Meeting Minutes

Engineering/Minerals
Tonto National Forest
Phoenix, AZ

To: Project Record

From: Donna Morey, SWCA

Re: Resolution Water Work group meeting #7 7/30/2020

Attendees:

USFS: Eddie Gazzetti, Mary Rasmussen
SWCA: Chris Garrett, Donna Morey, Emily Newell, Nick Enos, Mark Williamson, Gabi Walser, Carl Medoza
AGFD: Jim Ruff
ASLD: Aundrea DeGravina, Pam Muse
Resolution: Chris Pantano, Jason Nielson, Gustavo M, Vicky Peacey, Greg Ghidotti, Greg "Reggie" Nelson, Tim Bayley, Jim Butler, Mark Logsdon, Derek Groenendyk
EPA: Hugo Hoffman
San Carlos Tribe representative: Jim Wells
ADEQ: Wayne Harrison

Handouts:

Agenda (1pg)

Discussion:

Welcome and Roll Call

- Recap since the last meeting, response to comments still underway, edits to FEIS still need to occur.
- Welcome from the Forest, Mary wants to discuss impact mitigations today now that we have worked thru the new data and understanding of the project.
- **Q?** Will there be an administrative review for the Cooperators? **A:** Not at this time there is no planned Administrative FEIS review, SWCA has been instructed to have an FEIS submitted to the Forest by mid-September. The approval to release the FEIS to the public relies on many other processes, we are working to be ready to publish in December 2020 but will follow guidance given to the NEPA team by USDA and the OGC legal team.

Recap of Action Items

WR-2 – "Proceedings" process memo, not complete yet. Will be the "nuts and bolts" of the workgroup (everything that was submitted, asked for, etc.). Purpose is for the project record, will be circulated when it's done but not anticipated soon.

WR-1 – Resumes good to go, not waiting on anyone.

WR-15A – draft recently submitted to SWCA from Gabi Walser, Chris will review then provide to the group. Will depart from the DEIS approach. Can do a more quantitative prediction about the amount of

subsidence that will occur due to this type of pumping. There will be additional drawdown localized around the wellfield larger than historical for drawdown, but basin-wide, the drawdown for this project is not larger than historical withdrawals.

- WR-15 - One of the technical comments submitted suggested a specific approach to analyze the amount of subsidence the project could cause. This was not the approach in the Draft – made the statement that subsidence could not be narrowed down to one pumping well and it was a basin-wide phenomenon.

WR-18 – additional information showing that the model used was valid for what we used it for in the analysis of this project. Correct that the agency model was not as fully vetted as the project models as it is agency created and has been used for many years.

- ESRV model. Received comments stating that the model was not reviewed with the same level of rigor as the mine site model, which is true. However, have since done a level of review of the model. Didn't want to use the model for a purpose it wasn't built for. Gabi has provided draft to Chris, found that there were 3 or 4 items of additional model output that Gabi wanted to see to close the loop on a few items. SWCA requested those, got them in June. Gabi now finalizing memo incorporating those last items of output. Expect soon.

WR-20 – Identified in previous workgroup as potential discussion point. Stormwater Release. During there are certain conditions that stormwater could be released, and that scenario would be analyzed, Kate presented on that scenario and submitted new information. There will be a substantial new section added to the FEIS on this new analysis done to answer public comments.

- Comments were criticism over the approach taken in DEIS. Had drawn the conclusion that release of stormwater during operations is not expected. Comments disagreed that release was not foreseeable.
- Any follow up questions or concerns? No comments. Written comments or concerns are welcome until August 7th.

WR-29 – Prucha Model comments and responses. Discussed early 2020 with the group. The topics were very technical, and we requested written responses by both Resolution and BGC.

- Recap: Comments on mine site groundwater model. Got a lot of comments on the model – the most direct and pointed coming from Dr. Prucha. He talked over these with the workgroup in January. WSP and BGC reviewed the comments and provided those to SWCA. SWCA then needed to formulate response to comments. 55-page whitepaper (June 21st) worked through issues with response to comments.
- Are there aspects of the mine site model and comments that you would like to discuss today? No comments. Understand that silence does not mean agreement but wish anyone with concerns does bring them up later today or in written comments through August 7th. Any disagreements or comments on the white paper will be received and considered. We will circle back and consider other ideas brought forward from this group.

WR-30 – Skunk Camp additional work and reports for water quality modeling –

- Recap: Lot of background work by Resolution/contractors. There was a seepage model from KCP (one-dimensional). Similar to others done in the draft, but it was updated and specific to Skunk Camp. Looked at the actual cover and predicted seepage – ended up with a seepage curve for Skunk Camp. Was a building block (part of the reclamation and closure work). Second building block was the fieldwork (new water quality samples, new wells drilled, Geotech, bore holes, water levels) which was received in November 2019. Recently, more aquifer test data was received from M&A.
- A comment from BLM questioned the k-value used in the analysis, but the new data from M&A was very helpful in that response to comment.
- Final two pieces - a conceptual report from M&A and the actual numerical report that included water quality predictions. All of that came in after the most recent workgroup meeting.
- Any questions or concerns about those reports?
- Hugo will have some minor comments, unable to fully discuss them all today verbally for the model. The seepage report in concert with the reclamation report, not seeing an estimate of pumping rates for managing the seepage. Tim responded with page # within the report (pg. 86) with what pumping information is included in the model (figure 9-10), no other pumping information is in the model.
- Carl Mendoza – what boundary conditions to introduce the concentrations into the model? A: Concentration is added as a specified unit of 1, added rate by location of where it is being added, based on KCB 1D modeling work. That flux is put into the model – and added as the well package (specified in Section 7.3). Constant through operations and post closure with no attenuation, was supported by Geochem work Eary/Wickham who thought it was reasonable.
- 75' for dispersivity because you have 100m for grid spacing, was there any other rationale? Or did we choose grid spacing and stuck with dispersivity. There is not a way to measure a non-constructed activity in the Gallaher et al paper was used, acknowledge uncertainty/range. The 100 was selected for grid space first as it is easy to do the math, and then used Gallaher for scale.
- Could we do a sensitivity analysis for this? No sensitivities have been done yet. Resolution feels they are on the high end of the range with current dispersivity, Carl notes you may be over predicting but hard to tell with only 1 set of answers and no sensitivity on certain transport parameters.
- What parameters should be considered? Could accommodate many hydraulic parameters by modifying the dispersivity – could also vary the concentrations from the 1D model. Source concentrations/mass inputs/ and mixing parameters.
- We need to discuss that this is a conservative answer if we only give 1 answer and show it will be conservative. Or look at a range of results from uncertainty or sensitivity analysis. Resolution feels they will meet surface and groundwater standards at the Point of Compliance, if they did a sensitivity analysis they might show lower, but feel they are close to the central estimate. Resolution understands it may go further under the state permitting process and does not think it would add much value but will do what is required of them.
- The EIS shows there is an increase in concentrations in Dripping Springs Wash, showing a higher or lower concentration does not change that there is elevated concentrations. The new tool takes a different approach at the Gila River and it takes out the concern for mixing and flow

rates. Greg also notes we are currently applying SW standards to aquifer when there is no SW expression.
    - Proposed writeup in FEIS – nothing wrong with the DEIS analysis, this is a refinement with a different tool. This tool used now takes a different approach with the in point at the Gila River.
    - Consider turning off dispersivity in model or discussing qualitatively.
    - BGC is considering the report and will be documented in the record. Any comments that come up during the internal NEPA review and will be run to ground. Resolution & M&A will look at previous information and see if any previous runs could shed light on this conversation.
    - Gabi asked if Resolution could see where this was peer reviewed or used before for this model package.
- Low flow versus median values when calculating impacts to surface water. The group agreed low flow values would cause a higher concentration when mixed in. This approach of considering concentrations prior to entering the Gila River eliminates the concern. The only place responding to the public comment could be a concern at Alternative 5 as it is not as close to the limits – Chris is still considering how to answer the comment still – maybe a 7dayQ10 or a what if discussion. Low flow is dictated by release at San Carlos Reservoir, low flows at WRD for the Near West alternatives.

WR-31 – additional modeling output for whitepaper. Circulated 7/21/2020. Residuals Map, Elaboration of descriptions, and output/not remodeling of individual wells. Took runs for life of mine and post closure to give NEPA team an idea of what that would look like.

WR-32 – Memo from BGC on the groundwater model still in progress.

Mitigation and Monitoring Comment Discussion

Resolution believes the Mitigation and Monitoring Plan provided will still be a good framework and hope to better clarify some additional information to help answer questions, such as for specific triggers for specific GDEs. The overarching idea – Resolution already has an extensive monitoring network and have been monitoring since as early as 2002 (though majority of the wells have been since 2010). Have a good dataset, and data has been utilized to establish a good baseline. When looking at mine-related impacts, not detangling mine related impacts from incremental watering – all looked at together.

Montgomery shared screen with the M&M Report v0.2.pdf (88pgg PDF) File can be accessed here: https://www.resolutionmineeis.us/documents/montgomery-monitoring-mitigation-plan-2019

- Took each GDE, community, surface water reach and determined water use. Went through documentation of seeps and springs. Laid out a monitoring plan for GDE's that are part of the regional aquifer and things that could be impacted by regional dewatering at the mine.
- Plan laid out by a primary monitoring well – in this case, DHRES9. Water is moving in the direction of Bitter spring. On a quarterly basis, monitoring the spring and vegetation (estimating flow, etc.). If Resolution sees dewatering, will add a contingent monitoring well proximal to Bitter spring where groundwater data would be collected from. Intent would be to be ahead of any impacts. The mitigations should replace the current functions of the GDE.

    - For example, dig a spring box, install a guzzler, installation of a surface water capture system, find alternative water supplies. For Devil's Canyon and Mineral Creek, would have wells to provide water to the creeks (from the same aquifer that currently provides water to those creeks.
- Level 1 and Level 2 triggers need additional language to help readers understand the plan and method of mitigation based on conditions being seen.
    - The Level 1 trigger should be easier – the moment a decline is seen from dewatering, adding the contingent monitoring well.
    - Not every GDE have a sentinel well, want to come up with a defined trigger (not presented yet – possibly 3 quarters in a row if it does not recover or other type of trigger by area – wish for simple and easy to identify). Hugo suggests considering a trend of decrease not just 2 consecutive periods which may be harder to trigger.
- Are there examples from other projects or regulatory processes we could use as an example? Desire by resolution to make this specific, need input on how to do it. Barrett Cortez has gone thru this process for the SEIS – Resolution would likely be more proactive than that example.
- Jim Ruff noted an ASU study along San Pedro on habitat for changes in flow. – Will share report.
- Jim Ruff and others believe it would be better to have "or" than "and" on level 2 triggers.
- Distinction of on the fly analysis to decide if climate change or mine related and better to use historical trend information to determine if climatic. Still need to recognize that leaving level 1 trigger as only data analysis could lead to analysis paralysis and that could include risk than just a simple specific foot decline.
- Resolution agrees language needs to be cleaned up for the types and levels of data analysis from the draft report to better describe.
    - How specific is a level 1 trigger?
    - Question of mine related impacts (excuse to be an "out" for mine) and also don't want to truly mess something up if the mine is not what is causing the problem?
    - Resolution wants to make someone whole if their water well is impacted but need to add language that it would impacts to the pre mine capacity. There are other issues such as a poorly designed well, nonfunctioning pump, or someone who only has 1' left in their well existing.
    - A comment was on the transparency of reporting – annual reporting from Resolution to the USFS and ask that this be posted or made available to other agencies or well owners or local governments. Resolution is open to creating a portal and providing the information if the Forest does not mind sharing.
        - Yes, Resolution can update the M&M plan to add the public available reporting
- Sounds like we will get a revised M&M plan by Resolution with best effort to provide trigger information. Share this revised plan and ask for response from this group. Would like to aim for the end of August to have the revised plan & reviewed. Have flexibility, if changes are needed, but short window.

Things that are asked for in comments not yet proposed

1. Mitigation of water quality impact to private wells along Dripping Springs wash

- The 2 comments were provided by residents who no longer live there – does that affect the need to respond? It is likely not something the Forest can require mitigation on private land off of forest downstream of the TSF other than disclosing the impacts. Would eventually be regulated by ADEQ with APP permit as far as compliance, length of monitoring, etc. Not sure this is the right time to get into mitigations on something that can be complied with.
- Sulfate & TDS may not normally be covered by state permits – but can be added as a narrative standard in an APP permit and would be just as enforceable as the numeric standards if included in the permit. Hugo notes the impacts to water quality they are considered in USACE but not sure at what level USACE is looking at it for his permit.
- Resolution is already monitoring and disclosing water quality impacts already. Beginning APP process soon. Do we have monitoring plan that we can point to that shows those are being monitored? A: Yes, back in April or May, Chris needs to find that so it can be encompassed in Appendix J.
    - Explore if 404-permit would require mitigation
    - EIS is not relying on future permitting to disclose impacts (APP)
    - Point to Resolution monitoring of baseline wells
    - Forest can disclose baseline water quality information in DS Wash and disclose they intend to do the monitoring (new info in FEIS). The Forest just can't require it.
    - Hugo wants it noted that ADEQ isn't making a decision on it but that it can be permitted with both numeric and narrative standards.
        - Do not recall if we went into numeric and narrative standards, but Chris will check.

2. Mitigation of impacts around desert wellfield

- So far, nothing has been proposed for mitigation, looking for discussion on that.
- Was this about residents in the area, not from Arizona Water Company? A: Verbal comment from a resident, but not written.
- Resolution working a separate agreement with Arizona Water Company, but the agreement not likely to be completed in time to be included in FEIS.
- Comment from residents in the area not the AWC.
- Resolution is working with AWC to work with them. Will not fit timeline for FEIS – 3 specific issues for AWC. Tarp and replacement agreement for water level supply; AWC will not see quality impacts; AWC monitoring wells but do not see any water quality impacts form mining so moot point.
- Overall, nothing voluntary brought forward other than with Arizona Water Company.
    - Don't think there's an appropriate mitigation measure to be included in the FEIS. There are other legal mechanisms outside of the forest Service that would address those issues. A "No, but…" response.
- Resolution will have to get permits from ADWR, will have to do a well spacing analysis to demonstrate adjacent wells are not impacted, but Chris is leery about including those in FEIS for mitigation because we're not yet sure what they're for.
    - Not proposed to include that, just part of the process.
- Well spacing – need ground water rights from ADWR – likely need to do a well spacing analysis to demonstrate you are not impacting adjacent wells. It is not a mitigation just a process that

Resolution has to go through. Mitigation for private well owners in Desert Wellfield – Resolution is interested in seeing what is recommended by the group?

3. Mitigation of impacts to Queen Creek

- There has been work ongoing by resolution on this topic. Want to allow Resolution to tell the group what has been discussed and timing if it will happen in a time period to discuss in the FEIS.
- Yes, Resolution will replace the water captured in the captured zone (by 10-year increments) for subsidence growth for Queen Creek. They will deliver that water to queen creek provided they are able to discharge per ADEQ permitting. The mechanism is not part of the 404-mitigation package. Is this a different plan being brought forward – still working with the Town of Superior. Have identified they will intercept the flow and agreed in principal to replace the lost water. Resolution is willing to commit to this as a voluntary measure. Need to go offline with Vicky on documentation about 25gpm at maximum subsidence crater for loss of runoff. Where would the supplemental water come from? Not positive yet, possibly during dewatering of ALT or well drilled in ALT – most likely groundwater captured in ALT. Resolution and Town is also discussing the change to headwater cutting and other design issues in QC. Tim feels this be more under the idea of good neighbor collaboration
    - What is update for water sampling program? Yes, Resolution commits to the program continuing and Yes, Resolution is open to extending and including the residents of Dripping springs into this program.

Final Deadlines

Written comments can be submitted after this meeting through August 7th if you have additional concerns that are not noted in today's conversations.

Revised M&M plan by Resolution mid-August. Comments on the revised M&M plan will be the end of August

Action Items:

1. EPA to submit written comments from EPA on WR-30
2. Tim Bayley to provide additional articles or references for model package for the transport portion "USG Transport".
3. Jim Ruff to provide 2005 USGS report on San Pedro and vegetation ecology information – *Jim sent by email Chris G will share with group*
4. Resolution update M&M Plan & submit
5. Water work group review updated M&M plan & submit comments by end of August
6. Chris Garrett to look for baseline monitoring plan submitted by Resolution in approx. March 2020 as something to point to for those wells.
7. Wayne Harrison to share example language on narrative standards – *will share with group*
8. Jim Butler to share "no but" language examples for consideration with desert wellfield public well response to comment.
9. Follow up with Vicky on status of documentation for Queen Creek water replacement voluntary mitigation idea in concept.