

RECLAMATION

Managing Water in the West

TR-2013-06

Travel to Davis Dam

for routine maintenance and checkup of turbulence test system for quagga control research project 7169.

Dates of Travel: April 22-23, 2013



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: 86-68460

Date: April 29, 2013

To: Manager, Hydraulic Investigations and Laboratory Services Group
From: Josh Mortensen, Hydraulic Engineer

Subject: Travel to Davis Dam for routine maintenance and checkup of turbulence test system for quagga control research project 7169.

1. Travel period: 22 April – 23 April 2013
2. Places or offices visited: Davis Dam and Lake Mead Marina
3. Purpose of trip: Perform routine maintenance to the turbulence test system, particularly the pressure pumps, and to verify satisfactory system performance. A secondary purpose of this trip was to trouble shoot problems with newly installed linear fish screens/cleaning system on the quagga research boat at the Lake Mead Marina (project 4923).
4. Synopsis of trip: Josh arrived at the Las Vegas airport early Monday morning the 22nd and stopped at the Lake Mead Marina to turn off the new fish screen and brush system that had been malfunctioning. Josh then travelled to Davis Dam and met with Leonard Willett and Sherri Pucherelli regarding the turbulence mussel control research ongoing on unit 2. Maintenance was then performed to each pressure pump and pump flow capacity was confirmed on Pump #1 (which was suspect due to pressure data outside the calibration range). This was done using an in-line propeller flow meter. Josh returned to Davis Dam Tuesday morning the 23rd. Before leaving the dam the manual basket strainer filter was replaced by an 80 mesh filter to help prevent smaller debris particles from entering the turbulence pressure nozzles.

Recent electrical work at Davis Dam caused two separate power outages in mid-April to the pressure pumps and turbulence test system, resulting in untreated veligers flowing into the treatment bio-cooler. Both outages of the test system were discovered by Sherri before collecting veliger samples from the control and treatment pipes. On both occasions she cleaned the treatment bio-cooler and restarted the turbulence treatment system to restart the settlement study. Pump pressure data in Figure 1 also show the outages and restarting of the pumps. Pipe flow data through the control/treatment pipes were lost due to the power outage.

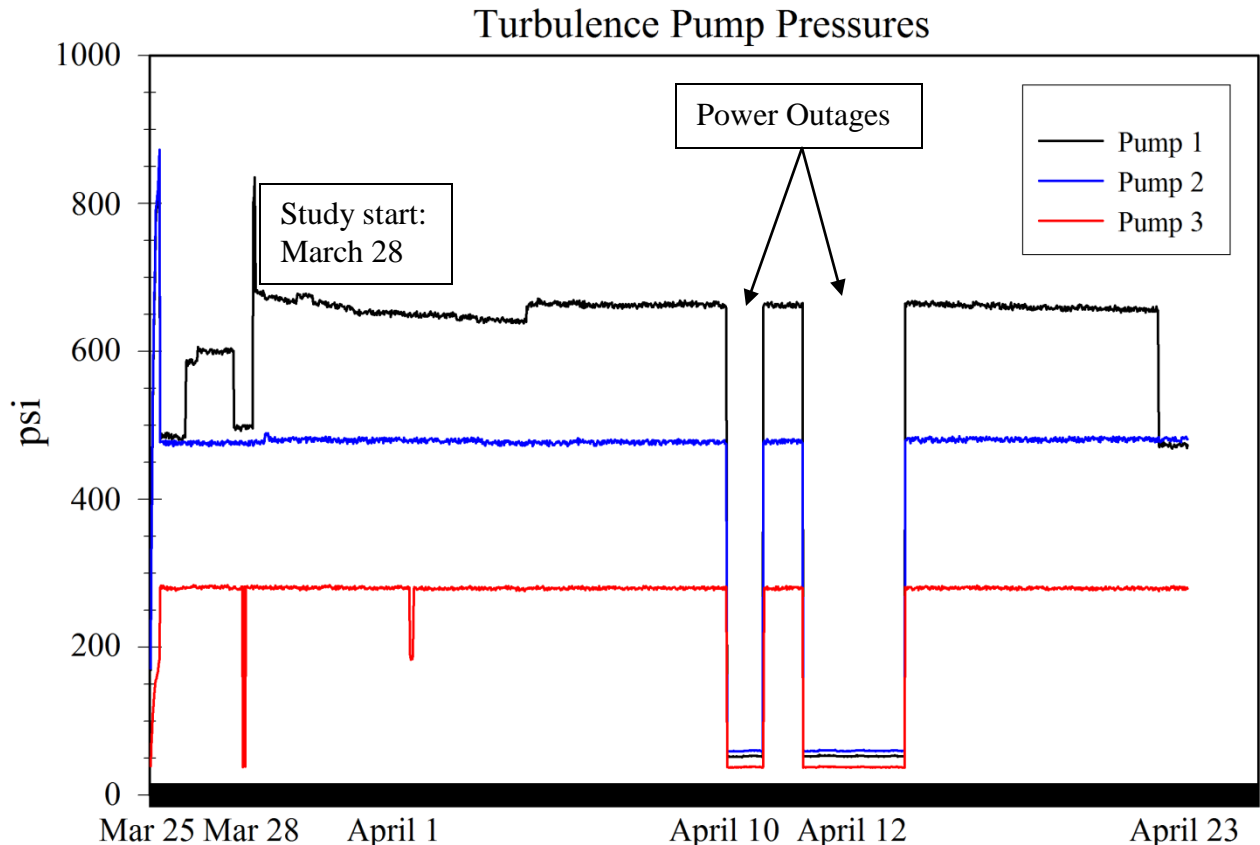


Figure 1. Pump pressure log showing power outages. It is unknown why pump 1 pressures are significantly higher than pump 2; a nozzle may have been plugged until the pump 1 pressure hose was back flushed on April 22nd prior to the pump flow capacity measurements. Pump 3 pressures are lower as it is a smaller pump.

On Tuesday afternoon Josh returned to the Lake Mead Marina to troubleshoot the problem with the screen brushing system and attempt to fix one of the actuators that broke loose. Due to lack of time complete repairs were not possible. Both actuators were turned off to prevent further damage and correct operation of the Hydrolox and ISI screens were verified before departing for the airport to return to Denver.

5. Conclusions: Project 7169 (Turbulence) – routine maintenance was performed on the pressure pumps. Correct system operation was verified (including Pump 1) upon departing. Davis personnel agreed to have someone check on the pumps daily and advise us in advance of any other electrical work they may produce an electrical outage. Josh will return to Davis Dam in one month to repeat maintenance tasks.

Project 4923 (Quagga boat) – Both actuators are currently turned off. Assistance from the Hydraulics Lab shop crew may be needed to complete repairs at Lake Mead.

6. cc: Leonard Willett (LCD-8200)
 Vince Lammers (LCD-D11)
 Sherri Pucherelli (86-68220)
 Joe Kubitschek (86-68460)
 Miguel Rocha (86-69000)

SIGNATURES AND SURNAMES FOR:

Travel to: Davis Dam, Bullhead City, AZ and Lake Mead Marina, Boulder City, NV

Dates of Travel: 22 April – 23 April 2013

Names and Codes of Travelers: Josh Mortensen, 86-68460

Travelers:


Joshua D. Mortensen
Hydraulic Investigations and Laboratory Services Group

4/26/13
Date

Peer Review by:


Tom Gill
Hydraulic Investigations and Laboratory Services Group

4-25-13
Date

Noted and Dated by:


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

4/26/2013
Date