

RECLAMATION

Managing Water in the West

TR-2014-07

Travel to Northern California Area Office to perform sonar inspections at Shasta, Whiskeytown, and Trinity Reservoirs

Travel to Northern California Area Office to perform sonar inspections on Shasta Temperature Control Device (TCD), Whiskeytown's Spring Creek temperature curtain and the Trinity Outlet Works Tower

Date(s) of Travel: August 4 - 8, 2014



**U.S. Department of the Interior
Bureau of Reclamation
Technical Service Center
Hydraulic Investigations and Laboratory Services Group
Denver, Colorado**

BUREAU OF RECLAMATION
Technical Service Center
Denver, Colorado

TRAVEL REPORT

Code: 85-846000

Date: October 1, 2014

To: Manager, Hydraulic Investigations and Laboratory Services Group
From: Tracy Vermeyen, Hydraulic Engineer

Subject: Travel to Northern California Area Office to perform sonar inspections at Shasta, Whiskeytown, and Trinity Reservoirs.

1. Travel period: August 4 – 8, 2014
2. Places or offices visited: Northern California Area Office
3. Purpose of trip: Perform sonar inspections on Shasta Temperature Control Device (TCD), Whiskeytown's Spring Creek temperature curtain and the Trinity Outlet Works Tower
4. Synopsis of trip: I arrived at Shasta Dam on Monday, August 4th where I met with Bob Gee to discuss the sonar inspection project. We went over the job hazard analysis and signed it. I tested the sonar equipment and everything was working normally. We inspected the work area on top of the TCD and selected the TCD location area where we would work. Bob suggested we begin work at 7:00 a.m. on Tuesday morning.

Tuesday, August 5, 2014 – At 7:00 a.m. I met with Bob Gee (mechanical engineer) and Mark Carrington and Jerry Sears (maintenance crew) at the Shasta Maintenance Center (SMC). We transported the sonar equipment to the Shasta TCD and removed a section of grating to gain access to the inside of the TCD. We used safety harnesses/fall protection while working around the opening. We collected sonar images inside by lowering the sonar inside TCD bays no. 2 and no. 4. These bays were chosen because they did not have any structural framework to interfere with the sonar. We completed internal TCD sonar imaging at 11:30 a.m. In the afternoon, we loaded the sonar onto a patio boat and collected images of the outside surfaces of the TCD. We collected images on the face of all five bays, the side of bay no. 1 (west side), the side of bay no. 5 (east side), the face of the low-level intake structure, and the face of Shasta Dam directly above the low-level intake structure.

Wednesday, August 6, 2014 – At 7:00 a.m. I met with Bob Gee. Mark Carrington and Jerry Sears at the Shasta Maintenance Center. We took the NCAO patio boat out to the TCD to collect additional images on the low-level intake structure. Attempts to image the side of the low-level intake no.3 resulted in the sonar getting stuck on some debris. The sonar was retrieved, but the communications cable was pulled out of the sonar instrument. The sonar communications cable was reinstalled but communications were unreliable. After several unsuccessful attempts to

collect sonar images I decided to abandon data collection and return to shore to repair the sonar connector. Bob and I visited the NCAO mechanic and he gave me an O-ring that fit the waterproof connector and was used to create a tighter communications cable connection. This repair was successful. We transferred the sonar equipment to the "Cat" work boat and drove to Trinity Lake. The afternoon was spent collecting sonar images the Trinity Dam outlet works intake structure. The outlet was located by a buoy line attached to the intake. Several images of the intake tower showed it was clear of any major debris accumulation. Sonar images also indicated the presence of the air vent valve and a small A-frame structure on top of the metal cover. We completed sonar imaging at about 3:30 p.m. and drove back to Shasta Dam.

Thursday, August 7, 2014 – At 7:00 a.m. I met with Bob Gee, Mark Carrington and Jerry Sears at Shasta Dam to load the "Cat" boat for a day of work on Whiskeytown reservoir. We drove to the Oak Bottom boat ramp and launched the boat at 8:30 a.m. The day was spent collecting sonar images along the 2400-ft-long Spring Creek temperature curtain. The goal of the sonar inspection was to image the entire curtain length and document any damage or unusual features. Sonar images were collected for twenty-one 100-ft-long curtain sections. Each curtain section was located between 5 consecutive surface stabilizing tanks. A sonar profile perpendicular to the curtain panel was collected to document the shape of the curtain fabric. We completed the sonar work around 12:30 p.m. Bob Gee wanted to document the location of curtain fabric damage we observed during sonar imaging. We traversed the entire length of curtain and documented 22 fabric tears. We complete the curtain inspection around 2:00 p.m. We trailered the boat and returned to the Shasta maintenance center. I packed my sonar equipment into shipping cases and prepared them to be shipped back to Denver by the Shasta warehouse staff. I left the project at 3:30 p.m.

Friday, August 7, 2014 – I left Redding CA at 8:00 a.m. and drove to Sacramento for my 12:00 return flight to Denver. I arrive in Denver at 4:30 p.m.

5. Conclusions: Sonar images were successfully collected at hydraulic structures at Shasta, Trinity and Whiskeytown Lakes. The sonar system performed as expected for all applications. A sonar underwater cable connector was damaged during the Shasta work and will need to be replaced.

6. Action correspondence initiated or required: None

7. Client feedback received: N/A

cc:

Robert Gee (NCAO-Engineering)

Mark Cram (NCAO-Engineering)

Dick LaFond (86-68100)

Rick Christensen (86-68410)

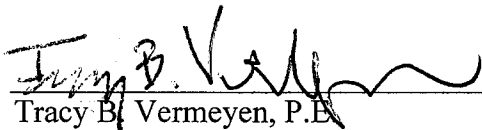
SIGNATURES AND SURNAMES FOR:

Travel to: Travel to Northern California Area Office, Shasta, Whiskeytown and Trinity Reservoirs.

Dates of Travel: August 4-8, 2014

Names and Codes of Travelers: Tracy Vermeyen-846000

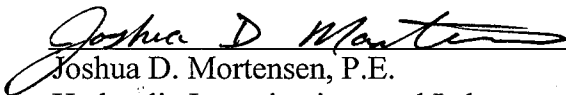
Traveler:



Tracy B. Vermeyen, P.E.
Hydraulic Investigations and Laboratory Services Group

8/19/14
Date

Reviewed:



Joshua D. Mortensen, P.E.
Hydraulic Investigations and Laboratory Services Group

8/19/14
Date

Noted and Dated by:



Robert F. Einhellig, Manager
Hydraulic Investigations and Laboratory Services Group

9/30/14
Date

