

Memorandum

To: Water Right Permit File 74-15613, Shelley Keen, Dan Nelson

From: Tim Luke, Water Compliance Bureau

Date: September 26, 2013

RE: Whittaker Permit Field Visit – May 22, 2013

On May 22, 2013, at approximately 2:00 p.m., I met James Whittaker near Leadore, ID to visit his point of diversion from Big Timber Creek for Permit No. 74-15613. The primary purpose of the visit was to verify that a measuring device and data logger had been installed on the ditch diversion as required by conditions of the permit, and to assist James with programming the data logger.

James took me to the measuring device on the ditch. The measuring device is a pre-fabricated adjustable broad crested flume (3 to 4 ft. wide). The water level transducer and data logger was installed inside an approximate 2 inch plastic pipe that was attached to the bottom of a metal fence pole driven in to the center of the ditch about four to five feet in front (upstream) of the flume (see attached photos of the flume and data logger installation). A rather large hole had been dug in the ditch where the metal fence pole had been driven. The plastic pipe attached to the fence pole that housed the transducer/data logger was within the hole in the ditch. The top of the plastic pipe was about level with the floor of the ditch and nearly level with the floor of the flume. The transducer therefore was set below the elevation of the ramped sill in the flume. I had the following concerns with this installation:

- There was no stilling well installed with the flume to house the transducer and data logger in order to measure a proper water level in the flume to correspond with the staff gage installed in the flume.
- Water delivered down the ditch and filling the hole might undermine and dislodge the fence pole and data logger, or sediment may wash into the hole and potentially bury the transducer and data logger and cause at least faulty readings or no readings at all, thereby rendering the instrument useless and potentially damaged.

Based on the above concerns, I removed the data logger from the metal fence pole, programmed it to record water levels every 30 or 60 minutes¹, and left the logger at the convenience store/post office in Leadore for James to pick up along with a hand written note suggesting that he re-install the logger inside the plastic pipe and attach the pipe securely along the inside wall of the flume and near the upstream entrance of the flume. I discussed this idea with him on site as well. I also instructed him to drill several holes in the plastic pipe so that water level in the pipe fills to the same level in the flume. I explained that the logger will not record the correct height of water above the flume sill but it should at least record water levels inside the measuring device which can be adjusted later knowing the exact location of the transducer/logger relative to the sill and bottom of the staff gage. This is not necessarily the most ideal installation set-up but it seemed like the most practical for him to follow.

¹ I did not keep notes on the data logger set-up and don't remember the exact recording frequency logged.

Before leaving the site, I also took a location of the diversion ditch head gate from Big Timber Creek. The head gate is located on the ditch near the ditch heading and about 500 feet above (upstream) of the flume. My GPS location was at the physical control steel head gate (see attached photos) which was located about 130 to 150 feet from the creek where the water can be checked or diverted into the ditch by a rock/dirt berm and plastic tarps. Some water was backed up to the steel head gate but water was flowing freely down the creek as the rock/dirt berm was not maintained to check water down the head of the ditch and past the control head gate. The location of the earthen dam and plastic tarp can be seen in the background of photo no. 3.

Also attached is a map of the GPS head gate location. Note that the GPS head gate and point of diversion from the creek are in the SESWNE of Sec. 8, T15N, R26E. The current permit POD description is NWSE of Section 8.

I did not inspect the place of use with Mr. Whittaker or on my own given that no beneficial use had yet occurred in 2013. It is my understanding James had called for delivery of this permit a week or two earlier but the watermaster was not able to deliver the permit due to low runoff, drought conditions and the permit condition requiring 13 cfs of flow in the creek from the confluence of Little and Big Timber Creeks down to the confluence of Big Timber Creek and the Lemhi River. The ditch did appear to run towards the place of use but I did not follow it to the place of use. There were several ditches crossing the alluvial fan from the west side of the creek in this immediate area that were dry at time of my visit.

Note: I apparently misplaced the few field notes that I took relative to the dimensions of the flume and several details on the head gate. I did not have a level to check the level of the flume. The sill height may not be properly set to accurately measure water relative to ditch conditions. A current meter measurement should be taken of the ditch near the flume at the time of the field exam to check the accuracy of the flume. See also comments on photo no. 2 concerning the flume installation where flow exits the device – there is a concern regarding some potential for the device to wash out.



1. Data logger and transducer installed in plastic pipe mounted to metal fence pole in a dug hole about 4 to 5 feet in front/upstream of ramped flume.



2. View of flume from downstream location. Metal fence pole with data logger/transducer in background. Note the significant size hole dug in the ditch where the logger is located inside the plastic pipe. Note potential for flume to wash out where water exits flume where boulders are located.



3. Control head gate to Whittaker's Ditch – permit 74-15613.



4. Control head gate with ditch in background behind Mr. Whittaker.

