the criteria at 40 C.F.R. § 146.4; permit standards for Class III UIC permits are detailed at 40 C.F.R. § 146 Subpart D. The UIC regulations for Class III permits do not require re-examination of existing aquifer exemptions as long as the Class III permit does not allow injected fluids to migrate outside the exempted area.

As discussed, the UIC regulations for Class III well permits require the permit conditions prevent the migration of fluids to USDWs. The record clearly supports the Region's conclusion that the FCI Permit will not cause migration of fluids outside the area of the PTF activity and into USDWs. As a part of the permit decision, the Region conducted a voluntary analysis in response to comments that demonstrated the discrete portion of the exempted aquifer potentially affected by the PTF operation continues to meet the requirements for exemption under 40 C.F.R. § 146.4. To the extent Petitioners are concerned about protection of the aquifer outside the PTF area, that issue is not before the Region or the Board, as this Permit only concerns the PTF, and any expansion to injection activity in the larger exempted area would require a new permit application to the Region. In drafting this Permit to protect USDWs and prevent migration of fluids outside the PTF area, the Region took a conservative and protective approach. Petitioners have not met their burden to demonstrate how the permit decision before the Board is clearly erroneous given the extensive analysis in the record and the permit conditions that meet the requirements under UIC regulations. To the extent they take issue with the existence of an

aquifer exemption outside the PTF area covered by this Permit, that issue is not before the Board in this Petition for Review and is outside the scope of that review.[3]

C. Region's Responses to Comments Were Adequate and Not Clearly Erroneous

As discussed in Section III and under 40 C.F.R. § 124.19(a)(4)(ii), Petitioners must carry the burden of explaining why the Region's response to their comment was clearly erroneous or otherwise warrants review by the Board. At various points in their petition, Petitioners take issue with the Region's responses to their comments under 40 C.F.R. § 124.17(a)(2), however they fail to explain why the Region's responses were clearly erroneous. Through their Petition to the Board, Petitioners seek to compel the Region to revoke and reissue the existing Aquifer Exemption, an action not required by law and outside the scope of the Board's review of this permit decision. In support of this effort, Petitioners argue that the Region's responses to their comments were inadequate, they fail to substantiate why the Region's technical responses were clearly erroneous and warrant review by the Board.

The Region carefully considered Petitioners' comments regarding the reevaluation of the existing Aquifer Exemption and responded to the significant issues raised. The regulation governing the response to comments in a permit proceeding requires that the Region "[b]riefly describe and respond to all significant comments." 40 C.F.R. § 124.17(a)(2). Significantly, this regulation does not require the Region's response to be of the same length or level of detail as the comment. *See In re Hoechst Celanese Corp.* 2 E.A.D. 735, 739 n.7 (EAB 1989) ("Once the Agency has reached a reasonable and legally proper permit decision based on the administrative record, it need not provide detailed findings and conclusions, but instead must reply to all significant comments as required by 40 C.F.R. § 124.17").

Specifically, Petitioners suggest that the Region's response to the role of future residential development and zoning matters was inadequate. Petition at 16-17; 27. The

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[3] The plain language of SDWA is clear that the Region's approval of the 1997 aquifer exemption is final agency action reviewable in federal Circuit Courts, in this instance the Ninth Circuit. Section 1448 of SDWA provides for judicial review of any action by the Administrator of the EPA (or authorized delegates) under the SDWA (other than actions pertaining to the establishment of national primary drinking water standards):

> …in the circuit in which petitioner resides or transacts business which is directly affected by the action. Any such petition shall be filed within the 45-day period beginning on the date of the promulgation of the regulation or any other final Agency action with respect to which review is sought or on the date of the determination with respect to which review is sought, and may be filed after the expiration of such 45-day period if the petition is based solely on grounds arising after the expiration of such period

42 U.S.C. § 300j-7(a)(2); *See also W. Neb. Resources Council v. U.S. Envtl. Prot. Agency* ("*WRNC I*"), 793 F.2d 194, 200 (8th Cir. 1986) (holding the Eighth Circuit was proper venue for judicial review of EPA Region 8 aquifer exemption approval).

Petitioners' central argument is that the planned development surrounding the FCI property will require use of the aquifer for drinking water supplies, and this should be considered in the Region's analysis that the aquifer will not in the future serve as a source of drinking water under 40 C.F.R. § 146.4(b)(1). Petitioners suggest the Region should consider potential future land use changes, although this is not a factor in the EPA regulations relied upon for the Region's determination. Moreover, the Region did directly respond to this issue, stating that:

> … local ordinances and zoning restrictions do not replace EPA's responsibility to implement the UIC program under the Safe Drinking Water Act to ensure protection of USDWs under our statutory authority. Based on the conditions in the PTF permit, EPA believes that the surrounding USDWs will be protected, as required, regardless of surface land use and ownership.

(RTC at 20, AR #581). The Region's response is reasonable, as it is based on the EPA's authority and responsibility to protect USDWs under the SDWA. The EPA regulations make clear that issuance of a UIC permit does not implicate private property rights, thus these arguments are beyond the scope of the permitting process and Board review. *See* 40 C.F.R. § 144.51(g), *In re Envotech*, L.P., 6 E.A.D. 260, 276, (EAB 1996), *See also In the Matter of Brine Disposal Well*, 4 E.A.D. 736, 741, (EAB 1993), *quoting In re Suckla Farms, Inc.*, 4 E.A.D. 686, 695 (EAB 1993) ("EPA is simply not the correct forum for litigating contract- or property-law disputes that may happen to arise…[t]hese disputes properly belong in a court of competent jurisdiction." Petitioners also do not explain why the Region erred in its analysis, which under 40 C.F.R. § 146.4(b)(1), does not implicate local land use matters.

Petitioners assert that the existing Aquifer Exemption is not valid because mining is "illegal" within most of the existing Aquifer Exemption area, and therefore, "the project site cannot be considered mineral producing." Petition at 27. However, while this inquiry is also outside the criteria found in 40 C.F.R. § 146.4(b)(1), it is notable that the surface area where FCI has proposed the PTF activity is wholly within the State Mineral Lease, where FCI has a valid lease to mine copper ore. In the area impacted by the PTF operation and under consideration in this permit action, it is not "illegal" for FCI to conduct ISCR activities. The Region's reliance on regulatory criteria at 40 C.F.R. § 146.4(b)(1) was not clearly erroneous, and the Region's response to the comments raised were adequate and reasonable, and therefore do not warrant review by the Board.

Petitioners argue that the Region has not adequately responded to facts related to FCI's future plans to restore the aquifer. Petition at 19. Petitioners assert that the restoration of the aquifer required by the Permit after PTF operations renders the aquifer a future source of drinking water. Petition at 18. To further protect USDWs outside the exempted area, the Permit requires FCI to conduct post-injection restoration of the aquifer:

> Pursuant to §§ 144.12 and 146.10(a)(4), the Permittee shall adequately protect USDWs by commencing, within sixty (60) days after completing copper recovery operations in the PTF, restoration of groundwater in the injection and recovery zone of the PTF to primary maximum contaminant levels (MCLs) under 40 CFR Part 141, or to pre-operational concentrations if those concentrations exceed MCLs.

(Permit at Part II.B.3, AR #596). Petitioners seem to propose a circular argument: if an aquifer can be restored to pre-injection MCLs through post production activities required by a UIC Class III Permit, the aquifer should not be exempted because it could in the future serve as a source of drinking water. However, that is not the standard in 40 C.F.R. § 146.4(b)(1). In addition, this issue was raised by the Petitioners without proper citation to specific comments, as required by 40 C.F.R. § 124.19(a)(4)(ii). Petition at 18, n. 68. This comment does not rise to the "significance" level subject to a required response by the Region, due to its circular reasoning unsupported in law. Therefore, the Region's consideration and response to significant comments raised regarding the Region's discretionary review of the future use criteria for the Aquifer Exemption was reasonable and not clearly erroneous.

Likewise, Petitioners suggest, without pointing to legal authority, that the size of an aquifer exemption relative to the proposed injection activity is a factor that the EPA must consider in granting an aquifer exemption or permitting injection. Petition at 31-33. Petitioners point to the fact that the size of the existing Aquifer Exemption is larger than the area impacted by the PTF, which covers only a small portion of the exempted aquifer, and argue that this renders the Region's reliance on the valid Aquifer exemption erroneous. Petition at 27-34. The Region responded in the record to clarify that the Permit decision did not reopen the existing Aquifer Exemption and its boundaries, and further explained that each aquifer exemption decision is based on the facts presented at the time of consideration:

> The comment that EPA did not follow applicable regulations and guidance because the aquifer exemption boundary is larger than necessary for the PTF operation represents a misunderstanding of EPA's current action. In the current action, EPA is approving the PTF mining permit for activity wholly within the boundary of the existing aquifer exemption. As noted in a prior response, EPA's current action to approve the PTF permit has no effect on the existing aquifer exemption. EPA defined the aquifer exemption boundaries in 1997, in consideration of the particular characteristics of the permitted project, the mining site, and the specific purpose of in-situ copper recovery. The 1997 exemption boundary was based on the entire extent of the ore body that contains minerals expected to be commercially producible, with an additional lateral buffer zone of 500 feet from the ore body. In establishing the existing exemption boundary, EPA adhered to applicable regulations and guidance for aquifer exemption approval.

(RTC at 16-17, AR #581). The Region adequately responded to Petitioners' concerns regarding the size of the Aquifer Exemption. Further, as noted by the Ninth Circuit*:*

> [Petitioner WRNC] does not argue that the expanded exemption area violates the exemption regulations; rather, WNRC simply complains that the exempted area is unnecessarily large, contrary to the statute's purpose. We disagree. Particularly because all mining activities in the exempted area will be thoroughly regulated by [other federal agencies] and EPA, we see no basis for disturbing EPA's decision that a 3,000-acre exemption was appropriate.

W. Neb. Resources Council v. U.S. Envtl. Prot. Agency ("WRNC II"), 943 F.2d 867, 871. Notably, in *WRNC II*, the Court deferred to the Region's decision to approve a new aquifer exemption when the Plaintiff questioned the size of the exemption relative to the proposed injection activity. However, in the FCI Permit, the Region considered the adequacy of an existing, validly approved aquifer exemption in the context of a permit decision that affects only a portion of the existing exempted area. Petitioners acknowledge there is no regulatory requirement to alter the existing Aquifer Exemption but also claim, "as a matter of policy, good practice and simple logic" the Region should revisit the size of the exemption. Petition at 33. However, like the aquifer exemption at issue in *WRNC II*, the exempted aquifer area subject to injection in the Permit is regulated by the EPA UIC Class III Permit and should FCI seek to expand its activities for commercial production into other areas of the exempted aquifer, a new application for a Class III UIC permit would be required before injection activities could commence. The mining activities are comprehensively regulated by the EPA through the Permit and UIC regulations; therefore, reliance on the existing Aquifer Exemption for the limited operations of the PTF, which cover only a limited area of the exempted aquifer, was not clearly erroneous.

Petitioners do not engage with the substance of the Region's responses but instead, simply reiterate their view, without sufficient legal authority, that as a matter of policy, the size of the existing Aquifer Exemption should be altered through the Region's UIC permit action. Therefore, the Petitioners' assertion that the Region's response is not adequate is without merit, and does not warrant review by the Board.

V. CONCLUSION

The Petition fails to meet requirements at 40 C.F..R § 124.19(a)(4)(i) to challenge permit conditions or other aspects of the permit decision on a finding of fact or conclusion of law that is clearly erroneous. As discussed, Petitioners present to the Board a collateral attack of the existing Aquifer Exemption, a matter outside the scope of this permit decision. In addition, Petitioners have not demonstrated how the Region's reliance on the existing Aquifer Exemption and the significant analysis of the exemption in the context of the proposed PTF operation was clearly erroneous. As evidenced by the record, the Permit is protective of USDWs in accordance with 40 C.F.R. Parts 144 and 146. The Region's discretionary review of the basis for the Aquifer Exemption was made in accordance with law and was responsive to Petitioners' concerns.

Likewise, the Region provided well-reasoned and complete responses to the significant comments provided by Petitioners, and Petitioners have not articulated why the Region's response was clearly erroneous or deserving of review by the Board. The Region therefore respectfully requests that the Board deny the Petitioners' request for review of the FCI Permit.

VI. STATEMENT OF COMPLIANCE WITH WORD COUNT

Pursuant to 40 C.F.R § 124.19(d)(3), the Region states that this Response to Petition for Review contains approximately 9,091 words, which does not exceed the 14,000-word limit set by the EAB.

Date: April 7, 2017

Respectfully submitted,

Alexa Engelman
Office of Regional Counsel
EPA Region 9 (MC ORC-2)
75 Hawthorne St.
San Francisco, CA 94105
Telephone: (415) 972-3884
Facsimile: (415) 947-3570
Email: Engelman.Alexa@epa.gov

Of Counsel:

Leslie Darman
Water Law Office
EPA Office of General Counsel
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
Telephone: (202) 564-5452

CERTIFICATE OF SERVICE

I hereby certify that I caused a copy of the attached **RESPONSE TO PETITION FOR REVIEW** to be served by electronic mail upon the persons listed below.

Date: April 7, 2017

Respectfully submitted,

Alexa Engelman
Office of Regional Counsel
EPA Region 9 (MC ORC-2)
75 Hawthorne St.
San Francisco, CA 94105
Telephone: (415) 972-3884
Facsimile: (415) 947-3570
Email: Engelman.Alexa@epa.gov

Ronnie P. Hawks
rph@jhc-law.com
Russell R. Yurk
rry@jhc-law.com
Jennings, Haug & Cunningham, L.L.P.
2800 N. Central Avenue, Suite 1800
Phoenix, AZ 85004-1049
Telephone: 602-234-7800
Fax: 602-277-5595
Attorneys for SWVP-GTIS MR, LLC

Christopher Kramer
CKramer@gustlaw.com
Barbara U. Rodriguez-Pashkowski
bpashkowski@gustlaw.com
GUST ROSENFELD P.L.C.
One E. Washington, Suite 1600
Phoenix, AZ 85004
Telephone: 602-257-7422
Fax: 602-254-4878
Attorneys for the Town of Florence, Arizona

Rita Maguire, Esq.
Maguire, Pearce & Storey, PLLC
2999 North 44th Street, Suite 650
Phoenix, AZ 85018
(602) 277-2195
rmaguire@azlandandwater.com

George A. Tsiolis
Attorney at Law
351 Lydecker Street
Englewood, NJ 07631
(201) 408-4256
gtsiolis@nj.rr.com
Attorneys for Florence Copper, Inc.