

11 June 2020

Via email to: mary.rasmussen@usda.gov

Mary Rasmussen
US Forest Service
Supervisor's Office
2324E McDowell Road
Phoenix, AZ 85006-2496

Subject: Resolution Copper Mining, LLC – Mine Plan of Operations and Land Exchange – Response to Water Work Group Action Item WR-27

Dear Ms. Rasmussen,

Several comments on the DEIS were received relating to Resolution's existing AZPDES permit that authorizes discharge to Queen Creek (AZPDES Permit No. AZ0020389). The comments were discussed during the Water Work Group Meeting held on April 23, 2020. During the meeting Resolution Copper was assigned an action item (WR-27) to "*Document current conditions and expected conditions of discharge under AZPDES and exploration of discharges during transitional times of mine life.*" The DEIS comments and information in response to WR-27 is provided below for your review and consideration.

Comments discussed during April 23, 2020 Water Work Group Pertinent to RC's AZPDES Permit:

30075-42: *"...Queen Creek and Arnett Creek are already impaired for aquatic and wildlife use from copper during stormflow conditions. Action: Consider revising this discussion. For Queen Creek and Arnett Creek, since they're impaired for copper during stormflow conditions, AGFD believes that many of the constituents of concern would be elevated during stormflow conditions, not reduced via dilution."*

30075-43: *"...Upper Queen Creek is currently listed as impaired for lead by ADEQ. Action: The text should be revised to include lead as a constituent of concern."*

8031-60: *"The DEIS (p. 364) wrongly says that "Resolution Copper is not proposing any direct discharges to surface waters." A similar incorrect characterization can be found at p. 370. This is simply not correct. Resolution Copper has applied for*

and holds Arizona Pollutant Discharge Elimination System (AZPDES) Permit No. AZ0020389 issued by the Arizona Department of Environmental Quality (ADEQ). Resolution Copper has applied for this permit to discharge up to 3.6 MGD of water into Queen Creek, an impaired water body which is listed on the CWA 303(d) Impaired Waters List as required by the EPA.”

The DEIS (p. 364) incorrectly states that “assimilative capacity is the ability for a perennial water to receive additional pollutants without being degraded.” This is not correct. Per the Arizona Administrative Code Section R18-11-107.01(A), Tier 1 antidegradation criteria applies to: “a. A surface water listed on the 303(d) list for the pollutant that resulted in the listing, b. An effluent dependent water, c. An ephemeral water, d. An intermittent water, and e. A canal listed in Appendix B.” Regarding Tier 1 antidegradation protections, R-18-11-107 states: “The level of water quality necessary to support an existing use shall be maintained and protected. No degradation of existing water quality is permitted in a surface water where the existing water quality does not meet the applicable water quality standards.” As an impaired water body on the 303(d) Impaired Waters List, Queen Creek is subject to the heightened Tier 1 antidegradation criteria but this analysis is absent from the DEIS. Meaningful, full, and fair discussion should have been included in the DEIS on the potential for this project to degrade water quality.”

30075-32: *“Queen Creek Section 3.7.2, which identifies potential risks to water quality, including surface water, does not discuss or analyze the mine’s permitted discharges to Queen Creek under ADEQ AZPDES Permit AZ0020389.”*

8031-61: *“The DEIS fails to analyze the impacts of the project on impaired waters. Queen Creek Reach No. 15050100-014A, (headwaters to the Superior Wastewater Treatment Plant discharge), has been listed on Arizona’s 303(d) list as impaired for dissolved copper since 2002. Reach No. 15050100-014B, (Superior Wastewater Treatment Plant discharge to Potts Canyon) has been listed as impaired for dissolved copper since 2004. Reach No. 15050100-014C (Potts Canyon confluence to the Whitlow Dam) has been listed as impaired for dissolved copper since 2010...The DEIS (p. 370) claims that “only two reaches with the potential to receive additional pollutants caused by the Resolution Copper Project are Queen Creek below the Superior Wastewater Treatment Plant, due to runoff or seepage from Alternatives 2, 3, and 4, and the Gila River from the San Pedro River to Mineral Creek, due to runoff or seepage from Alternative 6.” This is incorrect. Resolution Copper holds AZPDES permit No. AZ0020389 to discharge dewatered mine project water into Queen Creek, and has held this permit since 2010. Although the DEIS (p. 365) acknowledges that TNF is required to identify which waters have been determined to be impaired, identify specifically where contaminants from the project could enter those waters and further pollute waters, and estimate the loading from that*

impairment, this analysis was not done as required by law. Additionally, no discussion at all is provided in the DEIS about the exact location(s) where contaminants could enter those waters as seepage or runoff from these tailings alternatives, nor is there any discussion of attempts to avoid or mitigate such runoff or seepage, impacts, or the potential levels of loading into each water body resulting from each of those discharges. Instead, after simply stating that runoff “could be captured by the subsidence crater” (p. 370), discussion in the DEIS on impacts to impaired waters concludes and is never meaningfully revisited. This is entirely unacceptable and fails to comply with the requirements of NEPA at 40 C.F.R. § 1502.14 to “rigorously explore and objectively evaluate” all reasonable alternatives.”

Resolution Copper Response to WR-27:

Background – Current AZPDES Permit

Resolution’s current AZPDES permit authorizes discharges to Queen Creek through two outfalls located at the West Plant, outfalls 001 and 002. Outfall 001 is authorized for stormwater discharges, but discharges resulting from less than a 100-year, 24-hour storm event are prohibited. See AZPDES Permit, Part I.A. Technology-based and water-quality based effluent limitations are imposed in the event such a discharge occurs. See AZPDES Permit, Table I.a.

Outfall 002 is authorized for discharges from the mine water treatment plant (MWTP). The MWTP primarily treats dewatering water from the various shafts, but discharge of treated industrial water and seepage water is also authorized from outfall 002. Currently, the vast majority of the treated water from the MWTP is sent to the New Magma Irrigation and Drainage District (NMIDD) for reuse in irrigation, pursuant to the terms of a state-issued recycled water individual permit (No. R-511181). Some of the treated water also may be used on site for dust control. As with outfall 001, the permit imposes stringent technology-based and water-quality based effluent limitations on any discharge to Queen Creek through outfall 002. See AZPDES Permit, Table I.b. Discharge monitoring (including whole effluent toxicity testing, see AZPDES Permit, Part I.C) also is required under the AZPDES permit if there is a discharge.¹

On August 21, 1975 the original NPDES permit issued was issued to Magma Copper Company. Several permit renewals were granted, including the BHP NPDES permit issued Nov 7, 2000. On April 29, 2005 Resolution Copper applied for a renewal of the 2000 permit, with the final revised application submitted Dec. 22, 2008. The current AZPDES permit for

¹ Any discharge through outfall 002 is also subject to limits and monitoring requirements under aquifer protection permit No. P-105823.

Resolution Copper was issued in 2010, and was renewed in January 2017. Since becoming the operator of the site in 2004, Resolution Copper has not discharged through either outfall 001 or outfall 002. Stormwater has been retained on site, and treated water from the MWTP has been reused by NMIDD or reused on site for dust control.

Status of Queen Creek as Impaired Water

The AZPDES permit outfalls are located on a stretch of Queen Creek (from its headwaters to the Town of Superior wastewater treatment plant outfall) that has been listed as an impaired water by the State of Arizona, pursuant to its obligations under § 303(d) of the Clean Water Act.² The parameters for which the segment is listed as impaired are dissolved copper, total lead, and total selenium. Ultimately, the state will develop total maximum daily loads (TMDLs) for these parameters in this segment of Queen Creek, pursuant to A.R.S. § 49-234 and governing federal law. A TMDL is an estimate of the total amount of a pollutant that can be added to a water while still allowing it to meet applicable surface water quality standards. TMDLs have not yet been developed for this segment of Queen Creek, although ADEQ issued a draft TMDL for copper for comment in September 2017.³ The draft TMDL indicated that because they do not discharge continuously, ADEQ was planning to apply a concentration-based (not mass-based) waste load allocation on the Resolution Copper permit, which would be based on water quality standards in the receiving water. See draft TMDL, at pp. 35-37. In other words, water quality-based effluent limitations for copper, developed in exactly the same fashion as those already included in the Resolution permit (i.e., based on chronic aquatic and wildlife criteria), would be incorporated as concentration-based wasteload allocations in the eventual copper TMDL. There is no reason to think that a different approach would be required for lead and selenium TMDLs when such TMDLs are developed in the future.

The current Resolution Copper AZPDES permit includes water quality based permit limits for copper, lead and selenium, the three parameters for which the receiving segment of Queen Creek is impaired. Those limits are set at levels equal to or below (i.e., more stringent than) the most stringent applicable surface water quality standard (aquatic and wildlife warm water chronic in all three cases), based as applicable on receiving water hardness levels noted in the permit. In other words, the Resolution AZPDES permit requires any discharges (if and when they occur) to meet permit limits that are equal to or more stringent than the Queen Creek water quality standards that any final TMDL (and associated wasteload allocations) will be designed to protect.

² https://static.azdeq.gov/pn/pn_303d_2018draft.pdf

³ https://static.azdeq.gov/pn/draft_tmdl_queen_arnett.pdf

Antidegradation Requirements for Queen Creek

AZPDES permits also must comply with antidegradation requirements. As noted in the draft TMDL, Queen Creek is not a perennial water. See draft TMDL, at p. 6 (“Neither Arnett Creek, the three reaches of Queen Creek [including the segment from the headwaters to the Town wastewater treatment plant outfall] nor the two unnamed drainages being addressed in this TMDL meet ADEQ’s definition of a perennial water (“a surface water that flows continuously throughout the year.”) (emphasis and bracketed parenthetical added). As such, the segment of Queen Creek into which the Resolution AZPDES permit authorizes discharge is subject to Tier 1 antidegradation protection, which applies to (*inter alia*) intermittent and ephemeral waters. See A.A.C. R18-11-107.01(A)(1). Tier 1 is the baseline level of antidegradation protection; the more stringent antidegradation requirements applicable to Tier 2 waters (perennial waters that meet all standards) and Tier 3 waters (outstanding Arizona waters listed in rule) do not apply to Queen Creek. See A.A.C. R18-11-107.01(B)-(C).

For Tier 1 waters like Queen Creek, antidegradation requirements for point source discharges are satisfied if an AZPDES permit includes water-quality based effluent limitations designed to achieve compliance with applicable surface water quality standards, and also includes any technology-based permit limitations. See A.A.C. R18-11-107.01(A)(3). The Resolution AZPDES permit includes both technology-based and water quality-based effluent limitations, and therefore satisfies this Tier 1 antidegradation requirement.

Future Plans and Effect on Likelihood of Discharge

Currently, Resolution is generating more treated water at the MWTP than it can reuse, which is why that water is being provided to NMIDD for agricultural irrigation. As the mine moves into construction and throughout production, Resolution will need to consume all the water generated from the underground workings, and will in fact need additional water to be pumped from the Desert Wellfield, as discussed in the DEIS. Resolution will maintain the AZPDES permit in the event of a need to discharge in unanticipated conditions (e.g., interim shutdown) or for future mitigation related to subsidence.

At some point after mining of ore commences, the ground surface above the deposit will begin to subside (approximately year 6 post initiation of ore production). The subsidence crater would increase progressively over the life of the operation and some stormwater that would otherwise flow to Queen Creek would be intercepted (Attachment 1 provides an analysis by JE Fuller showing reduction in flow to Queen Creek over 10 year subsidence increments for the Skunk Camp Alternative). As a mitigation measure, Resolution plans to capture water in an interceptor well or wells, and place it into Queen Creek before it reaches the underground workings. The water placed into Queen Creek will increase in ten-year increments coinciding with subsidence progression. This is presumed to require

a new AZPDES permit based on the need for a new outfall at a new discharge location (i.e., Queen Creek above the Magma Bridge). The water placed into Queen Creek will have to meet water quality-based effluent limits based on surface water quality standards applicable at the time of permit issuance. Antidegradation requirements also will need to be satisfied before the permit is issued.

During the post closure period and until such time when evaporation exceeds collected seepage from the Tailing Storage Facility (approximately 80 years post closure), Resolution Copper will need to actively manage seepage collected from the toe of the TSF embankment. During this post closure period, water treatment and an associated AZPDES permit may be required to allow discharge of stormwater and collected seepage into the Dripping Springs Wash. Assuming current legal requirements still apply at that time, then this discharge will have to meet water-quality based effluent limits based on applicable surface water quality standards at the time of permit issuance. Antidegradation requirements also will need to be satisfied before the permit is issued. It should be acknowledged, however, that different and/or additional legal requirements may apply by the time the facility enters post-closure.

Appropriate NEPA Consideration of Current AZPDES Permit

The current AZPDES permit at West Plant is not tied to the specific action being approved by the Forest Service. The AZPDES permit is a state permit issued to Resolution Copper in 2010 (with the original permit having been issued to a prior site owner going in 1975), before any request was submitted to the Forest Service for a mine plan of operations. No Forest Service approval was required before the discharges were lawfully authorized by ADEQ, and the existence of the current AZPDES permit is already included in the No Action alternative as part of the baseline condition. Resolution Copper has not discharged under from either approved outfall and, as explained above, any discharge is unlikely. If anything, as noted above, Forest Service approval that allows mining to commence will most likely reduce the potential for discharge during construction and active operations, given the mine's need for water to facilitate construction and production. Any analysis of the current AZPDES permit included in the final EIS should acknowledge this factor.

By contrast, the discharge to Queen Creek of water intercepted before it can enter the subsidence area, as well as the discharge of stormwater and seepage from the tailings storage facility to Dripping Springs Wash in very large storm events at the end of mine life, would be a result of the Forest Service approval, and thus should be qualitatively evaluated in the EIS given how far subsidence and closure are in the future.

Should you have any questions or require further information please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script, appearing to read "Vicky Peacey".

Vicky Peacey
Senior Manager, Permitting and Approvals; Resolution Copper Company, as Manager of
Resolution Copper Mining LLC

Attachments:

Attachment 1 – JE Fuller (2020), USGS Regression Equation Computation Updates for
Skunk Camp (Alternative 6) Queen Creek, Devil’s Canyon, & Dripping Springs Wash