



## Seepage and Conveyance Technical Feedback Group

Thursday, April 25, 2019, 1:30 p.m. – 3:30 p.m.

San Luis Canal Company

11704 Henry Miller Avenue, Dos Palos, CA 93620

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### Meeting Summary

#### Attendees

Adam Hoffman	San Joaquin River Exchange Contractors Water Authority
Anusha Kashyap	CDM Smith
Brian Grant	Nickel Family LLC
Brian Heywood	CDM Smith
Bruce Marlow	WaterFX
Carson Burton	U.S. Bureau of Reclamation
Chris White	San Joaquin River Exchange Contractors Water Authority
Craig Moyle	Stantec
Danielle Duncan	Wonderful Orchards
Elizabeth Vasquez	U.S. Bureau of Reclamation
George Park	Lone Tree Mutual Water Company
James Nickel	Nickel Family LLC
Jarett Martin	Central California Irrigation District
Jeff Siemens	Nickel Family LLC
John Wiersma	San Luis Canal Company
Mari Locke Martin	RMC and Landowner
Mark Tompkins	SJRRP TAC
Mike Stearns	Landowner and 4@ Ranch
Palmer McCoy	San Luis Canal Company
Peter Vorster	Bay Institute
Regina Story	U.S. Bureau of Reclamation
Scott Skinner	Landowner, Turner Island Water District
Scott McBain	McBain & Trush
Stephen Lee	U.S. Bureau of Reclamation

This document is a summary of the discussion and questions that were raised during the Seepage and Conveyance Technical Feedback Group (SCTFG) meeting held on April 25, 2019. This document does not provide all the information that was presented during the meeting. Refer to the presentation materials posted on the San Joaquin River Restoration Program (SJRRP) website (<http://www.restoresjr.net/get-involved/technical-feedback-meetings/seepage-and-conveyance/>) for additional information, including a copy of the presentation.

## **Introductions, Meeting Objectives, and Agenda**

Regina Story opened the SCTFG meeting with introductions and reviewed the agenda. The purpose of the meeting was to provide updates on SJRRP activities, seepage monitoring, seepage projects, and the Seepage Management Plan (SMP).

## **SJRRP Update**

Regina Story and Liz Vasquez, U.S. Bureau of Reclamation (Reclamation), provided SJRRP Updates. Per the Funding Constrained Framework, Reclamation is focusing their efforts to release Restoration Flows up to 2,500 cfs (Stage 1 Capacity Target). The following projects have been identified to meet the Stage 1 Capacity Target: Physical Seepage Projects up to 2,500 cfs of Restoration Flow, Mendota Pool Bypass and Reach 2B Project, Eastside Bypass Fish Passage Improvements, Arroyo Canal and Sack Dam Improvements Project, Partial Fish Passage and Unimpeded Fish Passage. Chris White, CCID, mentioned the San Joaquin River Exchange Contractors Water Authority (Authority) is partnering with Reclamation on the Arroyo Canal and Sack Dam Improvements Project. It was also mentioned that there was a request to delegate design and construction of the Columbia Canal Company siphon to the Authority.

## **Restoration Flow Update**

Regina Story provided an overview of recent Restoration Flow releases. Water Year 2019 is currently projected to be a “wet” water year type based on 50<sup>th</sup>-percentile estimates. The SJRRP suspended Restoration Flow releases between March 15 and April 5 to allow for flood control releases. Flood flow releases were ramped down on March 29 and the switch to Restoration Flows occurred on April 5. Releases from Friant Dam are currently at approximately 500 cfs, with recommended flows of no more than 235 cfs past Sack Dam.

Hydrologic conditions later this year might warrant another flood control release, this would likely occur end of May or early June.

One of the attendees asked for a hydrograph showing the flow split at the bifurcation structure. Regina mentioned that she did not have the flow split plotted in a chart, but the flow information is available on [restoresjr.net](http://restoresjr.net).

One of the attendees wanted some context added to the transition period from flood flows to Restoration Flows. Regina noted that the Program operates so as not to inhibit groundwater levels from going down due to Restoration Flow releases. Therefore, some time is allowed for groundwater levels to stabilize after flood flow releases.

## **Flow Bench Exercise and Evaluation**

Regina Story provided a brief overview of the flow bench exercise conducted between February 14 and February 28, with a target flow of 520 cfs in Reach 3. She noted this was an ideal time for observing the influence of Restoration Flows as there were limited irrigation flows during this period and no groundwater pumping for irrigation was observed at the critical wells identified for monitoring. Therefore, there were limited external influences and the evaluation captured the influence of Restoration

Flows on seepage in the region. Regina highlighted hydrographs from three wells over the flow bench exercise: MW-09-49B in Reach 2A (Slide 17 of presentation), PZ-09-R3-7 in Reach 3 (Slide 18), and MW-10-89 in Reach 4A (Slide 19).

One of the attendees asked about the completed depth of MW-09-49B. Stephen Lee, Reclamation, noted that this well was completed at approximately 25 feet below ground surface.

In Slide 19, Regina noted that the graph plots stage rather than flow. The gage near Dos Palos is likely reading an inaccurate (high) measurement of flow. This high flow reading is mostly due to the change in channel shape at this location. Therefore, stage is a better indicator of flow in the channel at this location. She also noted that at this well, groundwater levels responded shortly after increased flows; however, groundwater levels did not stabilize immediately and took approximately 10 days to stabilize. This longer stabilization window in comparison to the Reach 2A and Reach 3 locations (Slide 17 and Slide 18) could be due to soil conditions in this region.

One of the attendees asked if soil textures in this region were confirmed by field observations. Regina noted that Reclamation had conducted soil analysis at the time of drilling at this well. Based on the analysis conducted, this region has mostly clayey soils and the MW-09-49B and PZ-09-R3-7 have sandier soils. The longer stabilization period is consistent with clayey soil properties.

Regina noted that water levels near MW-18-80B and MW-17-225 (two recently installed wells in Reach 4A) had elevated groundwater conditions. However, thresholds have not yet been set at these two wells. Based on monitoring of critical well locations throughout the flow bench exercise, Reclamation has recommended operating Restoration Flows below Sack Dam at approximately 235 cfs. The Restoration Administrator implemented this recommendation.

One of the attendees asked if other external factors that could be impacting groundwater levels in Reach 4A has been evaluated and eliminated in this analysis. Regina noted that other external factors have been considered and are being investigated. She noted there was limited irrigation in the region during the period of the flow bench exercise.

## **Groundwater Monitoring Updates**

Stephen Lee gave an update on groundwater monitoring. He mentioned the program monitors over 200 monitoring wells in the SJRRP area. These wells are mostly concentrated in Reach 2A, 2B, 3, and Reach 4A. Stephen mentioned that groundwater level monitoring staff measure groundwater levels at the monitoring wells but also note other relevant information such as flows in nearby rivers/canals or ditches, irrigation at nearby fields, planted crops in nearby fields while at each well location. The goal of the monitoring is to meet the objectives of the SMP. Reclamation is reviewing the monitoring well network (well locations, monitoring frequency) to evaluate potential changes. For example, Reclamation has signed seepage easements with several landowners and will evaluate the need to continue monitoring the wells at these properties.

One of the attendees asked if access to the monitoring wells could be turned over to the landowner on properties where seepage easements have been signed. Reclamation would be willing to turn over

ownership of the well to the landowner if the SJRRP has no use for the monitoring well. Currently, there are several wells within properties with seepage easements which are still being monitored. During the evaluation of the monitoring program, Reclamation will review the multiple reasons for potential continued monitoring, including locations near properties that do not have easements or physical projects, landowner operated physical projects like tile drains at the property etc.

One of the attendees asked about wells near properties that do not have a completed easement or physical project. Reclamation confirmed that monitoring will continue at these wells as the data would help understand seepage issues.

One of the attendees asked about well MW-17-225 in Reach 4A. Regina noted that this well has real time monitoring. Thresholds have not been developed at this well but elevated groundwater levels have been noted at the well. MW-18-80B in Reach 4A also had elevated groundwater levels and also does not have a threshold established yet. However, both wells are being operated to under conservative threshold assumptions.

### **Seepage Projects and SMP Updates**

Regina provided an update on seepage projects and proposed SMP updates for this year. The program is currently working on the following seepage projects: (1) two seepage fee title agreements in Reach 3; (2) seven potential seepage easements currently being prepared for appraisal; and (3) two physical seepage projects in Reach 3 are under consideration.

Slide 31 of the presentation lists potential updates to the SMP. Planned SMP updates include: (1) Appendix C: Areas Potentially Vulnerable to Seepage Effects; (2) Appendix E: Monitoring Network; and (3) Appendix H: Groundwater Level Thresholds. Regina mentioned that the Appendix H update would include updates to crop types to determine the agricultural thresholds. She asked landowners to reach out to her with any information they have available on potential future cropping plans at their properties. She noted that this information would be considered in determining the crop types at the well and the well threshold.

One of the attendees wanted some additional information on updates to the seepage priority map (Figure C-31 to C-37 of the SMP). Regina mentioned the program has more recent data since the development of that seepage priority map. The SJRRP plans to update this priority map with (1) recent monitoring information; (2) recent modeling information from the Local Models; (3) recent elevation data (2015 LiDAR and 2019 elevation surveys); (4) anecdotal information; and (5) aerial imagery.

One of the attendees asked if there would be a focused evaluation of impacts from flood flows using aerial imagery from 2011 and 2017. Regina mentioned that aerial imagery information is one of the data sources used for updating the priority mapping.

## **Elevation Survey of Monitoring Network**

Reclamation performed elevation surveys of monitoring wells and surface water gages between February and April 2019. The survey included measurement of 263 wells and 24 staff gages. Previous surveys may be as old as 2009.

One of the attendees asked who conducted the surveying. Regina mentioned the survey was conducted by Reclamation staff from the Mid-Pacific (MP) region office.

One of the attendees asked if they could receive a map showing the locations of all the staff gages. Regina mentioned that several staff gage location were surveyed in the spring. She agreed to develop a figure with this information and upload it to [restoresjr.net](http://restoresjr.net).

*Action Item: Reclamation to develop a figure with the location of the staff gages and upload figure to [restoresjr.net](http://restoresjr.net).*

One of the attendees asked about the status of the elevation survey results. Regina mentioned that the survey results were currently being reviewed. Regina noted that the review will likely be completed within a month. However, inconsistencies in the data may delay the results or potentially require additional surveying.

## **Wrap Up and Additional Questions**

Regina opened the meeting for additional questions. The following questions were raised during this discussion:

One of the attendees asked for a timeline for updating the HEC-RAS models with new elevation data from the elevation survey. Regina mentioned that there is no timeline established for this task.

One of the attendees asked if seepage has been noted in areas outside current seepage easements. This question led to a discussion regarding landowners with seepage easements potentially installing tile drains. One of the attendees asked for a rough estimate on the number of physical projects implemented in the last few years and performance of these projects. Regina mentioned that Reclamation has not installed any physical projects yet. However, some landowners with seepage easements have installed physical projects (i.e., tile drains) at their properties. Reclamation believes there may be three properties with seepage easements where tile drains have been installed.

An attendee noted that a drain was installed on San Juan Ranch per a 60% design completed by Reclamation. This project was installed by the landowner. Reclamation has not studied the performance of these physical projects. An attendee from San Juan Ranch noted that additional monitoring wells have been installed on the property. The attendee mentioned they would be willing to share information on their tile drain system with Reclamation.

One of the attendees asked for an estimate on the percentage of landowners with easements that install physical projects. It was noted that four seepage easements have been implemented so far. Three of these properties have tile drains installed. Some of these tile drains were installed before the easements.

One of the attendees asked if the monitoring information collected by Reclamation was shared with Groundwater Sustainability Agencies (GSAs) in the region. Chris White mentioned that CCID had access to collected information and that the data was very helpful.

One of the attendees asked for a timeline on the re-prioritization work. Regina mentioned the SJRRP is working towards having the re-prioritization work completed for the next SCTFG meeting. The group agreed to a tentative meeting in August/September timeframe.

Regina thanked attendees for the feedback and reminded the group to contact her or the Seepage Hotline (916-978-4398) with further site-specific questions and requests.

### **Action Items**

- *Reclamation to develop a figure with the location of the staff gages and upload figure to [restoresjr.net](http://restoresjr.net).*