

**SAMPLING ACTIVITIES REPORT
2014 Sampling Events**

**Upper Animas Mining District
Gladstone, San Juan County, Colorado
Final**

Prepared for:



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Distribution List
Sampling Activities Report – Upper Animas Mining District

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Acronym and Abbreviation List

ARSG	Animas River Stakeholder Group
BLM	Bureau of Land Management
CDPHE	Colorado Department of Public Health and Environment
CLP	Contract Laboratory Program
cm	Centimeter
COPEC	Contaminant of Potential Ecological Concern
CPW	Colorado Parks and Wildlife
CRQL	Contract Required Quantitation Limit
DO	Dissolved Oxygen
DOC	Dissolved Organic Carbon
DRMS	Division of Reclamation, Mining and Safety
EPA	United States Environmental Protection Agency
ESAT	Environmental Services Assistance Team
Esri	Environmental Systems Research Institute
GIS	Geographical Informational Systems
gpm	Gallons per minute
GPS	Global Positioning System
HDPE	High Density Polyethylene
MDL	Method Detection Limit
mL	Milliliter
RBP	Rapid Bioassessment Protocols
RPD	Relative Percent Difference
SAP/QAPP	Sampling Analysis Plan/Quality Assurance Project Plan
SAR	Sampling Activities Report
SGC	Sunnyside Gold Corporation
SOP	Standard Operating Procedure
STIL	Stream Temperature Intermittency Loggers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

This document serves as the Sampling Activities Report (SAR) for fieldwork conducted at the Upper Animas Mining District and select locations along the Animas River, Cement Creek, Mineral Creek, and tributaries in San Juan County and La Plata County, Colorado. This SAR summarizes field activities, media collection, data and any deviations from the Final Sampling Analysis Plan/Quality Assurance Project Plan - 2014 Sampling Event (SAP) (ESAT, 2014) for the 2014 sampling events. This includes the April 14-16, 2014 MiniSipper and Stream Temperature Intermittency Logger (STIL) deployment; the high-flow sampling event conducted on May 5-7, 2014; the July 27, 2014 MiniSipper and STIL extraction event; and the low-flow and biota sampling conducted on September 23-25, 2014. Personnel from the United States Environmental Protection Agency (EPA), Environmental Services Assistance Team (ESAT), Bureau of Land Management (BLM), the United States Fish and Wildlife Service (USFWS), Colorado Parks and Wildlife, and the United States Geological Survey (USGS) sampled Cement Creek and the Animas River as part of a continued Remedial Investigation.

The following were sampled or assessed during the investigation: surface water, sediment, stream flow measurements, in-situ water quality, pore water, benthic macroinvertebrates, fish, habitat assessment, and bulk sediment for toxicity testing. A sampling location map was developed using Trimble Global Positioning System (GPS) and Environmental Systems Research Institute (ESRI) Arc Geographical Informational Systems (GIS) software.

This summary report includes the following sections: Sampling Activities and Procedures (Section 2.0), Sample Quality Control (Section 3.0), Field Changes and Corrective Actions (Section 4.0), and References (Section 5.0).

1.1 Site Background and Description

The discovery of gold and silver brought miners to the Silverton area and the Animas Mining District in the early 1870's. The discovery of silver in the base-metal ores was the major factor in establishing Silverton as a permanent settlement. Between 1870 and 1890, the richer ore deposits were discovered and mined to the extent possible. Not until 1890 was any serious attempt made to mine and concentrate the larger low-grade ore bodies in the area. By 1900, there were 12 concentration mills in the valley sending products to the Kendrick and Gelder Smelter near the mouth of Cement Creek. Mining and milling operations slowed down circa 1905, and mines were consolidated into fewer and larger operations with the facilities for milling large volumes of ore. After 1907, mining and milling continued throughout the basin whenever prices were favorable.

Gladstone, located about eight miles upstream of Silverton on Cement Creek, is the site of a historic mining town developed in the 1880s commensurate with the onset of mining in the surrounding area. The town was the central location and railroad terminus for the milling and shipping of mine ores from the surrounding three-square-mile valley. The town declined in the 1920's and no remnants of the town remain. By the 1970's only one

year-round active mine (Sunnyside Mine) remained in the county. This mine ceased production in 1991 and has since undergone reclamation. The Gold King Mine's permit status with the Colorado Division Reclamation, Mining and Safety (DRMS) is currently inactive, however, landowners hope to rehabilitate the mine. Both the Sunnyside and Gold King properties were partially accessed through the American Tunnel, the portal for which is located in Gladstone.

Previously the American Tunnel drained as much as 1,600 gallons per minute (gpm) of water from the mines. A lime feed and settling pond type treatment facility was constructed in Gladstone in 1979 by Standard Metals Corporation. Water discharging from the American Tunnel was treated as required by a water discharge permit. The facility operations and mine ownership were later transferred to the Sunnyside Gold Corporation (SGC). Under jurisdiction of a court consent decree to terminate their discharge permit, SGC installed several bulkheads within the Sunnyside Mine that greatly reduced the amount of discharge from the American Tunnel. Seventy to one hundred gpm continue to discharge presumably from near-surface groundwater. All terms of the consent decree were met by SGC in 2002.

In January 2003, the treatment facility, operations, and permit were transferred to the Gold King Mines Corporation. The settling ponds were deeded to the San Juan Corporation by SGC prior to the lease between the Gold King Mines and San Juan Corporations. The treatment facility continued to treat the remaining American Tunnel and the Gold King discharges until September 2004. The San Juan Corporation required SGC to reclaim the four settling ponds (completed in 2005) following termination of the San Juan Corporation and SGC lease. The Gold King Mines Corporation was subsequently evicted and the balance of the Gold King Mines Corporation land was acquired by the San Juan Corporation as the lien holder. The American Tunnel portal reclamation and removal of some out buildings were completed in 2006. BLM manages land associated with the American Tunnel portal and vicinity; however, the San Juan Corporation owns the majority of the land surrounding the portal.

Numerous historic and abandoned mines exist within a two-mile radius of Gladstone. They include: the Upper Gold King 7 Level, American Tunnel, Grand Mogul, Mogul, Red and Bonita, Evelyne, Henrietta, Joe and John, and Lark mines. Some of these mines have acid mine drainage that flows between 30 and 300 gpm, directly or indirectly into Cement Creek, and eventually into the Animas River, the confluence located approximately eight miles downstream of Gladstone. The Animas River Stakeholder Group (ARSG), BLM, DRMS and private stakeholders have completed remediation projects at the Evelyne, Henrietta, Joe and John, and Lark mines. The remaining sites located in the Cement Creek drainage where the focus of the current sampling efforts include the American Tunnel, Grand Mogul, Mogul, Red and Bonita, and the Upper Gold King 7 Level.

The monitoring and assessment activities were designed to:

- Determine the seasonal metals loads in surface water in the Cement Creek drainage and Animas River;
- Determine the concentrations of metals in the Animas River surface water immediately before, during, and after high-flow conditions;
- Determine the nature and extent of sediment metal contamination in the Animas River between Howardsville and Purple Cliffs south of Durango;
- Determine the level of Contaminants of Potential Ecological Concern (COPECs) in fish and invertebrate tissues to refine risk estimates of food chain exposures of wildlife receptors; and
- Determine the toxicity to benthic organisms when exposed to sediment collected in the Animas River

1.2 Objective

The sampling events were conducted in April, May, July, and September 2014 in order to evaluate the extent of metals contamination. The following data were collected during these events:

- Real-time field water quality parameters – pH, conductivity, dissolved oxygen (DO), temperature, and GPS;
- Stream flows – using SonTek™ flow meters, flumes, and USGS gaging stations;
- Surface water samples from streams and adit discharges to measure dissolved and total recoverable metals, alkalinity, anions, and dissolved organic carbon (DOC);
- MiniSippers – daily integrated water sample for dissolved metals analysis, along with weekly collocated grab water samples collected at stations A72 and A68 during the MiniSippers deployment;
- STILs were deployed along the Animas River for logging water conductivity;
- Sediment samples – total recoverable metals and mercury;
- Pore water samples – dissolved metals;
- Macroinvertebrate – total recoverable metals, mercury, and demographic analysis;
- Habitat Evaluation using *Rapid Bioassessment Protocols for use in Streams and Wadeable Rivers* (EPA, 1999);
- Fish population and total recoverable metals and mercury analysis in tissue; and
- Sediment – used for ten day static renewal toxicity test.

2.0 SAMPLING ACTIVITIES AND PROCEDURES

Field activities conducted in the Upper Animas Mining District included the following:

April 14-15, 2014

- MiniSipper and STIL deployment
- Sediment sampling
- Surface water sampling
- Pore water sampling
- Photo documentation
- GPS

May 5-9, 2014

- Real-time field water quality measurements
- Stream flow data
- Surface water sampling
- Photo documentation
- GPS

July 15-16, 2014

- MiniSipper and STIL Extraction

September 22-26, 2014

- Real-time field water quality measurements
- Stream flow data
- Surface water sampling
- In-situ ferrous iron analysis on surface water
- Sediment sampling
- Pore water sampling
- Macroinvertebrate and fish sampling
- Habitat evaluation
- Photo documentation
- GPS

2.1 Sample Handling and Identification

Samples were collected, placed in containers, processed, and preserved in accordance with the *Surface Water Sampling* Standard Operating Procedure (SOP) # FLD-01 (ESAT, 2012), *Shallow Stream Sediment Sampling* SOP # FLD-06 (ESAT, 2012), *Pore Water Sampling* (ESAT, 2012), *Sample Preservation* SOP #FLD-03 (ESAT, 2012), and as outlined in the *Sampling and Analysis Plan/Quality Assurance Project Plan* (SAP/QAPP)

Upper Animas Mining District (ESAT, 2014). Sample tags, labels, and chain of custody records were completed in accordance with the *Sample Custody and Labeling SOP # FLD-11* (ESAT, 2012).

Samples collected during the events were identified by the stream name followed by the station number. For example, locations in Cement Creek were identified CCXX, with the station number corresponding to its location along the stream. Likewise, locations along Animas River were identified as AX. Duplicate samples were indicated with the letters “dup” immediately following the sampling location identification number. Sampling locations are shown in Figures 2.1-1 through 2.1-4.

2.2 Surface Water Sampling

Surface water samples were collected during the events at locations along the Animas River, Cement Creek, Mineral Creek, North Fork Cement Creek, South Fork Cement Creek, adits, and tributaries. Discrete surface water samples were collected in 250 milliliter (mL) high density polyethylene (HDPE) bottles (total recoverable metals), 250 mL Nalgene filter bottles (dissolved metals and DOC), and 500 mL HDPE bottles (anions/alkalinity). Prior to sample collection, the 250 mL and 500mL HDPE bottles were triple rinsed with water from the sample location and then filled by holding the bottles at an approximate 45 degree angle facing upstream. The 250 mL triple rinsed bottle was first used to transfer water to the filter bottles for dissolved metals and DOC analysis and then refilled for total recoverable metals analysis. Surface water samples for dissolved metals and DOC were then filtered using Nalgene 0.45 micron filters. Samples were preserved with nitric acid (for total and dissolved metals), phosphoric acid (for DOC) or, no preservatives were added and the sample was placed on ice (for anions and alkalinity). After preservation, all samples were placed in a cooler with ice for transport to the EPA Region 8 Laboratory for analysis. Samples were analyzed at the EPA Region 8 Laboratory for the following: total and dissolved metals (EPA method 200.7 and 200.8), hardness (EPA method 2340B calculated from calcium and magnesium results), DOC (EPA method 415.3), alkalinity (EPA method 310.1), and anions (chloride, fluoride, nitrates/nitrites and sulfate using EPA method 300.0). Analytical results for dissolved metals, total recoverable metals, alkalinity, anions, and DOC are included in Tables 2.2-1 through 2.2-7.

Water quality measurements (pH, temperature, DO, and specific conductance) were collected at each sampling location using In-Situ[®] multi-parameter meters. During the September event, ferrous iron concentrations were determined by using a Hach Ferrous Iron Color Disc Test Kit. Results were recorded in project-dedicated field notebooks and scanned copies are provided in Appendix A.

2.3 Stream Flows

Stream discharge measurements were collected using Flow Tracker[®] flow meters, flumes, or USGS gaging stations. Stream discharge measurements were collected in accordance with *Flow Tracker Operation SOP # FLD-08* (ESAT, 2012). Flume

measurements were recorded in the field notebook and scanned copies are included in Appendix A. Flow Tracker® summary sheets are included in Appendix B.

2.4 Sediment Sampling

Sediment samples were collected during the September event for total recoverable metals analysis and for use in a sediment toxicity test. Collection of sediment followed protocols outlined in *Shallow Stream Sediment Sampling SOP # FLD-06* (ESAT, 2012), and as described in the *Sampling and Analysis Plan/Quality Assurance Project Plan (SAPP/QAPP) for the Upper Animas Mining District* (ESAT, 2014). Samples were collected using a station dedicated Teflon™ scoop and placed in two one liter HDPE bottles for both metals analysis and toxicity testing. Sediment samples were preserved by placing them in a cooler on ice after collection and during transportation to the Region 8 EPA Laboratory for total recoverable metals analysis (EPA methods 200.7 and 200.8). Sediment analytical results are included in Table 2.4-1 and 2.4-2.

2.5 Pore Water Sampling

Pore water samples were collected using PushPoint® samplers from the hyporheic zone of the streambed and in accordance with *Pore Water Sampling, SOP#FLD-10* (ESAT, 2012). The PushPoint® samplers were purged until the pore water ran clear or until sufficient volume had been purged through the sampling device. The station dedicated syringe used to extract the pore water was rinsed three times prior to sample collection with water from the sample location. The pore water was first pulled into the syringe and then placed in a 250 mL HDPE sample bottle and the sample was filtered with a Nalgene 0.45 micron filter. Analytical results for pore water are included in Table 2.5-1 and Table 2.5-2.

2.6 Macroinvertebrate and Fish Tissue Sampling

Macroinvertebrate samples were collected using a modified rectangular kick net by disturbing the substrate one square meter upstream of the net. The single habitat collection method was used to replicate previous macroinvertebrate collection efforts in order to have comparable data. Samples were collected by inserting the kick net into the river and disturbing about one square foot of substrate (using the toe or heel of a boot) upstream from the net for a one minute time period in accordance with Rapid Bioassessment Protocols methods (EPA, 1999). Large substrate particles were picked up and rubbed by hand to dislodge attached organisms. The debris and organisms were then washed from the net into a sieve using stream water and transferred to the sample container. Efforts were made to collect a sufficient number of invertebrates so that total mass was equivalent to one gram of dry weight material. Macroinvertebrates were analyzed for total recoverable metals and demographics. Samples were preserved with ethanol (demographics) or ice (metals). The analytical results are included in Table 2.6-1.

Fish shocking by Colorado Parks and Wildlife (CPW), occurred at two locations during the September event according to CPW protocols. Several attempts were made to shock for fish at five locations but due to high water levels and unsafe conditions only two

locations were sampled. Whole body fish tissue samples were collected from one location, A45. Ten fingerling and ten adult brook trout were collected and euthanized in order to determine the level of COPECs in fish tissue. After collection, each fish sample was placed in one of two Whirl-Pak bags, one for fingerlings and one for adults. The bags were then sealed and placed on ice in a cooler for transportation to the Region 8 EPA Laboratory. The brook trout collected for metals analysis were preserved by placing them on ice after collection and during transportation to the Region 8 EPA Laboratory. Fingerling whole body tissue samples weighed 2.5-6.5g and were 6.4-8.5 centimeters (cm) in length. The adult whole body samples weighed 18.9-56.3g and were 12.1-17.7cm in length. The fish were stored in an ultra-low temperature freezer until analysis for total recoverable metals using EPA methods 200.7 and 200.8. The analytical results for fish tissue are included in Table 2.6-2 and the assemblage results report can be seen in Appendix G. Minnow traps were used at two locations to collect forage fish but the attempts were unsuccessful.

2.7 Mini Sipper and STIL Sampling

Mini Sippers and STIL sampling devices were deployed during the April event and recovered during the July event in accordance with *MiniSipper: A new in situ water sampler for high resolution, long duration acid mine drainage monitoring* (Chapin and Todd, 2012). MiniSippers were deployed in order to collect a daily integrated sample for dissolved metals analysis. The MiniSipper collected a five milliliter water sample into the sample coil daily. Water samples were then preserved with 0.25 milliliters of nitric acid (stabilizing reagent) to a pH of less than or equal to two, and separated via injection of a nitrogen gas bubble between samples. Samples were filtered in-situ with a ten-micron, ultra-high molecular weight polyethylene solvent filter. At MiniSipper locations A68 and A72, surface water grab samples were collected weekly while MiniSippers were deployed for QA purposes. STILs were deployed for logging specific conductance at intervals of 15 minutes throughout the day from April through July. These units were installed in the water column at multiple locations by inserting or “pounding” a metal rod into the streambed and using wire ties to affix the logger the metal rod. Additionally, large rocks were placed around the loggers in order to protect and conceal each unit. MiniSipper results are included in Appendix F.

2.8 Habitat Evaluation

The habitat assessments conducted during the September event were used to evaluate the current structure of the physical habitat that might influence the quality of the watershed and, as a result, the condition of the aquatic community. Habitat assessments were conducted at six locations in accordance with *the Rapid Bioassessment Protocols (RBPs) for Use in Streams and Wadeable Rivers* (EPA, 1999), Section 5.2 – A Visual-Based Habitat Assessment. Habitat assessment field data sheets are included in Appendix E.

2.9 Sample Documentation

At the time of sampling, the dedicated field logbook was filled out with information such as sampling date, time, location, weather conditions, personnel, sampling plan deviations,

real-time stream measurements (pH, DO, specific conductivity, and temperature), and other pertinent observations. Samples submitted for laboratory analysis were first logged into a chain of custody form in the field and then logged into the electronic chain of custody system using Scribe at the Region 8 EPA Laboratory. All analytical data and field water quality parameters collected during the event were also entered into Scribe.

3.0 SAMPLE QUALITY CONTROL

This section details the quality control methods used in the field for activities performed during the sampling effort. These include decontamination methods, field instrument calibration, duplicate sample collection, and field blank collection.

3.1 Decontamination Methods

Sampling equipment (containers, personal protective equipment, and sediment scoops) involved in field sampling activities were either disposable or station dedicated, therefore, decontamination of this equipment was not necessary.

3.2 Field Instrument Calibration

Field instrumentation requiring calibration or routine function checks included the water quality meters and the Flow Tracker® flow meter, respectively. Water quality meters were calibrated daily for pH, conductivity, and DO. Conductivity and pH probes were calibrated with established pH buffers and conductivity standards. The DO probe was calibrated using the saturated water approach on a daily basis. At the completion of each sampling day, calibration checks were performed using pH buffers and conductivity standards in order to check for accuracy. All calibration procedures were recorded in the instruments calibration notebook (Appendix E) and are done so in accordance with SOP # FLD-09 *Water Quality Measurements with the In-Situ® Multi-Parameter Meter* (ESAT, 2012). The Flow Tracker® flow measurement device has internal routine function checks that are conducted prior to data collection.

3.3 Duplicate Sample Collection

Duplicate samples were collected on a ten percent frequency in order to determine sampling precision and correlation of analytical results between a sample and its duplicate. According to the EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Inorganic Data Review* (EPA, 2004), a control limit of twenty percent for water and thirty-five percent for sediment for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values greater than or equal to five times the Contract Required Quantitation Limit (CRQL). These are laboratory guidelines and may not apply to all field situations. RPD values were calculated for total and dissolved metals (contaminants of potential concern) for duplicate sediment and water samples. RPD values were calculated using the following equation:

$$RPD = 100[ABS(\text{Sample Result} - \text{Duplicate Result})]/[(0.5 * (\text{Sample Result} + \text{Duplicate Result}))]$$

RPD results are included in the results tables

3.4 Blanks

Field blanks were collected in order to evaluate the potential of sample contamination during collection, transport to the laboratory, and while at the laboratory. Blanks were processed in the field using E-pure de-ionized water. Field blanks were collected daily and treated the same as a sample in all respects, including collection and preservation. Blank samples were analyzed for total recoverable metals, dissolved metals, alkalinity, anions, and DOC. All blank results were either below, or just above the method detection limit (MDL) for each analyte indicating no substantial contamination issue associated with the collection or laboratory analysis process.

4.0 FIELD CHANGES AND CORRECTIVE ACTIONS

Field changes to the SAP/QAPP include the following:

April 14-15, 2014

- Pore water was not collected at the following locations: A73B, A75B, A75CC, and M34.
- Sediment was not collected at the following locations: A73B, A75B, A75CC, CB-Opp1, CB-Opp2, CB-Opp3, CB-Opp4, and CB-Opp5.

May 5-7, 2014

- Flow measurements were not collected at the Animas locations and CC41 due to high flows causing unsafe conditions.
- Flow measurements were not collected at CC14 due to sludge build up.
- The DH-81 sampling method was not used due to high flows causing unsafe conditions.
- The following locations were not collected due to large amounts of snow blocking access and creating unsafe conditions: CC02H, CC01U, CC01T, CC02B, CC18B, CC01C2, CC02D, CC02E, CC02K, MTD-4, FD-1, CC15, CC04, CC06, and CC06B.

July 27, 2014

- The MiniSippers deployed at the A66, A68, and A72 sample locations were lost during runoff
- New STILs were deployed at A73, A75D, Above Ten Mile, Below Ten Mile, and Above Needle Creek.
- Due to the train schedule the STIL at Ruby Creek had to be collected during the fall event

September 23-25, 2014

- Due to high flows causing unsafe conditions, flow measurements were not collected at the following locations: A65, A73, A73B, A75D, A75B, A75CC,

A73EC, Bbridge, James Ranch, Animas@32nd Bridge, Animas@Lightner Creek, Animas@Purple Cliffs

- The DH-81 sampling method was not used due to high flows causing unsafe conditions.
- The water quality meter (# 965487) had to be recalibrated at A60 and A56 due to the pH probe not holding calibration.
- The following locations were not sampled: CC02H and CC49.
- The following opportunistic locations were sampled: A39, A41, A43, A45, A47, A49, A51, A53AC, CC02i, PG-01, and Little Bird Spring.
- According to the SAP, fish shocking was supposed to occur at A55, A68-A72, A73-A73B, and A75D-A75B. However, due to high flows causing unsafe conditions, other locations were selected. Fish shocking occurred at the following locations: A45 and A73EC.

5.0 REFERENCES

Documents:

ESAT, 2014. *Final Sampling Analysis Plan/Quality Assurance Project Plan – 2014 Sampling Event*. Upper Animas Mining District, Gladstone, San Juan County, Colorado.

EPA, 2004. *National Functional Guidelines for Inorganic Data Review*, EPA Contract Laboratory Program (EPA 540-R-10-011).

EPA, 1999. *Rapid Bioassessment Protocols for use in Streams and Wadeable Rivers*, USEPA (EPA 841-B-99-002).

Chapin, Thomas P. and Todd, A. S. 2012. MiniSipper: A new in situ water sampler for high resolution, long duration acid mine drainage monitoring. *Science of the Total Environment*. 439:343-353.

Standard Operating Procedures:

ESAT 2012, Region 8 – *Surface Water Sampling*. SOP# FLD-01

ESAT 2012, Region 8 – *Sampling Equipment Decontamination*. SOP# FLD-02

ESAT 2012, Region 8 – *Sample Preservation*. SOP# FLD-03

ESAT 2012, Region 8 – *Shallow Stream Sediment Sampling*. SOP# FLD-06

ESAT 2012, Region 8 – *Flow Tracker Operation*. SOP # FLD-08

ESAT 2012, Region 8 – *Water Quality Measurements with the In-Situ® Multi-Parameter Meter*. SOP # FLD-09

ESAT 2012, Region 8 – *Sample Custody and Labeling*. SOP# FLD-11

Tables

Table 2.2-1 Upper Animas April 2014

Surface Water Analytical Results

STATION_ID	ANALYSIS	UNITS	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
A55	Dissolved Metals	ug/L	24.8J	<0.500U	<0.500U	26.0	<2.00U	0.580	48200	<1.00U	0.170J	1.85	133	112J	0.185J	2980	190	<0.500U	645J	<1.00U	<0.500U	2160	454	<0.500U	<2.00U	289
A56	Dissolved Metals	ug/L	40.8J	<0.500U	<0.500U	23.9	<2.00U	0.582	47700	<1.00U	0.207	2.07	131	<100U	0.381	2980	172	<0.500U	635J	<1.00U	<0.500U	2210	452	<0.500U	<2.00U	241
A68	Dissolved Metals	ug/L	82.9	<0.500U	<0.500U	21.8	<2.00U	3.00	54300	<1.00U	1.28	5.99	151	<100U	<0.100U	3600	3340	<0.500U	673J	<1.00U	<0.500U	2520	492	<0.500U	<2.00U	1030
A73	Dissolved Metals	ug/L	32.2J	<0.500U	<0.500U	22.2	<2.00U	1.79	64500	<1.00U	4.28	2.48	182	557	<0.100U	4980	1830	0.930J	905J	<1.00U	<0.500U	3540	601	<0.500U	<2.00U	701
A75D	Dissolved Metals	ug/L	36.9J	<0.500U	<0.500U	21.3	<2.00U	1.02	46700	<1.00U	2.69	2.14	133	<100U	<0.100U	4080	1090	0.842J	888J	<1.00U	<0.500U	2760	419	<0.500U	<2.00U	367
Bbridge	Dissolved Metals	ug/L	69.1	<0.500U	<0.500U	33.7	<2.00U	0.533	41700	<1.00U	1.35	2.49	127	<100U	<0.100U	5550	584	<0.500U	845J	<1.00U	<0.500U	2970	327	<0.500U	<2.00U	174
FB-01	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	<100U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<2.00U	<0.500U	<2.00U	<10.0U
FB-02	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	<100U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<2.00U	<0.500U	<2.00U	<10.0U

STATION_ID	ANALYSIS	UNITS	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
A55	Total Metals	ug/L	67.8	<2.50U	<2.50U	<25.0U	<2.00U	0.517JD	49000	<5.00U	<0.500U	2.63JD	144J	2.09D	3000	200	<2.50U	568J	<5.00U	<2.50U	2200	453	<2.50U	<10.0U	283
A56	Total Metals	ug/L	71.2	<2.50U	<2.50U	25.1JD	<2.00U	0.596JD	48000	<5.00U	<0.500U	3.32JD	142J	2.35D	2970	187	<2.50U	538J	<5.00U	<2.50U	2230	457	12.9D	<10.0U	247
A68	Total Metals	ug/L	438	<2.50U	<2.50U	<25.0U	<2.00U	3.20D	54300	<5.00U	1.44D	20.5D	334	3.88D	3590	3390	<2.50U	628J	<5.00U	<2.50U	2400	503	5.97D	<10.0U	1020
A73	Total Metals	ug/L	1620	<2.50U	<2.50U	<25.0U	<2.00U	2.18D	63300	<5.00U	4.11D	19.3D	3850	6.27D	4880	1860	<2.50U	766J	<5.00U	<2.50U	3400	611	3.82JD	<10.0U	768
A75D	Total Metals	ug/L	1260	<2.50U	<2.50U	<25.0U	<2.00U	1.43D	46400	<5.00U	2.87D	13.5D	2730	5.45D	4080	1100	<2.50U	824J	<5.00U	<2.50U	2720	415	<2.50U	<10.0U	483
Bbridge	Total Metals	ug/L	843	<2.50U	<2.50U	38.3JD	<2.00U	0.689JD	41500	<5.00U	1.54D	7.87D	1460	5.39D	5590	638	<2.50U	814J	<5.00U	<2.50U	2960	316	<2.50U	<10.0U	273
FB-01	Total Metals	ug/L	21.4J	<2.50U	<2.50U	<25.0U	<2.00U	<0.500U	<100U	<5.00U	<0.500U	<2.50U	<100U	<0.500U	<100U	<2.00U	<2.50U	<250U	<5.00U	<2.50U	<250U	<2.00U	<2.50U	<10.0U	<10.0U
FB-02	Total Metals	ug/L	<20.0U	<2.50U	<2.50U	<25.0U	<2.00U	<0.500U	<100U	<5.00U	<0.500U	<2.50U	<100U	<0.500U	<100U	<2.00U	<2.50U	<250U	<5.00U	<2.50U	<250U	<2.00U	<2.50U	<10.0U	<10.0U

Note: Data Qualifier Definitions Listed Below:

- D The analyte was diluted prior to analysis.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 2.2-2 Upper Animas May 2014
Surface Water Total Recoverable Metals Analytical Results

Station ID	Analysis	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
A55	Total Metals	ug/L	376	<2.50U	<2.50U	<25.0U	<2.00U	1.23D	28400	<5.00U	<0.500U	27.1D	402	11.3D	2070	310	<2.50U	796J	<5.00U	<2.50U	1470	272	<2.50U	<10.0U	425
A55 Dup-01	Total Metals	ug/L	349	<2.50U	<2.50U	<25.0U	<2.00U	1.01D	29000	<5.00U	<0.500U	30.5D	351	10.2D	2070	305	<2.50U	570J	<5.00U	<2.50U	1360	274	<2.50U	<10.0U	436
A56	Total Metals	ug/L	392	<2.50U	<2.50U	<25.0U	<2.00U	1.33D	28500	<5.00U	<0.500U	25.9D	413	14.1D	2090	287	<2.50U	679J	<5.00U	<2.50U	1480	275	6.57D	<10.0U	396
A58	Total Metals	ug/L	141	<2.50U	<2.50U	<25.0U	<2.00U	0.842JD	23600	<5.00U	<0.500U	11.4D	133J	12.9D	1210	10.6	<2.50U	592J	<5.00U	<2.50U	1670	324	7.96D	<10.0U	140
A60	Total Metals	ug/L	452	<2.50U	<2.50U	<25.0U	<2.00U	1.17D	27700	<5.00U	<0.500U	27.1D	408	15.0D	2020	302	<2.50U	652J	<5.00U	<2.50U	1410	274	<2.50U	<10.0U	426
A61	Total Metals	ug/L	549	<2.50U	<2.50U	<25.0U	<2.00U	1.83D	28400	<5.00U	0.596JD	33.5D	427	12.8D	2120	917	<2.50U	658J	<5.00U	<2.50U	1470	276	<2.50U	<10.0U	547
A64	Total Metals	ug/L	514	<2.50U	<2.50U	<25.0U	<2.00U	1.49D	27500	<5.00U	<0.500U	29.2D	497	13.5D	2040	756	<2.50U	648J	<5.00U	<2.50U	1460	269	<2.50U	<10.0U	504
A65	Total Metals	ug/L	454	<2.50U	<2.50U	<25.0U	<2.00U	1.37D	28500	<5.00U	<0.500U	29.9D	420	14.3D	2050	771	<2.50U	620J	<5.00U	<2.50U	1430	272	<2.50U	<10.0U	502
A66	Total Metals	ug/L	547	<2.50U	<2.50U	<25.0U	<2.00U	1.50D	27500	<5.00U	0.574JD	30.3D	675	15.6D	2030	944	<2.50U	618J	<5.00U	<2.50U	1410	272	<2.50U	<10.0U	516
A67	Total Metals	ug/L	335	<2.50U	<2.50U	27.7JD	<2.00U	1.11D	17200	<5.00U	<0.500U	7.29D	521	23.0D	1460	38.6	<2.50U	583J	<5.00U	<2.50U	1450	164	<2.50U	<10.0U	190
A68	Total Metals	ug/L	508	<2.50U	<2.50U	<25.0U	<2.00U	1.52D	31500	<5.00U	0.703JD	27.2D	536	14.7D	2280	1300	<2.50U	662J	<5.00U	<2.50U	1610	317	<2.50U	<10.0U	491
A68 QC minisipper 1	Total Metals	ug/L	358	<2.50U	<2.50U	<25.0U	<2.00U	2.29D	42400	<5.00U	0.785JD	20.7D	374	7.30D	2930	1780	<2.50U	646J	<5.00U	<2.50U	1920	409	<2.50U	<10.0U	703
A68 QC minisipper 2	Total Metals	ug/L	414	<2.50U	<2.50U	<25.0U	<2.00U	1.42D	28900	<5.00U	0.505JD	28.3D	424	10.1D	2090	842	<2.50U	620J	<5.00U	<2.50U	1490	282	<2.50U	<10.0U	465
A72	Total Metals	ug/L	2340	<2.50U	<2.50U	35.1JD	<2.00U	1.65D	35800	<5.00U	3.36D	34.0D	7200	24.3D	3000	898	<2.50U	1010	<5.00U	<2.50U	2310	373	<2.50U	<10.0U	489
A72 QC minisipper 1	Total Metals	ug/L	1530	<2.50U	<2.50U	<25.0U	<2.00U	1.97D	53800	<5.00U	4.05D	27.0D	3360	8.21D	4040	1450	<2.50U	815J	<5.00U	<2.50U	2840	548	<2.50U	<10.0U	684
A72 QC minisipper 2	Total Metals	ug/L	1660	<2.50U	<2.50U	29.3JD	<2.00U	1.51D	33300	<5.00U	2.78D	29.3D	4650	20.7D	2760	846	<2.50U	848J	<5.00U	<2.50U	2120	343	8.06D	<10.0U	483
A73	Total Metals	ug/L	1050	<2.50U	<2.50U	<25.0U	<2.00U	1.27D	30500	<5.00U	2.00D	22.5D	2580	9.34D	2770	689	<2.50U	682J	<5.00U	<2.50U	1990	295	<2.50U	<10.0U	426
A73B	Total Metals	ug/L	640	<2.50U	<2.50U	31.8JD	<2.00U	<0.500U	17800	<5.00U	1.08D	11.8D	1400	5.06D	2520	333	<2.50U	605J	<5.00U	<2.50U	1300	163	6.32D	<10.0U	204
A75B	Total Metals	ug/L	1040	<2.50U	<2.50U	<25.0U	<2.00U	0.896JD	23900	<5.00U	1.59D	17.9D	2440	10.4D	2600	493	<2.50U	752J	<5.00U	<2.50U	1690	213	<2.50U	<10.0U	296
A75CC	Total Metals	ug/L	350	<2.50U	<2.50U	52.7D	<2.00U	<0.500U	20800	<5.00U	<0.500U	<2.50U	307	<0.500U	3720	15.9	<2.50U	605J	<5.00U	<2.50U	1770	102	<2.50U	<10.0U	<10.0U
A75D	Total Metals	ug/L	1060	<2.50U	<2.50U	<25.0U	<2.00U	0.924JD	24200	<5.00U	1.63D	17.9D	2530	11.2D	2600	507	<2.50U	736J	<5.00U	<2.50U	1710	217	<2.50U	<10.0U	306
Bbridge	Total Metals	ug/L	734	<2.50U	<2.50U	32.1JD	<2.00U	0.601JD	23200	<5.00U	1.08D	11.0D	1530	5.74D	3210	327	<2.50U	682J	<5.00U	<2.50U	1610	177	<2.50U	<10.0U	195
CB-Opp3	Total Metals	ug/L	877	<2.50U	<2.50U	<25.0U	<2.00U	0.992JD	25700	<5.00U	1.75D	17.4D	2140	7.79D	2630	556	<2.50U	679J	<5.00U	<2.50U	1750	238	<2.50U	<10.0U	332
CB-Opp4	Total Metals	ug/L	880	<2.50U	<2.50U	<25.0U	<2.00U	0.874JD	25800	<5.00U	1.58D	16.8D	2150	8.04D	2640	537	<2.50U	667J	<5.00U	<2.50U	1770	239	<2.50U	<10.0U	323
CC03	Total Metals	ug/L	1930	<2.50U	<2.50U	<25.0U	<2.00U	8.00D	58300	<5.00U	11.2D	93.7D	8460	18.0D	4280	3950	4.04JD	590J	<5.00U	<2.50U	1890	603	<2.50U	<10.0U	3220
CC03B	Total Metals	ug/L	1270	<2.50U	<2.50U	<25.0U	<2.00U	5.60D	19000	<5.00U	2.28D	96.5D	923	7.76D	1870	884	<2.50U	458J	<5.00U	<2.50U	1120	180	<2.50U	<10.0U	1860
CC03C	Total Metals	ug/L	4530D	<2.50U	2.59JD	<25.0U	<10.0U	26.6D	433000D	<5.00U	101D	16.7D	96700D	77.7D	27000D	34300D	34.9D	1730JD	<5.00U	<2.50U	8630D	4930D	<2.50U	<10.0U	15800D
CC07	Total Metals	ug/L	14400	<2.50U	10.4D	<25.0U	<2.00U	23.9D	70200	5.07JD	34.6D	1390D	67900	5.31D	14300	6170	18.3D	384J	<5.00U	<2.50U	1690	636	<2.50U	<10.0U	5310
CC14	Total Metals	ug/L	1070D	<2.50U	<2.50U	<25.0U	<10.0U	2.28D	219000D	<5.00U	15.3D	28.3D	18700D	3.77D	9030D	2500D	<2.50U	<1250U	<5.00U	<2.50U	4080JD	2600D	<2.50U	<10.0U	764D
CC16B	Total Metals	ug/L	1820	<2.50U	<2.50U	<25.0U	<2.00U	1.43D	109000	<5.00U	11.4D	36.4D	8140	1.80D	5170	1040	<2.50U	706J	<5.00U	<2.50U	2470	1160	<2.50U	<10.0U	364
CC17	Total Metals	ug/L	2020	<2.50U	<2.50U	<25.0U	<2.00U	3.38D	80300	<5.00U	7.58D	52.1D	4510	8.73D	4930	1290	<2.50U	686J	<5.00U	<2.50U	2270	994	7.33D	<10.0U	965
CC18	Total Metals	ug/L	3230	<2.50U	<2.50U	<25.0U	<2.00U	8.27D	63300	<5.00U	15.9D	206D	15100	19.7D	5470	4690	6.46D	623J	<5.00U	<2.50U	1930	658	8.75D	<10.0U	3460
CC19	Total Metals	ug/L	4760D	<2.50U	3.38JD	<25.0U	<10.0U	2.26D	442000D	<5.00U	151D	9.37D	151000D	2.55D	30400D	46900D	50.7D	1360JD	<5.00U	<2.50U	8860D	5430D	<2.50U	<10.0U	20400D
CC21	Total Metals	ug/L	4400	<2.50U	<2.50U	<25.0U	<2.00U	14.9D	73800	<5.00U	19.4D	267D	10900	23.0D	6840	7240	8.12D	665J	<5.00U	<2.50U	2170	743	<2.50U	<10.0U	5210
CC21B	Total Metals	ug/L	3200	<2.50U	<2.50U	<25.0U	<2.00U	8.30D	57600	<5.00U	12.9D	156D	11700	17.1D	5010	4000	5.19D	1170J	<5.00U	<2.50U	1910	644	<2.50U	<10.0U	2890
CC26	Total Metals	ug/L	2530	<2.50U	3.83JD	41.2JD	<2.00U	2.20D	6930	<5.00U	4.74D	95.4D	5190	55.9D	1640	186	3.22JD	801J	<5.00U	<2.50U	577J	105	<2.50U	<10.0U	578
CC41	Total Metals	ug/L	3210	<2.50U	4.11JD	<25.0U	<2.00U	4.58D	46600	<5.00U	9.71D	93.4D	15300	22.3D	4070	2250	4.45JD	898J	<5.00U	<2.50U	1720	494	<2.50U	<10.0U	1620
CC48	Total Metals	ug/L	3280	<2.50U	4.43JD	34.9JD	<2.00U	3.67D	43900	<5.00U	8.90D	80.4D	16600	24.5D	3770	1770	3.52JD	1030	<5.00U	<2.50U	1690	497	<2.50U	<10.0U	1270
Dup-04	Total Metals	ug/L	3240	<2.50U	<2.50U	<25.0U	<2.00U	8.17D	63700	<5.00U	15.4D	203D	15200	21.4D	5520	4710	5.82D	613J	<5.00U	<2.50U	1950	663	<2.50U	<10.0U	3460
Dup-05	Total Metals	ug/L	4750D	<2.50U	3.20JD	<25.0U	<10.0U	2.15D	436000D	<5.00U	144D	8.38D	149000D	2.47D	30200D	46300D	47.9D	1340JD	<5.00U	<2.50U	8900D	5380D	<2.50U	<10.0U	20300D
FB-01	Total Metals	ug/L	<20.0U	<2.50U	<2.50U	<25.0U	<2.00U	<0.500U	110J	<5.00U	<0.500U	<2.50U	<100U	<0.500U	<100U	<2.00U	<2.50U	<250U	<5.00U	<2.50U	<250U	<2.00U	<2.50U	<10.0U	<10.0U
FB-02	Total Metals	ug/L	<20.0U	<2.50U	<2.50U	<25.0U	<2.00U	<0.500U	<100U	<5.00U	<0.500U	<2.50U	<100U	<0.500U	<100U	<2.00U	<2.50U	<250U	<5.00U	<2.50U	<250U	<2.00U	<2.50U	<10.0U	<10.0U
M34	Total Metals	ug/L	2610	<2.50U	3.24JD	34.6JD	<2.00U	0.684JD	32300	<5.00U	2.86D	22.4D	6330	25.5D	2950	242	<2.50U	771J	<5.00U	<2.50U	3260	301	<2.50U	<10.0U	196

Station ID	Analysis	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
A55	Total Metals	ug/L	376	<2.50	<2.50	<25.0	<2.00	1.23	28400	<5.00	<0.500	27.1	402	11.3	2070	310	<2.50	796	<5.00	<2.50	1470	272	<2.50U	<10.0U	425
A55 Dup-01	Total Metals																								

Table 2.2-3 Upper Animas May 2014
Surface Water Dissolved Metals Analytical Results

Station ID	Analysis	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness (mg/L)	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc	
A55	Dissolved Metals	ug/L	54.0	<0.500U	<0.500U	20.1	<2.00U	1.06	29100	<1.00U	0.218	15.2	81	<100U	0.958	2030	233	<0.500U	515J	<1.00U	<0.500U	1350	268	<0.500U	<2.00U	409	
A55 Dup-01	Dissolved Metals	ug/L	51.3	<0.500U	<0.500U	19.0	<2.00U	1.08	29500	<1.00U	0.198J	13.9	82	<100U	0.870	2070	235	<0.500U	487J	<1.00U	<0.500U	1360	268	<0.500U	<2.00U	413	
A56	Dissolved Metals	ug/L	58.1	<0.500U	<0.500U	21.1	<2.00U	0.970	28400	<1.00U	0.210	13.4	79	<100U	0.968	2010	196	<0.500U	508J	<1.00U	<0.500U	1390	271	<0.500U	<2.00U	361	
A58	Dissolved Metals	ug/L	22.9J	<0.500U	<0.500U	18.1	<2.00U	0.878	23200	<1.00U	<0.100U	7.55	63	<100U	1.83	1160	<2.00U	<0.500U	474J	<1.00U	<0.500U	1580	319	<0.500U	<2.00U	136	
A60	Dissolved Metals	ug/L	52.5	<0.500U	<0.500U	20.3	<2.00U	1.01	28100	<1.00U	0.200	12.6	78	<100U	0.928	1970	189	<0.500U	499J	<1.00U	<0.500U	1360	269	<0.500U	<2.00U	360	
A61	Dissolved Metals	ug/L	116	<0.500U	<0.500U	20.7	<2.00U	1.51	28700	<1.00U	0.409	16.5	80	<100U	1.04	2060	786	<0.500U	523J	<1.00U	<0.500U	1420	271	<0.500U	<2.00U	509	
A64	Dissolved Metals	ug/L	84.8	<0.500U	<0.500U	20.0	<2.00U	1.35	27500	<1.00U	0.323	14.3	76	<100U	0.950	1920	639	<0.500U	517J	<1.00U	<0.500U	1360	265	<0.500U	<2.00U	452	
A65	Dissolved Metals	ug/L	89.9	<0.500U	<0.500U	19.5	<2.00U	1.31	28700	<1.00U	0.315	14.1	80	<100U	0.882	2000	655	<0.500U	515J	<1.00U	<0.500U	1400	267	<0.500U	<2.00U	455	
A66	Dissolved Metals	ug/L	93.1	<0.500U	<0.500U	19.5	<2.00U	1.40	28200	<1.00U	0.470	13.9	79	<100U	1.11	1970	805	<0.500U	517J	<1.00U	<0.500U	1370	269	<0.500U	<2.00U	461	
A67	Dissolved Metals	ug/L	72.8	<0.500U	<0.500U	26.2	<2.00U	0.939	17300	<1.00U	0.153J	4.18	49	<100U	4.88	1390	13.8	<0.500U	446J	<1.00U	<0.500U	1360	159	<0.500U	<2.00U	170	
A68	Dissolved Metals	ug/L	112	<0.500U	<0.500U	20.0	<2.00U	1.33	31500	<1.00U	0.576	11.3	87	<100U	1.10	2150	1220	<0.500U	555J	<1.00U	<0.500U	1500	312	<0.500U	<2.00U	446	
A68 QC minisipper 1	Dissolved Metals	ug/L	69.4	<0.500U	<0.500U	21.5	<2.00U	1.98	41600	<1.00U	0.779	7.11	115	<100U	0.296	2800	1700	<0.500U	563J	<1.00U	<0.500U	1830	399	<0.500U	<2.00U	690	
A68 QC minisipper 2	Dissolved Metals	ug/L	86.7	<0.500U	<0.500U	19.8	<2.00U	1.36	28900	<1.00U	0.352	11.6	80	<100U	1.15	1990	748	<0.500U	509J	<1.00U	<0.500U	1390	277	<0.500U	<2.00U	425	
A72	Dissolved Metals	ug/L	37.4J	<0.500U	<0.500U	20.4	<2.00U	1.40	36600	<1.00U	2.84	6.38	103	913	<0.100U	2820	823	0.606J	604J	<1.00U	<0.500U	2240	361	<0.500U	<2.00U	453	
A72 QC minisipper 1	Dissolved Metals	ug/L	63.4	<0.500U	<0.500U	21.4	<2.00U	1.83	54000	<1.00U	3.90	8.06	151	2000	0.234	3920	1400	0.568J	701J	<1.00U	<0.500U	2740	533	<0.500U	<2.00U	671	
A72 QC minisipper 2	Dissolved Metals	ug/L	41.7J	<0.500U	<0.500U	19.9	<2.00U	1.47	34100	<1.00U	2.50	7.06	96	809	0.202	2640	759	0.727J	582J	<1.00U	<0.500U	2060	331	<0.500U	<2.00U	443	
A73	Dissolved Metals	ug/L	38.6J	<0.500U	<0.500U	20.4	<2.00U	1.09	30700	<1.00U	1.77	4.91	88	284	0.179J	2680	624	<0.500U	530J	<1.00U	<0.500U	1930	285	<0.500U	<2.00U	364	
A73B	Dissolved Metals	ug/L	64.6	<0.500U	<0.500U	29.3	<2.00U	0.564	17700	<1.00U	0.990	3.79	54	157J	0.146J	2450	294	0.808J	507J	<1.00U	<0.500U	1260	157	<0.500U	<2.00U	178	
A75B	Dissolved Metals	ug/L	58.9	<0.500U	<0.500U	18.8	<2.00U	0.694	23900	<1.00U	1.13	4.05	70	<100U	0.334	2470	394	<0.500U	552J	<1.00U	<0.500U	1620	206	<0.500U	<2.00U	210	
A75CC	Dissolved Metals	ug/L	67.8	<0.500U	<0.500U	49.6	<2.00U	<0.100U	21300	<1.53J	<0.100U	1.62	68	<100U	<0.100U	3690	2.47J	<0.500U	495J	<1.00U	<0.500U	1750	99.3	<0.500U	<2.00U	<10.0U	
A75D	Dissolved Metals	ug/L	58.1	<0.500U	<0.500U	19.0	<2.00U	0.711	26000	<1.00U	1.14	4.21	76	<100U	0.300	2630	408	<0.500U	601J	<1.00U	<0.500U	1740	210	<0.500U	<2.00U	217	
Bbridge	Dissolved Metals	ug/L	79.3	<0.500U	<0.500U	27.2	<2.00U	0.422	24000	<1.00U	0.695	3.72	73	<100U	0.286	3180	246	<0.500U	560J	<1.00U	<0.500U	1560	171	<0.500U	<2.00U	111	
CB-Opp3	Dissolved Metals	ug/L	51.7	<0.500U	<0.500U	19.8	<2.00U	0.802	25800	<1.00U	1.29	4.09	75	109J	0.282	2540	466	<0.500U	544J	<1.00U	<0.500U	1680	233	<0.500U	<2.00U	247	
CB-Opp4	Dissolved Metals	ug/L	49.9J	<0.500U	<0.500U	20.2	<2.00U	0.760	26200	<1.00U	1.34	4.44	76	130J	0.254	2570	466	<0.500U	558J	<1.00U	<0.500U	1690	231	<0.500U	<2.00U	246	
CC03	Dissolved Metals	ug/L	1600	<0.500U	<0.500U	14.1	<2.00U	8.00	57200	<1.00U	11.0	91.2	160	7600	8.92	4100	3920	4.58	529J	<1.00U	<0.500U	1790	589	<0.500U	<2.00U	3320	
CC03B	Dissolved Metals	ug/L	1130	<0.500U	<0.500U	14.8	<2.00U	5.85	19600	<1.00U	2.28	105	57	571	5.20	1860	876	1.64	422J	<1.00U	<0.500U	1090	174	<0.500U	<2.00U	2020	
CC03C	Dissolved Metals	ug/L	4210D	<5.00U	<5.00U	<50.0U	<20.0U	28.0D	429000D	<10.0U	103D	17.0D	1180D	95400D	28.2D	26100D	34300D	38.6D	<2500U	<10.0U	<5.00U	7990JD	4830D	<5.00U	<20.0U	15900D	
CC07	Dissolved Metals	ug/L	13900	<0.500U	12.4	6.56J	<2.00U	20.4	70300	5.23	32.4	1380	233	68200	2.67	13900	1380	6170	18.3	329J	<1.00U	<0.500U	1600	620	<0.500U	<2.00U	5560
CC14	Dissolved Metals	ug/L	437JD	<5.00U	<5.00U	<50.0U	<20.0U	2.04D	220000D	<10.0U	16.1D	<5.00U	586D	9380D	<1.00U	8920D	2480D	<5.00U	<2500U	<10.0U	<5.00U	3870JD	2530D	<5.00U	<20.0U	733D	
CC16B	Dissolved Metals	ug/L	1180	<2.50U	<2.50U	<25.0U	<2.00U	1.24D	108000	<5.00U	10.6D	25.2D	292	6710	<0.500U	5140	1050	<2.50U	633J	<5.00U	<2.50U	2420	1140	<2.50U	<10.0U	380	
CC17	Dissolved Metals	ug/L	954	<0.500U	<0.500U	9.94J	<2.00U	3.24	80400	<1.00U	6.72	40.5	221	1640	1.73	4900	1260	1.02	570J	<1.00U	<0.500U	2240	970	<0.500U	<2.00U	986	
CC18	Dissolved Metals	ug/L	2940	<0.500U	1.09J	11.2	<2.00U	8.35	64600	<1.00U	15.0	189	184	13200	8.49	5530	4630	6.62	511J	<1.00U	<0.500U	1940	644	<0.500U	<2.00U	3520	
CC19	Dissolved Metals	ug/L	4530D	<5.00U	<5.00U	<50.0U	<20.0U	2.19D	453000D	<10.0U	141D	7.43JD	1260D	154000D	1.40JD	31500D	48500D	45.8D	<2500U	<10.0U	<5.00U	9040JD	5420D	<5.00U	<20.0U	20900D	
CC21	Dissolved Metals	ug/L	3970	<0.500U	1.02J	11.5	<2.00U	14.9	72100	<1.00U	17.7	245	207	13600	14.3	6620	7220	7.09	546J	<1.00U	<0.500U	2090	728	<0.500U	<2.00U	5380	
CC21B	Dissolved Metals	ug/L	2940	<0.500U	0.703J	11.8	<2.00U	8.28	58600	<1.00U	11.5	137	167	8440	9.59	5080	3980	4.31	650J	<1.00U	<0.500U	1930	630	<0.500U	<2.00U	3010	
CC26	Dissolved Metals	ug/L	2020	<0.500U	1.94J	27.7	<2.00U	2.17	6880	<1.00U	4.11	81.3	23	3730	38.5	1530	174	2.97	570J	<1.00U	<0.500U	557J	99.3	<0.500U	<2.00U	582	
CC41	Dissolved Metals	ug/L	2670	<0.500U	0.514J	14.4	<2.00U	4.65	47100	<1.00U	8.77	83.2	134	6700	9.94	4030	2230	3.99	711J	<1.00U	<0.500U	1690	486	<0.500U	<2.00U	1700	
CC48	Dissolved Metals	ug/L	2360	<0.500U	<0.500U	18.0	<2.00U	3.83	44600	<1.00U	7.32	65.4	126	4590	6.85	3620	1740	3.12	729J	<1.00U	<0.500U	1700	486	<0.500U	<2.00U	1310	
Dup-04	Dissolved Metals	ug/L	2910	<0.500U	1.09J	11.4	<2.00U	8.43	63900	<1.00U	14.3	188	182	13000	8.57	5460	4670	6.49	520J	<1.00U	<0.500U	1920	650	<0.500U	<2.00U	3570	
Dup-05	Dissolved Metals	ug/L	4630D	<5.00U	<5.00U	<50.0U	<20.0U	2.46D	459000D	<10.0U	142D	8.16JD	1280D	157000D	1.36JD	31900D	48000D	45.4D	<2500U	<10.0U	<5.00U	9130JD	5430D	<5.00U	<20.0U	20600D	
FB-01	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	<100U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<2.00U	<0.500U	<2.00U	<10.0U	
FB-02	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	<100U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<2.00U	<0.500U	<2.00U	<10.0U	
M34	Dissolved Metals	ug/L	35.5J	<0.500U	<0.500U	19.9	<2.00U	0.563	32200	<1.00U	1.99	3.14	92	545	0.108J	2830	184	<0.500U	489J	<1.00U	<0.500U	3230	294	<0.500U	<2.00U	146	

Station ID	Analysis	Units
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Table 2.2-4 Upper Animas May 2014
Surface Water Select Anions, Alkalinity, and DOC Analytical Results

Station ID	Units	Chloride	Dissolved Organic Carbon	Fluoride	Nitrate/Nitrite as N	Sulfate as SO4	Total Alkalinity (mg CaCO3/L)
A55	mg/L	1.1J	1.8	0.3	<1.0U	55.2	28.0
A55 Dup-01	mg/L	1.2J	1.8	0.3	<1.0U	56.3	<5.00U
A56	mg/L	1.2J	1.8	0.3	<1.0U	53.3	29.9
A58	mg/L	1.0J	1.7	0.2	<1.0U	30.2	35.2
A60	mg/L	1.2J	1.8	0.3	<1.0U	52.3	29.6
A61	mg/L	1.2J	1.9	0.4	<1.0U	54.2	29.1
A64	mg/L	1.2J	1.9	0.3	<1.0U	52.2	28.9
A65	mg/L	1.2J	1.9	0.3	<1.0U	53.2	28.6
A66	mg/L	1.2J	1.8	0.4	<1.0U	54.5	28.1
A67	mg/L	1.0J	2.5	0.2	<1.0U	29.0	20.8
A68	mg/L	1.3J	1.8	0.4	<1.0U	66.3	28.5
A72	mg/L	2.0	1.7	0.4	<1.0U	100	10.2
A73	mg/L	1.9J	2.0	0.3	<1.0U	74.0	20.3
A73B	mg/L	1.4J	2.7	0.2	<1.0U	41.0	14.3
A75B	mg/L	1.7J	2.4	0.3	<1.0U	50.9	21.7
A75CC	mg/L	1.9J	3.9	<0.1U	<1.0U	4.7	65.2
A75D	mg/L	1.7J	2.3	0.3	<1.0U	53.7	20.7
Bbridge	mg/L	1.7J	2.9	0.2	<1.0U	37.3	38.8
CC03	mg/L	0.9J		1.1	<1.0U	203	<5.00U
CC03B	mg/L	0.9J		0.5	<1.0U	68.7	<5.00U
CC03C	mg/L	<5.0U		6.0D	<10.0U	1470D	10.2
CC07	mg/L	<5.0U		2.0D	<10.0U	514D	<5.00U
CC14	mg/L	<5.0U		2.8D	<10.0U	613D	19.1
CC16B	mg/L	<5.0U		1.5JD	<10.0U	292D	<5.00U
CC17	mg/L	1.0J		0.9	<1.0U	240	<5.00U
CC18	mg/L	0.9J		1.2	<1.0U	250	<5.00U
CC19	mg/L	8.3JD		3.6D	<10.0U	1700D	15.4
CC21	mg/L	<5.0U		1.6JD	<10.0U	265D	<5.00U
CC21B	mg/L	1.0J		1.1	<1.0U	225	<5.00U
CC26	mg/L	1.0J		0.2	<1.0U	46.9	<5.00U
CC41	mg/L	1.0J		0.7	<1.0U	177	<5.00U
CC48	mg/L	1.0J		0.6	<1.0U	160	<5.00U
Dup-04	mg/L	0.9J		1.2	<1.0U	248	<5.00U
Dup-05	mg/L	8.3JD		3.5D	<10.0U	1680D	16.9
FB-01	mg/L	<0.5U	<1.0U	<0.1U	<1.0U	0.3	<5.00U
FB-02	mg/L	<0.5U	1.0	<0.1U	<1.0U	0.07J	<5.00U
M34	mg/L	3.7	1.8	0.3	<1.0U	84.7	13.0

Station ID	Units	Chloride	Dissolved Organic Carbon	Fluoride	Nitrate/Nitrite as N	Sulfate as SO4	Total Alkalinity (mg CaCO3/L)
A55	mg/L	1.1	1.8	0.3	<1.0	55.2	28.0
A55 Dup-01	mg/L	1.2	1.8	0.3	<1.0	56.3	<5.00
	RPD	8.70%	0.00%	0.00%	N/A	1.97%	N/A

Note: Data Qualifiers removed for RPD calculation

Station ID	Units	Chloride	Dissolved Organic Carbon	Fluoride	Nitrate/Nitrite as N	Sulfate as SO4	Total Alkalinity (mg CaCO3/L)
CC18	mg/L	0.9		1.2	<1.0	250	<5.00
CC18 Dup-04	mg/L	0.9		1.2	<1.0	248	<5.00
	RPD	0.00%	N/A	0.00%	N/A	0.80%	N/A

Note: Data Qualifiers removed for RPD calculation

Station ID	Units	Chloride	Dissolved Organic Carbon	Fluoride	Nitrate/Nitrite as N	Sulfate as SO4	Total Alkalinity (mg CaCO3/L)
CC19	mg/L	8.3		3.6	<10.0	1700	15.4
CC19 Dup-05	mg/L	8.3		3.5	<10.0	1680	16.9
	RPD	0.00%	N/A	2.82%	N/A	1.18%	9.29%

Note: Data Qualifiers removed for RPD calculation

Note: Data Qualifier Definitions Listed Below:

- D The analyte was diluted prior to analysis.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 2.2-5 Upper Animas September 2014
Surface Water Total Recoverable Metals Results

Station ID	Analysis	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
A39	Total Metals	ug/L	2470	<2.50U	<2.50U	<25.0U	<2.00U	5.79D	21900	<5.00U	1.91D	16.1D	<100U	9.79D	3800	1160	<2.50U	1.91D	<2.50U	802J	62.0	<2.50U	<10.0U	<10.0U	961
A41	Total Metals	ug/L	3620	<2.50U	<2.50U	<25.0U	6.14	6.09D	36000	<5.00U	1.65D	22.6D	178J	7.65D	5140	9070	4.75JD	834J	<5.00U	<2.50U	1500	227	7.52D	<10.0U	2160
A43	Total Metals	ug/L	1200	<2.50U	<2.50U	<25.0U	<2.00U	3.23D	37100	<5.00U	0.797JD	22.9D	<100U	4.32D	3880	2670	<2.50U	641J	<5.00U	<2.50U	1180	234	6.48D	<10.0U	918
A45	Total Metals	ug/L	868	<2.50U	<2.50U	<25.0U	<2.00U	2.55D	40900	<5.00U	0.720JD	18.3D	<100U	2.50D	3630	1810	<2.50U	582J	<5.00U	<2.50U	1260	330	<2.50U	<10.0U	699
A47	Total Metals	ug/L	639	<2.50U	<2.50U	<25.0U	<2.00U	2.32D	40000	<5.00U	0.615JD	13.9D	<100U	1.93D	3500	1660	<2.50U	581J	<5.00U	<2.50U	1240	322	<2.50U	<10.0U	651
A49	Total Metals	ug/L	658	<2.50U	<2.50U	<25.0U	<2.00U	1.99D	39000	<5.00U	0.553JD	13.0D	<100U	2.62D	3450	1560	<2.50U	596J	<5.00U	<2.50U	1360	344	<2.50U	<10.0U	605
A51	Total Metals	ug/L	308	<2.50U	<2.50U	<25.0U	<2.00U	1.35D	40800	<5.00U	<0.500U	6.30D	<100U	1.12D	3240	810	<2.50U	604J	<5.00U	<2.50U	1650	392	<2.50U	<10.0U	434
A53AC	Total Metals	ug/L	283	<2.50U	<2.50U	<25.0U	<2.00U	1.36D	42600	<5.00U	<0.500U	5.88D	<100U	1.89D	3280	832	<2.50U	619J	<5.00U	<2.50U	1790	419	<2.50U	<10.0U	466
A55	Total Metals	ug/L	208	<2.50U	<2.50U	29.7JD	<2.00U	0.878JD	37400	<5.00U	<0.500U	4.62JD	<100U	1.70D	2810	531	<2.50U	569J	<5.00U	<2.50U	1760	393	<2.50U	<10.0U	309
A56	Total Metals	ug/L	188	<2.50U	<2.50U	29.9JD	<2.00U	0.985JD	38000	<5.00U	<0.500U	3.89JD	<100U	1.86D	2860	482	<2.50U	588J	<5.00U	<2.50U	1860	403	<2.50U	<10.0U	255
A58	Total Metals	ug/L	28.6J	<2.50U	<2.50U	<25.0U	<2.00U	0.868JD	27000	<5.00U	<0.500U	4.99JD	<100U	3.55D	1420	3.02J	<2.50U	458J	<5.00U	<2.50U	1660	407	<2.50U	<10.0U	117
A60	Total Metals	ug/L	174	<2.50U	<2.50U	27.2JD	<2.00U	0.929JD	37100	<5.00U	<0.500U	4.13JD	<100U	1.82D	2670	424	<2.50U	554J	<5.00U	<2.50U	1810	402	<2.50U	<10.0U	267
A61	Total Metals	ug/L	168	<2.50U	<2.50U	27.8JD	<2.00U	0.988JD	36600	<5.00U	<0.500U	5.00D	<100U	1.98D	2690	481	<2.50U	591J	<5.00U	<2.50U	1880	407	<2.50U	<10.0U	263
A61 Dup-01	Total Metals	ug/L	162JD	<2.50U	<2.50U	25.1JD	<10.0U	0.826JD	38600D	<5.00U	<0.500U	4.76JD	<500U	1.56D	2730D	472D	<2.50U	<1250U	<5.00U	<2.50U	1980JD	431D	<2.50U	<10.0U	267D
A64	Total Metals	ug/L	150	<2.50U	<2.50U	26.0JD	<2.00U	0.930JD	37400	<5.00U	<0.500U	4.64JD	<100U	1.72D	2650	576	<2.50U	584J	<5.00U	<2.50U	1830	413	<2.50U	<10.0U	259
A65	Total Metals	ug/L	160	<2.50U	<2.50U	25.5JD	<2.00U	0.944JD	40200	<5.00U	<0.500U	4.96JD	<100U	2.84D	2780	630	<2.50U	567J	<5.00U	<2.50U	1910	437	<2.50U	<10.0U	293
A66	Total Metals	ug/L	174	<2.50U	<2.50U	26.1JD	<2.00U	1.01D	40500	<5.00U	<0.500U	5.11D	111J	1.96D	2860	862	<2.50U	576J	<5.00U	<2.50U	1980	441	<2.50U	<10.0U	340
A67	Total Metals	ug/L	37.8J	<2.50U	<2.50U	30.3JD	<2.00U	0.862JD	19600	<5.00U	<0.500U	2.78JD	<100U	3.46D	1420	25.5	<2.50U	448J	<5.00U	<2.50U	1280	190	<2.50U	<10.0U	124
A68	Total Metals	ug/L	164	<2.50U	<2.50U	25.2JD	<2.00U	1.09D	39000	<5.00U	<0.500U	4.69JD	<100U	2.01D	2720	835	<2.50U	581J	<5.00U	<2.50U	1870	427	<2.50U	<10.0U	273
A72	Total Metals	ug/L	1110	<2.50U	<2.50U	25.5JD	<2.00U	1.11D	49100	<5.00U	2.87D	1340	3.42D	3820	884	<2.50U	668J	<5.00U	<2.50U	2410	530	<2.50U	<10.0U	391	
A73	Total Metals	ug/L	933	<2.50U	<2.50U	27.1JD	<2.00U	0.968JD	47600	<5.00U	2.46D	8.29D	1080	2.56D	3790	813	<2.50U	653J	<5.00U	<2.50U	2340	510	<2.50U	<10.0U	372
A73B	Total Metals	ug/L	612	<2.50U	<2.50U	32.8JD	<2.00U	0.584JD	25600	<5.00U	1.46D	4.30JD	569	1.65D	3000	2960	<2.50U	526J	<5.00U	<2.50U	1420	267	5.90D	<10.0U	181
A75B	Total Metals	ug/L	562	<2.50U	<2.50U	<25.0U	<2.00U	0.510JD	28400	<5.00U	1.20D	4.06JD	585	2.09D	2900	381	<2.50U	691J	<5.00U	<2.50U	1660	275	6.85D	<10.0U	183
A75CC	Total Metals	ug/L	296	<2.50U	<2.50U	65.9D	<2.00U	<0.500U	24300	<5.00U	<0.500U	<2.50U	<100U	<0.500U	4350	16.2	<2.50U	639J	<5.00U	<2.50U	2220	170	<2.50U	<10.0U	11.4J
A75D	Total Metals	ug/L	534	<2.50U	<2.50U	<25.0U	<2.00U	0.505JD	28400	<5.00U	1.30D	4.39JD	580	1.61D	2870	385	<2.50U	687J	<5.00U	<2.50U	1600	277	<2.50U	<10.0U	181
A75EC	Total Metals	ug/L	278	<2.50U	<2.50U	35.8JD	<2.00U	<0.500U	5740	<5.00U	0.576JD	<2.50U	<100U	<0.500U	2230	16.8	2.50JD	439J	<5.00U	<2.50U	608J	46.9	<2.50U	<10.0U	<10.0U
Animas @32nd Bridge	Total Metals	ug/L	348	<2.50U	<2.50U	40.6JD	<2.00U	<0.500U	43500	<5.00U	<0.500U	2.98JD	448	3.02D	6050	122	<2.50U	1750	<5.00U	<2.50U	8970	463	<2.50U	<10.0U	81.2
Animas @Lightner Creek	Total Metals	ug/L	449	<2.50U	<2.50U	37.5JD	<2.00U	<0.500U	37600	<5.00U	<0.500U	3.59JD	525	3.62D	5320	128	<2.50U	1410	<5.00U	<2.50U	6790	379	<2.50U	<10.0U	82.4
Animas @Purple Cliffs	Total Metals	ug/L	612	<2.50U	<2.50U	45.6JD	<2.00U	<0.500U	37400	<5.00U	0.506JD	4.00JD	743	5.64D	5430	133	<2.50U	1490	<5.00U	<2.50U	6710	367	<2.50U	<10.0U	75.8
Bbridge	Total Metals	ug/L	399	<2.50U	<2.50U	37.0JD	<2.00U	<0.500U	30200	<5.00U	0.831JD	2.82JD	317	1.22D	3660	272	<2.50U	692J	<5.00U	<2.50U	1800	273	<2.50U	<10.0U	126
CC01C2	Total Metals	ug/L	6160	<2.50U	6.49JD	<25.0U	<2.00U	58.8D	15700	<5.00U	6.58D	1510D	12500	27.9D	5410	4780	6.10D	489J	<5.00U	<2.50U	878J	52.8	<2.50U	<10.0U	13500
CC01T	Total Metals	ug/L	2100	<2.50U	<2.50U	32.1JD	<2.00U	10.7D	54800	<5.00U	0.547JD	136D	729	3.59D	7370	2960	3.03JD	417J	<5.00U	<2.50U	1310	379	<2.50U	<10.0U	2300
CC01U	Total Metals	ug/L	2090	<2.50U	<2.50U	29.5JD	<2.00U	11.1D	53900	<5.00U	0.609JD	142D	699	4.06D	7420	2990	3.67JD	420J	<5.00U	<2.50U	1290	360	<2.50U	<10.0U	2280
CC02B	Total Metals	ug/L	2050	<2.50U	<2.50U	29.8JD	<2.00U	12.5D	52000	<5.00U	1.27D	151D	681	8.74D	6620	2960	3.13JD	476J	<5.00U	<2.50U	1440	381	<2.50U	<10.0U	3410
CC02D	Total Metals	ug/L	3570	<2.50U	<2.50U	<25.0U	3.84J	61.6D	213000	<5.00U	18.7D	18.7D	25000	226D	13200	28000	3.53JD	2150	<5.00U	<2.50U	6210	1870	<2.50U	<10.0U	35400
CC02E	Total Metals	ug/L	285	<2.50U	8.81JD	<25.0U	<2.00U	<0.500U	144000	<5.00U	4.87D	3.11JD	5270	1.45D	7370	2540	<2.50U	659J	<5.00U	<2.50U	4960	1690	<2.50U	<10.0U	841
CC02i	Total Metals	ug/L	1500	<2.50U	<2.50U	36.4JD	<2.00U	10.0D	58900	<5.00U	<0.500U	21.5D	<100U	3.29D	8070	159	6.28D	618J	<5.00U	<2.50U	1280	270	<2.50U	<10.0U	3190
CC02K	Total Metals	ug/L	2220	<2.50U	<2.50U	<25.0U	<2.00U	22.3D	42200	<5.00U	7.44D	17.7D	9240	38.3D	3470	1950	<2.50U	730J	<5.00U	<2.50U	3460	579	<2.50U	<10.0U	2500
CC03	Total Metals	ug/L	2630	<2.50U	<2.50U	<25.0U	<2.00U	13.6D	138000	<5.00U	20.7D	118D	18000	21.1D	10200	13800	9.22D	700J	<5.00U	<2.50U	3250	1450	10.6D	<10.0U	5650
CC03B	Total Metals	ug/L	1850	<2.50U	<2.50U	<25.0U	<2.00U	10.7D	60400	<5.00U	1.43D	138D	613	7.87D	6020	2530	<2.50U	471J	<5.00U	<2.50U	1730	509	11.7D	<10.0U	2940
CC03C	Total Metals	ug/L	4250D	<5.00U	<5.00U	<50.0U	<20.0U	23.9D	42000D	<10.0U	86.1D	20.1D	87400D	73.8D	25600D	43300D	25.6D	<2500U	<10.0U	<5.00U	8280JD	4840D	<5.		

Table 2.2-6 Upper Animas September 2014
Surface Water Dissolved Metals Analytical Results

Station ID	Analysis	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness (mg/L)	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc	
A39	Dissolved Metals	ug/L	880	<0.500U	<0.500U	16.6	<2.00U	5.71	23000	<1.00U	1.95	16.3	73	<100U	8.10	3730	1150	2.47	710J	<1.00U	<0.500U	754J	60.0	<0.500U	<2.00U	1000	
A41	Dissolved Metals	ug/L	1930	<0.500U	<0.500U	18.0	5.23	6.27	38600	<1.00U	1.70	19.2	118	123J	5.36	5180	9010	4.73	788J	<1.00U	<0.500U	1420	220	<0.500U	<2.00U	2210	
A43	Dissolved Metals	ug/L	76.1	<0.500U	<0.500U	16.0	<2.00U	3.36	39800	<1.00U	0.831	5.59	115	<100U	0.374	3890	2640	0.963J	624J	<1.00U	<0.500U	1130	227	<0.500U	<2.00U	875	
A45	Dissolved Metals	ug/L	80.4	<0.500U	<0.500U	16.0	<2.00U	2.47	43700	<1.00U	0.693	4.95	124	<100U	0.236	3650	1790	0.755J	551J	<1.00U	<0.500U	1210	319	<0.500U	<2.00U	639	
A47	Dissolved Metals	ug/L	68.3	<0.500U	<0.500U	15.3	<2.00U	2.31	42600	<1.00U	0.639	4.63	121	<100U	0.197J	3560	1670	<0.500U	590J	<1.00U	<0.500U	1230	312	<0.500U	<2.00U	633	
A49	Dissolved Metals	ug/L	63.5	<0.500U	<0.500U	18.0	<2.00U	2.18	42600	<1.00U	0.598	4.45	121	<100U	0.180J	3540	1560	<0.500U	573J	<1.00U	<0.500U	1300	329	<0.500U	<2.00U	603	
A51	Dissolved Metals	ug/L	39.1J	<0.500U	<0.500U	21.8	<2.00U	1.34	43300	<1.00U	0.353	3.36	122	<100U	0.149J	3310	823	<0.500U	604J	<1.00U	<0.500U	1620	379	<0.500U	<2.00U	440	
A53AC	Dissolved Metals	ug/L	46.0J	<0.500U	<0.500U	21.3	<2.00U	1.37	45700	<1.00U	0.323	2.94	128	<100U	0.275	3320	826	<0.500U	578J	<1.00U	<0.500U	1720	402	<0.500U	<2.00U	462	
A55	Dissolved Metals	ug/L	37.6J	<0.500U	<0.500U	28.7	<2.00U	0.877	40200	<1.00U	0.251	2.59	112	<100U	0.209	2870	524	<0.500U	568J	<1.00U	<0.500U	1740	380	<0.500U	<2.00U	315	
A56	Dissolved Metals	ug/L	61.4	<0.500U	<0.500U	29.1	<2.00U	0.863	40900	<1.00U	0.251	2.44	114	<100U	0.216	2910	469	<0.500U	590J	<1.00U	<0.500U	1800	391	<0.500U	<2.00U	250	
A58	Dissolved Metals	ug/L	<20.0U	4.76	<0.500U	21.3	<2.00U	2.53	28900	<1.00U	<0.100U	4.39	78	<100U	1.62	1380	<2.00U	<0.500U	450J	<1.00U	<0.500U	1520	389	<0.500U	<2.00U	144	
A60	Dissolved Metals	ug/L	43.3J	<0.500U	<0.500U	26.9	<2.00U	0.986	40200	<1.00U	0.235	2.80	111	<100U	0.322	2660	416	<0.500U	543J	<1.00U	<0.500U	1700	389	<0.500U	<2.00U	266	
A61	Dissolved Metals	ug/L	64.9	<0.500U	<0.500U	26.3	<2.00U	0.932	39900	<1.00U	0.231	3.43	111	<100U	0.342	2720	464	<0.500U	578J	<1.00U	<0.500U	1810	398	<0.500U	<2.00U	253	
A61 Dup-01	Dissolved Metals	ug/L	68.0	<0.500U	<0.500U	27.8	<2.00U	0.964	39200	<1.00U	0.203	2.76J	109	<100U	0.406	2650	452	<0.500U	568J	<1.00U	<0.500U	1760	396	<0.500U	<2.00U	249	
A64	Dissolved Metals	ug/L	63.0	<0.500U	<0.500U	26.3	<2.00U	1.01	40700	<1.00U	0.232	3.45	113	<100U	0.294	2730	569	<0.500U	581J	<1.00U	<0.500U	1810	401	<0.500U	<2.00U	260	
A65	Dissolved Metals	ug/L	54.7	<0.500U	<0.500U	26.2	<2.00U	1.05	42100	<1.00U	0.236	2.97	117	<100U	0.280	2790	614	<0.500U	564J	<1.00U	<0.500U	1860	424	<0.500U	<2.00U	293	
A66	Dissolved Metals	ug/L	59.9	<0.500U	<0.500U	25.9	<2.00U	1.13	43500	<1.00U	0.442	3.46	120	<100U	0.436	2850	860	<0.500U	576J	<1.00U	<0.500U	1850	436	<0.500U	<2.00U	341	
A67	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	28.7	<2.00U	0.781	20700	<1.00U	0.140J	1.70	58	<100U	1.02	1440	23.5	<0.500U	471J	<1.00U	<0.500U	1270	189	<0.500U	<2.00U	133	
A68	Dissolved Metals	ug/L	73.0	<0.500U	<0.500U	25.7	<2.00U	1.08	41000	<1.00U	0.370	3.32	114	<100U	0.381	2790	826	<0.500U	611J	<1.00U	<0.500U	1890	422	<0.500U	<2.00U	270	
A72	Dissolved Metals	ug/L	38.9J	<0.500U	<0.500U	26.5	<2.00U	1.19	51200	<1.00U	2.98	3.02	144	443	<0.100U	3920	2.98	863	1.10	690J	<1.00U	<0.500U	2420	523	<0.500U	<2.00U	362
A73	Dissolved Metals	ug/L	36.9J	<0.500U	<0.500U	28.6	<2.00U	1.01	50200	<1.00U	2.66	1.92	142	115J	<0.100U	4010	811	0.895J	686J	<1.00U	<0.500U	2450	510	<0.500U	<2.00U	327	
A73B	Dissolved Metals	ug/L	43.1J	<0.500U	<0.500U	33.6	<2.00U	0.572	27900	<1.00U	1.65	1.42	83	104J	<0.100U	3170	1.65	419	1.89	589J	<1.00U	<0.500U	1550	281	<0.500U	<2.00U	180
A75B	Dissolved Metals	ug/L	61.8	<0.500U	<0.500U	22.5	<2.00U	0.517	29200	<1.00U	1.30	2.01	85	<100U	0.139J	2930	363	1.02	695J	<1.00U	<0.500U	1640	275	<0.500U	<2.00U	149	
A75CC	Dissolved Metals	ug/L	87.7	<0.500U	<0.500U	66.3	<2.00U	<0.100U	25700	<1.00U	0.233	1.01	93	<100U	<0.100U	4540	8.56	2.44	632J	<1.00U	<0.500U	2300	171	<0.500U	<2.00U	<10.0U	
A75D	Dissolved Metals	ug/L	66.2	<0.500U	<0.500U	23.0	<2.00U	0.542	31900	<1.00U	1.26	1.91	82	<100U	<0.100U	3010	371	0.995J	674J	<1.00U	<0.500U	1620	279	<0.500U	<2.00U	152	
A75EC	Dissolved Metals	ug/L	56.7	<0.500U	<0.500U	38.7	<2.00U	<0.100U	6260	<1.00U	0.569	0.522J	26	<100U	<0.100U	2400	15.2	2.95	437J	<1.00U	<0.500U	604J	47.7	<0.500U	<2.00U	<10.0U	
Animas @ 32nd Bridge	Dissolved Metals	ug/L	40.4J	<0.500U	<0.500U	42.8	<2.00U	0.184J	47100	<1.00U	0.222	1.37	143	<100U	0.109J	6250	78.7	<0.500U	1740	<1.00U	<0.500U	9030	462	<0.500U	<2.00U	57.5	
Animas @ Lightner Creek	Dissolved Metals	ug/L	51.1	<0.500U	<0.500U	35.1	<2.00U	0.134J	39900	<1.00U	0.216	1.82	121	<100U	0.212	5300	55.2	<0.500U	1360	<1.00U	<0.500U	6550	373	<0.500U	<2.00U	41.5	
Animas @ Purple Cliffs	Dissolved Metals	ug/L	60.7	<0.500U	<0.500U	32.8	<2.00U	<0.100U	39500	<1.00U	0.171J	1.79	121	<100U	0.237	5310	40.2	<0.500U	1400	<1.00U	<0.500U	6510	357	<0.500U	<2.00U	34.7	
Bbridge	Dissolved Metals	ug/L	76.9	<0.500U	<0.500U	33.2	<2.00U	0.354	33400	<1.00U	0.905	1.89	99	<100U	<0.100U	3750	254	0.673J	695J	<1.00U	<0.500U	1740	272	<0.500U	<2.00U	87.7	
CC01C2	Dissolved Metals	ug/L	6290	<0.500U	5.50	19.7	<2.00U	54.2	17200	<1.00U	7.24	1700	66	13100	28.8	5570	4790	6.93	507J	<1.00U	<0.500U	870J	52.9	<0.500U	<2.00U	14400	
CC01T	Dissolved Metals	ug/L	1430	<0.500U	<0.500U	32.6	<2.00U	12.0	59400	<1.00U	0.694	146	179	<100U	1.48	7540	2920	4.44	421J	<1.00U	<0.500U	1290	375	<0.500U	<2.00U	2410	
CC01U	Dissolved Metals	ug/L	1350	<0.500U	<0.500U	32.5	<2.00U	11.9	58700	<1.00U	0.692	143	178	<100U	1.90	7570	2970	4.91	414J	<1.00U	<0.500U	1260	358	<0.500U	<2.00U	2420	
CC02B	Dissolved Metals	ug/L	1720	<0.500U	<0.500U	31.9	<2.00U	14.1	56300	<1.00U	1.36	164	168	215J	7.62	6700	2900	4.42	485J	<1.00U	<0.500U	1370	374	<0.500U	<2.00U	3530	
CC02D	Dissolved Metals	ug/L	3570	<0.500U	<0.500U	4.48J	65.3D	22800	<1.00U	22.6D	25.8D	625	2490	232D	13300	27500	9.31D	2100	<10.0U	<0.500U	5910	1820	<0.500U	<2.00U	36300		
CC02E	Dissolved Metals	ug/L	244	<2.50U	8.72D	<25.0U	<2.00U	0.526D	153000	<5.00U	5.83D	<2.50U	412	4750	<0.500U	7370	2510	<2.50U	629J	<5.00U	<2.50U	4770	1680	<2.50U	<10.0U	860	
CC02i	Dissolved Metals	ug/L	1510	<0.500U	<0.500U	37.7	<2.00U	10.9	64000	<1.00U	0.402	27.5	194	<100U	3.15	8270	155	9.13	620J	<1.00U	<0.500U	1260	268	<0.500U	<2.00U	3200	
CC02K	Dissolved Metals	ug/L	2260	<0.500U	<0.500U	11.7	<2.00U	23.1	43900	<1.00U	6.86	14.7	124	5860	37.2	3540	1990	3.83	775J	<1.00U	<0.500U	3560	582	<0.500U	<2.00U	2720	
CC03	Dissolved Metals	ug/L	2010	<2.50U	<2.50U	<25.0U	<2.00U	14.6D	147000	<5.00U	21.1D	104D	411	16800	7.45D	10400	9190	11.8D	743J	<5.00U	<2.50U	3270	1430	<2.50U	<10.0U	5850	
CC03B	Dissolved Metals	ug/L	1640	<0.500U	<0.500U	27.8	<2.00U	12.2	61800	<1.00U	1.52	132	179	199J	6.82	6020	2570	4.21	488J	<1.00U	<0.500U	1740	510	<0.500U	<2.00U	3150	
CC03C	Dissolved Metals	ug/L	3920D	<5.00U	<5.00U	<50.0U	<20.0U	22.7D	426000D	<10.0U	86.5D	17.8D	1170D	82000D	17.1D	24900D	33500D	37.7D	<2500U	<10.0U	<5.00U	7830D	4780D	<5.00U	<20.0U	15400D	
CC03D	Dissolved Metals	ug/L	2370D	<5.00U	<5.00U	<50.0U	<20.0U	23.7D	427000D	<10.0U	88.0D	15.3D	1170D	81600D	3.11D	25000D	33500D	40.4D	<2500U	<10.0U	<5.00U	7840D	4790D	<5.00U	<20.0U	15300D	
CC04	Dissolved Metals	ug/L	2080	<0.500U	<0.500U	21.5	<2.00U	4.31	35800	<1.00U	4.02	158	110	1180	2.15	4970	480	2.49	474J	<1.00U	<0.500U	1340	253	<0.500U	<2.00U	1100	
CC06	Dissolved Metals	ug/L	32700D	<5.00U	<5.00U	<50.0U	<10.0U	88.6D	358000D	<10.0																	

**Table 2.2-7 Upper Animas September 2014
Surface Water Select Anions, Alkalinity, and DOC Analytical Results**

Station ID	Units	Chloride	Dissolved Organic Carbon	Fluoride	Nitrate/Nitrite as N	Sulfate as SO4	Total Alkalinity (mg CaCO3/L)
A55	mg/L	1.4J	1.0	0.3	<1.0U	75.1	35.3
A56	mg/L	1.5J	1.0	0.4	<1.0U	78.3	35.1
A58	mg/L	1.1J	<1.0U	0.1J	<1.0U	32.9	42.3
A60	mg/L	1.5J	1.0	0.3	<1.0U	70.4	36.5
A61	mg/L	1.5J	1.0	0.4	<1.0U	72.6	36.0
A61 Dup-01	mg/L	1.5J	1.1	0.4	<1.0U	71.3	36.6
A64	mg/L	1.4J	<1.0U	0.4	<1.0U	73.3	35.9
A65	mg/L	1.4J	1.0	0.4	<1.0U	80.5	36.9
A66	mg/L	1.4J	<1.0U	0.4	<1.0U	82.0	36.6
A67	mg/L	1.2J	1.0	0.1J	<1.0U	25.8	30.3
A68	mg/L	1.4J	1.1	0.4	<1.0U	78.9	35.4
A72	mg/L	1.6J	1.1	0.4	<1.0U	129	16.1
A73	mg/L	1.7J	1.2	0.4	<1.0U	122	20.5
A73B	mg/L	1.4J	1.3	0.2	<1.0U	61.3	13.8
A75B	mg/L	1.5J	1.3	0.3	<1.0U	65.5	18.9
A75CC	mg/L	2.1	2.3	0.1J	<1.0U	15.6	66.8
A75D	mg/L	1.5J	1.3	0.3	<1.0U	65.7	18.2
A75EC	mg/L	1.2J	1.3	<0.1U	<1.0U	15.4	7.34J
Animas @32nd Bridge	mg/L	8.5	1.6	0.3	<1.0U	73.5	70.5
Animas @Lightner Creek	mg/L	6.4	1.7	0.3	<1.0U	59.1	62.0
Animas @Purple Cliffs	mg/L	6.3	1.9	0.3	<1.0U	57.8	61.5
Bbridge	mg/L	1.6J	1.6	0.3	<1.0U	59.2	34.3
CC01C2	mg/L	1.1J	--	1.3	<1.0U	189	<5.00U
CC01T	mg/L	1.1J	--	0.8	<1.0U	180	<5.00U
CC01U	mg/L	1.1J	--	0.8	<1.0U	180	<5.00U
CC02B	mg/L	1.1J	--	0.9	<1.0U	177	<5.00U
CC02D	mg/L	10.4JD	--	4.8D	<10.0U	732D	<5.00U
CC02E	mg/L	<5.0U	--	3.2D	<10.0U	343D	19.7
CC02i	mg/L	1.1J	--	1.2	<1.0U	190	<5.00U
CC02K	mg/L	1.1J	--	3.2	<1.0U	147	<5.00U
CC03	mg/L	<5.0U	--	2.1D	<10.0U	383D	<5.00U
CC03B	mg/L	1.2J	--	0.9	<1.0U	179	<5.00U
CC03C	mg/L	<5.0U	--	5.0D	<10.0U	1270D	<5.00U
CC03D	mg/L	<5.0U	--	5.3D	<10.0U	1290D	<5.00U
CC04	mg/L	1.2J	--	0.2	<1.0U	123	<5.00U
CC06	mg/L	10.3JD	--	8.4D	<10.0U	1330D	<5.00U
CC06B	mg/L	<5.0U	--	7.8D	<10.0U	1270D	<5.00U
CC07	mg/L	10.4JD	--	3.3D	<10.0U	743D	<5.00U
CC14	mg/L	10.5JD	--	2.4D	<10.0U	480D	20.3
CC15	mg/L	1.1J	--	0.4	<1.0U	80.5	5.60J
CC16B	mg/L	<5.0U	--	1.5JD	<10.0U	250D	7.46J
CC17	mg/L	10.5JD	--	1.1JD	<10.0U	256D	7.64J
CC18	mg/L	<5.0U	--	2.3D	<10.0U	454D	<5.00U
CC18B	mg/L	10.5JD	--	2.1D	<10.0U	419D	<5.00U
CC19	mg/L	10.3JD	--	3.1D	<10.0U	1530D	<5.00U
CC21	mg/L	10.3JD	--	1.7JD	<10.0U	353D	<5.00U
CC21B	mg/L	10.4JD	--	1.6JD	<10.0U	336D	<5.00U
CC26	mg/L	10.4JD	--	<1.0U	<10.0U	147D	<5.00U
CC41	mg/L	<5.0U	--	1.3JD	<10.0U	348D	<5.00U
CC48	mg/L	10.3JD	<1.0U	1.3JD	<10.0U	348D	<5.00U
Dup-04	mg/L	<5.0U	--	1.6JD	<10.0U	349D	<5.00U
Dup-05	mg/L	1.2J	--	1.0	<1.0U	186	<5.00U
FB-01	mg/L	<0.5U	<1.0U	<0.1U	<1.0U	<0.05U	<5.00U
FB-02	mg/L	<0.5U	--	<0.1U	<1.0U	<0.05U	<5.00U
FB-03	mg/L	<0.5U	<1.0U	<0.1U	<1.0U	<0.05U	<5.00U
FD-1	mg/L	<5.0U	--	2.3D	<10.0U	318D	<5.00U
JamesRanch	mg/L	<5.0U	1.6	2.3D	<10.0U	318D	<5.00U
M34	mg/L	1.5J	1.1	0.2	<1.0U	104	12.7
MTD-4	mg/L	<5.0U	--	3.4D	<10.0U	451D	<5.00U

Station ID	Units	Chloride	Dissolved Organic Carbon	Fluoride	Nitrate/Nitrite as N	Sulfate as SO4	Total Alkalinity (mg CaCO3/L)
A61	mg/L	1.5	1.0	0.4	<1.0	72.6	36.0
A61 Dup-01	mg/L	1.5	1.1	0.4	<1.0	71.3	36.6
RPD	%	0.00%	9.52%	0.00%	N/A	1.81%	1.65%

Note: Data Qualifiers removed for RPD calculation

Station ID	Units	Chloride	Dissolved Organic Carbon	Fluoride	Nitrate/Nitrite as N	Sulfate as SO4	Total Alkalinity (mg CaCO3/L)
CC21	mg/L	10.3	--	1.7	<10.0	353	<5.00
CC21 Dup-04	mg/L	<5.0	--	1.6	<10.0	349	<5.00
RPD	%	N/A	--	6.06%	N/A	1.14%	N/A

Note: Data Qualifiers removed for RPD calculation

Station ID	Units	Chloride	Dissolved Organic Carbon	Fluoride	Nitrate/Nitrite as N	Sulfate as SO4	Total Alkalinity (mg CaCO3/L)
CC03B	mg/L	1.2	--	0.9	<1.0	179	<5.00
CC03B Dup-05	mg/L	1.2	--	1.0	<1.0	186	<5.00
RPD	%	0.00%	--	10.53%	N/A	3.84%	N/A

Note: Data Qualifiers removed for RPD calculation

Note: Data Qualifier Definitions Listed Below:

D The analyte was diluted prior to analysis.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 2.4-1 Upper Animas April 2014
Sediment Total Recoverable Metals Analytical Results

STATION_ID	ANALYSIS	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
		mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	mg/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt
A55	Total Metals	11200D	1340D	22200D	111000D	4.55JD	10900D	4170D	3260D	9810D	334000D	22900D	1040000D	3850D	8060D	0.135D	6760D	505JD	1010JD	5520D	<250U	49.2D	<500U	12900D	3480D
A56	Total Metals	15100D	1330D	33100D	166000D	6.35D	17800D	7720D	4720D	15600D	432000D	40700D	772000D	4550D	12700D	0.171D	9920D	705JD	1620JD	7640D	<247U	84.0D	533JD	16400D	6200D
A58	Total Metals	7360D	<501U	14700D	120000D	<2.00U	6470D	3000D	4850D	8750D	79500D	34200D	307000D	5050D	1030D	0.013JD	3640D	696JD	1320JD	1410D	<250U	55.4D	657JD	20500D	1070D
A60	Total Metals	13400D	<502U	16400D	81000D	<2.01U	5840D	5250D	6350D	16200D	166000D	33500D	554000D	8200D	3400D	0.033D	9620D	640JD	<1000U	3480D	<251U	47.4D	<502U	21700D	1530D
A61	Total Metals	13500D	779JD	19800D	87500D	2.99JD	9020D	4120D	5280D	13600D	638000D	32000D	891000D	6130D	6400D	0.091D	8560D	633JD	1100JD	4280D	<250U	38.1D	<501U	18300D	2530D
A64	Total Metals	10700D	751JD	18800D	103000D	<2.02U	6250D	3520D	5150D	14000D	199000D	31400D	1050000D	6360D	4920D	0.053D	7440D	477JD	<1010U	3590D	<252U	34.5D	<504U	18900D	1950D
A65	Total Metals	13100D	711JD	21800D	113000D	2.16JD	10200D	4600D	5490D	16100D	331000D	31600D	900000D	6190D	10300D	0.073D	9900D	591JD	<1010U	3870D	<252U	47.5D	<503U	18600D	2890D
A66	Total Metals	11700D	1040D	18300D	165000D	2.24JD	18300D	3700D	4070D	19800D	378000D	31700D	1230000D	5250D	20500D	0.060D	10100D	376JD	<1000U	4130D	<250U	45.6D	<501U	16000D	4380D
A68	Total Metals	13000D	1040D	19100D	169000D	2.82JD	15700D	3950D	4210D	19500D	390000D	32400D	1080000D	5000D	19700D	0.056D	10300D	409JD	<998U	4350D	<250U	46.0D	<499U	16000D	4890D
A72	Total Metals	18900D	961JD	37000D	113000D	<2.00U	1700D	1830D	3450D	9810D	145000D	74600D	470000D	4080D	1710D	0.039D	4330D	537JD	1050JD	1680D	<249U	38.1D	<499U	22200D	616D
A73	Total Metals	40700D	1660D	33800D	109000D	4.20JD	5600D	2220D	2830D	34700D	284000D	109000D	297000D	2240D	7120D	0.036D	7190D	418JD	<1000U	1350D	<251U	36.8D	<502U	22800D	1450D
A75D	Total Metals	29900D	1050D	28500D	134000D	3.66JD	6750D	3370D	4390D	35900D	223000D	67900D	261000D	2930D	6900D	0.038D	13100D	724JD	1060JD	1270D	<253U	52.4D	<507U	19000D	2910D
Bbridge	Total Metals	27300D	1100D	25900D	216000D	3.51JD	14600D	6510D	4280D	50000D	199000D	62100D	248000D	3220D	13100D	0.043D	22000D	763JD	1160JD	1330D	<250U	79.4D	<500U	18900D	6030D

Note: Data Qualifier Definitions Listed Below:

- D The analyte was diluted prior to analysis.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 2.4-2 Upper Animas September 2014
Sediment Total Recoverable Metals Analytical Results

Station ID	Analysis	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thalium	Vanadium	Zinc
		mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	mg/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt
A55	Total Metals	7790D	1670D	18000D	102000D	<1.98U	7660D	2900D	3520D	10800D	203000D	20900D	1230000D	4440D	6660D	0.04D	5650D	432JD	<992U	2990D	<248U	37.6D	<496U	13700D	1920D
A56	Total Metals	9310D	1640D	20200D	129000D	2.94JD	11600D	3550D	3600D	13200D	244000D	21700D	1180000D	4450D	9250D	0.06D	7130D	422JD	<1000U	3620D	<251U	37.5D	1110D	13400D	3220D
A58	Total Metals	5920D	1480D	9800D	56000D	<1.99U	5540D	2340D	3270D	7290D	333000D	19900D	1080000D	4020D	2680D	0.06D	3050D	416JD	<993U	3390D	<248U	28.9D	1120D	12600D	1190D
A60	Total Metals	7730D	2190D	20400D	91700D	<2.03U	9550D	2730D	3880D	11000D	262000D	23400D	1610000D	4690D	7460D	0.07D	6260D	423JD	<1020U	5960D	<254U	27.2D	<508U	14300D	2130D
A61	Total Metals	9280D	1760D	20500D	76700D	2.10JD	4950D	2630D	3550D	10500D	286000D	22800D	1400000D	4540D	8210D	0.05D	6520D	498JD	<995U	5230D	<249U	25.5D	<497U	14300D	2330D
A61 Dup-01	Total Metals	10000D	2020D	20800D	105000D	2.54JD	5950D	3230D	3770D	10800D	329000D	24200D	1290000D	4540D	8890D	0.05D	7920BD	539JD	<1010U	4320D	<254U	28.9D	<507U	14900D	2660D
A64	Total Metals	9610D	1690D	21300D	101000D	3.00JD	7930D	3840D	3550D	11800D	264000D	24500D	1120000D	4370D	6850D	0.13D	6840D	488JD	<1010U	4880D	<252U	50.1D	<503U	14400D	2730D
A65	Total Metals	8190D	1670D	19400D	89200D	<1.99U	6820D	2830D	3760D	11100D	271000D	25000D	1220000D	4710D	8180D	0.03D	6490D	435JD	<997U	3610D	<249U	27.1D	<498U	15500D	1700D
A66	Total Metals	9190D	1940D	23700D	118000D	<2.03U	9170D	3180D	3700D	12200D	243000D	25700D	1190000D	4760D	8190D	0.05D	7110D	453JD	<1010U	4810D	<254U	34.6D	<507U	14700D	2500D
A68	Total Metals	7700D	1760D	17500D	128000D	<1.97U	10800D	3040D	3730D	12100D	216000D	24000D	1240000D	4590D	9430D	0.02JD	6560D	423JD	<985U	2900D	<246U	30.5D	<492U	14800D	2480D
A72	Total Metals	9960D	1390D	26800D	93200D	<2.03U	3030D	1970D	3010D	13600D	133000D	42000D	499000D	3580D	3400D	0.05D	5330D	521JD	<1020U	1830D	<254U	40.6D	<508U	16400D	858D
A73	Total Metals	6770D	1510D	20500D	92800D	<2.04U	2700D	1870D	3500D	10800D	113000D	36800D	435000D	3610D	2780D	0.02JD	5500D	522JD	<1020U	1240D	<255U	32.9D	<509U	16300D	749D
A73B	Total Metals	6620D	1580D	19900D	113000D	<2.03U	2720D	2110D	3680D	11900D	98800D	35200D	540000D	3610D	2480D	0.04D	8160D	461JD	<1010U	1250D	<253U	29.9D	<507U	16200D	659D
A75B	Total Metals	6640D	1430D	9220D	86900D	<1.99U	1990D	2050D	5010D	10100D	67000D	20100D	98000D	3320D	2070D	<0.01U	6710D	666JD	<994U	512JD	<248U	21.8D	<497U	14200D	578D
A75CC	Total Metals	4740D	<500U	3080D	93000D	<2.00U	164JD	5150D	6690D	5670D	7890D	9700D	5210D	3880D	376D	<0.01U	7310BD	834JD	<1000U	<500U	<250U	17.8D	<500U	11200D	45.3D
A75D	Total Metals	7660D	1220D	17500D	107000D	<2.03U	3730D	2150D	3720D	17200D	103000D	30800D	339000D	3580D	3750D	<0.02U	8200BD	638JD	<1020U	948JD	<254U	35.0D	1140D	14500D	1080D
A75EC	Total Metals	6560D	<508U	6550D	50700D	<2.03U	714D	952D	7290D	24000D	13000D	14400D	5290D	2460D	708D	<0.02U	37900BD	632JD	<1020U	<508U	<254U	4.73JD	552JD	7780D	142D
Animas @ 32nd Bridge	Total Metals	5210D	644JD	8710D	78500D	<2.03U	2100D	2740D	4440D	8730D	55000D	15300D	186000D	2970D	2220D	<0.02U	9770BD	523JD	<1020U	1210D	<254U	23.8D	<508U	11300D	810D
Animas @ Lightner Creek	Total Metals	4710D	772JD	10300D	153000D	<2.01U	3200D	71200D	5380D	7440D	41300D	17800D	92400D	6550D	1150D	0.04D	19500BD	708JD	1180JD	569JD	<252U	260D	<504U	19900D	529D
Animas @ Purple Cliffs	Total Metals	4470D	<494U	6840D	163000D	<1.98U	1100D	32700D	4190D	5150D	19000D	14600D	35500D	6250D	399D	0.04D	10700BD	723JD	<989U	<494U	<247U	121D	<494U	13300D	157D
Bbridge	Total Metals	8040D	863JD	16200D	119000D	<1.99U	4630D	4070D	4740D	17200D	92000D	27200D	244000D	3640D	3970D	0.02JD	12100BD	741JD	<997U	1020D	<249U	39.6D	<499U	15000D	1700D
JamesRanch	Total Metals	10600D	927JD	18900D	128000D	<2.02U	4970D	3830D	4830D	17800D	108000D	29900D	290000D	3840D	4250D	0.04D	11900BD	839JD	<1010U	1260D	<252U	39.1D	<504U	15500D	1730D
M34	Total Metals	29100D	1320D	32700D	126000D	<2.01U	1870D	2340D	2790D	25400D	127000D	89000D	237000D	2520D	1160D	0.05D	5930BD	812JD	<1010U	896JD	<252U	42.4D	<503U	16300D	666D

Station ID	Analysis	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thalium	Vanadium	Zinc
		mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	mg/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt
A61	Total Metals	9280	1760	20500	76700	2.1	4950	2630	3550	10500	286000	22800	1400000	4540	8210	0.05	6520	498	<995	5230	<249	25.5	<497	14300	2330
A61 Dup-01	Total Metals	10000	2020	20800	105000	2.54	5950	3230	3770	10800	329000	24200	1290000	4540	8890	0.05	7920	539	<1010	4320	<254	28.9	<507	14900	2660
RPD	%	7.47%	13.76%	1.45%	31.15%	18.97%	18.35%	20.48%	6.01%	2.82%	13.98%	5.96%	8.18%	0.00%	7.95%	0.00%	19.39%	7.91%	N/A	19.06%	N/A	12.50%	N/A	4.11%	13.23%

Note: Data Qualifiers removed for RPD calculation

Note: Data Qualifier Definitions Listed Below:

- D The analyte was diluted prior to analysis.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 2.5-1 Upper Animas April 2014
Pore Water Dissolved Metals Analytical Results

STATION_ID	ANALYSIS	UNITS	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
A55	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	20.4	<2.00U	0.197J	49000	1.05J	<0.100U	16.5	134	<100U	<0.100U	2900	<2.00U	<0.500U	682J	<1.00U	<0.500U	2160	464	<0.500U	<2.00U	128
A56	Dissolved Metals	ug/L	23.8J	<0.500U	<0.500U	21.8	<2.00U	0.232	49500	<1.00U	<0.100U	1.30	136	<100U	0.964	3050	4.87J	<0.500U	712J	<1.00U	<0.500U	2320	461	<0.500U	<2.00U	124
A58	Dissolved Metals	ug/L	30.4J	<0.500U	<0.500U	27.3	<2.00U	1.00	40400	1.14J	<0.100U	5.18	109	<100U	1.09	1980	<2.00U	<0.500U	644J	1.16J	<0.500U	2640	539	<0.500U	<2.00U	136
A60	Dissolved Metals	ug/L	20.9J	<0.500U	0.547J	21.7	<2.00U	0.809	57600	<1.00U	<0.100U	1.41	158	<100U	<0.100U	3430	<2.00U	<0.500U	634J	<1.00U	<0.500U	2590	571	<0.500U	<2.00U	353
A61	Dissolved Metals	ug/L	6170D	<5.00U	<5.00U	<50.0U	<20.0U	100D	279000D	<10.0U	2.80D	2250D	853D	<1000U	13.4D	38200D	78300D	77.5D	5240JD	<10.0U	<5.00U	10400D	1610D	<5.00U	<20.0U	29900D
A64	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	11.2	<2.00U	0.279	54300	<1.00U	<0.100U	1.83	141	<100U	<0.100U	1220	4.27J	<0.500U	519J	<1.00U	<0.500U	2150	582	<0.500U	<2.00U	264
A65	Dissolved Metals	ug/L	675	<0.500U	<0.500U	13.5	<2.00U	21.8	127000	1.09J	0.234	51.8	349	<100U	2.04	7410	18300	9.89	2800	<1.00U	<0.500U	3980	1140	<0.500U	<2.00U	6060
A66	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	12.9	<2.00U	0.546	50900	1.83J	0.136J	1.40	141	<100U	0.123J	3370	226	<0.500U	632J	<1.00U	<0.500U	2240	481	<0.500U	<2.00U	307
A68	Dissolved Metals	ug/L	42.2J	<0.500U	<0.500U	14.4	<2.00U	1.67	53900	<1.00U	0.644	3.46	149	<100U	<0.100U	3570	1540	<0.500U	681J	<1.00U	<0.500U	2380	497	<0.500U	<2.00U	675
A72	Dissolved Metals	ug/L	517	<0.500U	<0.500U	31.0	<2.00U	2.98	92400	<1.00U	0.222	8.07	256	<100U	0.453	6150	448	1.95	1220	<1.00U	<0.500U	4880	898	<0.500U	<2.00U	1630
A73	Dissolved Metals	ug/L	29.2J	<0.500U	<0.500U	21.6	<2.00U	2.03	65600	<1.00U	4.34	2.28	185	341	<0.100U	5090	1870	1.19	927J	<1.00U	<0.500U	3620	599	<0.500U	<2.00U	709
A75D	Dissolved Metals	ug/L	27.7J	<0.500U	<0.500U	16.9	<2.00U	0.387	47200	<1.00U	0.511	1.67	135	<100U	<0.100U	4140	185	<0.500U	1010	<1.00U	<0.500U	2840	417	<0.500U	<2.00U	173
Bbridge	Dissolved Metals	ug/L	47.0J	<0.500U	<0.500U	28.8	<2.00U	0.334	41200	1.15J	0.876	2.21	125	<100U	<0.100U	5460	325	<0.500U	818J	<1.00U	<0.500U	2920	318	<0.500U	<2.00U	115
Dup-01	Dissolved Metals	ug/L	667	<0.500U	<0.500U	12.6	<2.00U	23.0	128000	<1.00U	0.265	55.7	350	<100U	1.95	7330	18600	12.7	2820	<1.00U	<0.500U	3970	1150	<0.500U	<2.00U	6400

STATION_ID	ANALYSIS	UNITS	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
A65	Dissolved Metals	ug/L	675	<0.500U	<0.500U	13.5	<2.00U	21.8	127000	1.09J	0.234	51.8	349	<100U	2.04	7410	18300	9.89	2800	<1.00U	<0.500U	3980	1140	<0.500U	<2.00U	6060
Dup-01	Dissolved Metals	ug/L	667	<0.500U	<0.500U	12.6	<2.00U	23.0	128000	<1.00U	0.265	55.7	350	<100U	1.95	7330	18600	12.7	2820	<1.00U	<0.500U	3970	1150	<0.500U	<2.00U	6400
	RPD	%	1.19%	N/A	N/A	6.90%	N/A	5.36%	0.78%	N/A	12.42%	7.26%	0.29%	N/A	4.51%	1.09%	1.63%	24.88%	0.71%	N/A	N/A	0.25%	0.87%	N/A	N/A	5.46%

Note: Data Qualifier Definitions Listed Below:

- D The analyte was diluted prior to analysis.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

**Table 2.5-2 Upper Animas September 2014
Pore Water Dissolved Metals Analytical Results**

Station ID	Analysis	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness (mg/L)	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
A55	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	16.8	<2.00U	0.161J	40400	<1.00U	<0.100U	1.40	112	<100U	<0.100U	2670	4.85J	<0.500U	516J	<1.00U	<0.500U	1670	382	<0.500U	<2.00U	73.0
A56	Dissolved Metals	ug/L	28.4J	<0.500U	<0.500U	31.9	<2.00U	1.16	46400	<1.00U	0.148J	4.15	129	<100U	0.523	3110	689	<0.500U	1470	<1.00U	<0.500U	1750	444	<0.500U	<2.00U	463
A58	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	21.0	<2.00U	0.983	28900	<1.00U	<0.100U	4.32	78	<100U	0.964	1380	<2.00U	<0.500U	474J	<1.00U	<0.500U	1540	395	<0.500U	<2.00U	125
A60	Dissolved Metals	ug/L	119	<2.50U	<2.50U	<25.0U	<2.00U	3.86D	121000	<5.00U	<0.500U	2.67JD	340	<100U	<0.500U	9440	6.46	<2.50U	1260	<5.00U	<2.50U	5420	616	<2.50U	<10.0U	1630
A61	Dissolved Metals	ug/L	4380D	<5.00U	<5.00U	<50.0U	<20.0U	106D	275000D	<10.0U	1.57JD	102D	831D	<1000U	58.8D	34800D	108000D	41.3D	6680JD	<10.0U	<5.00U	8380JD	1330D	<5.00U	<20.0U	31100D
A61 Dup-01	Dissolved Metals	ug/L	829	<2.50U	<2.50U	<25.0U	<2.00U	107D	53700	<5.00U	1.37D	89.8JD	162	<100U	72.4D	6720	19600	34.3D	1280	<5.00U	<2.50U	1630	248	<2.50U	<10.0U	5880
A65	Dissolved Metals	ug/L	401	<2.50U	<2.50U	<25.0U	<2.00U	22.0D	143000	<5.00U	<0.500U	47.2D	389	<100U	0.579JD	7800	16200	13.4D	3270	<5.00U	<2.50U	4210	1310	<2.50U	<10.0U	4760
A66	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	15.9	<2.00U	0.296	42900	<1.00U	<0.100U	1.27	118	<100U	<0.100U	2710	2.57J	<0.500U	568J	<1.00U	<0.500U	1880	417	<0.500U	<2.00U	179
A68	Dissolved Metals	ug/L	42.8J	<0.500U	<0.500U	22.0	<2.00U	1.06	43400	<1.00U	0.283	4.13	121	<100U	0.258	3000	590	<0.500U	679J	<1.00U	<0.500U	2040	456	<0.500U	<2.00U	294
A72	Dissolved Metals	ug/L	46.9J	<0.500U	<0.500U	25.2	<2.00U	1.40	56800	<1.00U	3.16	2.87	160	338	<0.100U	4360	995	1.31	791J	<1.00U	<0.500U	2740	576	<0.500U	<2.00U	407
A73	Dissolved Metals	ug/L	23.3J	<0.500U	<0.500U	46.0	<2.00U	0.374	53400	<1.00U	<0.100U	1.18	151	<100U	<0.100U	4170	2.45J	1.35	924J	<1.00U	<0.500U	2720	542	<0.500U	<2.00U	362
A73B	Dissolved Metals	ug/L	<20.0U	<0.500U	<0.500U	54.5	<2.00U	<0.100U	15000	<1.00U	<0.100U	0.915J	49	<100U	<0.100U	2720	3.37J	0.581J	529J	<1.00U	<0.500U	1050	135	<0.500U	<2.00U	32.9
A75CC	Dissolved Metals	ug/L	103	<0.500U	<0.500U	69.5	<2.00U	<0.100U	25300	<1.00U	0.295	1.57	82	<100U	0.119J	4500	25.9	2.13	820J	<1.00U	<0.500U	2390	157	<0.500U	<2.00U	<10.0U
A75D	Dissolved Metals	ug/L	40.0J	<0.500U	<0.500U	17.6	<2.00U	0.786	33500	<1.00U	0.892	2.60	96	107J	0.205	3070	290	1.52	894J	<1.00U	<0.500U	1660	303	<0.500U	<2.00U	190
A75EC	Dissolved Metals	ug/L	43.2J	<0.500U	<0.500U	40.0	<2.00U	<0.100U	6180	<1.00U	<0.100U	<0.500U	25	<100U	<0.100U	2300	<2.00U	1.25	459J	<1.00U	<0.500U	604J	46.5	<0.500U	<2.00U	<10.0U
Animas @32nd Bridge	Dissolved Metals	ug/L	21.1J	<0.500U	8.05	108	<2.00U	<0.100U	85900	4.73	0.220	<0.500U	252	6050	<0.100U	9090	2690	<0.500U	2610	<1.00U	<0.500U	13100	656	<0.500U	<2.00U	10.6J
Animas @Lightner Creek	Dissolved Metals	ug/L	21.1J	<0.500U	8.05	108	<2.00U	<0.100U	85900	4.73	0.220	<0.500U	252	6050	<0.100U	9090	2690	<0.500U	2610	<1.00U	<0.500U	13100	656	<0.500U	<2.00U	10.6J
Animas @Purple Cliffs	Dissolved Metals	ug/L	41.0J	<2.50U	3.47JD	94.6D	<2.00U	<0.500U	132000	<5.00U	0.843JD	<2.50U	596	8380	<0.500U	64800	766	<2.50U	4140	<5.00U	<2.50U	25200	1550	<2.50U	<10.0U	10.0J
Bbridge	Dissolved Metals	ug/L	35.2J	<0.500U	3.74	195	<2.00U	<0.100U	88500	3.23	1.44	<0.500U	271	1260	0.193J	12100	5870	0.850J	3490	<1.00U	<0.500U	15200	896	<0.500U	<2.00U	13.3J
JamesRanch	Dissolved Metals	ug/L	28.2J	<0.500U	<0.500U	26.9	<2.00U	0.162J	31300	<1.00U	0.100J	1.78	93	<100U	0.174J	3600	12.1	<0.500U	896J	<1.00U	<0.500U	2700	263	<0.500U	<2.00U	46.7
M34	Dissolved Metals	ug/L	45.7J	0.571J	<0.500U	21.3	<2.00U	0.127J	47800	<1.00U	0.253	1.18	139	<100U	<0.100U	4750	27.6	<0.500U	547J	<1.00U	<0.500U	2690	343	<0.500U	<2.00U	48.2

Station ID	Analysis	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness (mg/L)	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
A61	Dissolved Metals	ug/L	4380	<5.00	<5.00	<50.0	<20.0	106	275000	<10.0	1.57	102	831	<1000	58.8	34800	108000	41.3	6680	<10.0	<5.00	8380	1330	<5.00	<20.0	31100
A61 Dup-01	Dissolved Metals	ug/L	829	<2.50	<2.50	<25.0	<2.00	107	53700	<5.00	1.37	89.8	162	<100	72.4	6720	19600	34.3	1280	<5.00	<2.50	1630	248	<2.50	<10.0	5880
	RPD	%	136.34%	N/A	N/A	N/A	N/A	0.94%	134.65%	N/A	13.61%	12.72%	134.74%	N/A	20.73%	135.26%	138.56%	18.52%	135.68%	N/A	N/A	134.87%	137.14%	N/A	N/A	136.40%

Note: Data Qualifiers removed for RPD calculation

Note: Data Qualifier Definitions Listed Below:

- D The analyte was diluted prior to analysis.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

**Table 2.6-1 Upper Animas September 2014
Macroinvertebrate Analytical Results**

Station ID	Analysis	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc	
		mg/kg as rcvd	ug/kg as rcvd	ug/kg as rcvd	ug/kg as rcvd	mg/kg as rcvd	ug/kg as rcvd	mg/kg as rcvd	ug/kg as rcvd	ug/kg as rcvd	ug/kg as rcvd	mg/kg as rcvd	ug/kg as rcvd	mg/kg as rcvd	mg/kg as rcvd	mg/kg as rcvd	ug/kg as rcvd	mg/kg as rcvd	ug/kg as rcvd	ug/kg as rcvd	mg/kg as rcvd	mg/kg as rcvd	ug/kg as rcvd	ug/kg as rcvd	mg/kg as rcvd	
A45	Total Recoverable Metals	247D	<98.7U	221D	1340D	0.2D	864D	160D	425D	174D	15100D	112D	5570D	69.8D	88.2D	<0.039U	128D	622D	<197U	<98.7U	330D	1.7D	<98.7U	<395U	145D	
A55	Total Recoverable Metals	143D	<65.7U	238D	1280D	0.1D	414D	139D	478D	1280D	166D	8040D	160D	5670D	105D	66.6D	<0.026U	135D	843D	202D	<65.7U	409D	1.6D	<65.7U	<263U	111D
A56	Total Recoverable Metals	91.8D	<61.4U	141D	639D	0.09D	347D	109D	440D	51.6D	5790D	57.9D	2630D	88.9D	31.2D	<0.025U	70.4D	891D	256D	<61.4U	473D	1.3D	<61.4U	<246U	99.8D	
A60	Total Recoverable Metals	120D	<123U	130D	735D	0.1D	545D	94.5D	703D	60.0D	19500D	73.4D	5250D	108D	25.6D	<0.049U	<123U	1190D	<246U	<123U	552D	1.5D	<123U	<491U	108D	
A68	Total Recoverable Metals	212D	<132U	631D	4190D	0.1D	1160D	158D	834D	174D	18000D	986D	7570D	146D	60.5D	<0.053U	155D	1260D	265D	<132U	669D	5.1D	<132U	<528U	240D	
A72	Total Recoverable Metals	261D	<160U	<160U	1720D	<0.1U	204D	98.8D	649D	127D	11500D	1190D	2270D	108D	17.3D	<0.064U	<160U	1190D	<321U	<160U	614D	1.3D	<160U	<642U	49.9D	
A73	Total Recoverable Metals	251D	<165U	208D	1790D	<0.1U	281D	162D	610D	193D	9980D	847D	2020D	96.3D	32.6D	<0.066U	173D	818D	<330U	<165U	469D	2.2D	<165U	<661U	59.3D	
A75CC	Total Recoverable Metals	50.5D	<165U	194D	2280D	<0.1U	156D	149D	550D	749D	1800D	40.8D	<33.0U	93.7D	37.5D	<0.066U	267D	850D	<330U	<165U	450D	0.9D	<165U	<660U	34.4D	
A75D	Total Recoverable Metals	78.4D	<368U	<368U	2050D	<0.3U	235D	74.3D	978D	2050D	446D	4520D	105D	689D	81.8D	<0.147U	<368U	1040D	<735U	<368U	560D	0.9D	<368U	<1470U	56.2D	
A75EC	Total Recoverable Metals	225D	<86.5U	181D	2400D	<0.07U	667D	153D	641D	2410D	2820D	62.4D	38.6D	138D	17.0D	<0.035U	682D	1070D	504D	<86.5U	535D	1.2D	<86.5U	<346U	58.4D	
BBRIDGE	Total Recoverable Metals	114D	<139U	<139U	2120D	<0.1U	478D	124D	615D	669D	5280D	156D	761D	111D	76.6D	<0.056U	477D	1230D	<279U	<139U	662D	1.3D	<139U	<557U	106D	

Note: Data Qualifier Definitions Listed Below:

- D The analyte was diluted prior to analysis.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- rcvd Abbreviation for "received."

Table 2.6-2 Upper Animas September 2014
Fish Tissue Analytical Results

Station ID	Analysis	% Solids	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Vanadium	Zinc
		% by Weight	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	mg/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	ug/kg dry wt	mg/kg dry wt	mg/kg dry wt	ug/kg dry wt	ug/kg dry wt	ug/kg dry wt
A45 Adult #11	Total Recoverable Metals	26.1	72.1D	<448U	<448U	730D	<0.179U	1220D	17600D	2590D	121D	6310D	66.7D	2390D	1130D	35.6D	0.034D	2060D	13700D	1390D	<448U	3080D	47.0D	<448U	<1790U	153D
A45 Adult #12	Total Recoverable Metals	25.8	137D	<468U	<468U	1190D	<0.187U	945D	14500D	3670D	162D	11300D	125D	4480D	1270D	45.5D	0.230D	1610D	14000D	2500D	<468U	3210D	36.9D	597D	<1870U	174D
A45 Adult #13	Total Recoverable Metals	26.2	39.4D	<462U	<462U	<462U	<0.185U	583D	16400D	3550D	122D	6930D	60.8D	3870D	1110D	39.9D	0.615D	1200D	14600D	2130D	<462U	3310D	36.0D	585D	<1850U	139D
A45 Adult #14	Total Recoverable Metals	23.9	205D	<457U	<457U	1560D	<0.183U	1070D	14800D	3060D	197D	14200D	201D	9750D	1150D	156D	0.308D	1390D	16100D	1600D	<457U	3820D	39.4D	<457U	<1830U	262D
A45 Adult #15	Total Recoverable Metals	27.2	98.4D	<475U	<475U	535D	<0.190U	1110D	16700D	3430D	106D	16900D	56.8D	1480D	1130D	25.7D	0.300D	1050D	12700D	4240D	<475U	3060D	38.9D	<475U	<1900U	298D
A45 Fingerling #10	Total Recoverable Metals	22.1	25.0D	<490U	<490U	<490U	<0.196U	697D	15800D	3680D	<98.1U	6750D	37.6D	709D	1200D	16.3D	<0.049U	884D	16500D	1840D	<490U	3940D	39.5D	<490U	<1960U	166D
A45 Fingerling #6	Total Recoverable Metals	21.4	238D	<496U	<496U	829D	<0.198U	935D	13700D	3790D	<99.2U	14000D	150D	3760D	1220D	48.3D		906D	16400D	1690D	<496U	4370D	35.4D	<496U	<1980U	212D
A45 Fingerling #7	Total Recoverable Metals	21.9	97.6D	<475U	<475U	674D	<0.190U	884D	15100D	3700D	122D	10000D	68.7D	1730D	1190D	30.5D		588D	15300D	1570D	<475U	3700D	37.6D	<475U	<1900U	233D
A45 Fingerling #8	Total Recoverable Metals	21.3	170D	<471U	719D	805D	<0.188U	737D	16500D	3510D	131D	12600D	264D	5030D	1240D	47.3D	<0.031U	771D	16900D	1720D	<471U	4080D	40.3D	<471U	<1880U	202D
A45 Fingerling #9	Total Recoverable Metals	22.9	159D	<467U	513D	924D	<0.187U	1260D	17300D	3530D	128D	13200D	104D	3800D	1190D	38.0D	0.028D	797D	15600D	2390D	<467U	3900D	43.3D	<467U	<1870U	291D
A45 Howardsville Adult #16	Total Recoverable Metals	25.8	44.5D	<474U	<474U	907D	<0.190U	1010D	14900D	3640D	123D	12100D	64.6D	2180D	1050D	39.6D	0.631D	8230D	14400D	2300D	<474U	3560D	38.8D	<474U	<1900U	175D
A45 Howardsville Adult #17	Total Recoverable Metals	27.3	43.3D	<455U	<455U	606D	<0.182U	1060D	18200D	3200D	98.2D	12500D	43.8D	1320D	1090D	38.4D	0.054D	828D	13400D	3090D	<455U	2970D	47.5D	<455U	<1820U	318D
A45 Howardsville Adult #18	Total Recoverable Metals	24.9	64.7D	<455U	597D	581D	<0.182U	742D	14100D	3080D	<91.0U	13900D	74.7D	4270D	1100D	29.5D	0.960D	634D	15100D	1770D	<455U	3510D	35.6D	<455U	<1820U	163D
A45 Howardsville Adult #19	Total Recoverable Metals	25.5	146D	<466U	859D	704D	<0.186U	836D	11700D	3120D	107D	20100D	98.5D	3670D	1040D	25.3D	0.188D	713D	14600D	2530D	<466U	3140D	27.3D	<466U	<1860U	155D
A45 Howardsville Adult #20	Total Recoverable Metals	26.4	72.6D	<476U	<476U	624D	<0.191U	1670D	20300D	3350D	144D	15600D	85.7D	2240D	1140D	45.1D	0.049D	550D	14700D	2840D	<476U	3410D	47.1D	<476U	<1910U	184D
A45 Howardsville Fingerling #1	Total Recoverable Metals	22.6	91.0D	<471U	<471U	546D	<0.188U	1120D	14000D	3820D	<94.2U	10300D	71.0D	1780D	1160D	26.7D	<0.029U	817D	15700D	2550D	<471U	3780D	34.7D	<471U	<1880U	244D
A45 Howardsville Fingerling #2	Total Recoverable Metals	22.4	139D	<487U	<487U	565D	<0.195U	1320D	18300D	3380D	103D	11100D	77.0D	1920D	1200D	41.6D	0.036D	617D	15700D	2750D	<487U	3800D	43.8D	<487U	<1950U	247D
A45 Howardsville Fingerling #3	Total Recoverable Metals	21.9	50.1D	<482U	<482U	527D	<0.193U	716D	15200D	3430D	<96.5U	7870D	44.8D	1280D	1170D	23.4D	0.064D	731D	14800D	2030D	<482U	3940D	36.8D	<482U	<1930U	192D
A45 Howardsville Fingerling #4	Total Recoverable Metals	22.8	46.0D	<472U	<472U	612D	<0.189U	509D	15300D	3860D	<94.4U	6100D	92.8D	2760D	1200D	25.7D	<0.028U	759D	15400D	1760D	<472U	3720D	38.3D	<472U	<1890U	137D
A45 Howardsville Fingerling #5	Total Recoverable Metals	21.9	210D	<473U	<473U	847D	<0.189U	1330D	17700D	3740D	111D	11700D	115D	3240D	1270D	47.2D		529D	16400D	2150D	<473U	4270D	42.8D	<473U	<1890U	228D

Note: Data Qualifier Definitions Listed Below:

- D The analyte was diluted prior to analysis.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Station ID	Species	Length	Weight
		mm	g
A45 Adult #11	<i>Salvelinus fontinalis</i>	121	18.9227
A45 Adult #12	<i>Salvelinus fontinalis</i>	152	38.8115
A45 Adult #13	<i>Salvelinus fontinalis</i>	149	34.6997
A45 Adult #14	<i>Salvelinus fontinalis</i>	148	29.999
A45 Adult #15	<i>Salvelinus fontinalis</i>	150	37.6059
A45 Fingerling #10	<i>Salvelinus fontinalis</i>	74	3.7157
A45 Fingerling #6	<i>Salvelinus fontinalis</i>	71	3.2057
A45 Fingerling #7	<i>Salvelinus fontinalis</i>	64	2.5019
A45 Fingerling #8	<i>Salvelinus fontinalis</i>	72	4.1763
A45 Fingerling #9	<i>Salvelinus fontinalis</i>	74	4.2508
A45 Howardsville Adult #16	<i>Salvelinus fontinalis</i>	151	45.315
A45 Howardsville Adult #17	<i>Salvelinus fontinalis</i>	153	38.6381
A45 Howardsville Adult #18	<i>Salvelinus fontinalis</i>	159	41.989
A45 Howardsville Adult #19	<i>Salvelinus fontinalis</i>	177	56.3442
A45 Howardsville Adult #20	<i>Salvelinus fontinalis</i>	175	53.6251
A45 Howardsville Fingerling #1	<i>Salvelinus fontinalis</i>	77	4.3656
A45 Howardsville Fingerling #2	<i>Salvelinus fontinalis</i>	76	4.6458
A45 Howardsville Fingerling #3	<i>Salvelinus fontinalis</i>	65	2.4851
A45 Howardsville Fingerling #4	<i>Salvelinus fontinalis</i>	85	6.4818
A45 Howardsville Fingerling #5	<i>Salvelinus fontinalis</i>	74	4.0211

Figures

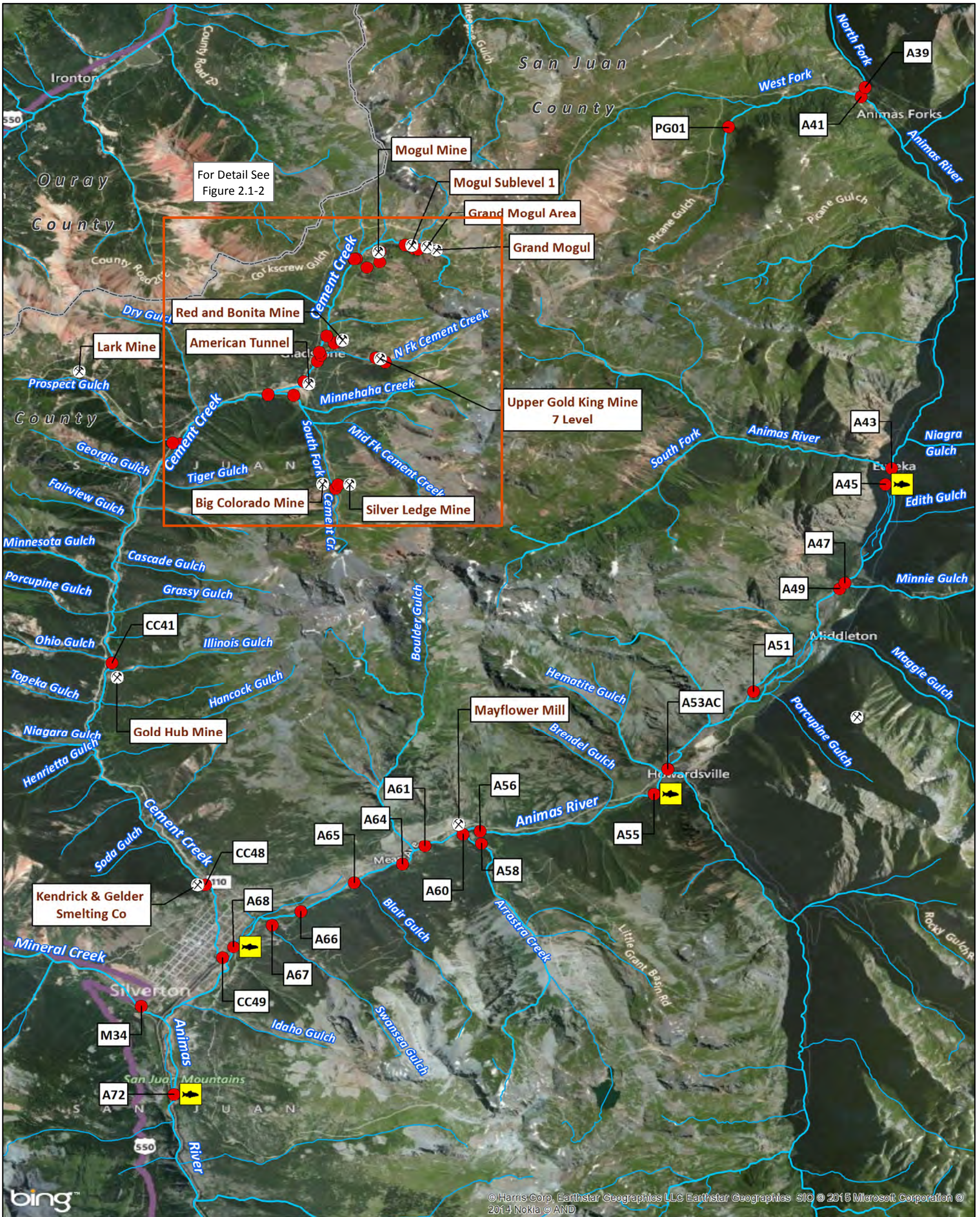


Figure 2.1-1

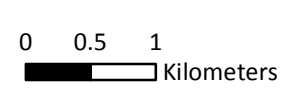
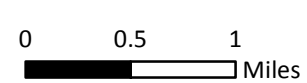
Upper Animas Mining District Area Overview
Upper Animas River and Cement Creek, Silverton, CO

- Sample Locations
- Fish Survey Locations
- Mine Locations
- Rivers and Streams
- County Boundaries

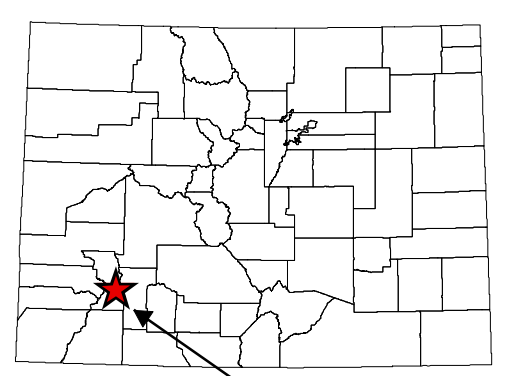
Date: January 28, 2015

Data Sources:
 Sample Locations: U.S. EPA Region 8 (2014)
 Mine Locations: U.S. EPA and ESAT (2012)
 Rivers and Streams: CDOW 1:24k (2004)
 County Boundaries: U.S. Census Bureau (2011)
 Image: Microsoft Bing web service (2015)

Coordinate System/Projection:
 UTM Zone 13 North, NAD 83, Meters



Colorado



Area of Interest



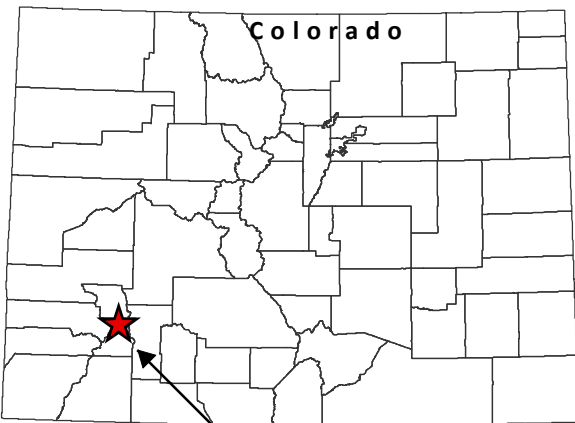
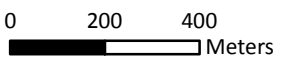
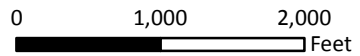
Figure 2.1 - 2
Upper Animas Mining District
Upper Cement Creek Area

- Sample Locations
- Mine Locations
- Rivers and Streams
- Counties

Map Date: January 28, 2015

Data Sources:

Sample Locations: U.S. EPA (2014)
 Rivers and Streams: CDOW (2004)
 Counties: U.S. Census Bureau (2011)
 Mine Locations: U.S. EPA and ESAT (2012)
 Image: Microsoft Bing web service (2015)
 Map Projection: UTM Zone 13 N, NAD83, Meters



Area of Interest

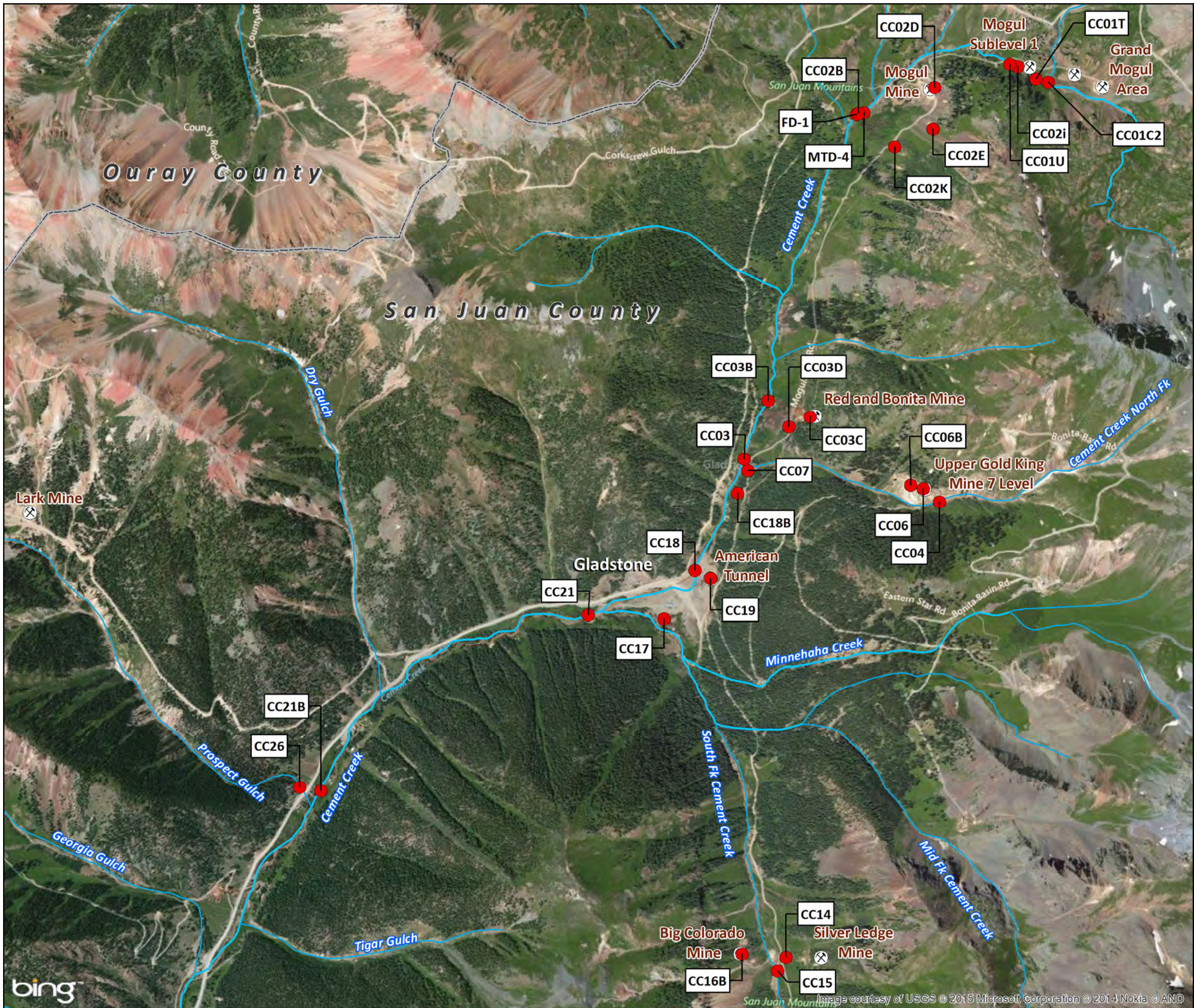


Image courtesy of USGS © 2015 Microsoft Corporation © 2014 Nokia © AND

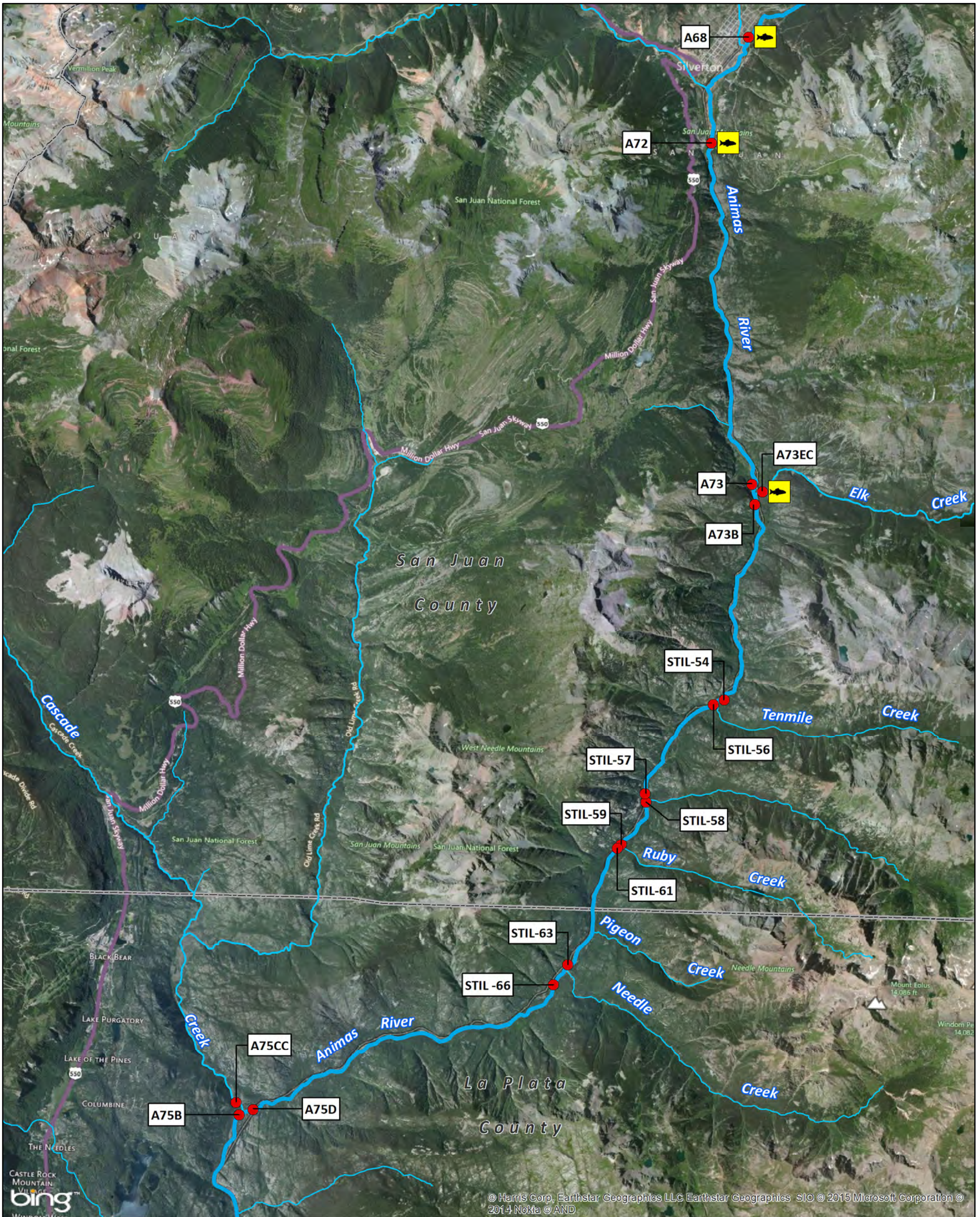
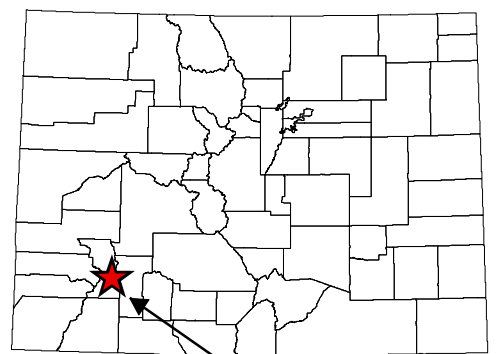


Figure 2.1-3
Upper Animas Mining District
Animas River Canyon Area



Colorado



Area of Interest

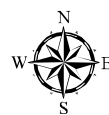
- Sample Locations
- Fish Survey Locations
- Mine Locations
- Rivers and Streams
- County Boundaries

Date: January 28, 2015

Data Sources:

Sample Locations: U.S. EPA Region 8 (2014)
 Mine Locations: U.S. EPA and ESAT (2012)
 Rivers and Streams: CDOW 1:24k (2004)
 County Boundaries: U.S. Census Bureau (2011)
 Image: Microsoft Bing web service (2015)

Coordinate System/Projection:
 UTM Zone 13 North, NAD 83, Meters



0 0.5 1 Miles

0 0.5 1 Kilometers



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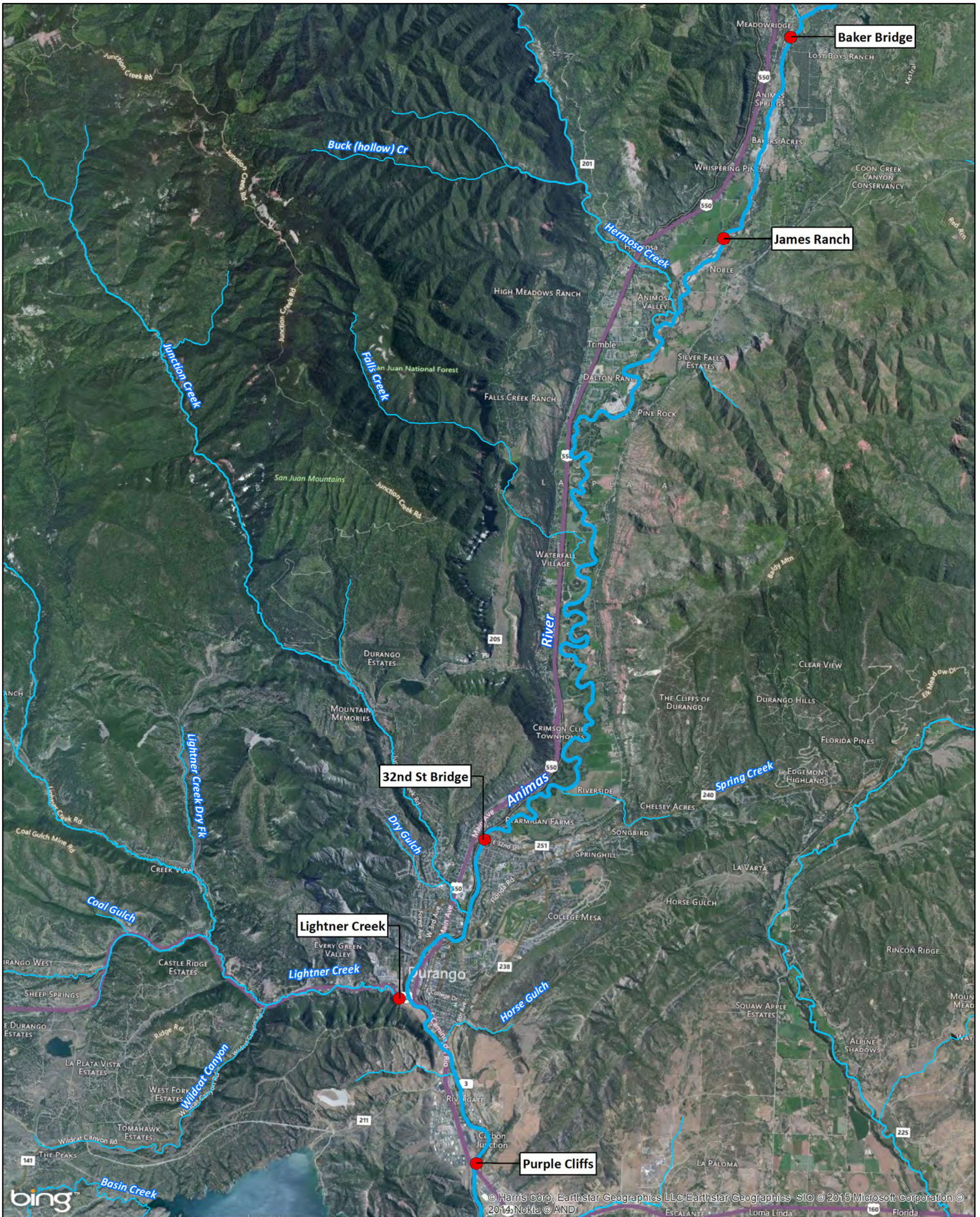


Figure 2.1 - 4
Upper Animas Mining District
City of Durango

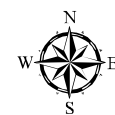
- Sample Locations
- ⊗ Mine Locations
- ~ Rivers and Streams
- County Boundaries

Date: January 28, 2015

Data Sources:

Sample Locations: U.S. EPA Region 8 (2014)
Mine Locations: U.S. EPA and ESAT (2012)
Rivers and Streams: CDOW 1:24k (2004)
County Boundaries: U.S. Census Bureau (2011)
Image: Microsoft Bing web service (2015)

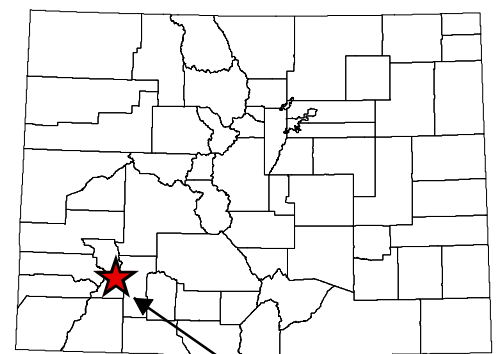
Coordinate System/Projection:
 UTM Zone 13 North, NAD 83, Meters



0 0.5 1 Miles

0 0.5 1 Kilometers

Colorado



Area of Interest

Appendix A
Scanned Field Notebook Pages

Location Silverton, Co

Date 5/15/13

Project / Client Cement Creek May '13

CC14

Time: 1430

Temp: 5.36 °C

pH: 6.22 su

Conduct: 959.0 us/cm

D.O.: 4.63 mg/L

- Collected TM, DM, Alk + Anion samples
- Did not collect flows at this location - there is a layer of orange muck about 6-8" deep that made it impossible to get accurate flow readings, if any.

Location A72

Date 4/14/17

Project / Client Upper Animas Mining District

Time 17:00

Collected sediment for
Total Recoverable metals analysis
Steve Auer

Collected pore water for dissolved
metals analysis Depth = 20.5 cm
Pan Well

Deployed minisipper auto sampler
by Thomas Chapin

Water was turbid and
substrate stayed orange.
A lot of sediment deposited
between rocks and in
low flowing areas

Up to 2 feet of snow
in riparian area

Weather was cool temps
in the upper 30's and breezy

Location A73

Date

4/15/04

Project / Client

Upper Animas Mining

Time 10:30

Collected sediment samples
for Total Recoverable metals
by Steve Auer

Porewater samples collected
for dissolved metals analysis
by Dan Wall
10cm depth

2 photographs taken with Gray
camera

Abundant orange fine sediment
throughout stream bed
Water turbid and visibility less
than 1 foot

Ice on REW and LEW
Snow abundant in Riparian
area

Collected Grab sample of surface
water for TR and DM analysis
new mini zipper

Location Above 10 mile Creek

Date

Project / Client

Time 11:15

STIL Deployment Unit # 54
on REW approximately 35 meters
upstream of confluence

Dan Wall
Thomas Chapin
Lisa Richardson
Steve Auer

STIL located 5 feet towards bank
from largest boulder

Time: 11:30

STIL Deployment Unit # 56

Deployed STIL 80' meter downstream
of Ten Mile confluence on REW
collected several photographs
and GPS coordinates using
ESUT Unit #2

Location _____ Date _____

Project / Client _____

Time 11:58

STIL Unit # 57 deployed 50 meters upstream of confluence of No Name Creek

Thomas Chapin collected photographs of the location with the USGS Camera

Positioned in front of Railroad track on stream bank

STIL Unit # 58 deployed ~~11:58~~^{12:15}

Chapin 37 39' 39.60

camera 107 40 47.67

GPS

Deployed 90 meters downstream of confluence with No Name Creek on REW

Collected photographs using Gray ~~STIL~~ ESAT Camera

Time 12:30

STIL #59 Deployed upstream approx 20 meters REW photographs collected by Thomas Chapin with USGS Camera. Placed directly in front of largest boulder along High Water mark 20 meters upstream

Collected GPS Point using ESAT Unit #2

Time 12:35

STIL #61 Deployed downstream of Ruby Creek confluence on REW approximately 110 meters Directly in line with a 2" pipe that stands 2.5' above ground

No GPS coordinates collected

Time: 13:00

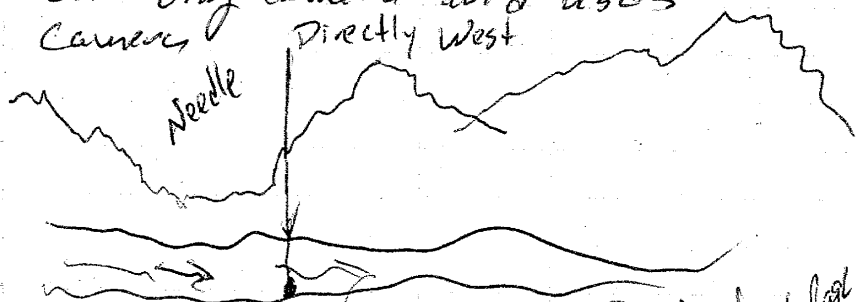
STILL # 63 upstream of confluence
with Needle Creek approximately
150 meter REW.

Located immediately below cable
that crosses Animas River.
Photographs collected by Thomas Chapin
using USGS camera

GPS Coordinates collected using
ESAT Unit #2

Time STILL #
13:13

Deployed STILLS unit 100' meters
downstream of South Branch
Needle Creek on REW.
Collected photographs using
ESAT Gray Camera and USGS
Camera Directly West



Cont Next Page

Collected GPS coordinates
using ESAT Unit #2

4/19/14 A 75
Time: 14:00

Collected sediment samples for
Total Recoverable metals analysis.
Sediment was abundant along
REW stream bank and top layer
was orange and very fine
particulate. Collected by Steve Auer

Minisipper was deployed 50 meters
upstream of railroad bridge on
REW. Installed by Thomas Chapin
Pore water was collected ~~5~~²⁰ meters
~~upstream~~^{downstream} of Minisipper location
by Dan Wall using a pushpoint
sample and collected at 15 cm Depth

Continue Next Page

Continue from Previous Page

Grab samples were collected for dissolved and Total recoverable metals.

Deployment of minisipper 14:20
Relative Cond. 320 μ S/cm
6.20 Temp

Baker Bridge

4/15/14

Time: 15:45

Collected sediment for total recoverable metals as a composite sample and collected by Steve Auer

Collected porewater samples using pushpoint sampler for dissolved metals analysis, collected by Dan Wall
Sample Depth = 16.5 cm

Deployed Minisipper at REW near property line of RV park and Veterinarian Clinic

Collected Grab samples for Total Recoverable metals and dissolved metals analysis.

Minisipper Deployment: 16:00
293 μ S/cm
4.9°C

A68

4/16/04

Time 07:00

Collected sediment as a composite sample downstream of 14th st bridge for Total Recoverable metals analysis by Steve Arner

Collected porewater using a pushpoint sampler for dissolved metals analysis by Dan Wall

Sample Depth = 16.2 cm

Deployed minisipper on LEW 60 meters downstream of 14th st Bridge and collect GPS coordinates using ESAT unit #2

Collected 2 Grab samples upstream of minisipper for DM SR

Collected 2 photographs using ESAT Gray Camera

A65

4/16/04

Time 08:15

Collected sediment as a composite sample 25 meters upstream and 25 meters downstream of gaging station for total Recoverable metals by Steve Arner

Collected porewater using a pushpoint sampler for dissolved metals analysis at a depth of 15 cm by Dan Wall

Deployed minisipper on REW 10 meters downstream of gaging station

Collected 2 Grab samples for dissolved and total Recoverable metals

Collected GPS coordinates using ESAT Unit #2
Collected photographs using ESAT Gray Camera

A66

4/16/14

Time 09:30

Collected sediment for total recoverable metals downstream of washed out bridge in a 50 meter stretch by Steve Auer

Collected porewater sample from REW using a pushpoint porewater sampler for dissolved metals at a depth of 18.2 cm by Dan Wall

2 photographs taken using gray ESAT Camera

A65

4/16/14

Time 10:00

Collected sediment for total recoverable metals as a composite sample from a 50 meter stretch by Steve Auer

Collected porewater sample from REW using pushpoint porewater sampler for dissolved metals at a depth of 23 cm by Dan Wall

Collect porewater duplicate sample

2 photographs taken using the ESAT Gray camera

A64

4/16/14

Time: 11:00

Collected sediment for total recoverable metals analysis ~~from~~ as a composite from a 50 meter stretch by Steve Auer

Collected pore water for dissolved metals using a pushpoint porewater sampler at a depth of 16.5 cm by Dan Wall

Collecting 2 photographs using the ESAT Gray Camera

A61

4/16/14

Time 11:30

Collected sediment for total recoverable metals analysis as a composite sample from a 25 meter stretch by Steve Auer

Collected pore water for dissolved metals using a pushpoint porewater sampler at a depth of 31 cm by Dan Wall

Collected 2 photographs using the ESAT Gray Camera

A60

4/16/14

Time: 12:30

Collected sediment samples as a composite sample along a 25 meter stretch for total recoverable metals analysis by Steve Auer

Porewater samples collected using a pushpoint porewater sampler for dissolved metals analysis. Sampling depth of push point 22.5 cm
Collected on LEW

Collected 2 photographs using gray ESAT camera

A58

4/16/14

Time 13:00

Collected sediment samples for total recoverable metals analysis as a composite sample. Sediment very limited in area. Located sediment in three depositional areas ⁵⁰ meters downstream of ₃₀ culvert.

Porewater samples were collected using a pushpoint porewater sampler on LEW. Samples were collected for dissolved metals analysis and a depth of 9.5 cm

Collected 2 photographs using Gray ESAT Camera

A56

4/16/14

11.5

Time 13:40

Collected sediment for Total recoverable metals as a composite sample from 20 meters by Steve Drew

Porewater was collected using a push point porewater sampler and was collected at a depth of 17.5 cm

Dan will collect sample

Minisipper was deployed and 2 grab samples were collected for dissolved and total recoverable metals

2 photographs were collected using East Gray camera

A72

5/15/14

Time 17:15

Collected Total Metals, Dissolved Metals, DOC, Alkalinity and Anions. Collected by Leslie Christian. Collected at gaging station

2 photographs Taken

Water is very turbid, can't see substrate. Banks are stained orange. Temp in the 50s and breezy/sunny

Temp: ~~9.51~~ °C KB 5/15/14
 pH: ~~6.33~~ su KB 5/15/14
 Condu: ~~240.4~~ $\mu\text{S}/\text{cm}$ KB
 DO: ~~8.04~~ mg/L KB

Temp: 9.51 °C
 pH: 6.33 su
 Condu: 240.4 $\mu\text{S}/\text{cm}$
 DO: 8.04 mg/L

M34

5/5/14

Time: 18:00

Water is turbid, can't see substrate
 Dissolved metals, Total Metals, Anions + Alk
 and DOC collected by Leslie Chintner

Temp in SOs, sunny and calm.
 Collected at gaging station
 Banks are stained orange
 2 photos taken

Temp: ~~12.87°C~~ KB 5/5/14
 pH: ~~6.86 su~~ KB 5/5/14
 Condo: ~~321.5 µs/cm~~ KB
 DOC: ~~7.10 mg/L~~ KB

Temp: 7.64 °C
 pH: 6.83 su
 Condo: 217.3 µs/cm
 Doc: 8.41 mg/L

M34-1
 readings are
 correct in
 pocket situ

A68

5/5/14

Time: 18:15

Dissolved Metals, Total Metals, Anions + Alk
 and DOC collected by Leslie Chintner

Temp in SOs, sunny and breezy
 Collected at gaging station.
 Water is fairly clear, no staining on
 substrate.
 2 photos taken with blue EJA7
 camera.

Temp: 8.53 °C
 pH: 7.09 su
 Condo: 263.4 µs/cm
 DO: 8.24 mg/L

CC 48

5/6/14

Christner, Richardson, Zilica

Time: 8:20 am

Water Turbid, can't see substrate.

Dissolved metal, Total metals,
anions, Alk and DOC collected by
Leslie Christner at gaging station.

2 photos on ESAT camera

Partly cloudy, calm. Orange
deposits on banks 4ft above current
water level.

Temp	2.18
pH	4.6
condo	343.9
DO ₂ etc	10.06

CC 41

5/6/14

Time: 9:00 am

Water turbid. Can't see substrate.
Orange deposit on banks shows
higher flow in recent past.
Sunny, calm. 50+° air temp.

Too dangerous for flow measurement

2 photos on ESAT camera.
Dissolved metal, total metals,
anions, alk, and DOC collected by
Leslie Christner.

Temp	2.18
pH	4.53
condo	334.4
DO	9.70

} not recorded
in instrument

Temp	2.23
pH	4.59
condo	384.5
DO	9.81

Location CC26 Prospect Gulch 5/6/14

Project Title:

Time 9:35

Sunny and breezy. Water
murky but not very.

Flow collected on FloeTracker
unit 2 by Leslie Christian,
below road. Dissolved metals,
Total metals, ammonia, and
and DOC collected by Lisa Richardson.

Temp. 1.42
pH 4.54
condo 161
DO 9.75

Photos on ESAT camera: 4 photos
2 of flow measurement
2 of water sample site

Location CC21B

Date 5/6/14

Project Title:

Time: 10:10 am

Sunny and breezy.
Water murky. Substrate stained
orange

Dissolved metals, Total metals,
ammonia, and DOC collected by
Lisa Richardson.
2 photos on ESAT camera

Temp: 2.79
pH 4.39
cond: 471.9
DO 9.20

Flow collected by Leslie Christian
using FloeTracker unit #2.

CC21

5/6/14

Time: 11:05 am

Sunny and windy.
Water murky. Substrate
stained orange.
2 photos on ESAT camera.

Flow collected by Leslie Christner
using unit #2 FlooTracker.

Dissolved metals, total metals,
ammonia, and DOC collected by
Lisa Richardson.

Temp: 3.4

pH: 4.25

cond: 600.7

DO: 7.11

CC17

5/6/14

Time = 11:40 am

Sunny and windy.
Water fairly clear. Substrate
stained orange.

Flow collected by Leslie Christner
using FlooTracker unit #2. Had
to kick out snow on left
bank to find stream bank.

Dissolved metals, total metals, cells + cations
and Doc collected by Lisa Richardson.

2 photos taken on ESAT (blue) camera.

Temp: 3.85

pH: 5.76

cond: 472.9

DO: 8.96

CC18

+ Dup 4

Time: 13:00

Clouding up. Cold. Windy. Snow falling fast. Under just slightly cloudy. Substrate stained orange.

Flow by Leslie Christine using flow tracker unit #2. Snowed out snow on ~~left~~ stream bed to fine creek

Dis metals, Alk & Amms, total metals, DOC, and Dup 4 collected by Lisa Richardson

2 photos taken on FSAT (blue) camera

Temp: 3.11°C

pH: 4.44

Condc: 525.4

DO: 7.22

CC19

+ Dup 5

Time: 14:35

Flow: 0.4

Cloudy, Windy. Water from well is clear. ~~But~~ Alit is placed to the top 3" of the grade. Precip in canal to flume is looking deeper. However, Leslie, Steve ^{and} worked on flume to to scrape precip crust from sides.

Dis metals, Alk & Amms, total metals, DOC, and Dup 5 collected by Lisa Richardson

2 photos taken on FSAT (blue) camera
(Alit + downstream to flume base)

Temp = 7.44°C

pH = 5.35

Condc 2153 μ S/cm

DO = 2.80 mg/L

CC07

5/7/2014

Time: 9:20 am

Sunny and cold. Windy.
Stream clear. Substrate
stained orange. Shaded
area for 3' on left bank
to find stream bank.
Stream is quite shallow here.

Flow collected by Leslie Christner
with FlowTracker unit #2. *

Dissolved metals, total metals
alk + anions and DOC collected by
Lisa Richardson.

2 photos taken on ESAT (blue) camera

Temp: 1.18

pH: 3.99

Cond: 1142

DO: 9.80

* Flows are
low and measurement
may not be
accurate

CC 03

5/7/14

9:45 am

Sunny and cold. Breezy. Water
only very slightly murky. Substrate
orange and cemented. Clear
flow on road joins stream
below sampling point. Water
samples taken 100 ft above flow.

Flow collected by Leslie Christner with
FlowTracker unit #2.

Dissolved metals, total metals, anions
alk, and DO collected by Lisa Richardson.
2 photos taken on ESAT (blue) camera.

Temp: 1.32

pH: 4.97

Cond: 423.5

DO: 9.67

Location CC03C Date May 7, 2014
Project/Team R&B/Bentley A.14

Time: 11:00

Portal structure covered in snow.
4 photos taken on EVAT (Blue) camera,
showing portal, water sampling site, flow
down dump, and settling pond areas.

Partly cloudy, cool, breezy.

Dissolved metals, total metals, arsenic, etc.,
and DOC collected by Lisa Richardson.

Temp: 6.26
pH: 5.78
cond: 2219
DO: 3.46

No flow taken here.

Location CC03 ~~Bentley~~ D Date 5/7/14
Project/Team below R&B/Bentley

Time: 11:20

Measured flow in roadside ditch
with FlowTracker unit #2 by
Leslie Christner.

Starting to snow.

Water samples: not taken (use
CC03C audit samples)

1 photo taken of flow measurement.
~~2 photos~~

Temp: 5.33
pH: ~~5.42~~ 6.26
cond: 2136
DO: 5.61

CC03 B

5/7/14

Time 12:40 pm

Cold, cloudy, breezy
 Water quality taken 130 ft
 above flow measurement

Flow collected by Leslie Christner
 with FlowTracker unit #2

Dissolved metal, total metal, alk +
 anions and DO collected by Lisa
 Richardson

Temp: 1.93

pH: 4.94

cond: 175.7

DO: 9.50

1 photo taken of water
 quality site. 2 photos taken
 of flow site. 2 more photos
 taken showing where FlowTracker
 ran out of battery.

FlowTracker ran out of batteries
 at 7.74 cfs, (which should be 85%
 of flow.) Unmeasured flows: ~~2.1 ft~~ depth

velocity: 0.95

9 ft 0.3

9.5 ft 0.65

10 0.55

D

CC16 B

5/7/14

South Fork Cement Cr below Silver Ledge

Time: 3:15 pm

Partly cloudy, breezy
 Water clear. Substrate stained orange.

Flow collected by Leslie Christner
 with FlowTracker unit #2

Dissolved metals, total metals, anions + alk,
 and DOC collected by Lisa Richardson.

2 photos on ESAT (blue) camera

Temp: 3.13

pH: 6.03

cond: 604.6

DO: 9.10

Flow = 1.639 Batteries low. May
 have some QC issues

CC14

5/7/14

Silver Ledge adit

Time: 1603

Cloudy.

No flow taken.

Adit grating plugged half way up.

1 photo taken on EAST (blue) cement

Dissolved metals, total metals
alkalinity and DOC taken by
Lisa Richardson

Temp: 5.14

pH: 6.46

cond. 439.9

DO: 5.37

July 27, 2014 Animas Canyon
A73-Elk thru Baker's
Crew:
Lisa Richardson
Thomas Chapin

Pop of PUTTROT DRIVER, RODNEY

Rained **HEAVY** overnight. Waters
level up and murky. Found minisippers
successfully. **HEAVY** SKIES.
Forecast for heavy rain. Recovered
Anastra + Howardsville sippers + STIL Above
Howardsville yesterday. Lost
Lackawanna + A68

A73 - Elk Park

09:45

TOTAL + DIS samples taken

LR

Installed new STIL until next deployment

STIL - E-5

Cond: 264

Temp: 9.9

Date 7/27/14

Recover STILS ~~also below~~:
Above needles

— A75D Ca Above cascade bridges
14:55

Recovered minisippes!
Installed new STIL for time until
next (fall) deployment of minisippes
Have been lucky with rain.
Took Dis + Total Samples

Cond: 196 μ S
Temp: 13.28°C

— Above Ten mile
STIL-54

Cond: 224
Temp: 11.4°C

Deployed E-7

Date 7/27/14

— Below Ten mile - STIL 56

Cond: 234
Temp: 12.4°C

STIL #8 Deployed

— Ruby Creek
did not have time to collect
because train was ~~off~~ right
behind us

— Above Needle-63 11:15am

Cond: 225
Temp 10.6°C

Deployed E-6 STIL

— Below Needle
we could not find STIL. Hope to
look for it again in fall
when water is low.

7/27/14

NOTICE That notes bounced around
from North to South to North.
PATT BTT or Pop case had to go back
and forth ~~to~~ due to schedule for
3 trains.

7/28/14 Location A72

Time: 16:40

Collected samples for Total
and Dissolved metals analysis

Collected field blank

Animas River 6/28/14

Steve Way cleaned
flames out at the
Gold King level 7
adits and took a
reading

CC06

height 0.4 ft
3" partial flame

CFs = 0.2997

gpm 107.6

Time 11:00

Location

CC41

Date

9/23/2014

Project / Client

Scribe: A.R.

Team Members: Ryan Bahrfleth (R.B.)
 Amanda Pombaugh (AR)
 John Eberhart (JI)

Cool, sunny, clear. Water in Content Creek is not clear and orange in color. The water level is high for this time of year.

Sample CC41 collected by JI at 08:10, for total metals, alkalinity/iron and dissolved metals.

Water Quality by AR using probe #965428

Temp: 4.82°C

pH: 3.50

cond: 810 $\mu\text{S}/\text{cm}^3$

DO: 2.28 mg/L

photo 69 upstream and photo 70 downstream, by AR using personal camera

RB collects flow data using unit #1

Location

CC21

Date

9/23/2014⁸⁵

Project / Client

Scribe: AR

Starting to get warmer, but still cool, sunny, clear. Water in creek is still cloudy and orange in color.

Sample CC21 collected by JI at 09:12 for total metals, alkalinity/iron and dissolved metals. This is the location of duplicate sample #4 (Dup-4)

Water Quality by AR using probe #965428

Temp: 4.30°C

pH: 4.07

cond: 807 $\mu\text{S}/\text{cm}^3$

DO: 7.94 mg/L

photo 71 upstream and photo 72 downstream, by AR using personal camera

RB collects flow data using unit #1

CC18

9/23/2014

Scribe: AR

Cool, sunny, clear. Creek water is cloudy and orange.

Sample CC18 collected by JI at 09:50 for total metals, alkalinity/anions, and dissolved metals.

Water quality by AR using probe #965488

Temp: 4.30°C

pH: 3.63

Cond: 960 $\mu\text{S}/\text{cm}^2$

DO: 6.53 mg/L

photo 73 upstream and photo 74 downstream by AR using personal camera.

RB collects flow data using unit #1

CC19

9/23/2014

Scribe: AR

Cool, sunny, clear, slight breeze. Water stream is orange in color.

Sample CC19 collected by JI at 10:10 for total metals, alkalinity/anions, and dissolved metals.

Water quality by AR using probe #965488

Temp: 8.21°C

pH: 5.12

Cond: 2305 $\mu\text{S}/\text{cm}^2$

DO: 5.45 mg/L

Ferrate iron test kit by AR, color match is 2.0 mg/L .

photo 75 upstream and photo ~~76~~⁷⁷ AR downstream by AR using personal camera. photo 76 inside flume. Depth 42 ft inside flume. JI scraped the flume clean prior to taking the reading.

Location CC18B

Date 9/23/2014

Project/Station

Screen: AR

Cool, sunny, clear. Water is clear but stream bed is orange.

Sample CC18B collected by JI at 10:50 for total metals, alkalinity/fanions, and dissolved metals.

Water quality by AR using probe

#965488

Temp: 6.67°C

pH: 3.61

Cond: 947 $\mu\text{S}/\text{cm}^2$

DO: 6.72 mg/L

photo 78 upstream and photo 79 downstream by AR using personal camera.

RB collects flow data using unit #1.

Location CC07

Date 9/23/2014

Project/Station

Screen: AR

Cool, sunny, clear. Water is clear but stream bed is orange.

Sample CC07 collected by JI at 11:10 for total metals, alkalinity/fanions, and dissolved metals.

Water quality by AR using probe

#965488

Temp: 6.47°C

pH: 2.94

Cond: 1544 $\mu\text{S}/\text{cm}^2$

DO: 6.02 mg/L

photo 80 upstream and photo 81 downstream by AR using personal camera.

RB collects flow data using unit #1.

CC03

9/23/2014

Scribe: AR

Cool, partly cloudy, slight breeze. Water is clear but stream bed is orange.

Sample CC03 collected by JI at 11:55 for total metals, alkalinity/cations, and dissolved metals.

Water quality by AR using probe #965488

Temp: 7.79 °C

pH: 5.24

Conc: 839 $\mu\text{S}/\text{cm}^2$

DO: 6.60 mg/L

Photo 82 upstream and photo 83 downstream by AR using personal camera.

RB collects flow data using unit #1

CC06B

9/23/2014

Scribe: AR

Cool, partly cloudy, slight breeze. Water is orange and there appears to be yellow-green vegetation in the water. Flow is very low (a trickle from the grate).

Sample CC06B collected by JI at 13:05 for total metals, alkalinity/cations, and dissolved metals.

25/1-inch partial Plume # 2 height at ~~Back~~ ^{Back} .05 and at the ~~Back~~ ^{Front} ~~Back~~ ^{Front} is .15, by RB

Water quality by AR using probe #965488

Temp: 9.26 °C

pH: 3.02

Conc: 2357 $\mu\text{S}/\text{cm}^2$

DO: 6.09 mg/L

Photo 84 upstream and photo 85 downstream by AR using personal camera.

Location C006

Date 9/23/2014

Project / Client

Scribe: AR

partly cloudy, slight breeze. water from pipes appears clear but bottom of the channel is orange.

Water quality by AR using probe #965488

Temp: 7.79 °C

pH: 2.78

Cond: 2450 $\mu\text{S}/\text{cm}^2$

DO: 3.07 mg/L

flame height 0.18 by RB, cleaned prior to reading.

Ferric iron test kit by AR, color match is 2.5 mg/L

photo 86 upstream (pipes), photo 87 the flame, photo 88 downstream by AR using personal camera.

Sample C006 by JI at 13:20 for total metals, alkalinity/ammonia, and dissolved metals.

work has been conducted ^{AR} in the area, photos 89 through 92 by RB.

Location C004

Date 9/23/2014

Project / Client

Scribe: AR

partly cloudy, slight breeze. water appears clear.

Sample C004 collected by JI at 13:50 for total metals, alkalinity/ammonia, and dissolved metals. sample taken up stream of run off point (photo 93 by AR).

Water quality by AR using probe #965488.

Temp: 8.27 °C

pH: 3.02

Cond: 334 $\mu\text{S}/\text{cm}^2$

DO: 6.34 mg/L

photo 94 upstream and photo 95 downstream by AR using personal camera.

4-inch flame unit #1 height at front 0.26 and at rear 0.17, by RB.

FD 1

9/23/2014

Scribe: AR

Warm, sunny, slight breeze. Water appears clear, but there is vegetation (moss-like) along the bottom of the stream bed.

Sample FD 1 collected by JI at 15:05 for total metals, alkalinity/ions, and dissolved metals.

Water quality by AR using probe #965488

temp: 11.28 °C

pH: 4.03

cond: 722 $\mu\text{S}/\text{cm}^3$

DO: 4.85 mg/L

photo 96 upstream and photo 97 downstream by AR using personal camera.

RB collects flow data using unit #1, but difficult due to vegetation.

RB places 1-inch flume and takes reading height in front ~~to~~ ⁱⁿ 26 and height in back 0.1

CC02B

9/23/2014

Scribe: AR

Warm, ~~sunny~~ ^{AR} partly cloudy w/ sun breaks, slight breeze. Water appears clear but the stream bed is orange.

Sample CC02B collected by JI at 15:15 for total metals, alkalinity/ions, and dissolved metals.

Water quality by AR using probe #965488

temp: 11.82 °C

pH: 4.53

cond: 338 $\mu\text{S}/\text{cm}^3$

DO: 4.67 mg/L

photo 98 upstream and photo 99 downstream, by AR using personal camera.

RB collects flow data using unit #1.

Location MTD-4Date 9/23/2014

Project / Client _____

Scribe AR

partly cloudy w/ sun breaks, warm, slight breeze.

Sample MTD-4 collected by JJ at 15:22 for total metals, alkalinity/anions, and dissolved metals.

Water quality by AR using probe #965188

temp: 11.63°C

pH: 3.24

cond: 1040 $\mu\text{S}/\text{cm}^2$

DO: 5.01 mg/L

photo 100 upstream and photo 101 downstream, by AR using personal camera

stream water appears clear but streambed is orange. There is dark green vegetation present within the stream.

field blank, FB-2 collected by JJ at 15:40 for total metals, alkalinity/anions and dissolved metals

RB placed a flume ^{in front} 1-inch flume, height 0.27 and 0.05 in back

Location CCRDDate 9/23/2014

Project / Client _____

Scribe AR

collection within the mouth of the Miguel Mine. Water is cloudy and orange in color.

Sample CCRD collected by JJ at 16:30 for total metals, alkalinity/anions, and dissolved metals

Water quality by AR using probe #965488

temp: 5.33°C

pH: 3.59

cond: 1372 $\mu\text{S}/\text{cm}^2$

DO: 5.64 mg/L

Photo 102 upstream and photo 103 downstream by AR using personal camera

Ferrus iron kit by AR, color match 1.5 mg/L

RB checked flume and took the reading, 0.3.

Location A75B

Date 9/24/2014

Project / Client

Scribe: AR

Field Team Members Ryan Bahnfleth (RB)
Amanda Rohrbaugh (AR)
Susan Griffin (SG)

Warm, sunny, clear. Water is moving quickly and is high for this time of year. The color is clear.

Sample A75B collected by SG at 13:10, for T_M, Alk/Anion, D_M, and DOC (surface water).

Water quality by AR using probe #965488
temp: 9.41°C
pH: 6.87
Cond: 199 μs/cm³
DO: 4.30 mg/L

photo 111 upstream
photo 112 downstream
by AR w/ personal camera.

Sample A75B collected by RB at 13:10, for ~~FRM~~ T_M/Hg (sediment).

Location A75CC

Date 9/24/2014

Project / Client

Scribe: AR

Warm, sunny, clear. Water is clear and moving quickly.

Sample A75CC collected by SG at 13:40, for T_M, Alk/Anion, D_M, and DOC (surface water).

Water quality by AR using probe #965488

temp: 10.05°C

pH: 7.28

Cond: 171 μs/cm³

DO: 4.18 mg/L

photo 113 upstream and photo 114 downstream
by AR w/ personal camera.

Sample A75CC (pore water) collected by RB at 13:40. Depth 7.5 inches.

Sample A75CC (sediment) collected by SG at 13:40 for sed tox.

Location A75D

Date 9/24/2014

Project / Client

Scribe: AR

Warm, sunny, clear. Water is clear and moving swiftly.

Sample A75D collected by SG at 14:00 for TM, alkalinity, DM, and DO. (surface water).

Water quality by AR using probe #965188
Temp: 10.07°C

pH: 6.93

Cond: 200

DO: 9.66

photo 115 upstream

photo 116 downstream

by AR using personal camera.

Sample A75D (pore water) collected by RB at 14:00 for DM. Depth 7.75 inches.

Sample A75D (sediment) collected by SG at 14:00 for sed box.

Location A53 AC

Date 9/25/2014

Project / Client

Scribe: AR

Field team members: Ryan Bahroff (RB),
Cynthia Bonbrugh (CB),
Lisa Richardson (LR)

Cool, sunny, clear. Water is clear in color and moving swiftly.

AR Grab

Sample A53 AC is collected approx.

2-3 yards above the confluence

with Cunningham Creek. Collected by

LR at 9:05 for TM and DM. A

cabin is located upstream of the confluence.

Water quality by AR using probe

#965428 (on bank opposite cabin)

Temp: 5.83°C

pH: 6.66

Cond: 277 $\mu\text{S}/\text{cm}^3$

DO: 9.70 mg/L

photo 121 upstream

photo 120 downstream

by AR w/ personal

camera.

Flow data collected by RB using
unit #3.

GPS coordinates by AR using unit #2
37.83641983°N 107.59762286°W

Location A53AC

Date 9/25/2014

Project / Client

Scribe: AR

Water quality by AR/LR using probe
#965488 (on bank same side as cabin).

Temp: 6.15 °C

pH: 6.71

Cond: 278 $\mu\text{S}/\text{cm}^3$

DO: 9.52 mg/L

Note that the cabin is upstream of the sample location (A53AC) and LR had a conversation w/ the resident there while team was at this location.

Location A51

Date 9/25/2014¹⁰³

Project / Client

Scribe: AR

Warming up, sunny, clear. Water looks clear, location is braided so this may impact flows in the area. According to LR there are beaver ponds upstream (closer to Kittemack tailings) that may also impact flow.

AR Grab

Sample A51 located in a braided section, approx. equidistance between ~~Howardsville~~ ^{Kittemack} tailings and ~~Kittemack~~ ^{AD} tailings. Sample A51 collected by LR at 10:20 for TM and DM.

Water quality by AR using probe
#965488

Temp: 7.69 °C

pH: 6.81

Cond: 266 $\mu\text{S}/\text{cm}^3$

DO: 9.19 mg/L

photo 122 upstream
photo 123 downstream
by AR w/ personal camera.

Flow by RB using unit #3, GPS by AR
using unit #2, 37.85161978°N
107.59130064°W

104

Location A49

Date 9/25/2014

Project / Client

Scribe: AR

Meet up with Robyn Blackburn (RAB) and Steve Auer (SA). sunny, clear, warm. Sample location A49 is upstream of Kittimack tailings and downstream of Minnie Gulch. The location is on Joe & Cheryl Jepsen's property, to which we are allowed access.

Grab sample A49 collected by RAB at 11:40 for TM and DM.

Water quality by AR using probe #965188

Temp: 10.78°C

pH: 6.80

Cond: 267 $\mu\text{S}/\text{cm}^3$

DO: 8.37 mg/L

photo 188 upstream

photo 189 downstream

by RAB w/ 582355 camera.

GPS by AR using unit #2, 37.86194727°N

107.57330514°W.

Flow data ~~to~~^{AR} collected by RB using unit #3.

Location A47

Date 9/25/2014¹⁰⁵

Project / Client

Scribe: AR

sunny, warm, clear, slight breeze. Sample location ^{A47 AR} is upstream of A49. Sample A47 is upstream of Minnie Gulch and on the boundary of Joe & Cheryl Jepsen's property, to which we have access.

Grab sample A47 collected by RAB at 12:00 for TM and DM.

Water quality by AR using probe #965188

Temp: 11.27°C

pH: 6.93

Cond: 266 $\mu\text{S}/\text{cm}^3$

DO: 8.06 mg/L

photo 124 upstream

photo 125 downstream

by AR using personal camera.

GPS by AR using unit #2, 37.86281269°N
107.57253305°W.

Flow data collected by SA using unit #2

106

Location A45

Date 9/25/2014

Project / Client

Scribe: AR

Warm, sunny, clear. Sample location A45 is downstream of Eureka Gulch. Water looks clear and is moving quickly.

Grab Sample A45 collected by RAB at 12:55 for TM and DM.

Water quality by AR using probe #965188
Temp: 11.33°C

pH: 6.91

Cond: 272 $\mu\text{S}/\text{cm}^3$

DO: 8.15 mg/L

photo 126 upstream

photo 127 downstream

by AR w/ personal camera

flow data collected by SA, using unit #2.

GPS collected by AR using unit #2,
31.87675437°N 107.50679119°W

Location A43

Date 9/25/2014¹⁰⁷

Project / Client

Scribe: AR

Warm, sunny, clear, slight breeze. Sample location A43 is located downstream of county Rd 2 bridge at Eureka and upstream of the confluence with Eureka Gulch.

Sample A43 is a grab sample collected by RAB at 13:15 for TM and ~~DM~~^{DM}.

Water quality by AR using probe #965188

Temp: 12.31°C

pH: 6.90

Cond: 262 $\mu\text{S}/\text{cm}^3$

DO: 7.78 mg/L

photo 128 upstream

photo 129 downstream

by AR w/ personal camera

flow data collected by RB using unit #3.

GPS by AR using unit #2,
31.87904544°N 107.50592240°W

Location A41Date 9/25/2014

Project / Client

Scribe: AR

Warm, sunny, clear, slight breeze. Sample location A41 is on the California fork of the Animas upstream of where the California meets the north fork, approx. 250-300 ft downstream of the bridge.

Grab sample A41 collected by RAB at 14:10, for TM and ~~SD~~ DM.

Water quality by AR using probe #965488

Temp: 13.30°C

pH: 5.40

Cond: 307 $\mu\text{S}/\text{cm}^2$

DO: 7.06 mg/L

photo 130 upstream

photo 131 downstream

by AR w/ personal camera

Flow data collected by RB using UMH #3.

GPS by AR using UMH #2, 37.93174501°N
107.57026220°W

Location A39Date 9/25/2014

Project / Client

Scribe: AR

Warm, sunny, clear, slight breeze. Sample location A39 is on the north fork of the Animas, upstream of where the north fork meets the California Fork. The location is upstream of the bridge.

Grab sample A39 collected by RAB at 14:25 for TM and DM.

Water quality by AR using probe #965488

Temp: 13.30°C

pH: 5.15

Cond: 185 $\mu\text{S}/\text{cm}^2$

DO: 6.64 mg/L

photo 132 upstream

photo 133 downstream

by AR w/ personal camera

Flow data by SA using UMH #2.

GPS by AR using UMH #2,
37.93306939°N 107.56966673°W

Location Placer Gulch - PG-01 Date 9/25/14

Project / Client Upper Animas

RAB Scope R. Blackburn, S. Auer, L. Richardson

1520 warm, sunny, ~70°F
Sample location is PG-01
Placer Gulch is a tributary
to California Gulch.

The gulch receives adit
discharge from several mines
upstream. There are
unmonitored settling ponds
known to overflow with
accrued sediment deposits
in the settling ponds.

Settling ponds are approx.
800' upstream of sample
location.

- Flow track by S. Auer
- Grab sample collected by
RAB at 1520 for TM and DM.

- Water quality by LISAR, probe 9165438

temp	14.36	photos w/ TLaw came...
pH	5.97	upstream: 188
cond	203	downstream: 189

- D.O. 6.42 mg/L
- GPS collected at this location

* Gold King Adit
9/22/14
Time: 11:00

3" parshall Flume Reading 0.12 ft

Location UPPER ANIMAS Date 5/6/14

Project / Client _____

Time: 08:15

A66

Dissolved metals, total metals, Anions +
Alk and DOC collected by Steve
Auer.

Temp in the 40s, sunny and
calm.

2 photos taken with black ESAT camera

Water is mostly clear, no staining on
banks

Temp: 1.96 °C

pH: 7.15 su

cond: 183.2 $\mu\text{S}/\text{cm}$ DO: 9.94 mg/L

Location UPPER ANIMAS Date 5/6/14

Project / Client _____

Time: 8:45

A65

Dissolved Metals, total metals, Anions +
Alk and DOC collected by Steve Auer

Temp in upper 40s, sunny and
slightly breezy.

Water is mostly clear, no staining
on banks

Temp: 2.32 °C

pH: 7.24 su

cond: 183.0 $\mu\text{S}/\text{cm}$ DO: 9.84 mg/L

2 photos taken with Black ESAT
camera

Location UPPER ANIMAS Date 5/6/14

Project / Client

Time: 9:15

A64

Dissolved metals, total metals, Anions +
Alk and DOC collected by Steve
Aver.

Windy sunny and temp in upper
40s.

No flows collected. Water is mostly
clear cant see substrate.

Temp: 2.60 °C
pH: 7.35 su
cond: 178.0 us/cm
DO: 9.79 mg/L

2 photos taken with Black EAT
Camera.

Location UPPER ANIMAS Date 5/6/14

Project / Client

Time: 09:25

A61

Dissolved metals, total metals, Anions +
Alk and DOC collected by Steve Aver.

Sunny and Breezy, temp in upper 40s.

No flows collected. Water is mostly
clear, cant see substrate.

2 photos taken with the Black EAT
Camera.

Temp: 2.89 °C
pH: 7.36 su
Cond: 183.2 us/cm
DO: 9.71 mg/L

Location UPPER ANIMALS

Date 5/6/14

Project / Client

A60

Time: 9:45

Dissolved metals, total metals, Anions +
Alk and DOC collected by Steve
Aver.

Water is mutly clear, can't see
substrate.

No flows were taken. Temps in
50s, sunny and calm.

Temp: 3.38 °C

pH: 7.44 su

cond: 178.7 $\mu\text{S}/\text{cm}$

DO: 9.55 mg/L

2 photos taken with black
EIA7 camera.

Location Upper Animal

Date 5/6/14

Project / Client

A58

Time: 10:10

Dissolved metals, total metals, Anion +
Alk and DOC collected by Steve
Aver.

Water is clear, rocky substrate.
Temps in the 50s, sunny and
calm.

2 photos taken with black EIA7
camera.

Temp: 3.20 °C

pH: 7.53 su

cond: 142.9 $\mu\text{S}/\text{cm}$

DO: 9.66 mg/L

Flow taken is an estimate.
Potentially did not capture
entire flow.

Location UPPER ANIMAS

Date 5/6/14

Project / Client

A56

Time: 11:30

Dissolved metals, total metals, DOC
Anions + Alk collected by Steve
Auer.

Water is clear. Temp in 50,
sunny and calm.
No flows taken.

2 photos taken w/ ESA7 black
camera.

Temp: 5.48 °C
pH: 7.44 su
cond: 181.2 µs/cm
DO: 9.01 mg/L

Location Upper Animas

Date 5/6/14

Project / Client

A55

Time: 12:00

DOC, Dissolved Metals, total metals, Anions +
Alk collected by Steve Auer.

Water is clear. Temp in the 50,
sunny and a slight breeze.
Taken at gaging station.

DUP OI taken here.

No staining on substrate, some snow
on banks.

2 photos taken by ESA7 black
camera.

Temp: 6.35 °C
pH: 7.36 su
cond: 182.7 µs/cm
DO: 8.86 mg/L

Location A67 Date 5/6/14
 Project / Client Upper Animas Mining District

Time: 13:15 Samplers
 Temp 3.85^{°C} Steve Auer
 DO 9.44 mg/l Kelsey Bartling
 pH 7.46 s.d.
 Cond 115

^{SA}
~~Collected~~ Collected grab surface
 water samples for the
 following analysis:

Alkalinity / Anions
 Dissolved Metals
 Total Recoverable Metals
 Dissolved Organic Carbon

Collected flows using flow tracker
 flow meter by Kelsey Bartling
 In flow tracker as A67A
 Water was clear and substrate
 was natural color with no staining

Warm and breezy with ambient
 temperature near mid 50's

Collected photographs using
 ESAT Trap Camera

Location USPER Animas Date 5/7/14
 Project / Client _____

A75 B

Time: 9:30
 Temp: 3.02 °C
 pH: 7.29 su
 Cond: 165.1 us/cm
 D.O: 10.29 mg/L

Dissolved metals, Total metals,
 anion + alkalinity and DOC
 collected by Steve Way and
 Steve Auer.

No flows were collected.
 Temps are in the 40s, sunny and
 breezy.

Water is turbid and substrate is
 not visible.

Collected 2 photographs using black
 ESAT camera.

40

A750

Location

Date 5/7/14

Project / Area

UPPER Animas

Time: 9:45

pH: 7.44 su

Conduct: 166.2 $\mu\text{S}/\text{cm}$ DO: 10.38 mg/L

Dissolved metals, Total metals,
Anions + Alkalinity and DOC
collected by Steve Aver and
Steve Way.

Water is turbid, can't see
substrate. No staining on banks.

Cool with temps in the mid 40s,
Sunny and a slight breeze.

Collected photographs using black
ESAT camera.

No flows were collected.

A73

Location

5/7/14

Project / Area

UPPER ANIMAS

Time: 10:50

Temp: 29.5°C

pH: 7.19 su

Conduct: 207.6 $\mu\text{S}/\text{cm}$ DO: 9.92 mg/L

Collected grab surface water sample
for the following analysis:

Alkalinity / Anions

DOC

Total Metals

Dissolved Metals

Samples collected by Steve Aver and
Steve Way.

Rocky substrate, mostly clear water.
Substrate is slightly stained orange.

Cool, temps in the 40s, cloudy
and breezy.

No flows collected. 2 photos
taken using black ESAT
camera.

Location

A73B

Date

5/7/14

Project / Client

Upper Animas

Time: 11:00

Temp: 3.25 °C

pH: 7.24 su

Cond: 134.6 μ S/cm

DO: 9.88 mg/L

Dissolved Metals, DOC, Total
Metals + Anions / Alkalinity
Collected by Steve Aver and
Steve Way.

Banks are slightly stained orange.
Can't see substrate. Water is
mostly clear.

Sunny, temps in 40s and
breezy

2 photos taken with Black EAT
camera.

Location

Still 1

Date

5/7/14 43

Project / Client

Upper Animas

Time:

Temp: 4.43 °C

pH: 7.23 su

Cond: 191.2 μ S/cm

DO: 9.55 mg/L

Only in-situ data collected here.
Slightly breezy, sunny.
Rocks on banks slightly stained
orange.

Water mostly clear, can't see substrate

No photos and no samples

Location Still 2 Date 5/7/14
Project / Client UPPER Animals

Time
Temp: 4.41 °C
pH: 7.31 su
Condo: 191.2 μ s/cm
DO: 7.52 mg/L

No samples collected, only in situ data collected.

Cloudy, temps in 40s, breezy

Water mostly clear, can't see substrate. Banks slightly stained orange

No photos and no samples

Location Still 3 Date 5/7/14
Project / Client Upper Animals

Temp: 4.07 °C Time: 13:00
pH: 7.38 su
Condo: 177.5 μ s/cm
DO: mg/L

KB 5/7/14 Total Dissolved metals and KB
~~No samples~~ collected, ~~only~~ in situ data collected. Samples collected by Steve Way and Steve Aver.
Partially cloudy / sunny, temps in upper 40s, breezy

Water mostly clear, can't see substrate. Banks normal color, no staining.

2 photos collected with black CAT camera.

Location Still 4 Date 5/7/14

Project / Client Upper Animas

Time: 13:15

Temp: 4.32 °C

pH: 7.47 su

Condo: 177.1 μ S/cm

DO: 9.81 mg/L

Total metals & dissolved metals
collected by Steve Way and
Steve Aver.

Windy and cloudy temps in the
mid 40s.

Water mostly clear with very
slight staining on banks. Can't
see substrate.

2 photos taken with black
EIA7 camera.

Still 4-1

5/7/14

Upper Animas

Time: 13:15

Temp: 4.50 °C

pH: 7.39 su

Condo: 177.0 μ S/cm

DO: 9.79 mg/L

Total metals and dissolved metals
collected by Steve Way and Steve
Aver.

Partially cloudy/sunny, temps in the
upper 40s.

Water mostly clear, slight orange
staining on lower banks.

2 photos taken with black EIA7
camera

A75 CC

Date 5/7/14

Upper Animas

Time: 13:55
Temp: 5.36 °C
pH: 7.89 su
cond: 136.0 us/cm
DO: 9.73 mg/L

Total metals, dissolved metals, DOC,
Alkalinity & Anions grab surface
water samples collected by
Steve Way and Steve Aver.

Temps in upper 40s, breezy and
cloudy.

Water mostly clear, can't see
substrate. No staining on banks.

2 photos taken with black EIA7
camera.

B Bridge

5/7/14

Upper Animas

Time: 15:00
Temp: 5.72 °C
pH: 7.63 su
cond: 161.0 us/cm
DO: 10.48 mg/L

Total metals, dissolved metals, DOC,
Alkalinity and Anions grab surface
water sample collected by Steve
Way and Steve Aver.

Temps in the 40s, breezy and
cloudy.

Water mostly clear, little to no
staining on banks. Can't see
substrate.

2 photos taken with Black EIA7
camera.

CC-48 and CC-26 9-23-14

Animas Low Flow - event

Cold, clear, ~45°F. High Flowing stream!

~~855~~ (RB) Susan Griffin (EPA)

755 Leslie Christner (ESAT)

Robyn Blackburn (FWS) (Scribe) (RAB)

Brian Sanchez (FWS) (BLS)

Location is at permanent
USGS Gauging Station. (no flow collected)

Brian Sanchez collected sample
for TM, DM, DOC, Alk/Anion.

Field parameters collected using
In situ Serial # S0817 (ESAT Unit 2)

Photos taken using ESAT camera

S82852. Samples preserved in field

Photo 0001 = upstream / 0002 = downstream

temp 41.51°F D.O. 9.15 mg/L

pH 4.0 Sp. Cond 514.5

0833 | CC-26 | - collected on upstream
side of road (NW side) above plastic
culverts. Brian Sanchez collected sample for
Leslie C. collecting flow tracks. DM, TM, Alk/An.

temp 39.89°F D.O. 9.03

pH 4.03 Sp. Cond 280.4

Outside temp ~ 32°F. Samples preserved

in field. photo 0003 = upstream

0004 = downstream

CC-21B

9/23/14

Cold, clear, ~ 32°F

0900 Blackburn and Sanchez collect

sample. up stream of input

water is clear but bottom substrate

stained orange. Collected DM, TM, Alk/Anion.

pH 4.44 (RB) * p. Cond 473.1

temp 39.57°F D.O. 8.67

photo 0005 = up stream

0006 = downstream

Leslie collected flow tracks at this
location

DM ~~RB~~ sampled field filtered and TM+DM
preserved on site.

* Collected "AC" - actual conductivity

CC-17

9/23/14

Upper Animas 2014 - Low Flow
 Clear, cool ~ 61°F Sunny

1015 Brian Sanchez collecting
 Sample. Water is clear
 with precip on bottom substrate
 Iron/orange fines noted imbedded.
 w/ large gravel-size and rock substrate

pH 6.48 *Cond 371.4 $\mu\text{c}/\text{cm}^2$
 *Temp: 40.93°F D.O. 8.89

It was noted that actual conductivity
 was being measured and could not
 convince Insitu to switch into Spec Cond.
 Leslie collected FlowTracker at this
 location.

Photo 0007 upstream
 0008 downstream

Samples were collected for
 Tm, Dm, A/V/An, field
 filtered and preserved onsite.
 L. Christner and S. Griffin collected
 FlowTracker at this location

CC-16B

9/23/14

Upper Animas Low Flow Event
 Cement Creek. Clear; ~ 63°F

1125 R. Blackburn & B. Sanchez
 collect sample. Location
 is upstream of Big Colorado
 and downstream of Silverledge Adit.
 Water is clear. Bottom substrate
 has significant Iron precip.
 med to large cobble bottom.

pH 6.70 Acond 410.5 $\mu\text{c}/\text{cm}^2$
 Temp 45.02°F D.O. 8.22 mg/L

Leslie C. collected FlowTracker
 at this location. (S. Griffin assisted)
 Photo 0009 - upstream
 Photo 0010 - downstream
 Samples were collected for
 Tm, Dm, A/V/An, field filtered
 and preserved on site.

CC-14

9/23/14

Upper Animas / Cement Creek
Sunny, clear day w/ 68°F

1140 R. Blackburn & Brian Sanchez
sample Adit location
Silver Ledge. Water is clear
and surging out a closed/graded
portal about 4' diameter.
It is noted that iron precip
sludge has built up on
the grate to the point of
blocking more than 1/2
the adit discharge. Significant
iron sludge, red-orange, covers
the bottom of channel.

pH 6.47 cond 655.8
temp: 42.19°F D.O. 3.80

R. Blackburn collected sample
for Tm, Dm, Alk/Anions.
Photo 0011 - upstream
0012 - downstream

No Flow collected at this location
due to sludge buildup on bottom of
channel.

Dm Samples were field filtered and metals
samples preserved on site

CC-15

9/23/14

Upper Animas / Cement Creek
Sunny, clear, w/ 68°F

1200 R. Blackburn and B. Sanchez
collect sample at CC-15. The
location is ~~above RB~~ in Cement Creek
above discharge from Silver Ledge.
Water is clear, staining on creek
bottom.

pH 6.54 A. Cond 149.3
temp: 48.58°F P.O. 7.83

Brian Sanchez collected samples
for Tm, Dm, Alk/Anions. Samples
were preserved on site.

photos: 0013 upstream
0014 downstream

L. Christner and S. Griffin collected
Fluoride at this site.

CC-03D

9/23/14

Upper Animas / Cement Creek
partly cloudy ~65°1305 R. Blackburn and S. Griffin
and L. Christner sample
TM, DM, AIK/AN.water is clear, bottom is
large to medium rocks coated
in white precip.

temp 44.68°F A. cond: 1397

pH 6.47 D.O.: 8.30

photo 0015 - upstream

0016 - downstream

L. Christner collected flowbacks

CC-03C

9/23/14

Upper Animas / Cement Creek
cloudy, cool1345 R. Blackburn and B. Sanchez
and S. Griffin collect samples for
TM, DM, AIK/AN.L. Christner collected Ferrous Iron
using Hach kit.In addition, 2 sample bottles
were filled (500mL each) as
requested by Steve Way. Samples
were collected directly below portal. by Sanchez

temp 43.18 F. Cond: 1369 µm/cm

pH 5.86 D.O.: 6.81 mg/L

photo 0017 upstream

0018 downstream

Flowbacks collected by L. Christner
and S. Griffin.Ferrous Iron: >7 mg/L
meas by L. Christner

CC-03B 9/23/14
Upper Animas / Cement Creek

1508 Sample collected by
Brian Sanchez and
R. Blackburn. Collected
Tm, Dm, Alk/Amn.

Dupoz collected at this
location.

Temp: 53.45^{oF} Acond: 308.4
pH: 5.32 D.O. 7.40

L. Christner collected Flowtrucks

~~(RB) L. Christner collected Fenowton~~

Photos not taken !!

CC-02K 9/23/14
Upper Animas / Cement Creek

1600 Brian Sanchez and
L. Christner collect Tm, Dm, Alk/Amn
using a syringe. Very low flow/trickle
No flow collected.

Temp 65.62^{oF} Cond 328.0
pH 4.1 D.O. 5.99

photos 0019
0020

Water is clear and trickles
over steep pile of rock
Rock stained deep red.
Drainage runs down road

Location

9/24/14

C 89.35
4" flume
0.09 HA
0.04 = 40

we are unsure of site name. Previous records have called this site CC02c. Current list calls it CC02v. And in my google maps photo calls it CC02H.

Historical records call this site CC02c so for now, we are labeling bottles:

CC02c: site drainage ~~confirms~~ beneath waste pile

9/24/14

Time: 9:35

pH: 4.87

Temp: 5.52°C

Alkal: 7°C.b.u.s

DO: 0.77 ml

Photos: Upstream #025

Downstream #026

Snitches collected: T₁, DM, Alk, & Amois

Location CC02T

9/24/14

CC02T - Current below confluence of Occochee River

Time: 10:00

pH: 5.61

Temp: 5.71°C

Alkal: 430 b.u.s

DO: 8.14 ml

- water is clear, thick creamy white precip on stream bottom
- Snitches collected samples: T₁, DM, Alk, & Amois
- Christner collected 1 box
- Richardson snitches
- photos: Upstream #027
Downstream #028

CC0102

9/24/14

CC0102 - consolidated discharges at Grand Village

Time: 10:35

pH: 3.17

Temp: 11.48

Alkal: 572.5

DO: 7.19 ml

photos

Sanchez collected Alk + Anions, TSM, DM

photos. Upstream: # 029

Downstream: # 030

4" flow -

HA: 0.19

HB: 0.07

Finished sampling @ 11:20

M34

9/24/14

M34 - Mineral Creek at gaging station

Time: 12:10 Sampling Team

Temp: 10.47°C Brian Sanchez

pH: 7.05 so Leslie Christner

Condo: 273 Buxton

DO: 7.85 mg/L

BS used D11 81 to collect surface water for TRM, DM, DOC, and Alk + Anions Analysis

Water is cloudy substrate stained orange

Temps in the upper 70's

Sunny partly cloudy.

LC collected sed for TRM Analysis

2 photos collected on 582852

upstream 31

downstream 32

A-72

9/24/2014

Project / Client

A-72 - Animas River below Silverton

Time: 1430

pH: 7.00 s.u.

Temp: 12.24°C

Cond: 326.0 us/cm Sp. Cond

DO: 7.5 mg/L

Robyn Blackburn collected samples

for TM, DM, Alkalinity, DOC

* Flow Not taken at site, unsafe

Leslie Christner collected sediment

Robyn Blackburn coll. sediment too.

In-situ #2 used for water quality
profile (DO, pH, Cond, Temp)~~Air~~ Air temp ~ mid 70s, breeze
from south, mostly clear skies,
some clouds

* Dead porcupine at site

RB took sample about 30 feet from
west bank, in brownish-colored water
further out into Animas is blue-green
Further to East bank is more green

Photos: 33 u/s, 34 d/s, 35 dead porcupine

A-68

9/24/2014

Project / Client

A-68 - Animas River at 14th Bridge
in Silverton

Time: 1540

pH: 7.71 s.u.

Temp: 13.32°C

Cond: 256.3 us/cm Specific Cond

DO: 7.39 mg/L

B. Sanchez collected water samples for
TM, DM, Alkalinity, DOCLeslie Christner + Robyn Blackburn collected
sedimentWater clear, Sky mostly cloudy, slight
breeze from southwest, Air Temp ~ upper 70's
Brian took grab water samples approx.

20 ft. from South Bank

In-situ #2 used

Picture 036 u/s, 037 d/s

Camera SN: 582852

EIK Park - DS on AR 9/25/14

ANIMAS Downst. of EIK Creek

A-73 B

Time: 10:00 AM

PH: 7.24

Temp: 6.27°C

upper
specific

Cond: ~~12.90~~ PMS 129.0

DO: 8.97 mg/l $\mu\text{S/cm}$

Leslie Christner collected
porewater at 29cm

Brian Sanchez collected water
samples for TM, DM, ALK/ANIONS
& DOC

Sediments: P Schmitt Diehl & Leslie Christner

Photos: #38 - Downstr on AR

#39 - up str, on AR

#40 - B. Sanchez setting
instruments.

Insta #2

Camera SN: S 82852

Sunny, no wind - calm, Temp - upper

Recorded by: P Schmitt Diehl

50's

EIK Creek at AR

9/25/14

A-75 EC

Time: 10:40 AM

PH: 7.25 s.u.

Temp: 6.40°C

Cond: 62.62 $\mu\text{S/cm Sp. Cond.}$

DO: 8.95 mg/L

Photos: #41 - up str on EIK CK

#42 - down str on EIK CK

B. Sanchez collected TM, DM, ALK/ANIONS
and DOC

L. Christner + P Schmitt Diehl collected
sediment, B. Sanchez too

L. Christner collected Porewater at 28cm

Sky is clear, Air temp ~ low 70's, no wind
Water is clear

Animas River ab. 9/25/2014
Elk Creek

A-73 - Animas upstream of Elk Creek

Time 1130

pH: 7.24 s.o.

Temp: 7.90°C

Cond: 317.9 μ S/cm sp. Cond.

DO: 8.61 mg/L

Photos: #43 - upstr. AR
#44 - dnstr. AR

Pore water collected by L. Christner @ 30cm
B. Sanchez collected TM, DM, DOC, AIC/Animas
P. Schmidt, L. Christner collected sediment

Sky is clear, few clouds, slight breeze from
south. Air temp in mid-70's
Water is somewhat cloudy, blueish gray

Location Animas

Date

Project / Client

09/23/14 - A-55 Animas
water quality: 965487

Temp: 5.03°C

pH: 6.71 pH units

O₂: 16.12 mg/L

Cond: 251 μS/cm

moose seen
close to bank

Flow by S. Auer

Sediment collection: B. Forsythe

water collection: S. Auer, B. Forsythe

porewater: D. Wall Sherman/Skippers camera

photos: S. Skipper ESAT camera

upstream 3119

downstream 3120

push point: 7 inches

photos also taken with ESAT camera
S-82853

upstream 169

downstream 148

sediment for analysis will be taken from
bulk sediment

SS

Location Animas

Date

Project / Client

09/23/14 A-60 10:40

Temp - 60's F. Sunny, no breeze

Water clear, substrate clear
rain over weekend, water high + running
rapidly

flow: S. Auer

sediment: B. Forsythe (Bulk)

surface H₂O: (TR, Dm, DOC)

porewater: D. Wall (Dm)

- water quality: 965487

@ 10:40 Temp 6.14°C

pH 3.78 ~~8.40~~ pH unitsO₂ 8.40 mg/L

Cond. 239 μS/cm

recalibrate

- photos taken by S. Skipper w/ ESAT camera
S-82853

upstream 170

downstream 171

- push point: 10 inches

- Temp 7.42°C @ 11:35

pH: 6.48 pH units

O₂: 7.00 mg/L

Cond: 240 μS/cm

Location

Animas

Date

Project / Client

- 9-23-2014 (1235) A58

scribe: B. Forsythe

- Air temp. mid to upper 60's, sunny, clear, w/a 5-10 mph breeze

- Flow: S. Auer
- Sediment: B. Forsythe
- Surface water: B. Forsythe
- Pore water: ~~N/A~~ S. Auer
- push depth = ~~N/A~~ 9 inches

◦ Water Quality (YSI 650 MDS, 02H0706AD)

BKF

- Temp: 7.73°C
- Conductivity: 166 $\mu\text{S/cm}$
- D.O.: 7.78 mg/L
- pH: 7.71

◦ Photos (ESAT Camera: S-82853)

- upstream: 172
- downstream: 173

BKF
9-23-2014

Location

ANIMAS

Date

Project / Client

A-50

09/23/14 1350

scribe - S. Skypor

mostly sunny, breezy 60°F
water clear, substrate clear

Brook trout seen in water by SA

Flow: S. Auer

Sediment B. Forsythe

surface H₂O:

pore water:

push depth: 5.5"

Water quality: 965487 S. Skypor

Temp 12.13°C

Conductivity $\mu\text{S/cm}$

DO 5.34 mg/L

pH 8.56 pH units

} recalibrate

Photos: S. Skypor ESAT Camera
S-82853

upstream: 174

downstream: 175

Redo Water quality - B Forsythe

Temp - 12.9°C

cond - 250 $\mu\text{S/cm}$

DO - 4.22 mg/L

pH - 6.64

Location: Animas

Date:

Project / Client:

09/23/14 A-61 SS, BF, SA
 - Trout observed taking fly
 low 70's, breezy, mostly clear
 water clear, substrate clear
 Taken by red house w/ green trim

- Drip 1 taken
- flow by: Sauer
- Sediment collected: B. Forsythe
- pore water collected: B. Forsythe (DM)
- Surface water collected: SA + BF (DM, DOC, TE)
^{OK}
 or SA + BF

Water quality taken by S. Stripes

Temp 11.94°C #965487

* pH 7.37 (drifted for 5.19, 20min)

cond 243 $\mu\text{S}/\text{cm}$

* DO: 3.20 mg/L

photos taken by S. Stripes w/ ESAT

camera 582853

upstream: 176

downstream: 177

* American Dipper heard + seen
 Pushpoint depth 6/8"

Location:

Animas

Date:

Project / Client:

9-23-2014 () A64
 SS, BF, SA

- Flow: SA
- Sediment: BF
- Surface Water: SA
- Pore water:
- ^{point} Depth:

- Water Quality

◦ Temp: 11.52°C

◦ pH: 6.26 s.u. (Faulty pH probe)

◦ DO: 6.94 mg/L

◦ Conductivity 239 $\mu\text{S}/\text{cm}$

- Photos taken by BF w/ ESAT 582853

◦ upstream: 178

◦ downstream: 179

Sunny, low 70's, ¹⁸⁷ to very light breeze

Location Animas

Date

Project / Client

09/24/14 Purple Cliffs 11:15
 upper 70s, sunny, slight breeze
 river high, fast + muddy
 Sediment: D. Wall
 Surface H₂O: S. Auer (DM, TR, DOC)
 porewater: D. Wall (DM)
 Scribe + water quality: S. Skipper

water quality: #3

Temp: 12.09°C

pH: 7.76 pH units

Cond: 278.6 μ S/cmO₂: 7.76 mg/L

Photos taken: S. Skipper w/ESAT camera
 S82853

upstream: 180

downstream: 181

porewater depth: 11"

No flows

*Note: heavy rainfall previous weekend
 lots of erosion into rim apparent - may
 be likely local

Location Animas

Date

Project / Client

09/24/14 Purple Cliffs, cont.
 Sediments collected are likely
 local

Coordinates: GPS unit #1
 Dalla beta park

N 37.23659628

W 107.86820728

09/24/14 Lightner 12:05
 Sample location just over
 Bridge on 160 West
 Coordinates - GPS Unit #1
 N 37.27076267
 W 107.88680122

upper 70s sunny, slight breeze
 river high, fast, muddy
 Significant rainfall previous
 weekend

Sediment: D. Wall

Surface H₂O: S. Auer (DM, TR, DOC)

Porewater: D. Wall (DM)

Scribe + water quality: S. Skipper →

Location Animas

Sight on 09/24/14, Cont.

Water quality: Unit #3

Temp: 12.59°C

pH 7.67 pH units

Cond 282.2

O₂ 8.74 mg/L

Photos taken: S. Skipper w/ESAT camera
S82853

upstream: 182

downstream: 183

No flows.

Sediments may be local - signs of erosion ~~also~~ along river.

Entrance to sampling site has stairs of stone - across stream of ~~approx~~ apartments and upstream of the bridge full of big enough for several vehicles porewater depth 16"

Location Animas

Project / Client

James Ranch 09/24/14 1415
samplers: S. Skipper, S. Auer

"Downstream" end of James Ranch at one of Chester Anderson's macroinvertebrate sampling stations. River is braided w/ gravel bars. Owner of ranch reports some changes in channel in the last year due to high flows, down stream gravel mining and neighbors across river armoring banks. River is most clear (no brownish color as was seen in lower Durango stations today.

Temps in mid to high 70's, clear, breezy. Significant rainfall in area (2" according to ranch owner) over previous weekend.

Sediment: S. Auer

surface H₂O: S. Auer / S. Skipper

porewater: S. Auer

scribe + water quality: S. Skipper

No flows

Location Animas

Date _____

Project / Client _____

James Ranch, cont, 09/24/14

water quality: unit #3

Temp: 12.07 °C

pH: 7.65 pH units

Cond: 212.9 μ S/cmO₂: 8.48 mg/L

pave water depth: 4.5"

photos taken by S. Skipper w/ESAT camera.
S82853

upstream: 184, 185

downstream: 186, 187

D. Wall was with samplers and all
3 (SS, DW, SA) met with land owner.Sampling site end of road downstream
on James Ranch

Coordinates (S. Auer):

N 37.42316802

W 107.8220330

Animas

A-67 (Swansea) 08:55 09/25/14

Samples: S. Skipper, D. Wall, S. Griffin

Creek is clear. Temp - 40's; clear,
no wind. Water is clear, substrate
clear. Flow taken between 2-track
and river. Water Quality +
Samples above 2-track (so not to
be influenced by road bed material)

Flow: D. Wall + S. Griffin

Surface H₂O: S. Skipper

Water Quality: S. Skipper

Temp: 4.21 °C

Unit #3

pH: 6.98 pH units

Cond: 133.6 μ S/cmO₂: 9.23 mg/L

Flume required - can't use flowmeter

photos: skipper camera

upstream: 3166

downstream: 3167, 3168

A6b

Animas

09/25/14 1000

A6b - @ Lakawanna Bridge

40°F's; clear, no breeze.

Water is obviously receding, recent
wetted rocks + substrate exposed
along shore + shoreline gravel beds.

Water is very clear. Rocks have
very light staining on exposed
gravel bars along shorelines.

Flows: S. Griffin + D. Wall

Surface water:

Porewater:

Sediment:

Water quality + scribe: S. Skipper Unit #3

Temp: 6.15°C

pH: 6.99 pH units

Cond: 267.5 µS/cm

O₂: 8.71 mg/L

Photos taken by S. Skipper w/ Skipper
up stream: 3169 Camera →

down stream: 3170

Porewater depth: 12" →

3196 - 3206

Staining on abble/
gravel

Animas

A6b, cont. 09/25/14

Flow redone - stored as

A66b in flowmeter

→ No flow taken

Surface water collected using interval
across stream method (10 pts using
tape measure).

A65 09/25/14 11:50

Sampling point @ pull off by old
power slab on and snowboard shop,
by clump of spruce.

Samples: S. Skipper, D. Wall, S. Griffin

Water is clear, temp in low 70's,
clear, no breeze

Samples collected:

- surface water using interval
method (10 pts across stream)
- Sediment: SG
- porewater: DW
- Water quality + scribe: SS →

Animas

A65 - 09/25/14 11:50
cont.

water quality: unit #3

Temp: 8.90°C

pH: 7.01 pH units

Cond: 266.0 μ S/cm

O₂: 8.17 mg/L

orewater depth: ~~A3/4~~^{6r} 10.5"

No flows at this site - flowmeter
not operational.

Photos taken by S. Skipper w/ skipper camera
up stream: 3214
down stream: 3215

32nd Bridge 09/25/14 1350

Temp 14.68°C

pH 7.15

Cond 333.1

O₂ 7.96

Water Quality Unit #3

Pore water + sediment collected
by DW. Water quality +
water chemistry collected by
SG

1/4 mile downstream on Animas
from 32nd St bridge.

Sunny, hot, clear skies
under clear, light breeze

pictures taken by DW / skipper
camera

Animas

B Bridge

at 25/14 1635 - Taken at ^{Durango} Riverside
RV & Resort
samplers: D. Wall, S. Griffith, S. Skipper

Temp 12.33°C

pH 7.58 pH units

Cond 215.5 $\mu\text{S}/\text{cm}$

Or 8.31 mg/L

pore water

depth: 10"

sediment: DW/SG

pore water: DW

surface water: SG

water quality - Unit #3, display
acting up

photos taken: S. Skipper w/ Skipper
Camera

upstream: 3220

downstream: 3221

Upper 2's, partly cloudy, thunder
still (no wind). Water slightly
murky.

Appendix B
Flow Summary Sheets

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A58.WAD
Start Date and Time 2014/05/06 10:30:37

Site Details

Site Name
Operator(s) KB

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	2.2%
Velocity	1.0%	7.8%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.2%	-
Overall	3.2%	8.2%

Summary

Averaging Int. 40 # Stations 23
Start Edge REW Total Width 6.097
Mean SNR 41.2 dB Total Area 4.114
Mean Temp 38.63 °F Mean Depth 0.675
Disch. Equation Mid-Section Mean Velocity 2.4539
Total Discharge 10.0943

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:30	3.00	None	0.600	0.0	0.0	0.0000	1.00	1.1568	0.030	0.0347	0.3
1	10:30	3.10	0.6	0.600	0.6	0.240	1.1568	1.00	1.1568	0.120	0.1388	1.4
2	<i>10:32</i>	<i>3.40</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>0.5528</i>	<i>1.00</i>	<i>0.5528</i>	<i>0.210</i>	<i>0.1161</i>	<i>1.1</i>
3	10:34	3.70	0.6	0.700	0.6	0.280	0.4245	1.00	0.4245	0.210	0.0891	0.9
4	10:36	4.00	0.6	0.600	0.6	0.240	2.0705	1.00	2.0705	0.180	0.3726	3.7
5	10:37	4.30	0.6	0.600	0.6	0.240	2.1257	1.00	2.1257	0.180	0.3825	3.8
6	10:38	4.60	0.6	0.800	0.6	0.320	2.9544	1.00	2.9544	0.240	0.7086	7.0
7	10:40	4.90	0.6	0.800	0.6	0.320	4.0092	1.00	4.0092	0.240	0.9616	9.5
8	10:41	5.20	0.6	0.900	0.6	0.360	3.9938	1.00	3.9938	0.180	0.7199	7.1
9	11:03	5.30	0.6	0.700	0.6	0.280	4.8609	1.00	4.8609	0.105	0.5103	5.1
10	<i>10:42</i>	<i>5.50</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>2.6253</i>	<i>1.00</i>	<i>2.6253</i>	<i>0.200</i>	<i>0.5239</i>	<i>5.2</i>
11	<i>10:45</i>	<i>5.80</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>0.1880</i>	<i>1.00</i>	<i>0.1880</i>	<i>0.240</i>	<i>0.0451</i>	<i>0.4</i>
12	10:47	6.10	0.6	0.700	0.6	0.280	3.9324	1.00	3.9324	0.210	0.8256	8.2
13	10:48	6.40	0.6	0.700	0.6	0.280	3.4199	1.00	3.4199	0.210	0.7180	7.1
14	10:49	6.70	0.6	0.700	0.6	0.280	3.0997	1.00	3.0997	0.210	0.6508	6.4
15	10:51	7.00	0.6	0.800	0.6	0.320	3.4931	1.00	3.4931	0.240	0.8378	8.3
16	10:52	7.30	0.6	0.700	0.6	0.280	2.9272	1.00	2.9272	0.210	0.6146	6.1
17	10:53	7.60	0.6	0.700	0.6	0.280	3.0157	1.00	3.0157	0.210	0.6331	6.3
18	<i>10:54</i>	<i>7.90</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>2.6086</i>	<i>1.00</i>	<i>2.6086</i>	<i>0.180</i>	<i>0.4694</i>	<i>4.7</i>
19	10:55	8.20	0.6	0.600	0.6	0.240	3.1677	1.00	3.1677	0.180	0.5700	5.6
20	10:56	8.50	0.6	0.600	0.6	0.240	0.9560	1.00	0.9560	0.180	0.1720	1.7
21	<i>11:00</i>	<i>8.80</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>-0.0023</i>	<i>1.00</i>	<i>-0.0023</i>	<i>0.150</i>	<i>-0.0003</i>	<i>0.0</i>
22	11:00	9.10	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

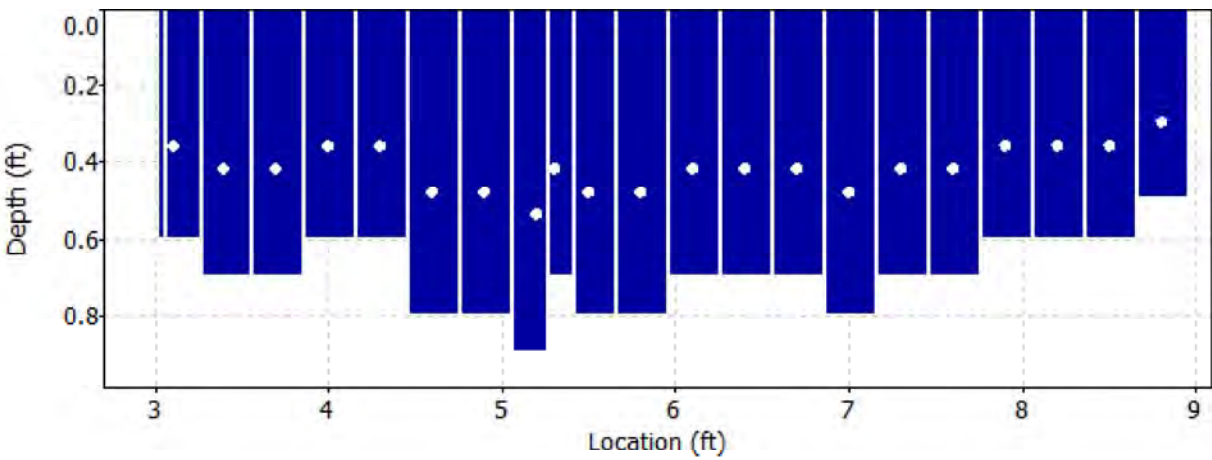
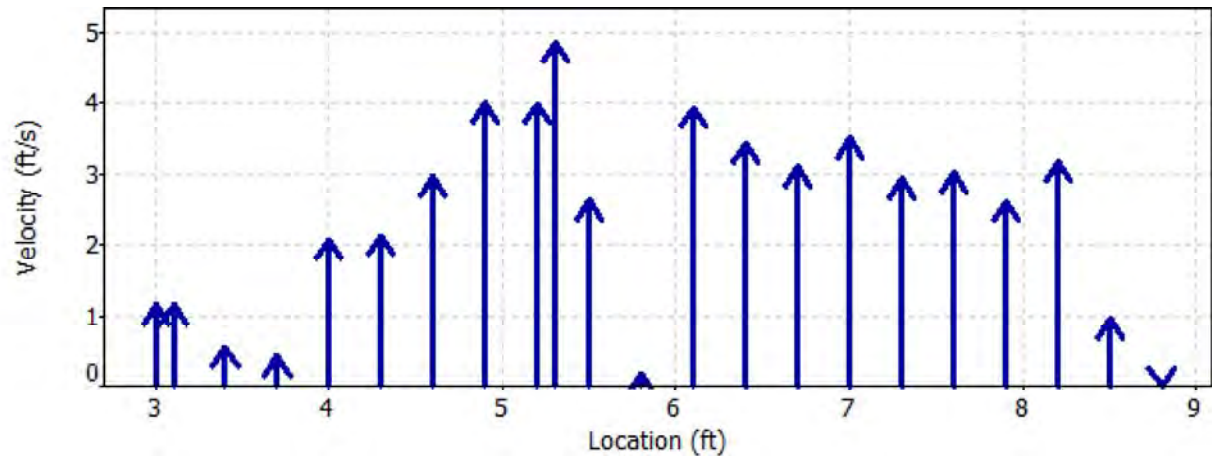
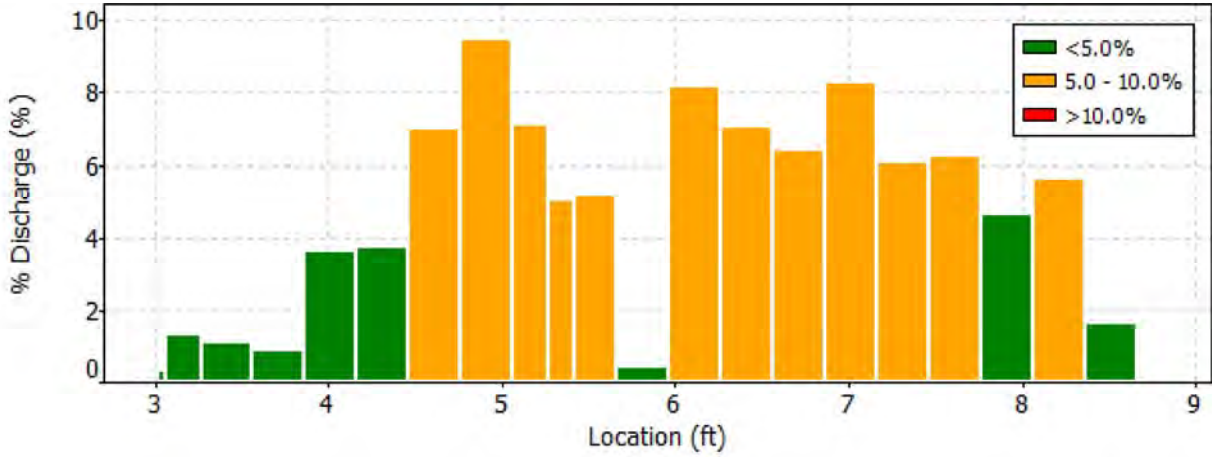
Date Generated: Mon Jan 19 2015

File Information

File Name: A58.WAD
 Start Date and Time: 2014/05/06 10:30:37

Site Details

Site Name:
 Operator(s): KB



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A58.WAD
Start Date and Time 2014/05/06 10:30:37

Site Details

Site Name
Operator(s) KB

Quality Control

St	Loc	%Dep	Message
2	3.40	0.6	High number of spikes: 5
10	5.50	0.6	High angle: 27
		0.6	High standard error: 0.184
11	5.80	0.6	High angle: -27
		0.6	High differences in beam SNR: 31.8,43.4
		0.6	High SNR variation during measurement: 5.2,3.0
		0.6	High standard error: 0.134
		0.6	Boundary QC is Fair; possible boundary interference
18	7.90	0.6	High standard error: 0.135
21	8.80	0.6	SNR (22.1) is different from typical SNR (41.2)
		0.6	High SNR variation during measurement: 3.4,6.0
		0.6	Boundary QC is Fair; possible boundary interference

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

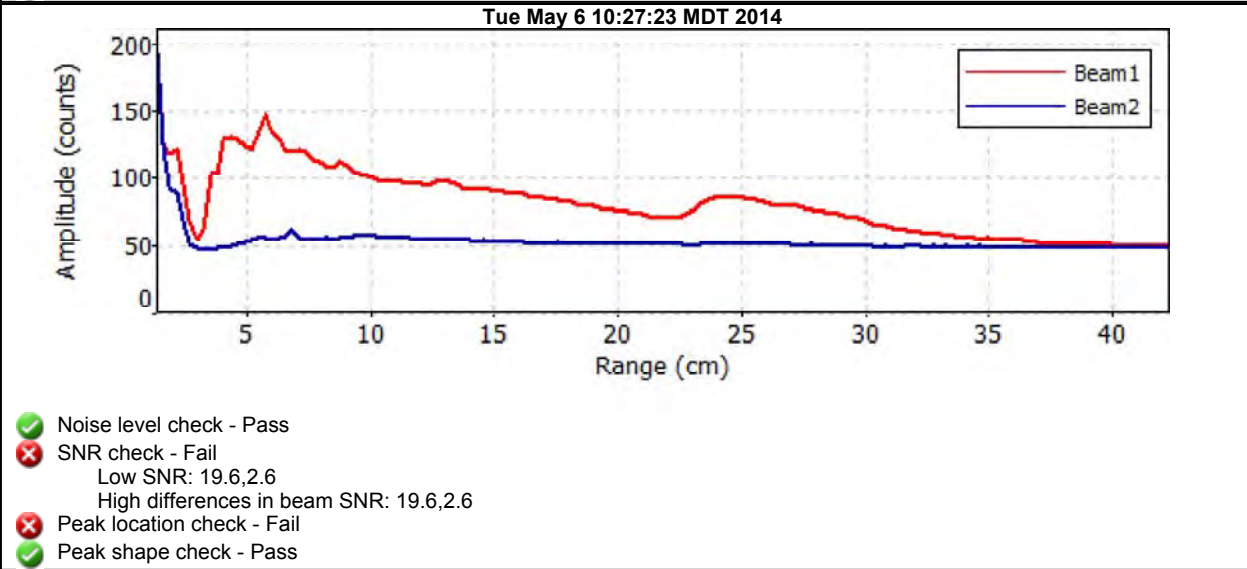
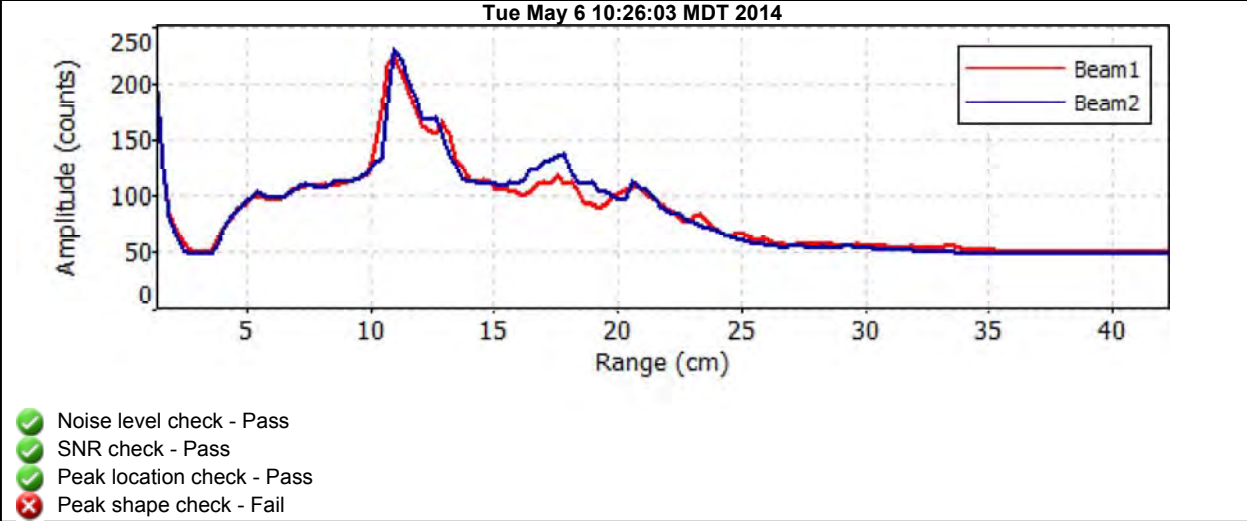
File Information

File Name A58.WAD
 Start Date and Time 2014/05/06 10:30:37

Site Details

Site Name
 Operator(s) KB

Automatic Quality Control Test (BeamCheck)



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A67A.WAD
Start Date and Time 2014/05/06 13:24:27

Site Details

Site Name
Operator(s) KB

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	1.6%
Velocity	0.6%	1.6%
Width	0.1%	0.1%
Method	2.1%	-
# Stations	3.0%	-
Overall	3.8%	2.5%

Summary

Averaging Int. 40 # Stations 17
Start Edge REW Total Width 1.601
Mean SNR 40.8 dB Total Area 0.430
Mean Temp 39.00 °F Mean Depth 0.269
Disch. Equation Mid-Section Mean Velocity 2.6344
Total Discharge 1.1332

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	13:24	1.50	None	0.200	0.0	0.0	0.0000	1.00	2.7520	0.010	0.0276	2.4
1	13:24	1.60	0.6	0.200	0.6	0.080	2.7520	1.00	2.7520	0.020	0.0551	4.9
2	13:25	1.70	0.6	0.200	0.6	0.080	2.9318	1.00	2.9318	0.020	0.0587	5.2
3	13:26	1.80	0.6	0.200	0.6	0.080	3.3035	1.00	3.3035	0.020	0.0662	5.8
4	13:27	1.90	0.6	0.300	0.6	0.120	3.3698	1.00	3.3698	0.030	0.1011	8.9
5	13:28	2.00	0.6	0.300	0.6	0.120	3.3320	1.00	3.3320	0.030	0.1000	8.8
6	13:29	2.10	0.6	0.300	0.6	0.120	3.6837	1.00	3.6837	0.030	0.1105	9.8
7	13:30	2.20	0.6	0.300	0.6	0.120	3.4948	1.00	3.4948	0.030	0.1049	9.3
8	<i>13:31</i>	<i>2.30</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>3.3363</i>	<i>1.00</i>	<i>3.3363</i>	<i>0.030</i>	<i>0.1001</i>	<i>8.8</i>
9	13:32	2.40	0.6	0.300	0.6	0.120	3.4324	1.00	3.4324	0.030	0.1030	9.1
10	13:33	2.50	0.6	0.300	0.6	0.120	3.1450	1.00	3.1450	0.030	0.0944	8.3
11	<i>13:34</i>	<i>2.60</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>2.5502</i>	<i>1.00</i>	<i>2.5502</i>	<i>0.030</i>	<i>0.0765</i>	<i>6.8</i>
12	13:35	2.70	0.6	0.300	0.6	0.120	2.3825	1.00	2.3825	0.030	0.0715	6.3
13	<i>13:36</i>	<i>2.80</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.6060</i>	<i>1.00</i>	<i>1.6060</i>	<i>0.030</i>	<i>0.0482</i>	<i>4.3</i>
14	<i>13:37</i>	<i>2.90</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.4354</i>	<i>1.00</i>	<i>0.4354</i>	<i>0.030</i>	<i>0.0131</i>	<i>1.2</i>
15	<i>13:38</i>	<i>3.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0817</i>	<i>1.00</i>	<i>0.0817</i>	<i>0.030</i>	<i>0.0025</i>	<i>0.2</i>
16	13:38	3.10	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

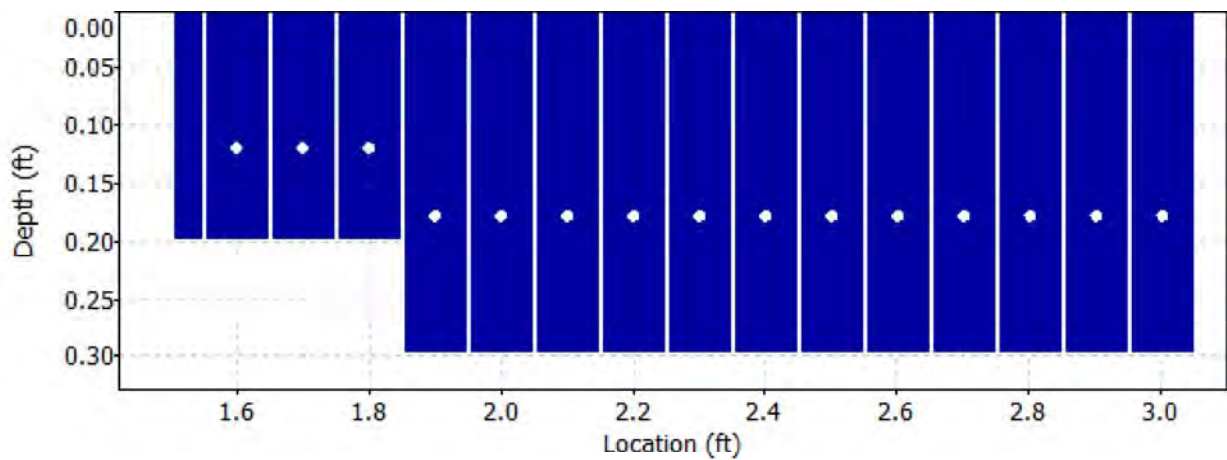
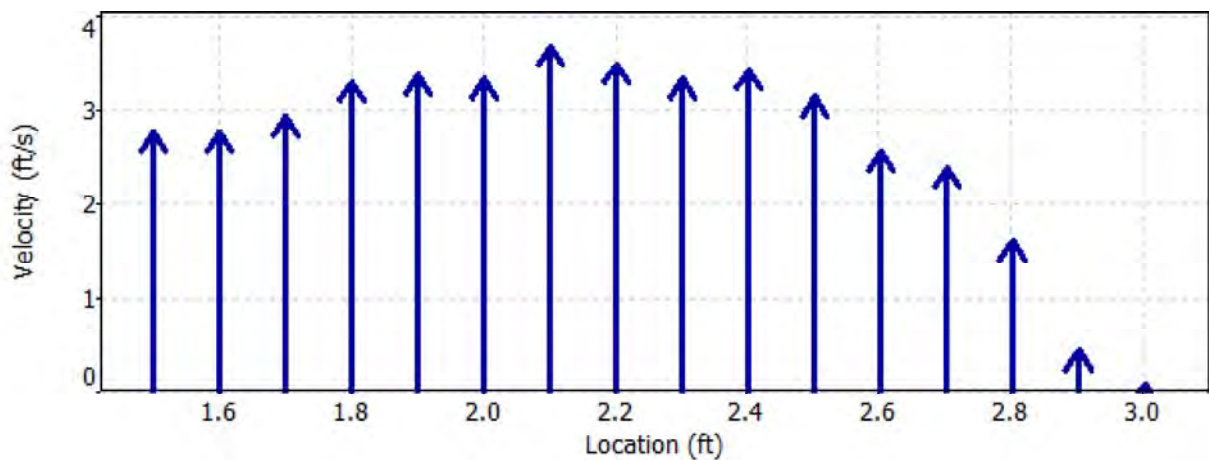
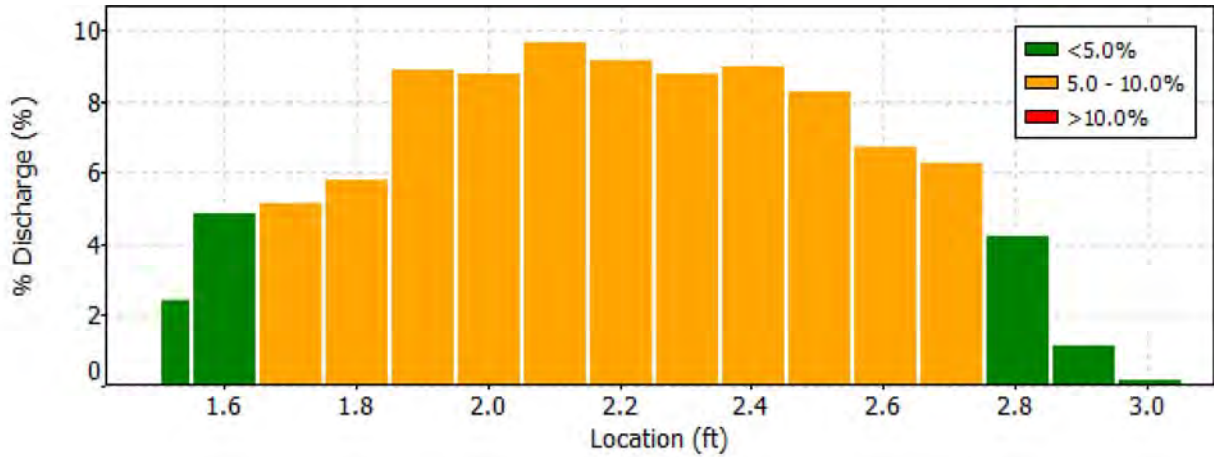
Date Generated: Mon Jan 19 2015

File Information

File Name: A67A.WAD
 Start Date and Time: 2014/05/06 13:24:27

Site Details

Site Name:
 Operator(s): KB



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A67A.WAD
Start Date and Time 2014/05/06 13:24:27

Site Details

Site Name
Operator(s) KB

Quality Control

St	Loc	%Dep	Message
8	2.30	0.6	High SNR variation during measurement: 1.3,6.0
11	2.60	0.6	Boundary QC is Good; possible boundary interference
13	2.80	0.6	High SNR variation during measurement: 2.6,6.5
14	2.90	0.6	SNR (23.6) is different from typical SNR (40.8)
		0.6	High SNR variation during measurement: 8.2,5.2
		0.6	High standard error: 0.135
15	3.00	0.6	High SNR variation during measurement: 9.9,4.7

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

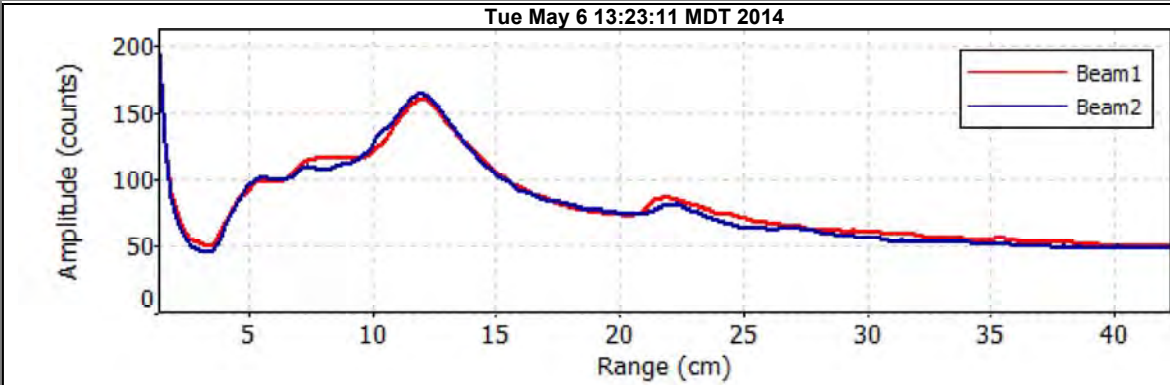
File Information

File Name A67A.WAD
Start Date and Time 2014/05/06 13:24:27

Site Details

Site Name
Operator(s) KB

Automatic Quality Control Test (BeamCheck)



- ✔ Noise level check - Pass
- ✔ SNR check - Pass
- ✔ Peak location check - Pass
- ✔ Peak shape check - Pass

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC16B.WAD
Start Date and Time 2014/05/07 15:20:18

Site Details

Site Name CC16B
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.5%	2.1%
Velocity	1.6%	5.9%
Width	0.2%	0.2%
Method	2.3%	-
# Stations	3.1%	-
Overall	4.3%	6.3%

Summary

Averaging Int.	40	# Stations	16
Start Edge	LEW	Total Width	3.301
Mean SNR	40.1 dB	Total Area	1.134
Mean Temp	37.39 °F	Mean Depth	0.344
Disch. Equation	Mid-Section	Mean Velocity	1.4450
		Total Discharge	1.6388

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	15:20	10.00	None	0.200	0.0	0.0	0.0000	1.00	3.6014	0.015	0.0540	3.3
1	15:20	9.85	0.6	0.350	0.6	0.140	3.6014	1.00	3.6014	0.052	0.1890	11.5
2	15:21	9.70	0.6	0.350	0.6	0.140	2.8842	1.00	2.8842	0.052	0.1514	9.2
3	15:22	9.55	0.6	0.350	0.6	0.140	1.6932	1.00	1.6932	0.052	0.0889	5.4
4	15:23	9.40	0.6	0.400	0.6	0.160	0.6293	1.00	0.6293	0.060	0.0377	2.3
5	15:24	9.25	0.6	0.400	0.6	0.160	1.0174	1.00	1.0174	0.060	0.0610	3.7
6	15:25	9.10	0.6	0.400	0.6	0.160	0.3376	1.00	0.3376	0.060	0.0202	1.2
7	15:26	8.95	0.6	0.450	0.6	0.180	0.8940	1.00	0.8940	0.067	0.0603	3.7
8	15:27	8.80	0.6	0.450	0.6	0.180	1.2992	1.00	1.2992	0.067	0.0877	5.4
9	15:28	8.65	0.6	0.400	0.6	0.160	1.2201	1.00	1.2201	0.060	0.0732	4.5
10	15:29	8.50	0.6	0.300	0.6	0.120	1.7067	1.00	1.7067	0.045	0.0767	4.7
11	15:30	8.35	0.6	0.350	0.6	0.140	2.0817	1.00	2.0817	0.052	0.1093	6.7
12	15:32	8.20	0.6	0.350	0.6	0.140	2.0200	1.00	2.0200	0.114	0.2300	14.0
13	15:34	7.70	0.6	0.350	0.6	0.140	1.6864	1.00	1.6864	0.175	0.2956	18.0
14	15:35	7.20	0.6	0.300	0.6	0.120	0.5180	1.00	0.5180	0.150	0.0778	4.7
15	15:35	6.70	None	0.200	0.0	0.0	0.0000	1.00	0.5180	0.050	0.0260	1.6

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

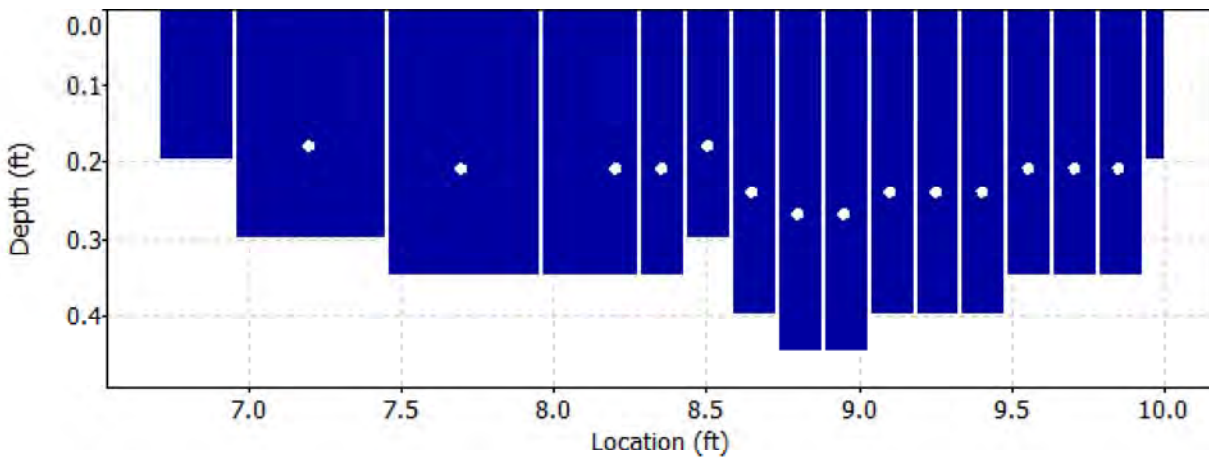
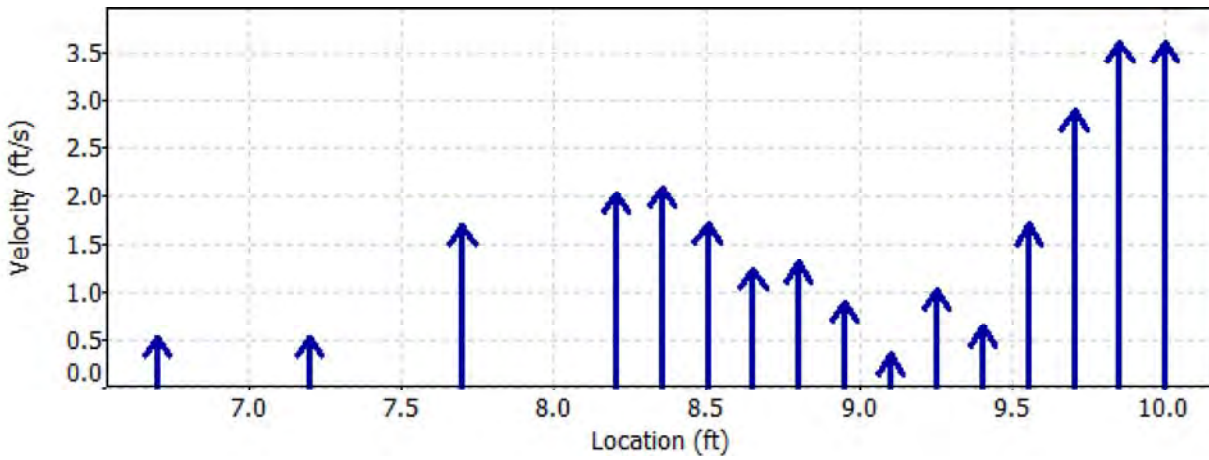
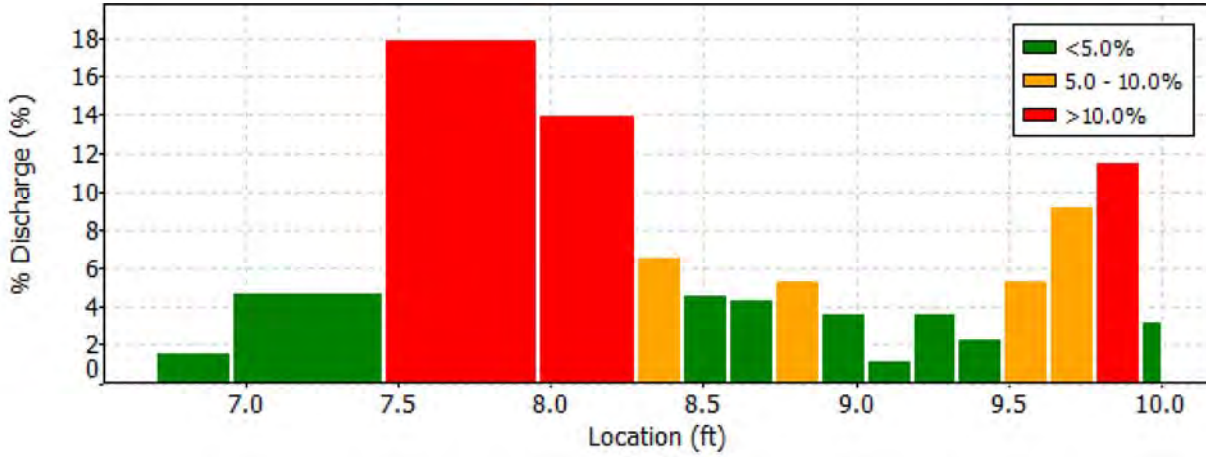
Date Generated: Mon Jan 19 2015

File Information

File Name CC16B.WAD
 Start Date and Time 2014/05/07 15:20:18

Site Details

Site Name CC16B
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC16B.WAD
Start Date and Time 2014/05/07 15:20:18

Site Details

Site Name CC16B
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
3	9.55	0.6	High angle: 31
4	9.40	0.6	High angle: 41
5	9.25	0.6	High standard error: 0.117
10	8.50	0.6	High standard error: 0.109
11	8.35	0.6	High number of spikes: 5

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC03.WAD
Start Date and Time 2014/05/07 09:42:43

Site Details

Site Name CC03
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	1.6%
Velocity	1.4%	4.2%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.3%	-
Overall	3.5%	4.6%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 7.999
Mean SNR 45.2 dB Total Area 5.389
Mean Temp 34.81 °F Mean Depth 0.674
Disch. Equation Mid-Section Mean Velocity 1.9303
Total Discharge 10.4020

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:42	4.60	None	0.100	0.0	0.0	0.0000	1.00	-0.1496	0.020	-0.0030	0.0
<i>1</i>	<i>09:42</i>	<i>5.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.1496</i>	<i>1.00</i>	<i>-0.1496</i>	<i>0.120</i>	<i>-0.0179</i>	<i>-0.2</i>
<i>2</i>	<i>09:43</i>	<i>5.40</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>-0.2474</i>	<i>1.00</i>	<i>-0.2474</i>	<i>0.160</i>	<i>-0.0396</i>	<i>-0.4</i>
3	09:44	5.80	0.6	0.400	0.6	0.160	2.0623	1.00	2.0623	0.160	0.3299	3.2
4	09:46	6.20	0.6	0.500	0.6	0.200	2.4797	1.00	2.4797	0.200	0.4959	4.8
<i>5</i>	<i>09:47</i>	<i>6.60</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>2.0548</i>	<i>1.00</i>	<i>2.0548</i>	<i>0.240</i>	<i>0.4931</i>	<i>4.7</i>
6	09:48	7.00	0.6	0.550	0.6	0.220	1.4275	1.00	1.4275	0.220	0.3139	3.0
7	09:49	7.40	0.6	0.650	0.6	0.260	0.8593	1.00	0.8593	0.260	0.2233	2.1
8	09:50	7.80	0.6	0.700	0.6	0.280	1.1450	1.00	1.1450	0.280	0.3206	3.1
<i>9</i>	<i>09:51</i>	<i>8.20</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>1.5738</i>	<i>1.00</i>	<i>1.5738</i>	<i>0.320</i>	<i>0.5035</i>	<i>4.8</i>
10	09:52	8.60	0.6	0.900	0.6	0.360	1.6768	1.00	1.6768	0.360	0.6035	5.8
<i>11</i>	<i>09:53</i>	<i>9.00</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.0295</i>	<i>1.00</i>	<i>2.0295</i>	<i>0.360</i>	<i>0.7305</i>	<i>7.0</i>
12	09:54	9.40	0.6	0.900	0.6	0.360	2.3442	1.00	2.3442	0.360	0.8437	8.1
<i>13</i>	<i>09:55</i>	<i>9.80</i>	<i>0.6</i>	<i>0.950</i>	<i>0.6</i>	<i>0.380</i>	<i>2.3419</i>	<i>1.00</i>	<i>2.3419</i>	<i>0.380</i>	<i>0.8899</i>	<i>8.6</i>
14	09:56	10.20	0.6	0.800	0.6	0.320	2.7372	1.00	2.7372	0.320	0.8756	8.4
15	09:57	10.60	0.6	0.900	0.6	0.360	2.9698	1.00	2.9698	0.270	0.8028	7.7
16	10:03	10.80	0.6	0.800	0.6	0.320	2.9459	1.00	2.9459	0.160	0.4712	4.5
17	09:58	11.00	0.6	0.800	0.6	0.320	3.2828	1.00	3.2828	0.240	0.7865	7.6
18	09:59	11.40	0.6	0.750	0.6	0.300	2.5564	1.00	2.5564	0.300	0.7668	7.4
19	10:00	11.80	0.6	0.800	0.6	0.320	2.2339	1.00	2.2339	0.320	0.7146	6.9
20	10:01	12.20	0.6	0.700	0.6	0.280	0.8743	1.00	0.8743	0.280	0.2448	2.4
21	10:01	12.60	None	0.300	0.0	0.0	0.0000	1.00	0.8743	0.060	0.0524	0.5

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

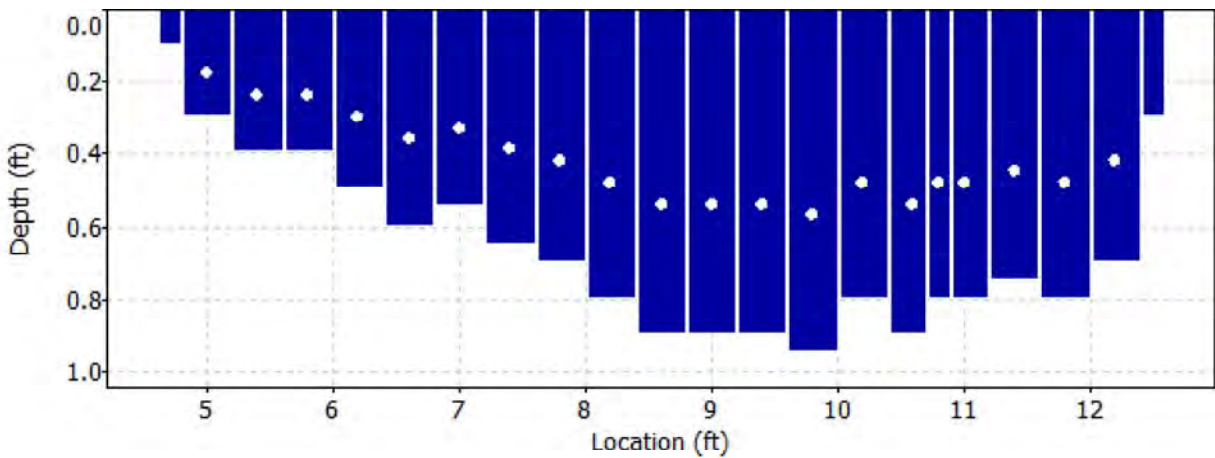
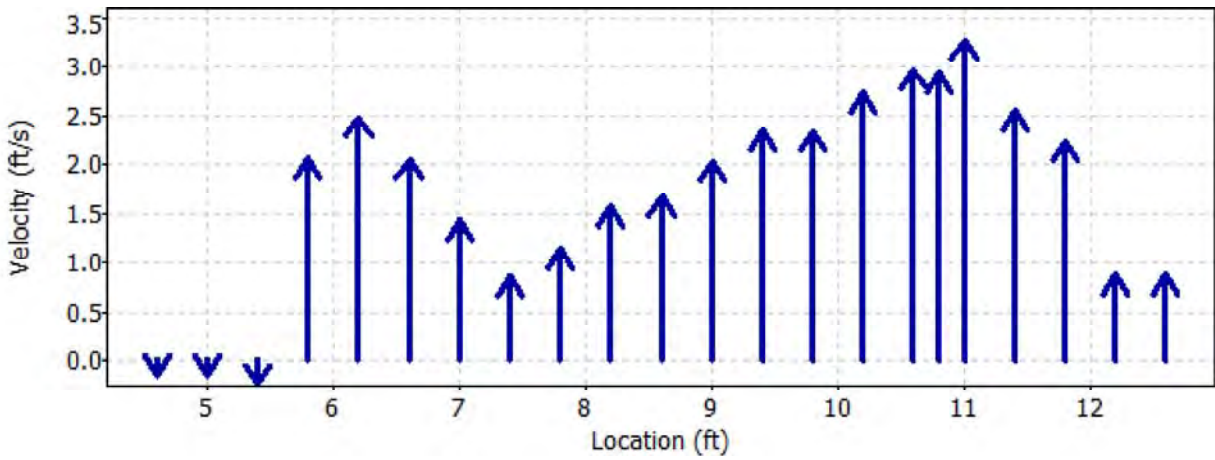
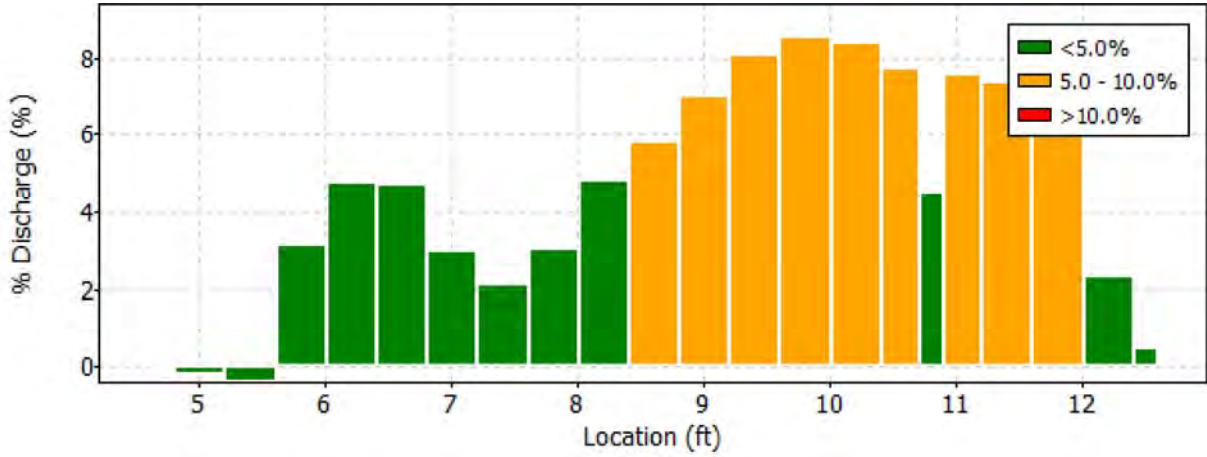
Date Generated: Mon Jan 19 2015

File Information

File Name CC03.WAD
 Start Date and Time 2014/05/07 09:42:43

Site Details

Site Name CC03
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC03.WAD
Start Date and Time 2014/05/07 09:42:43

Site Details

Site Name CC03
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	5.00	0.6	High angle: -137
2	5.40	0.6	High angle: -156
5	6.60	0.6	High standard error: 0.148
9	8.20	0.6	High standard error: 0.162
11	9.00	0.6	High standard error: 0.146
13	9.80	0.6	High standard error: 0.137

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC03B.WAD
Start Date and Time 2014/05/07 12:39:21

Site Details

Site Name CC03B
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.3%	0.8%
Velocity	1.1%	1.8%
Width	0.1%	0.1%
Method	2.0%	-
# Stations	3.0%	-
Overall	3.9%	2.2%

Summary

Averaging Int.	40	# Stations	17
Start Edge	REW	Total Width	4.000
Mean SNR	45.0 dB	Total Area	3.500
Mean Temp	35.18 °F	Mean Depth	0.875
Disch. Equation	Mid-Section	Mean Velocity	2.2114
		Total Discharge	7.7396

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:39	4.60	None	0.600	0.0	0.0	0.0000	1.00	0.5689	0.075	0.0427	0.6
1	12:39	4.85	0.6	0.700	0.6	0.280	0.5689	1.00	0.5689	0.175	0.0996	1.3
2	12:40	5.10	0.6	0.800	0.6	0.320	1.5925	1.00	1.5925	0.200	0.3185	4.1
3	<i>12:42</i>	<i>5.35</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>1.8081</i>	<i>1.00</i>	<i>1.8081</i>	<i>0.200</i>	<i>0.3616</i>	<i>4.7</i>
4	12:43	5.60	0.6	0.800	0.6	0.320	1.8898	1.00	1.8898	0.200	0.3779	4.9
5	12:44	5.85	0.6	0.800	0.6	0.320	2.0098	1.00	2.0098	0.200	0.4019	5.2
6	12:45	6.10	0.6	0.900	0.6	0.360	1.8835	1.00	1.8835	0.225	0.4238	5.5
7	12:46	6.35	0.6	1.000	0.6	0.400	2.3520	1.00	2.3520	0.250	0.5880	7.6
8	12:47	6.60	0.6	1.000	0.6	0.400	2.6237	1.00	2.6237	0.250	0.6559	8.5
9	12:48	6.85	0.6	0.950	0.6	0.380	2.4603	1.00	2.4603	0.238	0.5844	7.6
10	12:49	7.10	0.6	1.000	0.6	0.400	2.8835	1.00	2.8835	0.250	0.7209	9.3
11	12:50	7.35	0.6	0.950	0.6	0.380	3.1339	1.00	3.1339	0.238	0.7444	9.6
12	12:51	7.60	0.6	0.900	0.6	0.360	2.9587	1.00	2.9587	0.225	0.6657	8.6
13	12:52	7.85	0.6	0.900	0.6	0.360	2.6804	1.00	2.6804	0.225	0.6031	7.8
14	12:53	8.10	0.6	0.900	0.6	0.360	2.4797	1.00	2.4797	0.225	0.5579	7.2
15	12:54	8.35	0.6	0.850	0.6	0.340	1.8264	1.00	1.8264	0.213	0.3881	5.0
16	12:54	8.60	None	0.900	0.0	0.0	0.0000	1.00	1.8264	0.112	0.2055	2.7

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

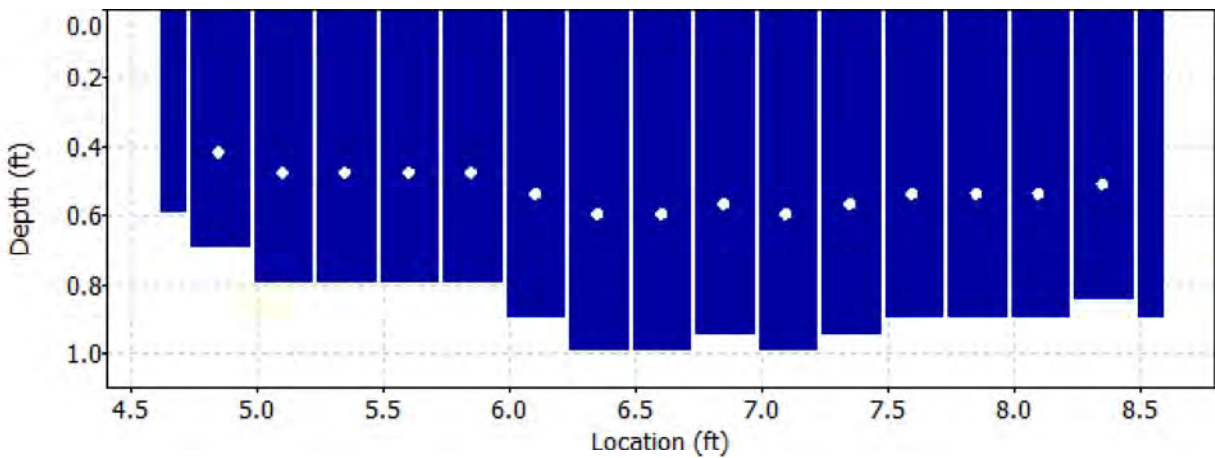
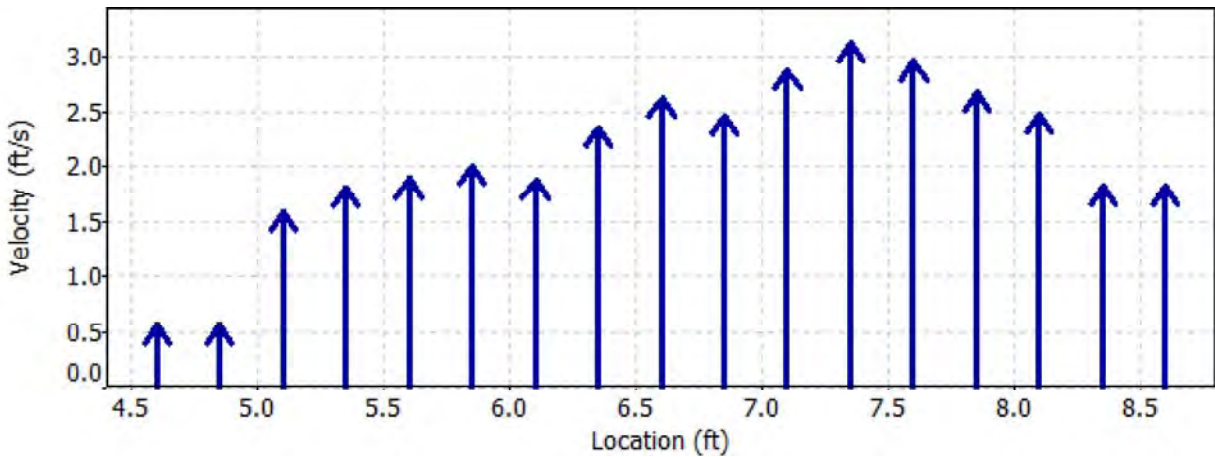
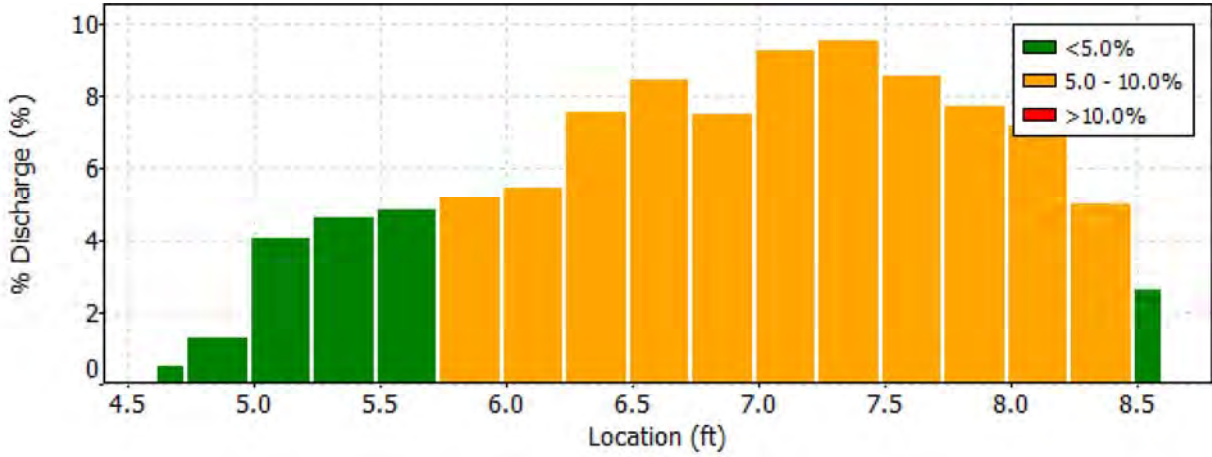
Date Generated: Mon Jan 19 2015

File Information

File Name: CC03B.WAD
 Start Date and Time: 2014/05/07 12:39:21

Site Details

Site Name: CC03B
 Operator(s): LC



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC03B.WAD
Start Date and Time 2014/05/07 12:39:21

Site Details

Site Name CC03B
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
3	5.35	0.6	High number of spikes: 5

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC03D.WAD
Start Date and Time 2014/05/07 11:19:17

Site Details

Site Name CC03D
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	2.2%
Velocity	1.5%	9.8%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.4%	-
Overall	3.6%	10.1%

Summary

Averaging Int.	40	# Stations	21
Start Edge	REW	Total Width	2.699
Mean SNR	40.8 dB	Total Area	0.799
Mean Temp	42.34 °F	Mean Depth	0.296
Disch. Equation	Mid-Section	Mean Velocity	0.9654
		Total Discharge	0.7709

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:19	6.90	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	11:19	6.75	0.6	0.200	0.6	0.080	1.1991	1.00	1.1991	0.030	0.0360	4.7
2	11:20	6.60	0.6	0.200	0.6	0.080	1.2595	1.00	1.2595	0.030	0.0378	4.9
3	11:21	6.45	0.6	0.200	0.6	0.080	1.3156	1.00	1.3156	0.030	0.0395	5.1
4	<i>11:22</i>	<i>6.30</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>1.5663</i>	<i>1.00</i>	<i>1.5663</i>	<i>0.030</i>	<i>0.0470</i>	<i>6.1</i>
5	11:23	6.15	0.6	0.200	0.6	0.080	1.3743	1.00	1.3743	0.030	0.0412	5.3
6	<i>11:26</i>	<i>6.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.2772</i>	<i>1.00</i>	<i>1.2772</i>	<i>0.045</i>	<i>0.0574</i>	<i>7.4</i>
7	<i>11:31</i>	<i>5.85</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>1.3169</i>	<i>1.00</i>	<i>1.3169</i>	<i>0.052</i>	<i>0.0691</i>	<i>9.0</i>
8	11:32	5.70	0.6	0.450	0.6	0.180	0.7677	1.00	0.7677	0.067	0.0518	6.7
9	11:33	5.55	0.6	0.400	0.6	0.160	0.6683	1.00	0.6683	0.060	0.0401	5.2
10	11:34	5.40	0.6	0.400	0.6	0.160	0.8156	1.00	0.8156	0.060	0.0489	6.3
11	11:35	5.25	0.6	0.400	0.6	0.160	0.9606	1.00	0.9606	0.060	0.0576	7.5
12	11:36	5.10	0.6	0.350	0.6	0.140	1.0817	1.00	1.0817	0.052	0.0568	7.4
13	11:37	4.95	0.6	0.350	0.6	0.140	1.5850	1.00	1.5850	0.035	0.0556	7.2
14	<i>11:46</i>	<i>4.90</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>1.5974</i>	<i>1.00</i>	<i>1.5974</i>	<i>0.030</i>	<i>0.0479</i>	<i>6.2</i>
15	<i>11:38</i>	<i>4.80</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>1.0873</i>	<i>1.00</i>	<i>1.0873</i>	<i>0.035</i>	<i>0.0380</i>	<i>4.9</i>
16	11:44	4.70	0.6	0.350	0.6	0.140	1.7375	1.00	1.7375	0.026	0.0456	5.9
17	<i>11:40</i>	<i>4.65</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>0.0079</i>	<i>1.00</i>	<i>0.0079</i>	<i>0.035</i>	<i>0.0003</i>	<i>0.0</i>
18	<i>11:41</i>	<i>4.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.045</i>	<i>0.0000</i>	<i>0.0</i>
19	<i>11:42</i>	<i>4.35</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0036</i>	<i>1.00</i>	<i>0.0036</i>	<i>0.045</i>	<i>0.0002</i>	<i>0.0</i>
20	11:42	4.20	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

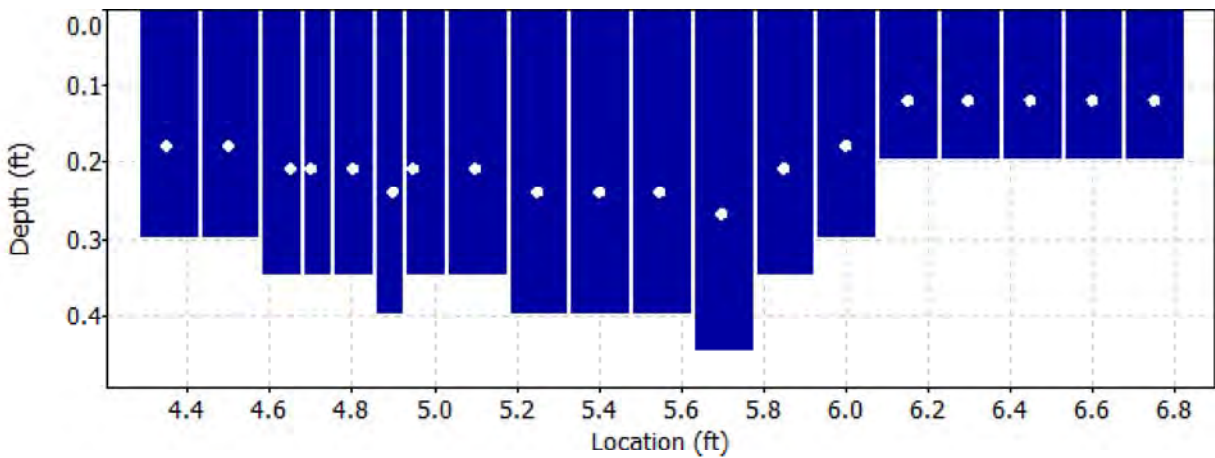
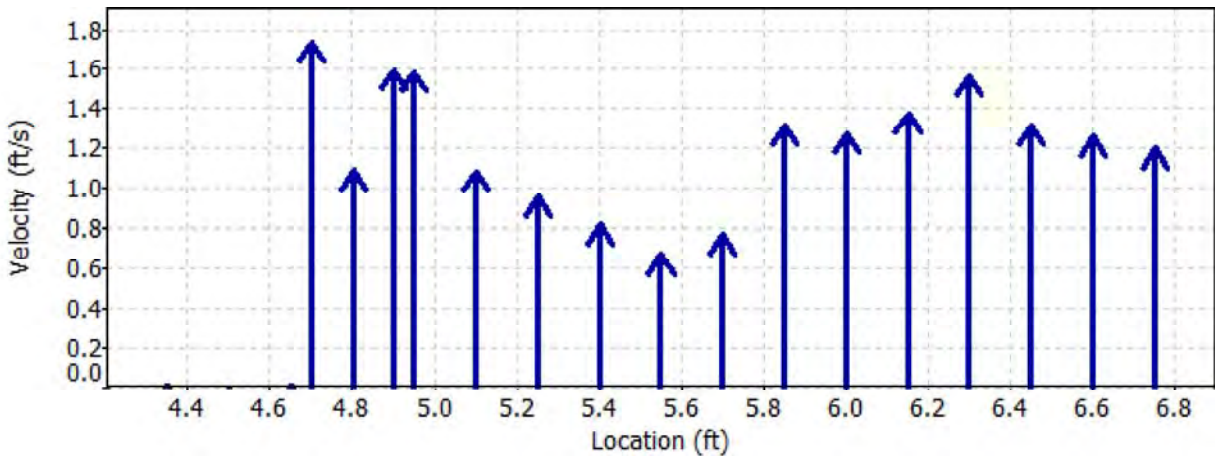
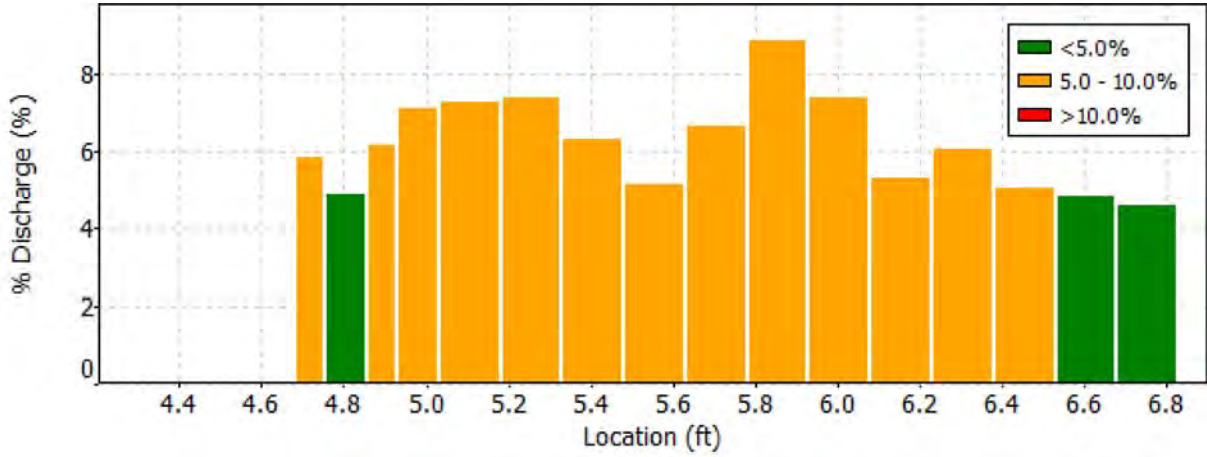
Date Generated: Mon Jan 19 2015

File Information

File Name CC03D.WAD
 Start Date and Time 2014/05/07 11:19:17

Site Details

Site Name CC03D
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC03D.WAD
Start Date and Time 2014/05/07 11:19:17

Site Details

Site Name CC03D
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
4	6.30	0.6	High number of spikes: 7
6	6.00	0.6	High SNR variation during measurement: 1.3,7.3
7	5.85	0.6	High standard error: 0.092
14	4.90	0.6	High standard error: 0.085
15	4.80	0.6	High standard error: 0.113
17	4.65	0.6	High number of spikes: 6
18	4.50	0.6	SNR (61.0) is different from typical SNR (40.8)
19	4.35	0.6	SNR (27.9) is different from typical SNR (40.8)
		0.6	High SNR variation during measurement: 5.2,4.3

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC17.WAD
Start Date and Time 2014/05/06 11:40:13

Site Details

Site Name CC17
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.3%	2.2%
Velocity	1.0%	3.4%
Width	0.1%	0.1%
Method	1.7%	-
# Stations	2.3%	-
Overall	3.2%	4.2%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 7.351
Mean SNR 46.5 dB Total Area 4.131
Mean Temp 38.83 °F Mean Depth 0.562
Disch. Equation Mid-Section Mean Velocity 2.1067
Total Discharge 8.7029

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:40	5.00	None	0.100	0.0	0.0	0.0000	1.00	2.1726	0.018	0.0381	0.4
<i>1</i>	<i>11:40</i>	<i>5.35</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>2.1726</i>	<i>1.00</i>	<i>2.1726</i>	<i>0.175</i>	<i>0.3803</i>	<i>4.4</i>
2	11:41	5.70	0.6	0.600	0.6	0.240	2.0351	1.00	2.0351	0.210	0.4275	4.9
<i>3</i>	<i>11:42</i>	<i>6.05</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>1.7477</i>	<i>1.00</i>	<i>1.7477</i>	<i>0.175</i>	<i>0.3059</i>	<i>3.5</i>
4	11:43	6.40	0.6	0.500	0.6	0.200	1.6417	1.00	1.6417	0.175	0.2874	3.3
5	11:44	6.75	0.6	0.500	0.6	0.200	2.6079	1.00	2.6079	0.175	0.4565	5.2
6	11:45	7.10	0.6	0.700	0.6	0.280	2.2283	1.00	2.2283	0.245	0.5461	6.3
7	11:46	7.45	0.6	0.700	0.6	0.280	2.2461	1.00	2.2461	0.245	0.5505	6.3
<i>8</i>	<i>11:47</i>	<i>7.80</i>	<i>0.6</i>	<i>0.750</i>	<i>0.6</i>	<i>0.300</i>	<i>2.0827</i>	<i>1.00</i>	<i>2.0827</i>	<i>0.263</i>	<i>0.5468</i>	<i>6.3</i>
9	11:47	8.15	0.6	0.750	0.6	0.300	1.2746	1.00	1.2746	0.263	0.3346	3.8
10	11:48	8.50	0.6	0.700	0.6	0.280	2.3924	1.00	2.3924	0.245	0.5864	6.7
11	11:49	8.85	0.6	0.650	0.6	0.260	2.5262	1.00	2.5262	0.228	0.5748	6.6
12	11:50	9.20	0.6	0.650	0.6	0.260	2.3766	1.00	2.3766	0.228	0.5407	6.2
13	11:51	9.55	0.6	0.600	0.6	0.240	2.8261	1.00	2.8261	0.210	0.5937	6.8
14	11:52	9.90	0.6	0.600	0.6	0.240	2.3481	1.00	2.3481	0.210	0.4932	5.7
15	11:53	10.25	0.6	0.500	0.6	0.200	2.2585	1.00	2.2585	0.175	0.3953	4.5
16	11:54	10.60	0.6	0.600	0.6	0.240	2.0157	1.00	2.0157	0.210	0.4234	4.9
17	11:55	10.95	0.6	0.600	0.6	0.240	2.4255	1.00	2.4255	0.210	0.5095	5.9
18	11:56	11.30	0.6	0.450	0.6	0.180	2.3907	1.00	2.3907	0.158	0.3767	4.3
<i>19</i>	<i>11:57</i>	<i>11.65</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.6253</i>	<i>1.00</i>	<i>1.6253</i>	<i>0.105</i>	<i>0.1706</i>	<i>2.0</i>
20	12:00	12.00	0.6	0.500	0.6	0.200	0.7851	1.00	0.7851	0.175	0.1374	1.6
21	12:00	12.35	None	0.200	0.0	0.0	0.0000	1.00	0.7851	0.035	0.0275	0.3

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

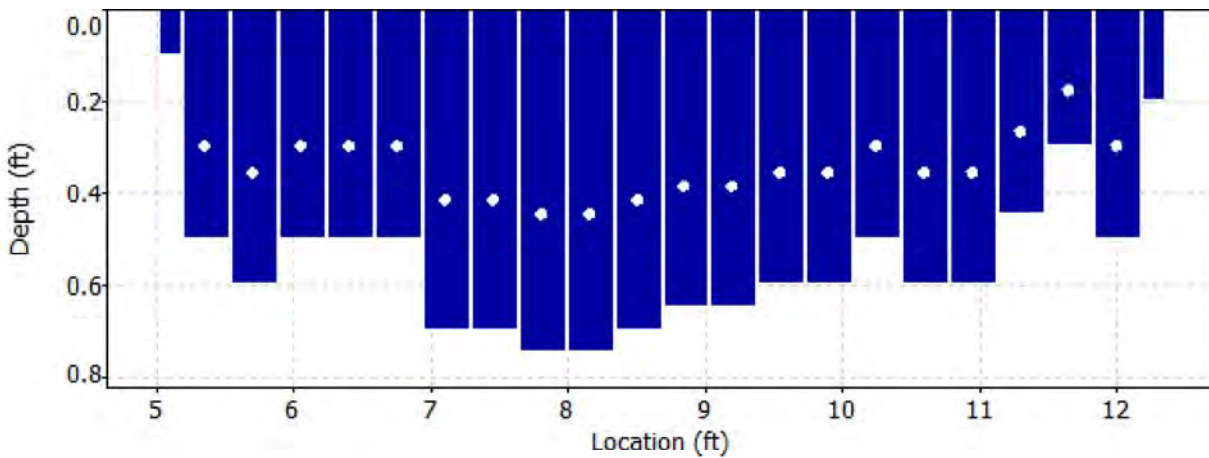
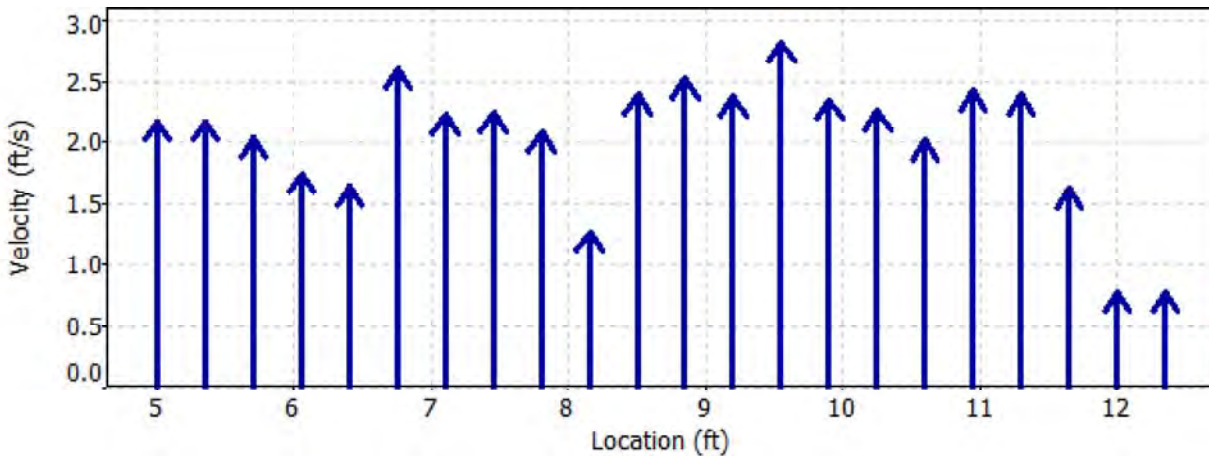
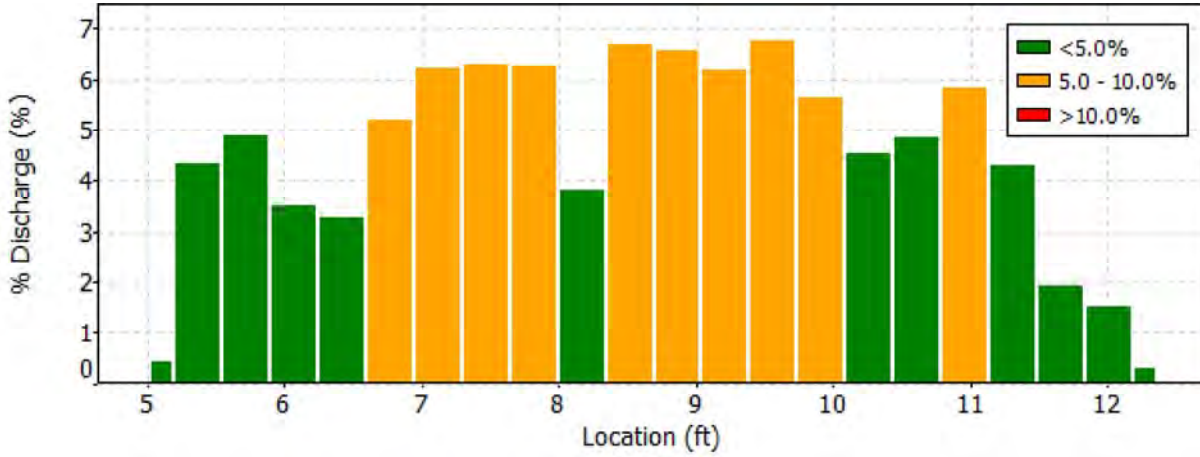
Date Generated: Mon Jan 19 2015

File Information

File Name CC17.WAD
 Start Date and Time 2014/05/06 11:40:13

Site Details

Site Name CC17
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC17.WAD
Start Date and Time 2014/05/06 11:40:13

Site Details

Site Name CC17
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	5.35	0.6	High standard error: 0.125
3	6.05	0.6	High standard error: 0.133
8	7.80	0.6	High number of spikes: 5
19	11.65	0.6	High angle: 30

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC07.WAD
Start Date and Time 2014/05/07 08:57:43

Site Details

Site Name CC07
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	4.4%
Velocity	2.3%	22.0%
Width	0.1%	0.1%
Method	2.2%	-
# Stations	2.0%	-
Overall	3.9%	22.5%

Summary

Averaging Int.	40	# Stations	25
Start Edge	LEW	Total Width	7.100
Mean SNR	44.7 dB	Total Area	1.628
Mean Temp	34.04 °F	Mean Depth	0.229
Disch. Equation	Mid-Section	Mean Velocity	0.6688
		Total Discharge	1.0888

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:57	7.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>08:57</i>	<i>7.85</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0974</i>	<i>1.00</i>	<i>0.0974</i>	<i>0.070</i>	<i>0.0068</i>	<i>0.6</i>
<i>2</i>	<i>08:58</i>	<i>8.20</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0630</i>	<i>1.00</i>	<i>0.0630</i>	<i>0.070</i>	<i>0.0044</i>	<i>0.4</i>
<i>3</i>	<i>08:59</i>	<i>8.55</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>-0.0098</i>	<i>1.00</i>	<i>-0.0098</i>	<i>0.088</i>	<i>-0.0009</i>	<i>-0.1</i>
<i>4</i>	<i>09:00</i>	<i>8.90</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.3369</i>	<i>1.00</i>	<i>0.3369</i>	<i>0.070</i>	<i>0.0236</i>	<i>2.2</i>
<i>5</i>	<i>09:02</i>	<i>9.25</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>1.5023</i>	<i>1.00</i>	<i>1.5023</i>	<i>0.070</i>	<i>0.1052</i>	<i>9.7</i>
<i>6</i>	<i>09:03</i>	<i>9.60</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.0614</i>	<i>1.00</i>	<i>-0.0614</i>	<i>0.105</i>	<i>-0.0064</i>	<i>-0.6</i>
<i>7</i>	<i>09:04</i>	<i>9.95</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.5272</i>	<i>1.00</i>	<i>0.5272</i>	<i>0.070</i>	<i>0.0369</i>	<i>3.4</i>
<i>8</i>	<i>09:05</i>	<i>10.30</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>1.2710</i>	<i>1.00</i>	<i>1.2710</i>	<i>0.088</i>	<i>0.1112</i>	<i>10.2</i>
<i>9</i>	<i>09:06</i>	<i>10.65</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>-0.1043</i>	<i>1.00</i>	<i>-0.1043</i>	<i>0.088</i>	<i>-0.0091</i>	<i>-0.8</i>
<i>10</i>	<i>09:07</i>	<i>11.00</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>0.6749</i>	<i>1.00</i>	<i>0.6749</i>	<i>0.088</i>	<i>0.0591</i>	<i>5.4</i>
<i>11</i>	<i>09:08</i>	<i>11.35</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.3310</i>	<i>1.00</i>	<i>0.3310</i>	<i>0.105</i>	<i>0.0348</i>	<i>3.2</i>
<i>12</i>	<i>09:09</i>	<i>11.70</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.5102</i>	<i>1.00</i>	<i>1.5102</i>	<i>0.075</i>	<i>0.1131</i>	<i>10.4</i>
<i>13</i>	<i>09:21</i>	<i>11.85</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>0.4948</i>	<i>1.00</i>	<i>0.4948</i>	<i>0.044</i>	<i>0.0216</i>	<i>2.0</i>
<i>14</i>	<i>09:11</i>	<i>12.05</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>2.0420</i>	<i>1.00</i>	<i>2.0420</i>	<i>0.055</i>	<i>0.1126</i>	<i>10.3</i>
<i>15</i>	<i>09:13</i>	<i>12.40</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.6070</i>	<i>1.00</i>	<i>1.6070</i>	<i>0.082</i>	<i>0.1323</i>	<i>12.2</i>
<i>16</i>	<i>09:24</i>	<i>12.60</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>1.4078</i>	<i>1.00</i>	<i>1.4078</i>	<i>0.044</i>	<i>0.0616</i>	<i>5.7</i>
<i>17</i>	<i>09:14</i>	<i>12.75</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.9925</i>	<i>1.00</i>	<i>0.9925</i>	<i>0.075</i>	<i>0.0745</i>	<i>6.8</i>
<i>18</i>	<i>09:15</i>	<i>13.10</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>-0.1749</i>	<i>1.00</i>	<i>-0.1749</i>	<i>0.088</i>	<i>-0.0153</i>	<i>-1.4</i>
<i>19</i>	<i>09:16</i>	<i>13.45</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>1.1798</i>	<i>1.00</i>	<i>1.1798</i>	<i>0.055</i>	<i>0.0648</i>	<i>6.0</i>
<i>20</i>	<i>09:25</i>	<i>13.65</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>1.5938</i>	<i>1.00</i>	<i>1.5938</i>	<i>0.035</i>	<i>0.0558</i>	<i>5.1</i>
<i>21</i>	<i>09:17</i>	<i>13.80</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>2.0318</i>	<i>1.00</i>	<i>2.0318</i>	<i>0.050</i>	<i>0.1019</i>	<i>9.4</i>
<i>22</i>	<i>09:19</i>	<i>14.15</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>-0.1483</i>	<i>1.00</i>	<i>-0.1483</i>	<i>0.070</i>	<i>-0.0104</i>	<i>-1.0</i>
<i>23</i>	<i>09:22</i>	<i>14.50</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.2339</i>	<i>1.00</i>	<i>0.2339</i>	<i>0.045</i>	<i>0.0105</i>	<i>1.0</i>
<i>24</i>	<i>09:22</i>	<i>14.60</i>	<i>None</i>	<i>0.000</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.000</i>	<i>0.0000</i>	<i>0.0</i>

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

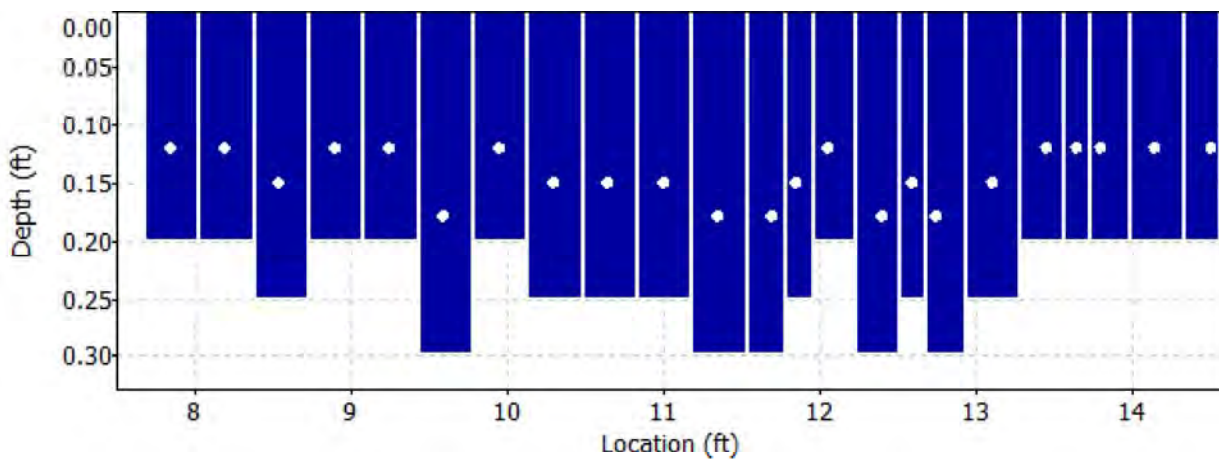
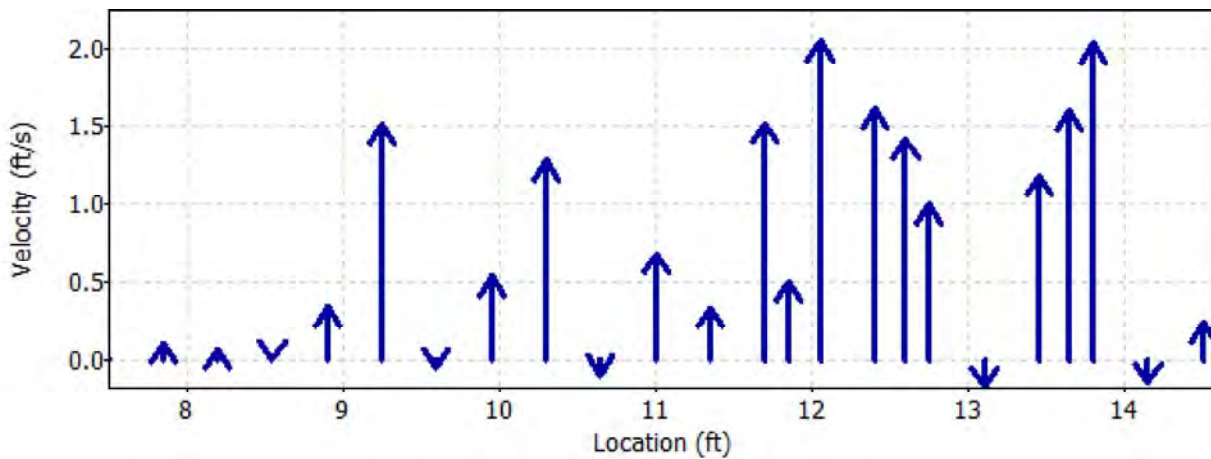
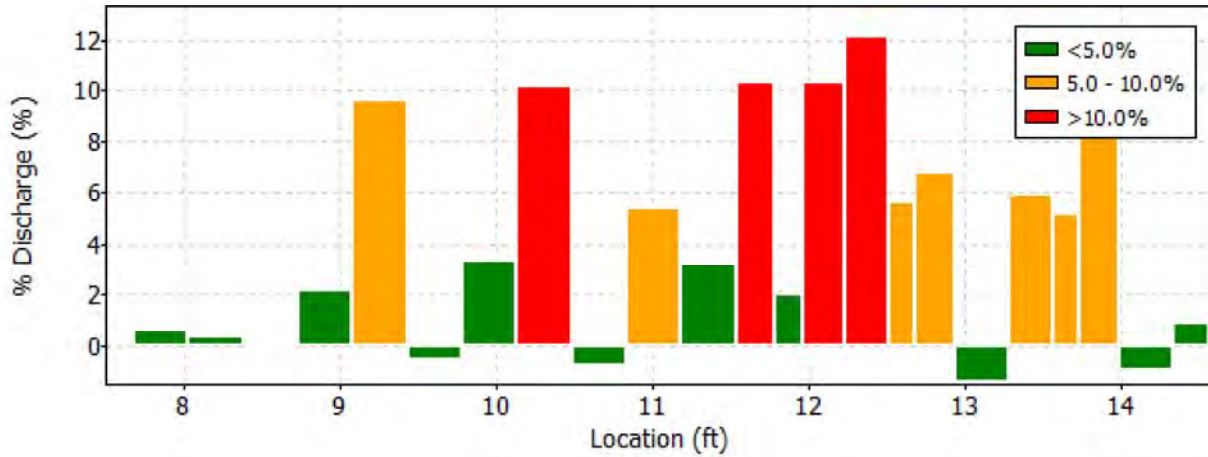
Date Generated: Mon Jan 19 2015

File Information

File Name CC07.WAD
 Start Date and Time 2014/05/07 08:57:43

Site Details

Site Name CC07
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC07.WAD
Start Date and Time 2014/05/07 08:57:43

Site Details

Site Name CC07
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	7.85	0.6	High angle: -30
2	8.20	0.6	High angle: -23
4	8.90	0.6	High SNR variation during measurement: 3.9,5.6
6	9.60	0.6	High angle: -119
7	9.95	0.6	High angle: -28
9	10.65	0.6	High angle: -170
13	11.85	0.6	High SNR variation during measurement: 6.9,5.6 High standard error: 0.140
14	12.05	0.6	High differences in beam SNR: 47.7,60.2 High SNR variation during measurement: 2.1,5.6 High standard error: 0.195
16	12.60	0.6	High differences in beam SNR: 44.7,13.3 SNR (29.0) is different from typical SNR (44.7) High standard error: 0.154
17	12.75	0.6	High standard error: 0.104
18	13.10	0.6	High angle: -142
22	14.15	0.6	High angle: -163 High differences in beam SNR: 30.5,43.4
23	14.50	0.6	High number of spikes: 9 SNR (32.6) is different from typical SNR (44.7) High standard error: 0.125

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

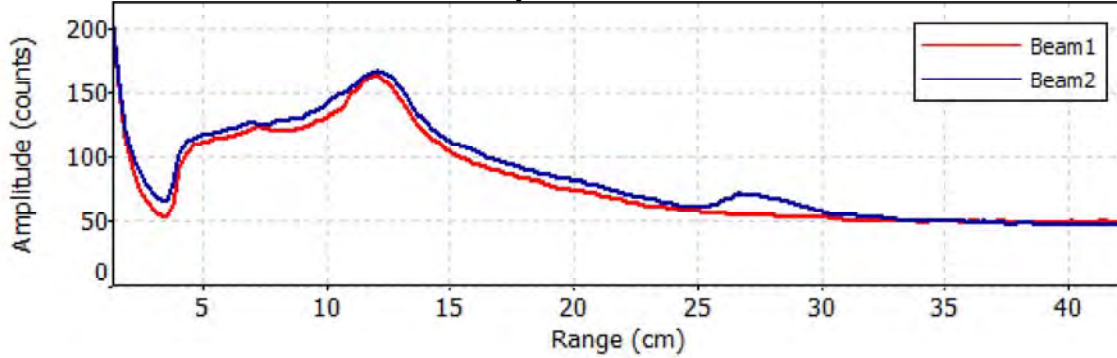
File Name CC07.WAD
Start Date and Time 2014/05/07 08:57:43

Site Details

Site Name CC07
Operator(s) LC

Automatic Quality Control Test (BeamCheck)

Wed May 7 08:55:46 MDT 2014



- ✔ Noise level check - Pass
- ✔ SNR check - Pass
- ✔ Peak location check - Pass
- ✔ Peak shape check - Pass

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC18.WAD
Start Date and Time 2014/05/06 13:39:34

Site Details

Site Name CC18
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	1.9%
Velocity	0.8%	6.7%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.3%	-
Overall	3.3%	7.1%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 14.500
Mean SNR 49.1 dB Total Area 7.223
Mean Temp 37.90 °F Mean Depth 0.498
Disch. Equation Mid-Section Mean Velocity 2.6125
Total Discharge 18.8704

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	13:39	7.00	None	0.100	0.0	0.0	0.0000	1.00	3.2379	0.035	0.1134	0.6
1	13:39	7.70	0.6	0.600	0.6	0.240	3.2379	1.00	3.2379	0.420	1.3603	7.2
2	13:40	8.40	0.6	0.700	0.6	0.280	2.4774	1.00	2.4774	0.490	1.2144	6.4
3	13:41	9.10	0.6	0.800	0.6	0.320	4.0125	1.00	4.0125	0.460	1.8448	9.8
4	14:01	9.55	0.6	0.700	0.6	0.280	4.6896	1.00	4.6896	0.245	1.1494	6.1
5	13:43	9.80	0.6	0.800	0.6	0.320	2.8566	1.00	2.8566	0.380	1.0862	5.8
6	13:44	10.50	0.6	0.800	0.6	0.320	2.5236	1.00	2.5236	0.560	1.4133	7.5
7	13:45	11.20	0.6	0.700	0.6	0.280	2.7523	1.00	2.7523	0.490	1.3491	7.1
8	13:46	11.90	0.6	0.600	0.6	0.240	1.9892	1.00	1.9892	0.420	0.8357	4.4
9	<i>13:47</i>	<i>12.60</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>2.1161</i>	<i>1.00</i>	<i>2.1161</i>	<i>0.350</i>	<i>0.7408</i>	<i>3.9</i>
10	13:48	13.30	0.6	0.500	0.6	0.200	2.7339	1.00	2.7339	0.350	0.9571	5.1
11	13:49	14.00	0.6	0.600	0.6	0.240	3.0016	1.00	3.0016	0.420	1.2611	6.7
12	13:50	14.70	0.6	0.700	0.6	0.280	3.4583	1.00	3.4583	0.490	1.6952	9.0
13	13:51	15.40	0.6	0.550	0.6	0.220	3.3491	1.00	3.3491	0.385	1.2893	6.8
14	13:52	16.10	0.6	0.400	0.6	0.160	3.5843	1.00	3.5843	0.280	1.0036	5.3
15	<i>13:53</i>	<i>16.80</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.5571</i>	<i>1.00</i>	<i>0.5571</i>	<i>0.280</i>	<i>0.1560</i>	<i>0.8</i>
16	<i>13:54</i>	<i>17.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>2.1421</i>	<i>1.00</i>	<i>2.1421</i>	<i>0.210</i>	<i>0.4497</i>	<i>2.4</i>
17	13:55	18.20	0.6	0.300	0.6	0.120	1.4767	1.00	1.4767	0.210	0.3100	1.6
18	<i>13:56</i>	<i>18.90</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.3054</i>	<i>1.00</i>	<i>0.3054</i>	<i>0.210</i>	<i>0.0641</i>	<i>0.3</i>
19	<i>13:57</i>	<i>19.60</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.8930</i>	<i>1.00</i>	<i>0.8930</i>	<i>0.210</i>	<i>0.1875</i>	<i>1.0</i>
20	<i>13:59</i>	<i>20.30</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>1.1906</i>	<i>1.00</i>	<i>1.1906</i>	<i>0.237</i>	<i>0.2824</i>	<i>1.5</i>
21	13:59	21.50	None	0.150	0.0	0.0	0.0000	1.00	1.1906	0.090	0.1069	0.6

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

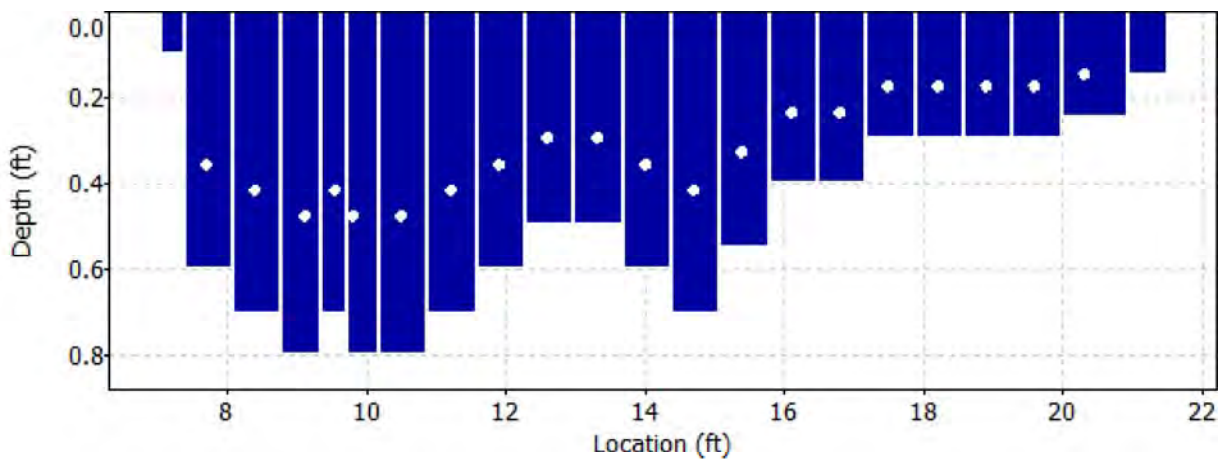
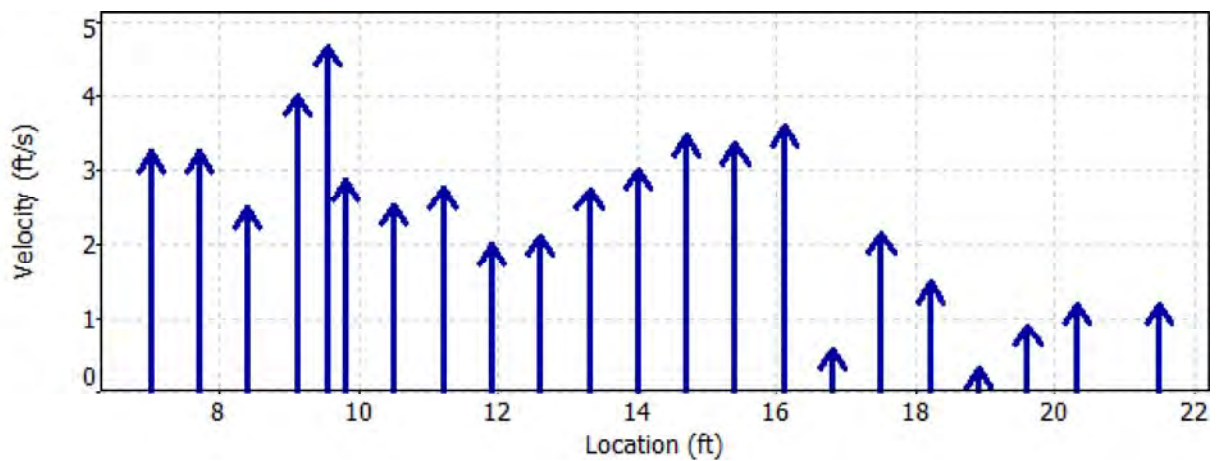
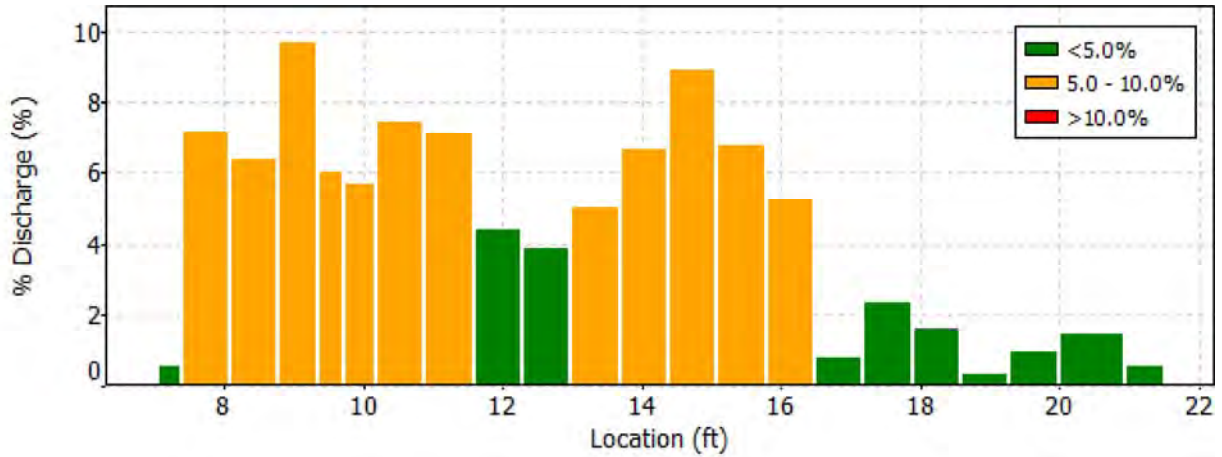
Date Generated: Mon Jan 19 2015

File Information

File Name CC18.WAD
 Start Date and Time 2014/05/06 13:39:34

Site Details

Site Name CC18
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC18.WAD
Start Date and Time 2014/05/06 13:39:34

Site Details

Site Name CC18
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
9	12.60	0.6	High number of spikes: 5
		0.6	High angle: -21
15	16.80	0.6	High standard error: 0.124
16	17.50	0.6	High angle: 24
18	18.90	0.6	High angle: 36
19	19.60	0.6	High angle: 37
20	20.30	0.6	High angle: 37

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC21.WAD
Start Date and Time 2014/05/06 11:01:38

Site Details

Site Name CC21
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.2%	1.4%
Velocity	1.6%	4.9%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.1%	-
Overall	3.4%	5.2%

Summary

Averaging Int. 40 # Stations 24
Start Edge LEW Total Width 13.300
Mean SNR 47.7 dB Total Area 11.092
Mean Temp 38.14 °F Mean Depth 0.834
Disch. Equation Mid-Section Mean Velocity 1.8398
Total Discharge 20.4078

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:01	18.00	None	0.100	0.0	0.0	0.0000	1.00	0.5144	0.033	0.0167	0.1
<i>1</i>	<i>11:01</i>	<i>17.35</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>0.5144</i>	<i>1.00</i>	<i>0.5144</i>	<i>0.325</i>	<i>0.1672</i>	<i>0.8</i>
2	11:02	16.70	0.6	0.550	0.6	0.220	0.5243	1.00	0.5243	0.357	0.1874	0.9
3	11:04	16.05	0.6	0.500	0.6	0.200	0.7087	1.00	0.7087	0.325	0.2303	1.1
4	11:05	15.40	0.6	0.500	0.6	0.200	0.3904	1.00	0.3904	0.325	0.1269	0.6
5	11:06	14.75	0.6	0.600	0.6	0.240	0.6234	1.00	0.6234	0.390	0.2431	1.2
6	11:07	14.10	0.6	0.650	0.6	0.260	2.3714	1.00	2.3714	0.422	1.0017	4.9
7	11:08	13.45	0.6	0.800	0.6	0.320	2.2575	1.00	2.2575	0.520	1.1736	5.8
<i>8</i>	<i>11:09</i>	<i>12.80</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>2.5692</i>	<i>1.00</i>	<i>2.5692</i>	<i>0.715</i>	<i>1.8369</i>	<i>9.0</i>
9	11:10	12.15	0.6	1.200	0.6	0.480	1.6378	1.00	1.6378	0.780	1.2775	6.3
10	11:11	11.50	0.6	1.200	0.6	0.480	2.9797	1.00	2.9797	0.570	1.6994	8.3
11	11:23	11.20	0.6	1.200	0.6	0.480	2.5853	1.00	2.5853	0.390	1.0083	4.9
<i>12</i>	<i>11:12</i>	<i>10.85</i>	<i>0.6</i>	<i>1.200</i>	<i>0.6</i>	<i>0.480</i>	<i>2.8511</i>	<i>1.00</i>	<i>2.8510</i>	<i>0.420</i>	<i>1.1978</i>	<i>5.9</i>
13	11:25	10.50	0.6	1.200	0.6	0.480	2.4862	1.00	2.4862	0.390	0.9696	4.8
<i>14</i>	<i>11:13</i>	<i>10.20</i>	<i>0.6</i>	<i>1.200</i>	<i>0.6</i>	<i>0.480</i>	<i>2.6581</i>	<i>1.00</i>	<i>2.6581</i>	<i>0.570</i>	<i>1.5139</i>	<i>7.4</i>
<i>15</i>	<i>11:14</i>	<i>9.55</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>2.1490</i>	<i>1.00</i>	<i>2.1490</i>	<i>0.715</i>	<i>1.5364</i>	<i>7.5</i>
16	11:15	8.90	0.6	1.000	0.6	0.400	2.8451	1.00	2.8451	0.500	1.4240	7.0
17	11:27	8.55	0.6	1.000	0.6	0.400	3.1122	1.00	3.1122	0.325	1.0114	5.0
18	11:17	8.25	0.6	1.100	0.6	0.440	3.0564	1.00	3.0564	0.522	1.5951	7.8
19	11:18	7.60	0.6	1.000	0.6	0.400	1.8350	1.00	1.8350	0.650	1.1926	5.8
20	11:19	6.95	0.6	1.000	0.6	0.400	0.5676	1.00	0.5676	0.650	0.3689	1.8
21	11:20	6.30	0.6	0.700	0.6	0.280	0.6631	1.00	0.6631	0.455	0.3017	1.5
22	11:21	5.65	0.6	0.750	0.6	0.300	0.4406	1.00	0.4406	0.600	0.2645	1.3
23	11:21	4.70	None	0.300	0.0	0.0	0.0000	1.00	0.4406	0.143	0.0628	0.3

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

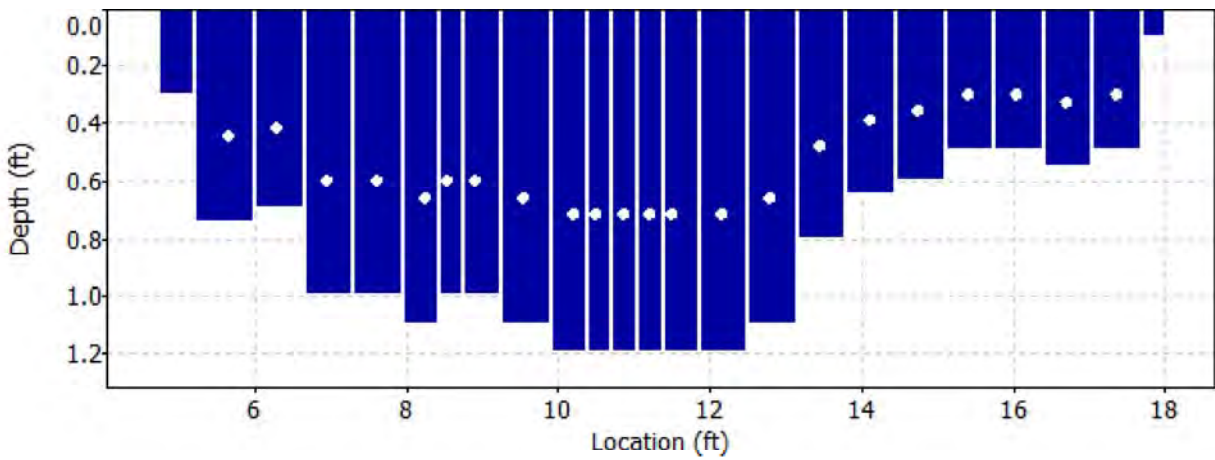
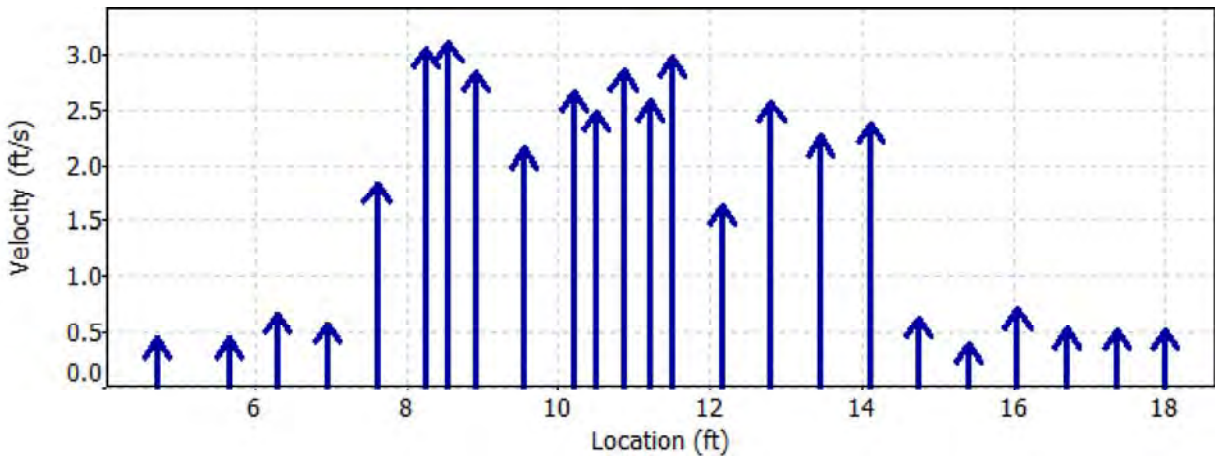
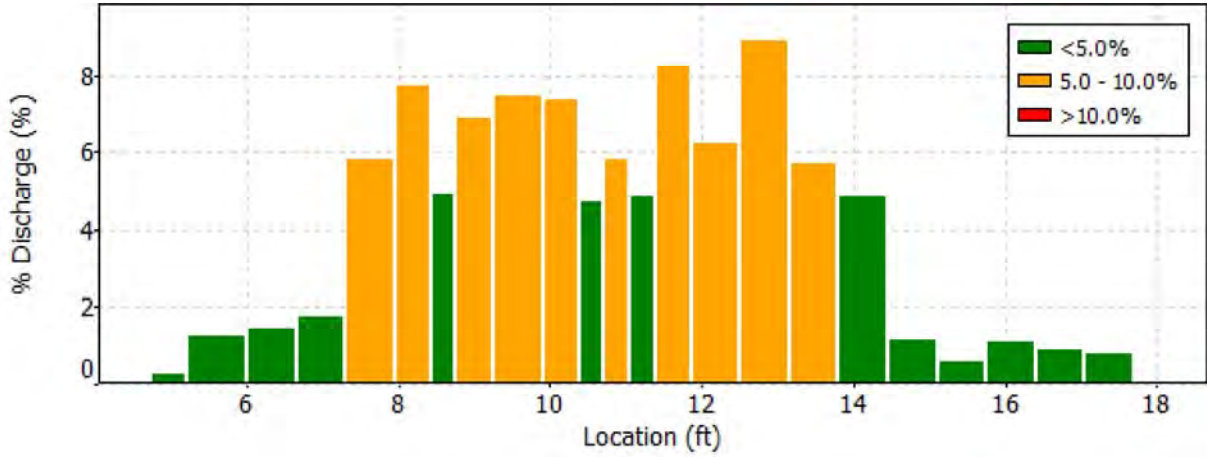
Date Generated: Mon Jan 19 2015

File Information

File Name CC21.WAD
 Start Date and Time 2014/05/06 11:01:38

Site Details

Site Name CC21
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC21.WAD
Start Date and Time 2014/05/06 11:01:38

Site Details

Site Name CC21
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	17.35	0.6	High angle: 45
8	12.80	0.6	High standard error: 0.145
12	10.85	0.6	High standard error: 0.146
14	10.20	0.6	High standard error: 0.222
15	9.55	0.6	High standard error: 0.240

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC21B.WAD
Start Date and Time 2014/05/06 10:17:25

Site Details

Site Name CC21B
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.2%	1.1%
Velocity	1.1%	4.4%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.3%	-
Overall	3.3%	4.7%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 10.500
Mean SNR 46.4 dB Total Area 10.475
Mean Temp 37.26 °F Mean Depth 0.998
Disch. Equation Mid-Section Mean Velocity 2.9713
Total Discharge 31.1238

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:17	22.50	None	0.300	0.0	0.0	0.0000	1.00	3.1837	0.075	0.2387	0.8
1	10:17	23.00	0.6	0.550	0.6	0.220	3.1837	1.00	3.1837	0.275	0.8753	2.8
2	10:18	23.50	0.6	0.700	0.6	0.280	3.4754	1.00	3.4754	0.350	1.2166	3.9
3	<i>10:19</i>	<i>24.00</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>1.5157</i>	<i>1.00</i>	<i>1.5157</i>	<i>0.400</i>	<i>0.6062</i>	<i>1.9</i>
4	<i>10:20</i>	<i>24.50</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.4075</i>	<i>1.00</i>	<i>2.4075</i>	<i>0.450</i>	<i>1.0833</i>	<i>3.5</i>
5	10:21	25.00	0.6	0.900	0.6	0.360	3.5236	1.00	3.5236	0.450	1.5855	5.1
6	10:22	25.50	0.6	0.900	0.6	0.360	4.7005	1.00	4.7005	0.450	2.1151	6.8
7	10:24	26.00	0.6	1.100	0.6	0.440	4.1335	1.00	4.1335	0.550	2.2736	7.3
8	10:25	26.50	0.6	1.000	0.6	0.400	4.4144	1.00	4.4144	0.500	2.2072	7.1
9	10:26	27.00	0.6	1.000	0.6	0.400	2.4688	1.00	2.4688	0.500	1.2344	4.0
10	10:27	27.50	0.6	1.200	0.6	0.480	2.4272	1.00	2.4272	0.600	1.4565	4.7
11	10:28	28.00	0.6	1.300	0.6	0.520	4.0364	1.00	4.0364	0.650	2.6234	8.4
12	10:29	28.50	0.6	1.350	0.6	0.540	3.6070	1.00	3.6070	0.675	2.4348	7.8
13	10:30	29.00	0.6	1.250	0.6	0.500	3.3025	1.00	3.3025	0.625	2.0641	6.6
14	10:31	29.50	0.6	1.150	0.6	0.460	2.6050	1.00	2.6050	0.575	1.4978	4.8
15	10:32	30.00	0.6	1.100	0.6	0.440	3.2162	1.00	3.2162	0.550	1.7690	5.7
16	10:34	30.50	0.6	1.000	0.6	0.400	3.3993	1.00	3.3993	0.500	1.6996	5.5
17	10:35	31.00	0.6	0.950	0.6	0.380	2.8012	1.00	2.8012	0.475	1.3307	4.3
18	10:36	31.50	0.6	1.000	0.6	0.400	2.9610	1.00	2.9610	0.500	1.4805	4.8
19	<i>10:37</i>	<i>32.00</i>	<i>0.6</i>	<i>1.050</i>	<i>0.6</i>	<i>0.420</i>	<i>1.5676</i>	<i>1.00</i>	<i>1.5676</i>	<i>0.525</i>	<i>0.8229</i>	<i>2.6</i>
20	<i>10:38</i>	<i>32.50</i>	<i>0.6</i>	<i>1.050</i>	<i>0.6</i>	<i>0.420</i>	<i>0.6358</i>	<i>1.00</i>	<i>0.6358</i>	<i>0.525</i>	<i>0.3338</i>	<i>1.1</i>
21	10:38	33.00	None	1.100	0.0	0.0	0.0000	1.00	0.6358	0.275	0.1749	0.6

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

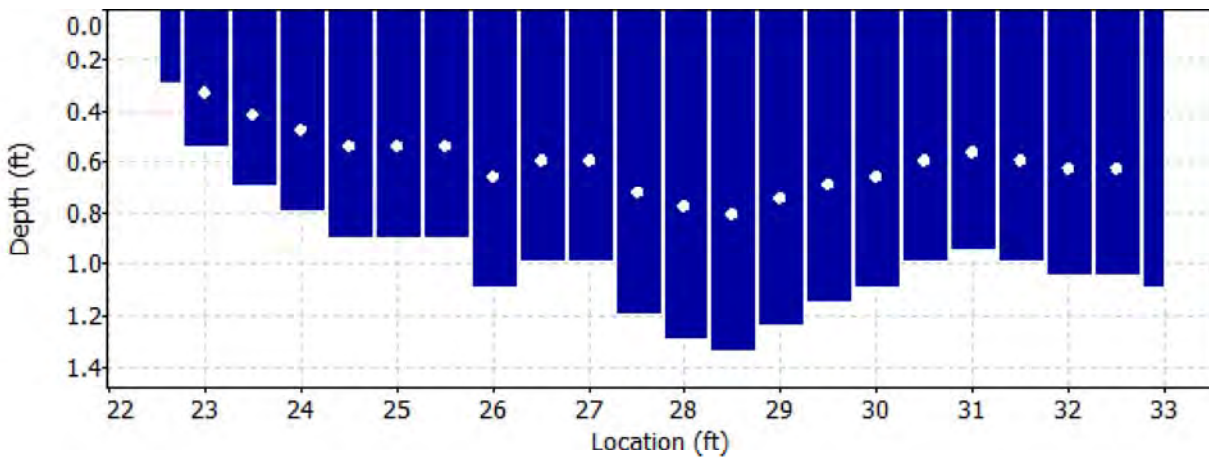
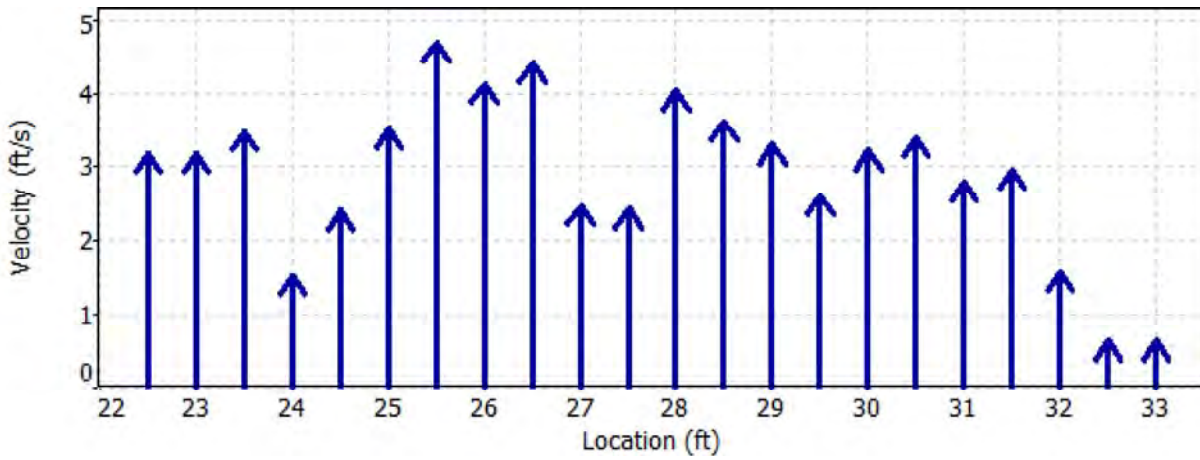
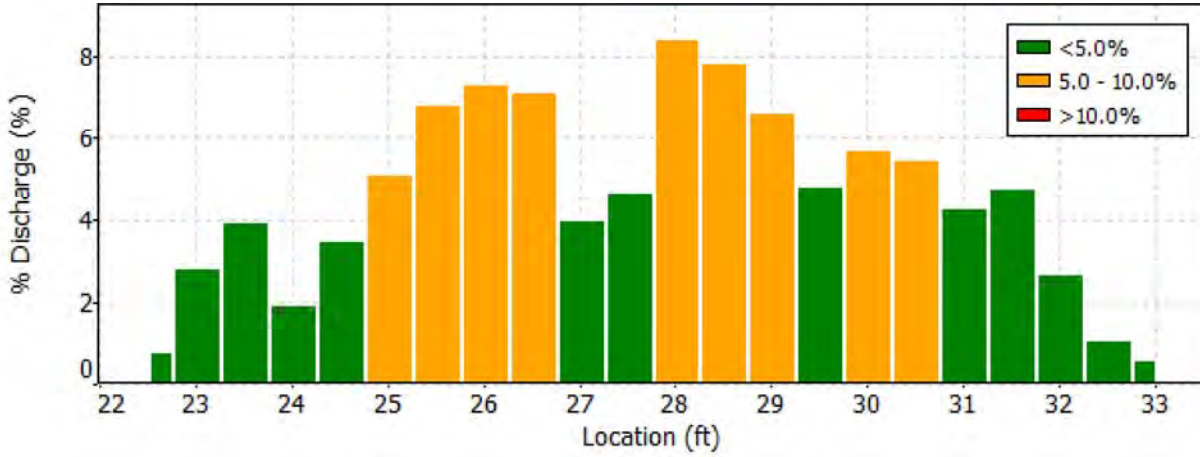
Date Generated: Mon Jan 19 2015

File Information

File Name CC21B.WAD
 Start Date and Time 2014/05/06 10:17:25

Site Details

Site Name CC21B
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC21B.WAD
Start Date and Time 2014/05/06 10:17:25

Site Details

Site Name CC21B
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
3	24.00	0.6	High standard error: 0.230
4	24.50	0.6	High angle: 21 High standard error: 0.245
19	32.00	0.6	High angle: -29
20	32.50	0.6	High angle: -32

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC26.WAD
Start Date and Time 2014/05/06 09:40:33

Site Details

Site Name CC26
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	3.3%
Velocity	1.0%	4.3%
Width	0.1%	0.1%
Method	2.0%	-
# Stations	2.1%	-
Overall	3.2%	5.5%

Summary

Averaging Int.	40	# Stations	24
Start Edge	LEW	Total Width	6.500
Mean SNR	48.0 dB	Total Area	3.336
Mean Temp	34.57 °F	Mean Depth	0.513
Disch. Equation	Mid-Section	Mean Velocity	1.9413
		Total Discharge	6.4770

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:40	9.50	None	0.200	0.0	0.0	0.0000	1.00	-0.0112	0.030	-0.0003	0.0
<i>1</i>	<i>09:40</i>	<i>9.80</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.0112</i>	<i>1.00</i>	<i>-0.0112</i>	<i>0.090</i>	<i>-0.0010</i>	<i>0.0</i>
<i>2</i>	<i>09:42</i>	<i>10.10</i>	<i>0.6</i>	<i>0.000</i>	<i>0.6</i>	<i>0.000</i>	<i>0.0896</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.000</i>	<i>0.0000</i>	<i>0.0</i>
<i>3</i>	<i>09:43</i>	<i>10.40</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.4970</i>	<i>1.00</i>	<i>0.4970</i>	<i>0.120</i>	<i>0.0596</i>	<i>0.9</i>
<i>4</i>	<i>09:44</i>	<i>10.70</i>	<i>0.6</i>	<i>0.450</i>	<i>0.6</i>	<i>0.180</i>	<i>0.7028</i>	<i>1.00</i>	<i>0.7028</i>	<i>0.135</i>	<i>0.0949</i>	<i>1.5</i>
<i>5</i>	<i>09:46</i>	<i>11.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.2595</i>	<i>1.00</i>	<i>1.2595</i>	<i>0.090</i>	<i>0.1133</i>	<i>1.7</i>
<i>6</i>	<i>09:47</i>	<i>11.30</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.9783</i>	<i>1.00</i>	<i>0.9783</i>	<i>0.090</i>	<i>0.0880</i>	<i>1.4</i>
<i>7</i>	<i>09:48</i>	<i>11.60</i>	<i>0.6</i>	<i>0.650</i>	<i>0.6</i>	<i>0.260</i>	<i>1.4990</i>	<i>1.00</i>	<i>1.4990</i>	<i>0.195</i>	<i>0.2922</i>	<i>4.5</i>
<i>8</i>	<i>09:49</i>	<i>11.90</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>0.8855</i>	<i>1.00</i>	<i>0.8855</i>	<i>0.210</i>	<i>0.1859</i>	<i>2.9</i>
<i>9</i>	<i>09:50</i>	<i>12.20</i>	<i>0.6</i>	<i>0.750</i>	<i>0.6</i>	<i>0.300</i>	<i>1.7139</i>	<i>1.00</i>	<i>1.7139</i>	<i>0.225</i>	<i>0.3855</i>	<i>6.0</i>
<i>10</i>	<i>09:51</i>	<i>12.50</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>2.1893</i>	<i>1.00</i>	<i>2.1893</i>	<i>0.240</i>	<i>0.5251</i>	<i>8.1</i>
<i>11</i>	<i>09:52</i>	<i>12.80</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.6119</i>	<i>1.00</i>	<i>2.6119</i>	<i>0.203</i>	<i>0.5306</i>	<i>8.2</i>
<i>12</i>	<i>10:05</i>	<i>12.95</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>1.9537</i>	<i>1.00</i>	<i>1.9537</i>	<i>0.135</i>	<i>0.2636</i>	<i>4.1</i>
<i>13</i>	<i>09:53</i>	<i>13.10</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.3310</i>	<i>1.00</i>	<i>2.3310</i>	<i>0.202</i>	<i>0.4701</i>	<i>7.3</i>
<i>14</i>	<i>09:54</i>	<i>13.40</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.8678</i>	<i>1.00</i>	<i>2.8678</i>	<i>0.203</i>	<i>0.5825</i>	<i>9.0</i>
<i>15</i>	<i>10:06</i>	<i>13.55</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.6588</i>	<i>1.00</i>	<i>2.6588</i>	<i>0.135</i>	<i>0.3588</i>	<i>5.5</i>
<i>16</i>	<i>09:55</i>	<i>13.70</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>3.2736</i>	<i>1.00</i>	<i>3.2736</i>	<i>0.179</i>	<i>0.5867</i>	<i>9.1</i>
<i>17</i>	<i>09:57</i>	<i>14.00</i>	<i>0.6</i>	<i>0.750</i>	<i>0.6</i>	<i>0.300</i>	<i>2.8589</i>	<i>1.00</i>	<i>2.8589</i>	<i>0.225</i>	<i>0.6430</i>	<i>9.9</i>
<i>18</i>	<i>09:58</i>	<i>14.30</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>3.3681</i>	<i>1.00</i>	<i>3.3681</i>	<i>0.180</i>	<i>0.6061</i>	<i>9.4</i>
<i>19</i>	<i>09:59</i>	<i>14.60</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>2.2195</i>	<i>1.00</i>	<i>2.2195</i>	<i>0.150</i>	<i>0.3328</i>	<i>5.1</i>
<i>20</i>	<i>10:00</i>	<i>14.90</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>1.1647</i>	<i>1.00</i>	<i>1.1647</i>	<i>0.120</i>	<i>0.1397</i>	<i>2.2</i>
<i>21</i>	<i>10:01</i>	<i>15.20</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>1.5082</i>	<i>1.00</i>	<i>1.5082</i>	<i>0.075</i>	<i>0.1131</i>	<i>1.7</i>
<i>22</i>	<i>10:02</i>	<i>15.50</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>1.0164</i>	<i>1.00</i>	<i>1.0164</i>	<i>0.080</i>	<i>0.0816</i>	<i>1.3</i>
<i>23</i>	<i>10:02</i>	<i>16.00</i>	<i>None</i>	<i>0.100</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0000</i>	<i>1.00</i>	<i>1.0164</i>	<i>0.025</i>	<i>0.0256</i>	<i>0.4</i>

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

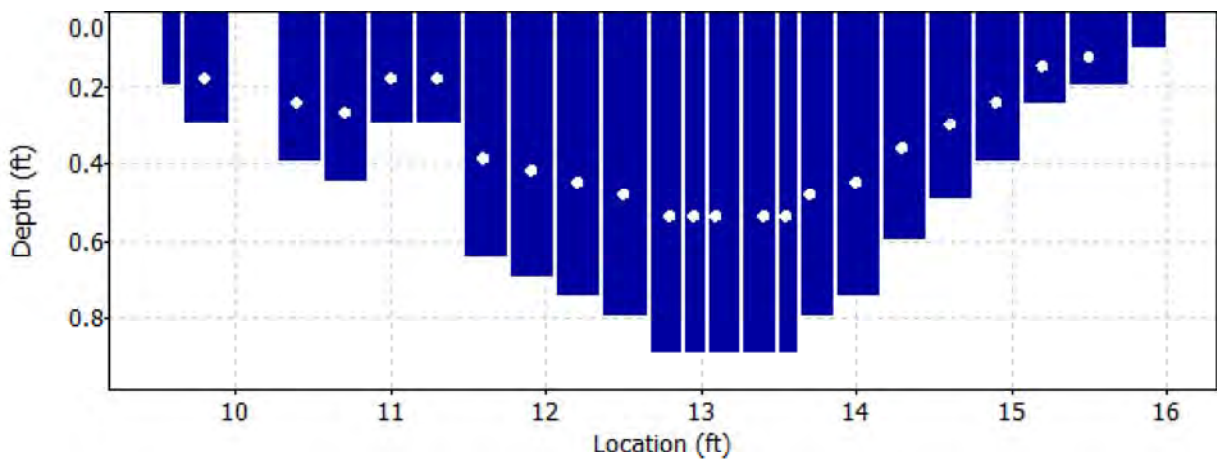
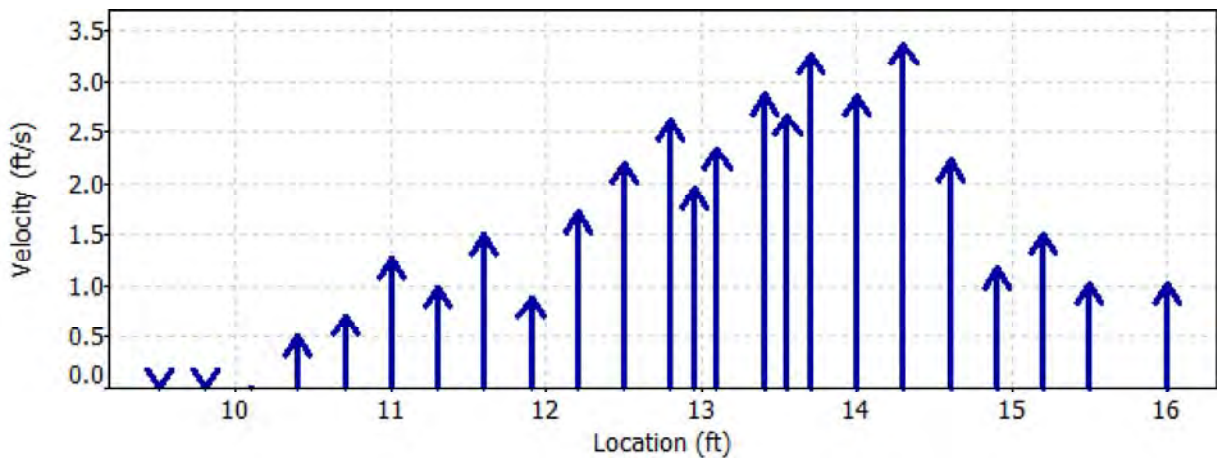
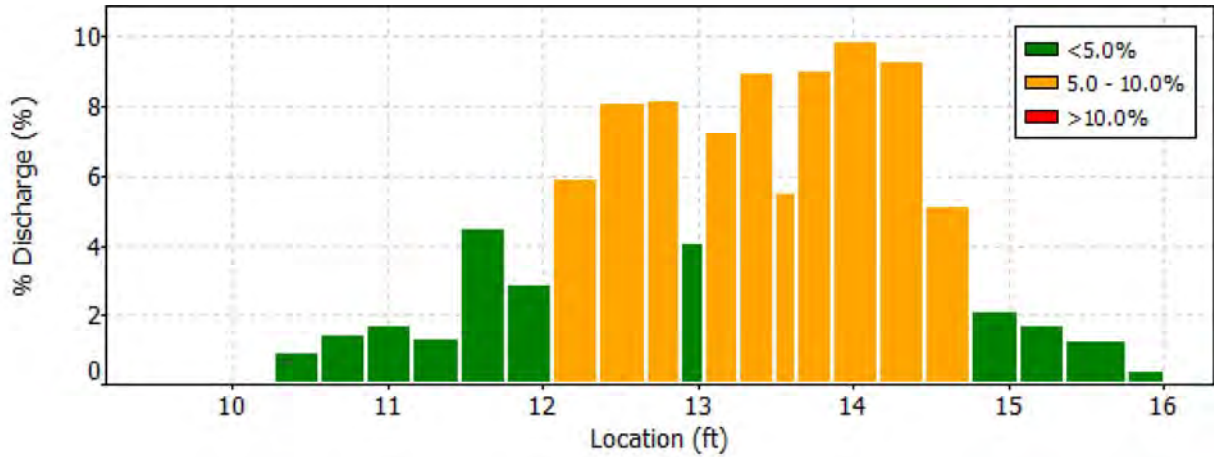
Date Generated: Mon Jan 19 2015

File Information

File Name CC26.WAD
 Start Date and Time 2014/05/06 09:40:33

Site Details

Site Name CC26
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name CC26.WAD
Start Date and Time 2014/05/06 09:40:33

Site Details

Site Name CC26
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	9.80	0.6	High number of spikes: 16
		0.6	High SNR variation during measurement: 6.5,5.6
2	10.10	0.6	High angle: 50
3	10.40	0.6	High angle: 34
4	10.70	0.6	High angle: 44
5	11.00	0.6	High angle: 48
6	11.30	0.6	High angle: 59
7	11.60	0.6	High angle: 32
8	11.90	0.6	High angle: 49
		0.6	High standard error: 0.113
9	12.20	0.6	High angle: 33
10	12.50	0.6	High angle: 28
11	12.80	0.6	High angle: 27
12	12.95	0.6	High angle: 33
13	13.10	0.6	High angle: 33
17	14.00	0.6	High angle: 30
18	14.30	0.6	High angle: 21
20	14.90	0.6	High standard error: 0.113
22	15.50	0.6	High angle: -28

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

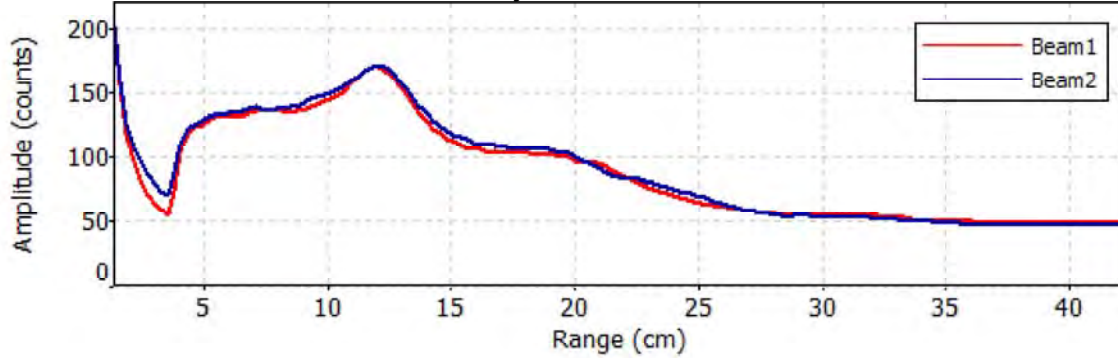
File Name CC26.WAD
Start Date and Time 2014/05/06 09:40:33

Site Details

Site Name CC26
Operator(s) LC

Automatic Quality Control Test (BeamCheck)

Tue May 6 09:38:32 MDT 2014



- ✔ Noise level check - Pass
- ✔ SNR check - Pass
- ✔ Peak location check - Pass
- ✔ Peak shape check - Pass

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A39.WAD
Start Date and Time 2014/09/25 14:12:45

Site Details

Site Name A39
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.5%	3.8%
Velocity	3.0%	11.2%
Width	0.2%	0.2%
Method	2.3%	-
# Stations	2.3%	-
Overall	4.5%	11.9%

Summary

Averaging Int.	40	# Stations	22
Start Edge	REW	Total Width	4.399
Mean SNR	44.2 dB	Total Area	1.020
Mean Temp	59.31 °F	Mean Depth	0.232
Disch. Equation	Mid-Section	Mean Velocity	2.2301
		Total Discharge	2.2748

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	14:12	1.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	14:12	1.20	0.6	0.300	0.6	0.120	6.0820	1.00	6.0820	0.060	0.3650	16.0
2	14:13	1.40	0.6	0.200	0.6	0.080	2.6138	1.00	2.6138	0.040	0.1047	4.6
3	14:15	1.60	0.6	0.200	0.6	0.080	6.4262	1.00	6.4262	0.040	0.2574	11.3
4	14:16	1.80	0.6	0.300	0.6	0.120	6.2267	1.00	6.2267	0.060	0.3737	16.4
5	14:17	2.00	0.6	0.300	0.6	0.120	3.2028	1.00	3.2028	0.060	0.1922	8.4
6	14:18	2.20	0.6	0.300	0.6	0.120	1.7654	1.00	1.7654	0.060	0.1059	4.7
7	14:19	2.40	0.6	0.200	0.6	0.080	5.0253	1.00	5.0253	0.040	0.2013	8.8
8	14:20	2.60	0.6	0.200	0.6	0.080	3.4669	1.00	3.4669	0.040	0.1389	6.1
9	14:21	2.80	0.6	0.200	0.6	0.080	2.9209	1.00	2.9209	0.040	0.1170	5.1
10	14:22	3.00	0.6	0.300	0.6	0.120	1.3970	1.00	1.3970	0.060	0.0838	3.7
11	14:23	3.20	0.6	0.300	0.6	0.120	0.9226	1.00	0.9226	0.060	0.0554	2.4
12	14:24	3.40	0.6	0.300	0.6	0.120	1.0184	1.00	1.0184	0.060	0.0611	2.7
13	14:25	3.60	0.6	0.300	0.6	0.120	0.6860	1.00	0.6860	0.060	0.0412	1.8
14	14:26	3.80	0.6	0.300	0.6	0.120	0.4892	1.00	0.4892	0.060	0.0294	1.3
15	14:27	4.00	0.6	0.300	0.6	0.120	0.5338	1.00	0.5338	0.060	0.0320	1.4
16	14:28	4.20	0.6	0.200	0.6	0.080	0.6296	1.00	0.6296	0.060	0.0377	1.7
17	14:29	4.60	0.6	0.200	0.6	0.080	0.5207	1.00	0.5207	0.060	0.0311	1.4
18	14:30	4.80	0.6	0.200	0.6	0.080	0.5446	1.00	0.5446	0.040	0.0218	1.0
19	14:31	5.00	0.6	0.200	0.6	0.080	0.5768	1.00	0.5768	0.040	0.0231	1.0
20	14:32	5.20	0.6	0.100	0.6	0.040	0.1093	1.00	0.1093	0.020	0.0022	0.1
21	14:32	5.40	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

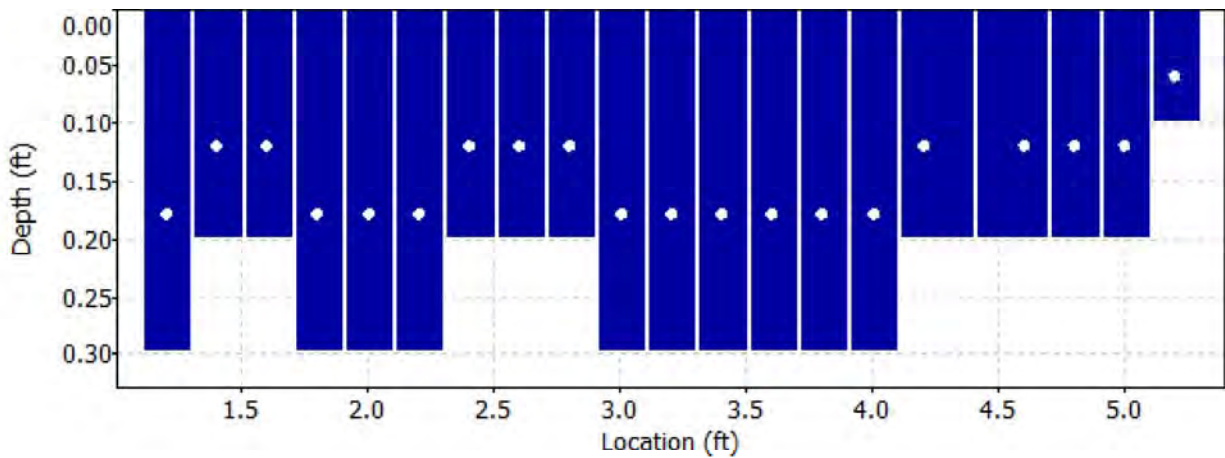
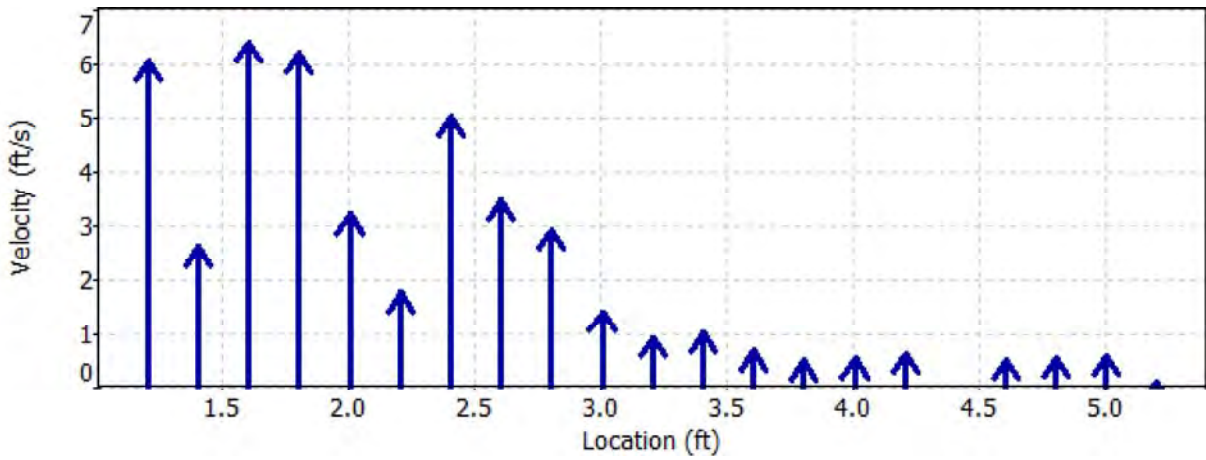
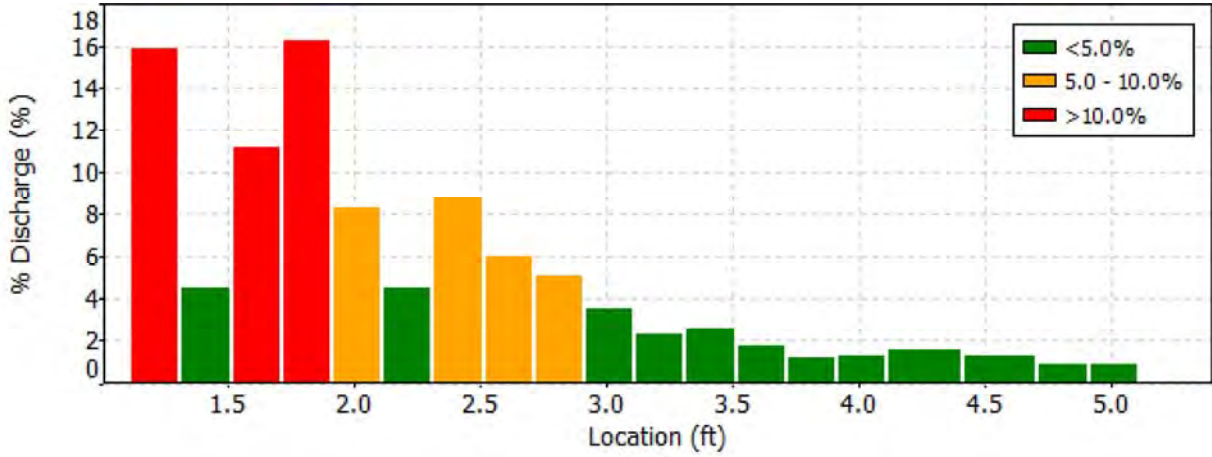
Date Generated: Mon Jan 19 2015

File Information

File Name A39.WAD
 Start Date and Time 2014/09/25 14:12:45

Site Details

Site Name A39
 Operator(s) SA



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A39.WAD
Start Date and Time 2014/09/25 14:12:45

Site Details

Site Name A39
Operator(s) SA

Quality Control

St	Loc	%Dep	Message
1	1.20	0.6	High number of spikes: 5
		0.6	High SNR variation during measurement: 7.7,10.8
		0.6	High standard error: 0.317
2	1.40	0.6	High SNR variation during measurement: 12.9,14.6
		0.6	High standard error: 0.910
3	1.60	0.6	High SNR variation during measurement: 3.0,13.8
5	2.00	0.6	High standard error: 0.299
6	2.20	0.6	High angle: 22
		0.6	SNR (17.8) is different from typical SNR (44.2)
		0.6	High SNR variation during measurement: 14.2,22.4
		0.6	High standard error: 0.802
7	2.40	0.6	High number of spikes: 8
		0.6	SNR (26.6) is different from typical SNR (44.2)
		0.6	High SNR variation during measurement: 21.5,23.6
		0.6	High standard error: 0.312
10	3.00	0.6	High angle: 21
		0.6	High SNR variation during measurement: 5.2,1.7
11	3.20	0.6	High angle: 22
13	3.60	0.6	High angle: 26
14	3.80	0.6	High angle: 39
15	4.00	0.6	High angle: 43
16	4.20	0.6	High angle: 47
17	4.60	0.6	High angle: 53
18	4.80	0.6	High angle: 54
19	5.00	0.6	High angle: 39
20	5.20	0.6	High angle: 38

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A41EORK.WAD
Start Date and Time 2014/09/25 14:00:55

Site Details

Site Name A41
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	2.7%
Velocity	1.5%	5.6%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.1%	-
Overall	3.4%	6.3%

Summary

Averaging Int.	40	# Stations	24
Start Edge	REW	Total Width	9.500
Mean SNR	40.1 dB	Total Area	5.148
Mean Temp	56.25 °F	Mean Depth	0.542
Disch. Equation	Mid-Section	Mean Velocity	1.4127
		Total Discharge	7.2721

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	14:00	3.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>14:00</i>	<i>3.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.4134</i>	<i>1.00</i>	<i>1.4134</i>	<i>0.150</i>	<i>0.2119</i>	<i>2.9</i>
<i>2</i>	<i>14:01</i>	<i>4.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.2300</i>	<i>1.00</i>	<i>1.2300</i>	<i>0.150</i>	<i>0.1844</i>	<i>2.5</i>
<i>3</i>	<i>14:02</i>	<i>4.50</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.8885</i>	<i>1.00</i>	<i>0.8885</i>	<i>0.200</i>	<i>0.1777</i>	<i>2.4</i>
<i>4</i>	<i>14:04</i>	<i>5.00</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>0.5715</i>	<i>1.00</i>	<i>0.5715</i>	<i>0.350</i>	<i>0.2001</i>	<i>2.8</i>
<i>5</i>	<i>14:05</i>	<i>5.50</i>	<i>0.6</i>	<i>0.950</i>	<i>0.6</i>	<i>0.380</i>	<i>1.0883</i>	<i>1.00</i>	<i>1.0883</i>	<i>0.475</i>	<i>0.5170</i>	<i>7.1</i>
<i>6</i>	<i>14:06</i>	<i>6.00</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>2.8530</i>	<i>1.00</i>	<i>2.8530</i>	<i>0.240</i>	<i>0.6847</i>	<i>9.4</i>
<i>7</i>	<i>14:25</i>	<i>6.10</i>	<i>0.6</i>	<i>0.850</i>	<i>0.6</i>	<i>0.340</i>	<i>2.5210</i>	<i>1.00</i>	<i>2.5210</i>	<i>0.106</i>	<i>0.2679</i>	<i>3.7</i>
<i>8</i>	<i>14:21</i>	<i>6.25</i>	<i>0.6</i>	<i>0.850</i>	<i>0.6</i>	<i>0.340</i>	<i>2.6056</i>	<i>1.00</i>	<i>2.6056</i>	<i>0.170</i>	<i>0.4429</i>	<i>6.1</i>
<i>9</i>	<i>14:07</i>	<i>6.50</i>	<i>0.6</i>	<i>0.950</i>	<i>0.6</i>	<i>0.380</i>	<i>2.8553</i>	<i>1.00</i>	<i>2.8553</i>	<i>0.238</i>	<i>0.6782</i>	<i>9.3</i>
<i>10</i>	<i>14:22</i>	<i>6.75</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.6657</i>	<i>1.00</i>	<i>2.6657</i>	<i>0.225</i>	<i>0.5997</i>	<i>8.2</i>
<i>11</i>	<i>14:08</i>	<i>7.00</i>	<i>0.6</i>	<i>0.850</i>	<i>0.6</i>	<i>0.340</i>	<i>2.2726</i>	<i>1.00</i>	<i>2.2726</i>	<i>0.213</i>	<i>0.4830</i>	<i>6.6</i>
<i>12</i>	<i>14:23</i>	<i>7.25</i>	<i>0.6</i>	<i>0.850</i>	<i>0.6</i>	<i>0.340</i>	<i>2.1490</i>	<i>1.00</i>	<i>2.1490</i>	<i>0.213</i>	<i>0.4567</i>	<i>6.3</i>
<i>13</i>	<i>14:09</i>	<i>7.50</i>	<i>0.6</i>	<i>0.850</i>	<i>0.6</i>	<i>0.340</i>	<i>2.0226</i>	<i>1.00</i>	<i>2.0226</i>	<i>0.319</i>	<i>0.6448</i>	<i>8.9</i>
<i>14</i>	<i>14:10</i>	<i>8.00</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.8832</i>	<i>1.00</i>	<i>1.8832</i>	<i>0.300</i>	<i>0.5650</i>	<i>7.8</i>
<i>15</i>	<i>14:11</i>	<i>8.50</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>-0.1949</i>	<i>1.00</i>	<i>-0.1949</i>	<i>0.350</i>	<i>-0.0682</i>	<i>-0.9</i>
<i>16</i>	<i>14:12</i>	<i>9.00</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>-0.0236</i>	<i>1.00</i>	<i>-0.0236</i>	<i>0.250</i>	<i>-0.0059</i>	<i>-0.1</i>
<i>17</i>	<i>14:13</i>	<i>9.50</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.8671</i>	<i>1.00</i>	<i>0.8671</i>	<i>0.300</i>	<i>0.2602</i>	<i>3.6</i>
<i>18</i>	<i>14:15</i>	<i>10.00</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.4373</i>	<i>1.00</i>	<i>1.4373</i>	<i>0.300</i>	<i>0.4312</i>	<i>5.9</i>
<i>19</i>	<i>14:16</i>	<i>10.50</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>1.1339</i>	<i>1.00</i>	<i>1.1339</i>	<i>0.200</i>	<i>0.2267</i>	<i>3.1</i>
<i>20</i>	<i>14:17</i>	<i>11.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.1119</i>	<i>1.00</i>	<i>1.1119</i>	<i>0.150</i>	<i>0.1667</i>	<i>2.3</i>
<i>21</i>	<i>14:18</i>	<i>11.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.7316</i>	<i>1.00</i>	<i>0.7316</i>	<i>0.150</i>	<i>0.1097</i>	<i>1.5</i>
<i>22</i>	<i>14:19</i>	<i>12.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.3766</i>	<i>1.00</i>	<i>0.3766</i>	<i>0.100</i>	<i>0.0377</i>	<i>0.5</i>
<i>23</i>	<i>14:19</i>	<i>12.50</i>	<i>None</i>	<i>0.000</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.000</i>	<i>0.0000</i>	<i>0.0</i>

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

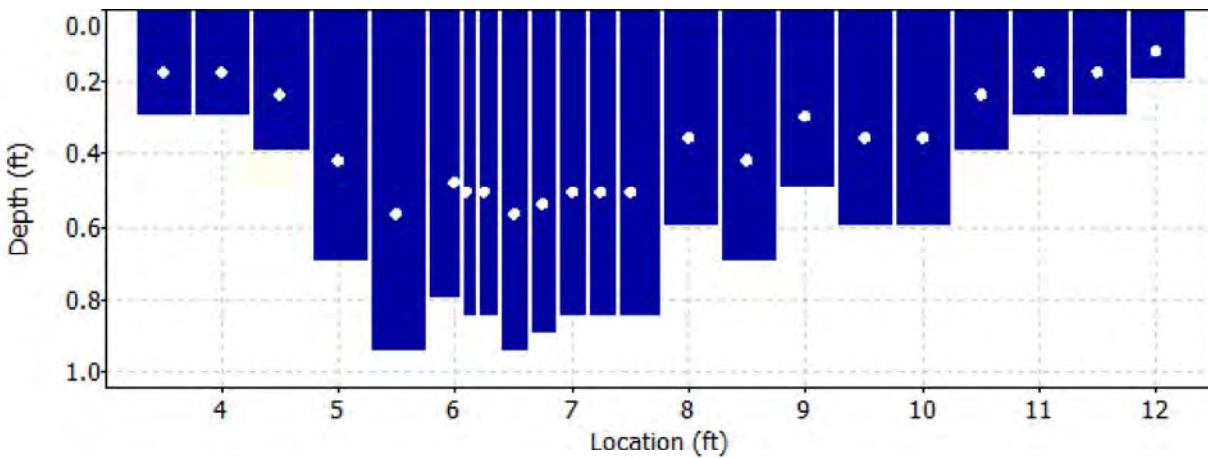
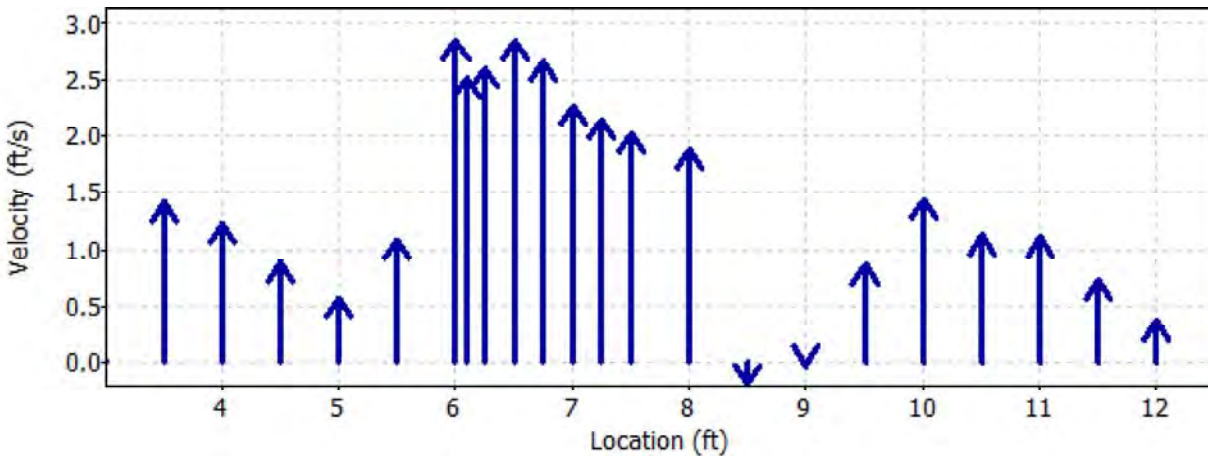
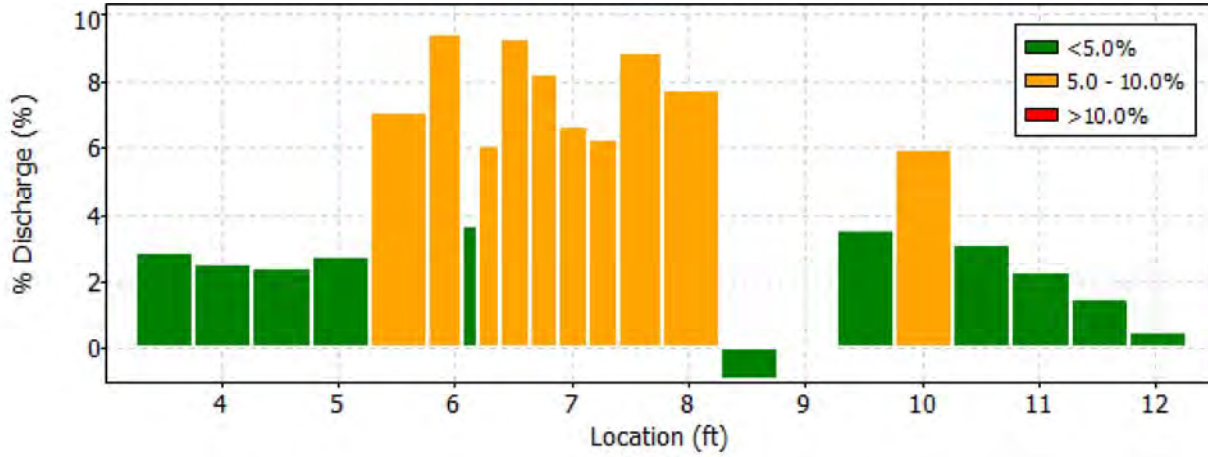
Date Generated: Mon Jan 19 2015

File Information

File Name: A41EORK.WAD
 Start Date and Time: 2014/09/25 14:00:55

Site Details

Site Name: A41
 Operator(s): RB



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A41EORK.WAD
Start Date and Time 2014/09/25 14:00:55

Site Details

Site Name A41
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
1	3.50	0.6	High angle: 25
		0.6	High standard error: 0.128
2	4.00	0.6	High standard error: 0.132
4	5.00	0.6	High standard error: 0.151
6	6.00	0.6	High standard error: 0.147
8	6.25	0.6	High standard error: 0.144
11	7.00	0.6	High number of spikes: 6
15	8.50	0.6	High angle: -176
		0.6	High differences in beam SNR: 44.2,30.9
		0.6	High SNR variation during measurement: 9.9,9.9
16	9.00	0.6	High angle: -99
17	9.50	0.6	High number of spikes: 5
18	10.00	0.6	High angle: -29

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A43.WAD
Start Date and Time 2014/09/25 12:48:35

Site Details

Site Name A43
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	4.3%
Velocity	1.2%	12.0%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.2%	-
Overall	3.3%	12.8%

Summary

Averaging Int. 40 # Stations 23
Start Edge REW Total Width 20.896
Mean SNR 35.3 dB Total Area 9.971
Mean Temp 53.79 °F Mean Depth 0.477
Disch. Equation Mid-Section Mean Velocity 1.7619
Total Discharge 17.5670

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:48	7.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>12:48</i>	<i>8.60</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>1.1158</i>	<i>1.00</i>	<i>1.1158</i>	<i>0.440</i>	<i>0.4909</i>	<i>2.8</i>
2	12:50	9.70	0.6	0.600	0.6	0.240	1.9600	1.00	1.9600	0.660	1.2936	7.4
<i>3</i>	<i>12:53</i>	<i>10.80</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>0.7178</i>	<i>1.00</i>	<i>0.7178</i>	<i>0.770</i>	<i>0.5527</i>	<i>3.1</i>
<i>4</i>	<i>12:55</i>	<i>11.90</i>	<i>0.6</i>	<i>0.550</i>	<i>0.6</i>	<i>0.220</i>	<i>1.4006</i>	<i>1.00</i>	<i>1.4006</i>	<i>0.522</i>	<i>0.7317</i>	<i>4.2</i>
5	13:15	12.70	0.6	0.550	0.6	0.220	4.0669	1.00	4.0669	0.302	1.2297	7.0
6	12:56	13.00	0.6	0.600	0.6	0.240	3.6693	1.00	3.6693	0.240	0.8806	5.0
7	13:13	13.50	0.6	0.550	0.6	0.220	3.6398	1.00	3.6398	0.302	1.1005	6.3
<i>8</i>	<i>12:57</i>	<i>14.10</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.2516</i>	<i>1.00</i>	<i>1.2516</i>	<i>0.510</i>	<i>0.6380</i>	<i>3.6</i>
9	12:58	15.20	0.6	0.450	0.6	0.180	3.4177	1.00	3.4177	0.495	1.6918	9.6
<i>10</i>	<i>12:59</i>	<i>16.30</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.9298</i>	<i>1.00</i>	<i>1.9298</i>	<i>0.510</i>	<i>0.9849</i>	<i>5.6</i>
11	13:12	16.90	0.6	0.500	0.6	0.200	2.5440	1.00	2.5440	0.275	0.6994	4.0
12	13:00	17.40	0.6	0.750	0.6	0.300	2.4442	1.00	2.4442	0.599	1.4648	8.3
<i>13</i>	<i>13:01</i>	<i>18.50</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.9770</i>	<i>1.00</i>	<i>1.9770</i>	<i>0.660</i>	<i>1.3047</i>	<i>7.4</i>
14	13:02	19.60	0.6	0.650	0.6	0.260	1.4245	1.00	1.4245	0.715	1.0182	5.8
15	13:03	20.70	0.6	0.600	0.6	0.240	0.9426	1.00	0.9426	0.660	0.6220	3.5
16	13:05	21.80	0.6	0.500	0.6	0.200	2.9249	1.00	2.9249	0.550	1.6083	9.2
<i>17</i>	<i>13:06</i>	<i>22.90</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>0.4692</i>	<i>1.00</i>	<i>0.4692</i>	<i>0.385</i>	<i>0.1806</i>	<i>1.0</i>
18	13:07	24.00	0.6	0.500	0.6	0.200	0.8291	1.00	0.8291	0.550	0.4559	2.6
<i>19</i>	<i>13:08</i>	<i>25.10</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>1.0118</i>	<i>1.00</i>	<i>1.0118</i>	<i>0.275</i>	<i>0.2782</i>	<i>1.6</i>
<i>20</i>	<i>13:09</i>	<i>26.20</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>0.9997</i>	<i>1.00</i>	<i>0.9997</i>	<i>0.275</i>	<i>0.2748</i>	<i>1.6</i>
21	13:10	27.30	0.6	0.250	0.6	0.100	0.2388	1.00	0.2388	0.275	0.0657	0.4
22	13:10	28.40	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

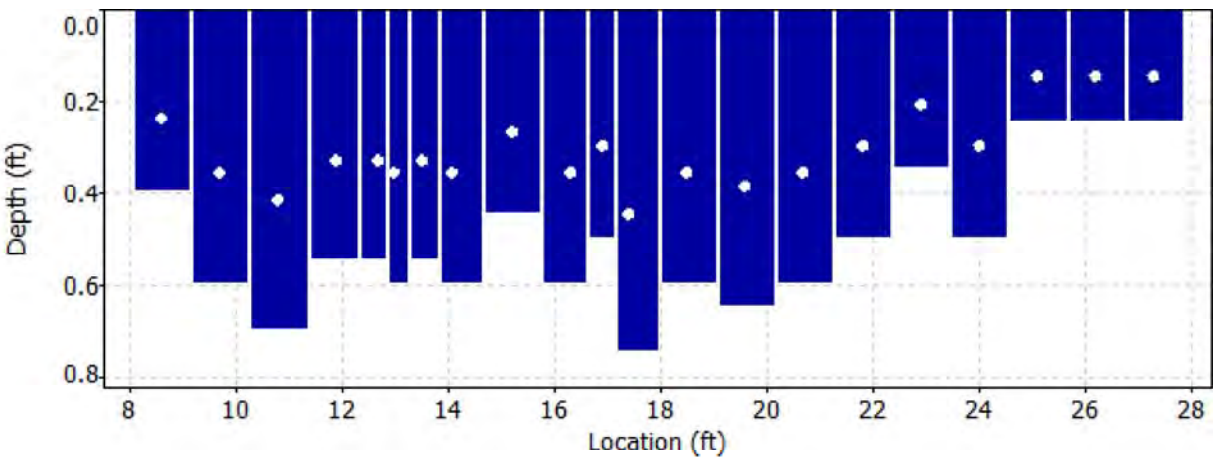
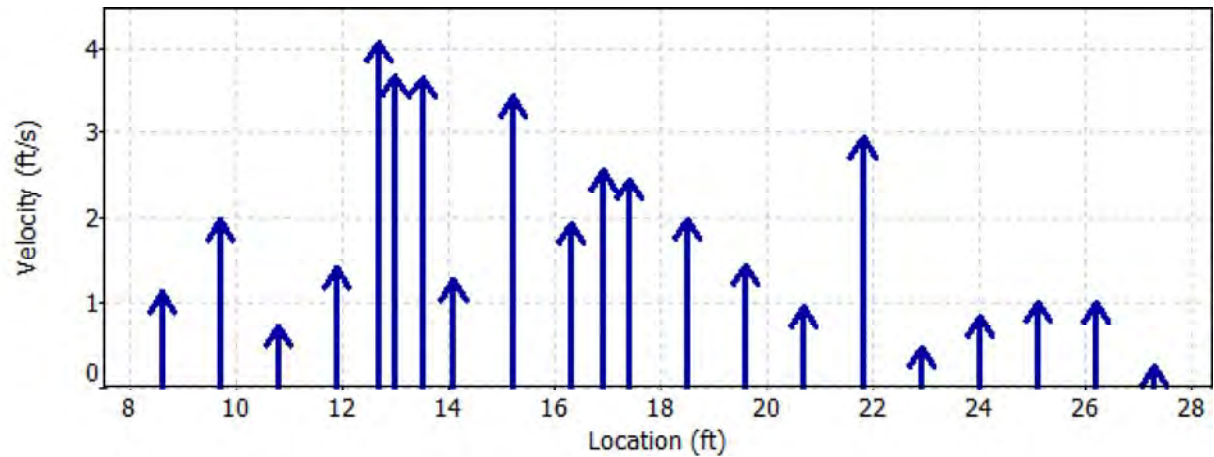
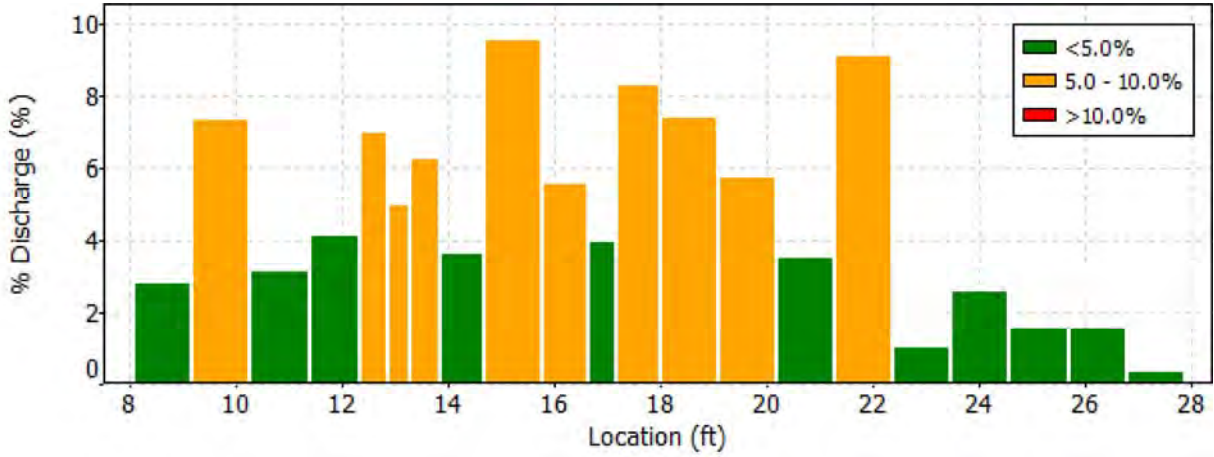
Date Generated: Mon Jan 19 2015

File Information

File Name: A43.WAD
 Start Date and Time: 2014/09/25 12:48:35

Site Details

Site Name: A43
 Operator(s): RB



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A43.WAD
Start Date and Time 2014/09/25 12:48:35

Site Details

Site Name A43
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
1	8.60	0.6	High number of spikes: 6
3	10.80	0.6	High angle: -33
4	11.90	0.6	High angle: -21
		0.6	High standard error: 0.149
8	14.10	0.6	High standard error: 0.128
10	16.30	0.6	High standard error: 0.121
13	18.50	0.6	High angle: -24
17	22.90	0.6	High angle: -46
19	25.10	0.6	High number of spikes: 5
20	26.20	0.6	High angle: -33

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A45.WAD
Start Date and Time 2014/09/25 12:54:18

Site Details

Site Name A45
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	1.3%
Velocity	1.3%	6.6%
Width	0.1%	0.1%
Method	2.0%	-
# Stations	2.3%	-
Overall	3.4%	6.8%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 15.000
Mean SNR 37.4 dB Total Area 16.450
Mean Temp 52.70 °F Mean Depth 1.097
Disch. Equation Mid-Section Mean Velocity 1.4148
Total Discharge 23.2730

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:54	4.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	12:54	4.50	0.6	0.600	0.6	0.240	0.9396	1.00	0.9396	0.300	0.2819	1.2
2	12:55	5.00	0.6	0.900	0.6	0.360	0.7093	1.00	0.7093	0.450	0.3192	1.4
3	12:56	5.50	0.6	1.100	0.6	0.440	1.3478	1.00	1.3478	0.550	0.7413	3.2
4	12:57	6.00	0.6	1.100	0.6	0.440	1.3051	1.00	1.3051	0.550	0.7179	3.1
5	12:58	6.50	0.6	1.200	0.6	0.480	1.4367	1.00	1.4367	0.600	0.8621	3.7
6	12:59	7.00	0.6	1.100	0.6	0.440	0.8825	1.00	0.8825	0.550	0.4854	2.1
7	13:00	7.50	0.6	1.100	0.6	0.440	-0.0719	1.00	-0.0719	0.825	-0.0593	-0.3
8	13:01	8.50	0.6	1.100	0.6	0.440	2.0187	1.00	2.0187	1.100	2.2207	9.5
9	13:02	9.50	0.6	1.300	0.6	0.520	2.0187	1.00	2.0187	0.975	1.9680	8.5
10	13:03	10.00	0.6	1.300	0.6	0.520	1.7241	1.00	1.7241	0.975	1.6808	7.2
11	13:05	11.00	0.6	1.300	0.6	0.520	2.2169	1.00	2.2169	0.975	2.1612	9.3
12	13:06	11.50	0.6	1.300	0.6	0.520	1.9639	1.00	1.9639	0.650	1.2764	5.5
13	13:07	12.00	0.6	1.300	0.6	0.520	1.3278	1.00	1.3278	0.650	0.8630	3.7
14	13:07	12.50	0.6	1.300	0.6	0.520	1.4505	1.00	1.4505	0.650	0.9427	4.1
15	13:08	13.00	0.6	1.400	0.6	0.560	1.9324	1.00	1.9324	1.050	2.0289	8.7
16	13:09	14.00	0.6	1.400	0.6	0.560	1.6125	1.00	1.6125	1.400	2.2574	9.7
17	13:11	15.00	0.6	1.300	0.6	0.520	1.3740	1.00	1.3740	1.300	1.7860	7.7
18	13:12	16.00	0.6	1.100	0.6	0.440	1.5341	1.00	1.5341	1.100	1.6876	7.3
19	13:12	17.00	0.6	1.100	0.6	0.440	0.8333	1.00	0.8333	1.100	0.9167	3.9
20	13:14	18.00	0.6	0.700	0.6	0.280	0.1926	1.00	0.1926	0.700	0.1348	0.6
21	13:14	19.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

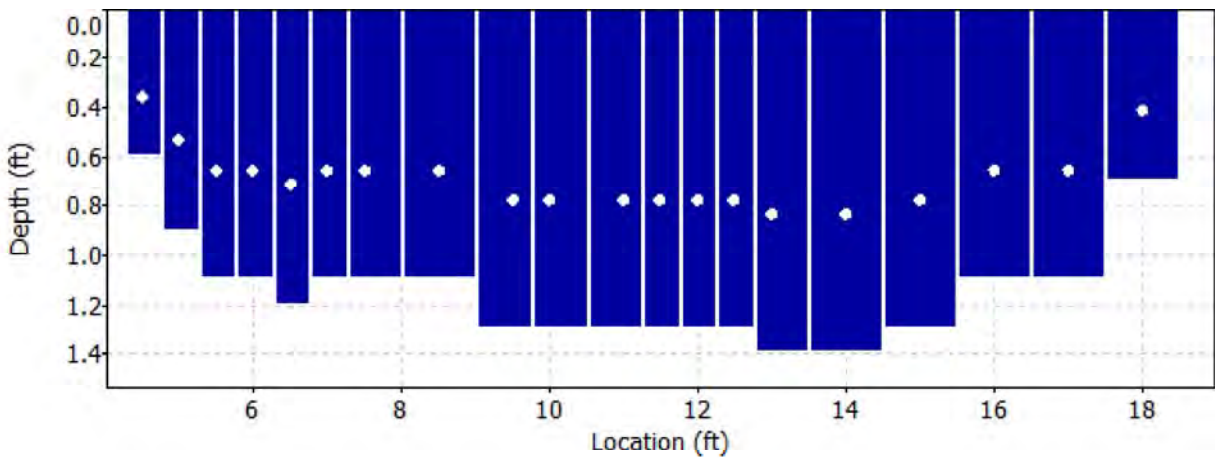
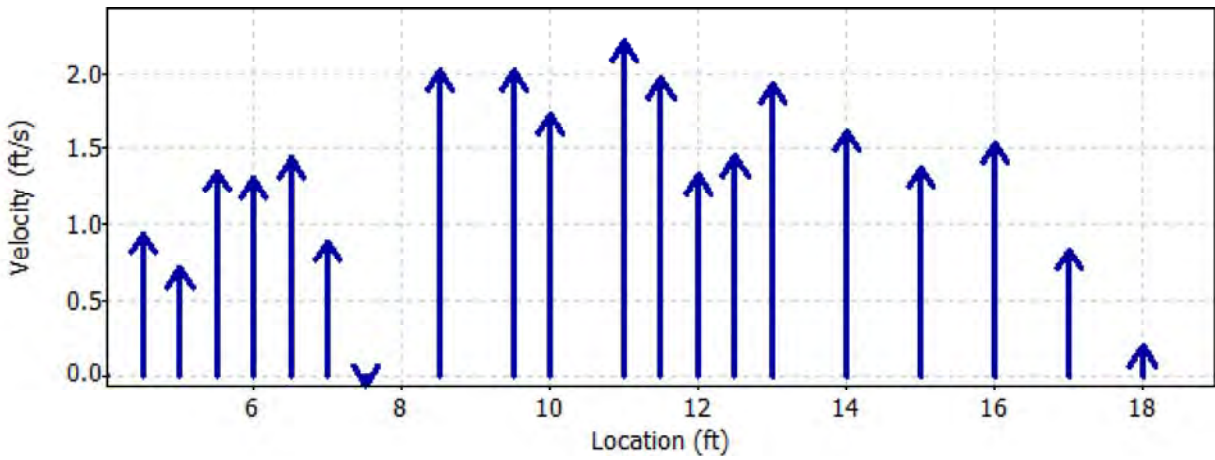
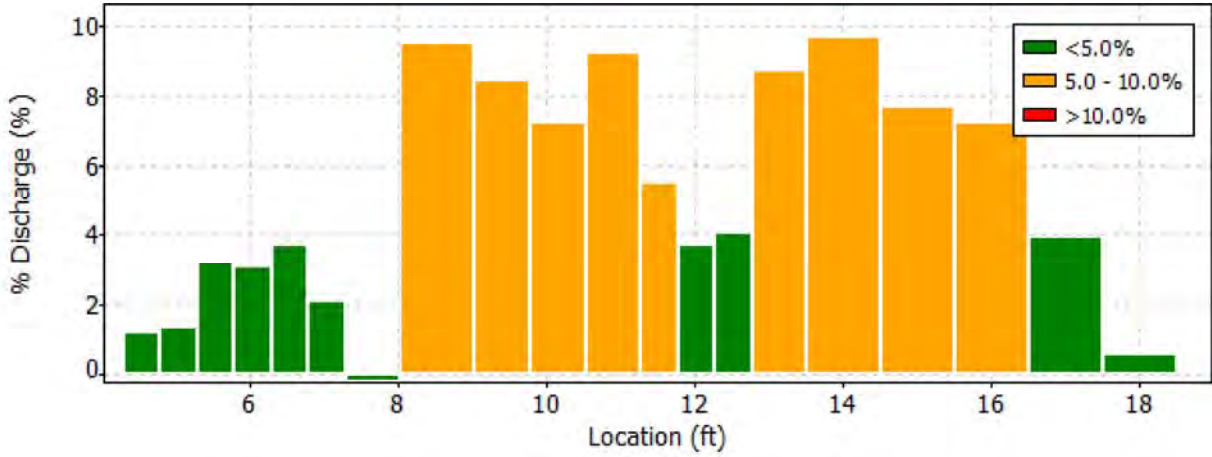
Date Generated: Mon Jan 19 2015

File Information

File Name A45.WAD
 Start Date and Time 2014/09/25 12:54:18

Site Details

Site Name A45
 Operator(s) SA



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A45.WAD
Start Date and Time 2014/09/25 12:54:18

Site Details

Site Name A45
Operator(s) SA

Quality Control

St	Loc	%Dep	Message
6	7.00	0.6	High standard error: 0.115
7	7.50	0.6	High angle: 180
10	10.00	0.6	High angle: 24
17	15.00	0.6	High standard error: 0.106

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A47.WAD
Start Date and Time 2014/09/25 11:47:01

Site Details

Site Name A47
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.3%	1.8%
Velocity	1.1%	6.7%
Width	0.1%	0.1%
Method	1.7%	-
# Stations	2.1%	-
Overall	3.1%	7.0%

Summary

Averaging Int.	40	# Stations	24
Start Edge	REW	Total Width	22.201
Mean SNR	36.0 dB	Total Area	13.590
Mean Temp	52.32 °F	Mean Depth	0.612
Disch. Equation	Mid-Section	Mean Velocity	1.9501
		Total Discharge	26.5031

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:47	7.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	11:47	7.40	0.6	0.600	0.6	0.240	2.5276	1.00	2.5276	0.420	1.0616	4.0
2	<i>11:49</i>	<i>8.40</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>2.1811</i>	<i>1.00</i>	<i>2.1811</i>	<i>0.700</i>	<i>1.5271</i>	<i>5.8</i>
3	11:50	9.40	0.6	0.700	0.6	0.280	2.3573	1.00	2.3573	0.700	1.6504	6.2
4	11:51	10.40	0.6	0.700	0.6	0.280	2.4747	1.00	2.4747	0.700	1.7326	6.5
5	<i>11:51</i>	<i>11.40</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>1.7877</i>	<i>1.00</i>	<i>1.7877</i>	<i>0.700</i>	<i>1.2516</i>	<i>4.7</i>
6	11:53	12.40	0.6	1.000	0.6	0.400	1.7385	1.00	1.7385	1.000	1.7385	6.6
7	11:54	13.40	0.6	0.900	0.6	0.360	1.4085	1.00	1.4085	0.900	1.2675	4.8
8	11:55	14.40	0.6	0.800	0.6	0.320	2.4144	1.00	2.4144	0.800	1.9312	7.3
9	11:56	15.40	0.6	0.700	0.6	0.280	1.8481	1.00	1.8481	0.700	1.2939	4.9
10	11:57	16.40	0.6	0.700	0.6	0.280	1.8333	1.00	1.8333	0.700	1.2836	4.8
11	11:58	17.40	0.6	0.800	0.6	0.320	1.9469	1.00	1.9469	0.800	1.5572	5.9
12	<i>11:59</i>	<i>18.40</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>2.3868</i>	<i>1.00</i>	<i>2.3868</i>	<i>0.640</i>	<i>1.5274</i>	<i>5.8</i>
13	12:00	19.00	0.6	0.800	0.6	0.320	3.0135	1.00	3.0135	0.480	1.4464	5.5
14	12:01	19.60	0.6	0.900	0.6	0.360	2.0371	1.00	2.0371	0.540	1.1001	4.2
15	12:02	20.20	0.6	0.800	0.6	0.320	3.2159	1.00	3.2159	0.480	1.5435	5.8
16	<i>12:03</i>	<i>20.80</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>1.5863</i>	<i>1.00</i>	<i>1.5863</i>	<i>0.480</i>	<i>0.7614</i>	<i>2.9</i>
17	12:04	21.40	0.6	0.800	0.6	0.320	1.9537	1.00	1.9537	0.720	1.4064	5.3
18	12:05	22.60	0.6	0.600	0.6	0.240	1.0364	1.00	1.0364	0.720	0.7462	2.8
19	12:06	23.80	0.6	0.400	0.6	0.160	1.4003	1.00	1.4003	0.480	0.6719	2.5
20	12:07	25.00	0.6	0.300	0.6	0.120	1.8681	1.00	1.8681	0.360	0.6721	2.5
21	12:08	26.20	0.6	0.200	0.6	0.080	0.0899	1.00	0.0899	0.270	0.0243	0.1
22	12:09	27.70	0.6	0.200	0.6	0.080	1.0262	1.00	1.0262	0.300	0.3082	1.2
23	12:09	29.20	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

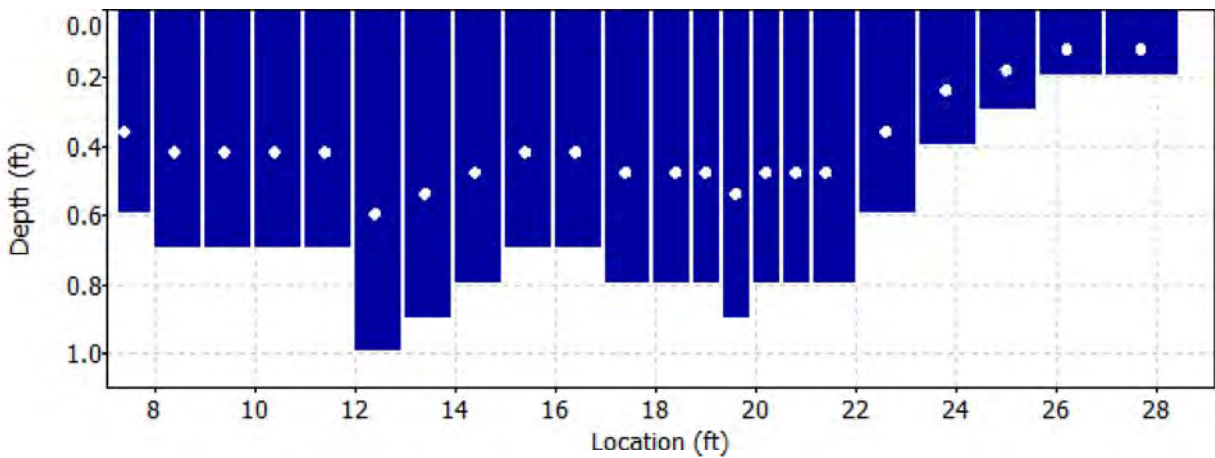
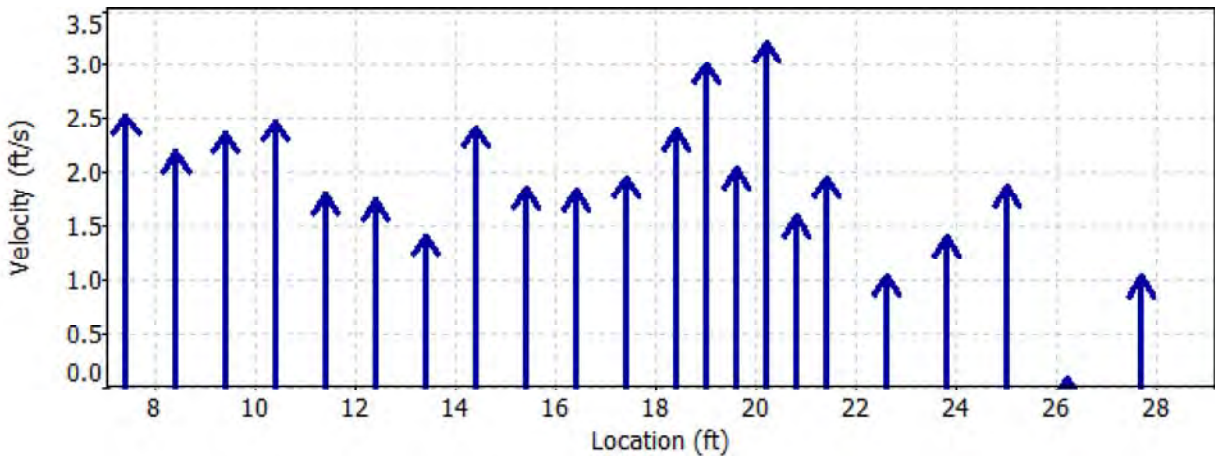
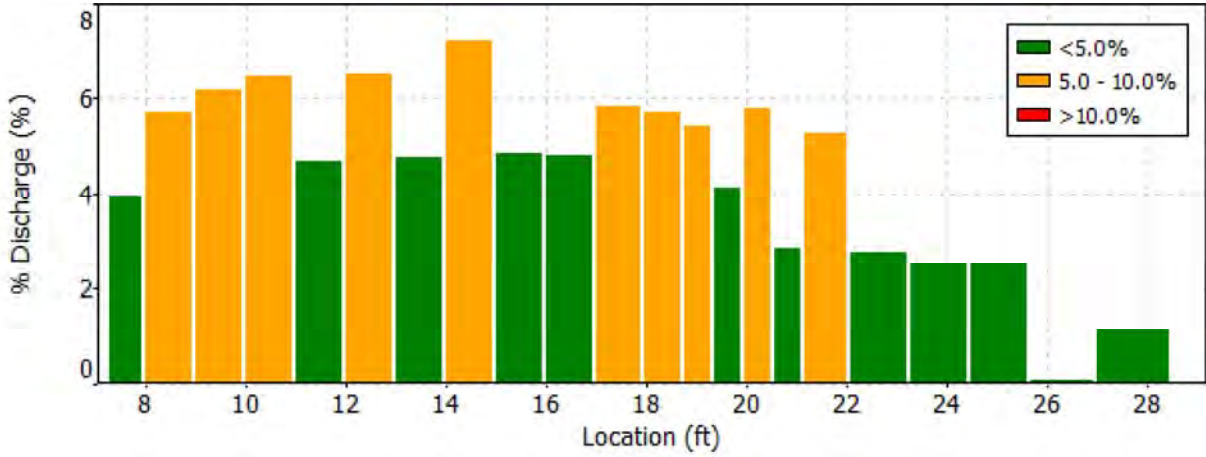
Date Generated: Mon Jan 19 2015

File Information

File Name: A47.WAD
 Start Date and Time: 2014/09/25 11:47:01

Site Details

Site Name: A47
 Operator(s): SA



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A47.WAD
Start Date and Time 2014/09/25 11:47:01

Site Details

Site Name A47
Operator(s) SA

Quality Control

St	Loc	%Dep	Message
2	8.40	0.6	High standard error: 0.119
5	11.40	0.6	High angle: 30
12	18.40	0.6	High standard error: 0.139
16	20.80	0.6	High standard error: 0.150

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

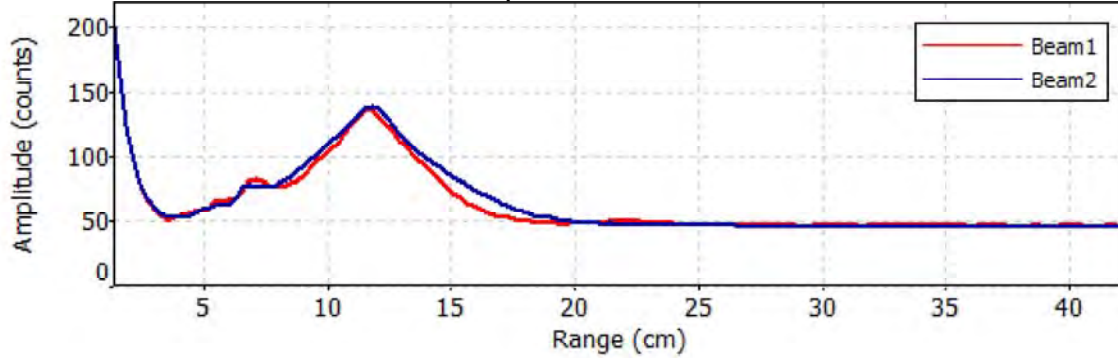
File Name A47.WAD
Start Date and Time 2014/09/25 11:47:01

Site Details

Site Name A47
Operator(s) SA

Automatic Quality Control Test (BeamCheck)

Thu Sep 25 11:45:49 MDT 2014



- ✔ Noise level check - Pass
- ✔ SNR check - Pass
- ✔ Peak location check - Pass
- ✔ Peak shape check - Pass

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A49.WAD
Start Date and Time 2014/09/25 11:34:20

Site Details

Site Name A49
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	2.7%
Velocity	1.4%	9.8%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.2%	-
Overall	3.4%	10.2%

Summary

Averaging Int. 40 # Stations 23
Start Edge REW Total Width 32.001
Mean SNR 32.5 dB Total Area 17.001
Mean Temp 51.76 °F Mean Depth 0.531
Disch. Equation Mid-Section Mean Velocity 1.4587
Total Discharge 24.7996

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:34	8.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	11:34	9.60	0.6	0.300	0.6	0.120	0.8583	1.00	0.8583	0.480	0.4118	1.7
2	11:35	11.20	0.6	0.700	0.6	0.280	1.3530	1.00	1.3530	1.120	1.5157	6.1
3	11:36	12.80	0.6	0.700	0.6	0.280	1.4754	1.00	1.4754	1.120	1.6528	6.7
4	11:37	14.40	0.6	0.750	0.6	0.300	2.4160	1.00	2.4160	0.900	2.1744	8.8
5	11:57	15.20	0.6	0.750	0.6	0.300	0.8727	1.00	0.8727	0.600	0.5236	2.1
6	11:39	16.00	0.6	0.800	0.6	0.320	2.6552	1.00	2.6552	0.640	1.6988	6.8
7	11:58	16.80	0.6	0.700	0.6	0.280	2.6657	1.00	2.6657	0.560	1.4931	6.0
8	11:40	17.60	0.6	0.650	0.6	0.260	1.8140	1.00	1.8140	0.780	1.4151	5.7
9	11:41	19.20	0.6	0.850	0.6	0.340	1.3369	1.00	1.3369	1.360	1.8185	7.3
10	11:42	20.80	0.6	0.750	0.6	0.300	1.6873	1.00	1.6873	1.200	2.0249	8.2
11	11:43	22.40	0.6	0.650	0.6	0.260	1.6490	1.00	1.6490	1.040	1.7148	6.9
12	11:45	24.00	0.6	0.650	0.6	0.260	0.9554	1.00	0.9554	1.040	0.9935	4.0
13	11:46	25.60	0.6	0.500	0.6	0.200	0.6969	1.00	0.6969	0.800	0.5575	2.2
14	11:47	27.20	0.6	0.300	0.6	0.120	1.2782	1.00	1.2782	0.480	0.6133	2.5
15	11:48	28.80	0.6	0.300	0.6	0.120	1.5387	1.00	1.5387	0.480	0.7383	3.0
16	11:49	30.40	0.6	0.400	0.6	0.160	1.5981	1.00	1.5981	0.640	1.0227	4.1
17	11:51	32.00	0.6	0.600	0.6	0.240	1.7904	1.00	1.7904	0.960	1.7190	6.9
18	11:52	33.60	0.6	0.500	0.6	0.200	0.1850	1.00	0.1850	0.800	0.1480	0.6
19	11:53	35.20	0.6	0.450	0.6	0.180	1.5676	1.00	1.5676	0.720	1.1290	4.6
20	11:54	36.80	0.6	0.450	0.6	0.180	0.8484	1.00	0.8484	0.720	0.6111	2.5
21	11:55	38.40	0.6	0.350	0.6	0.140	1.4705	1.00	1.4705	0.560	0.8237	3.3
22	11:55	40.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

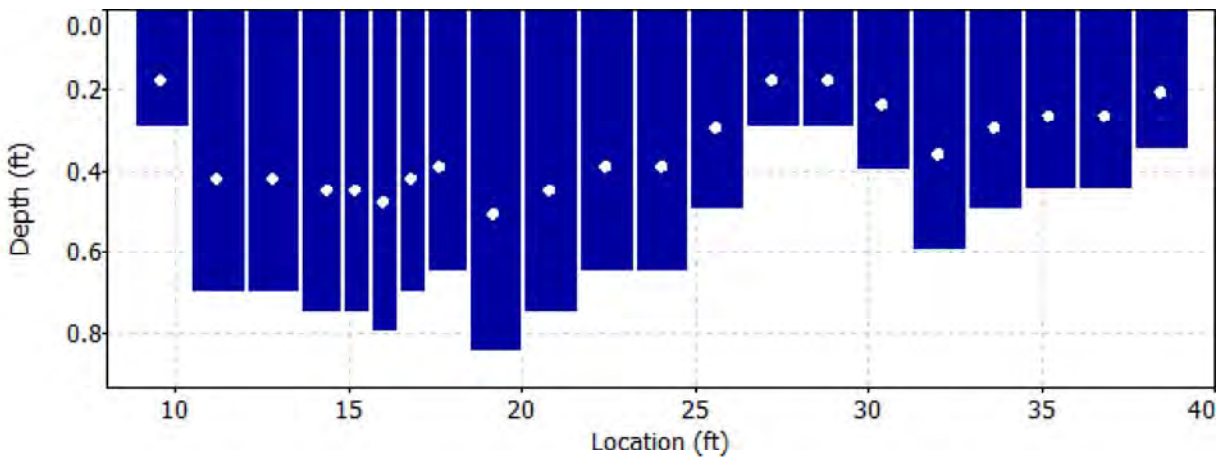
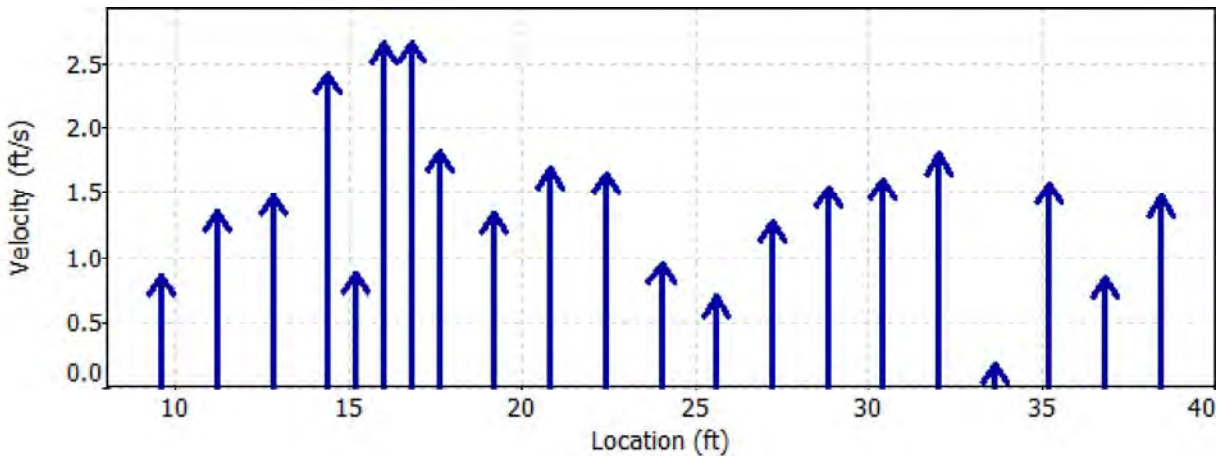
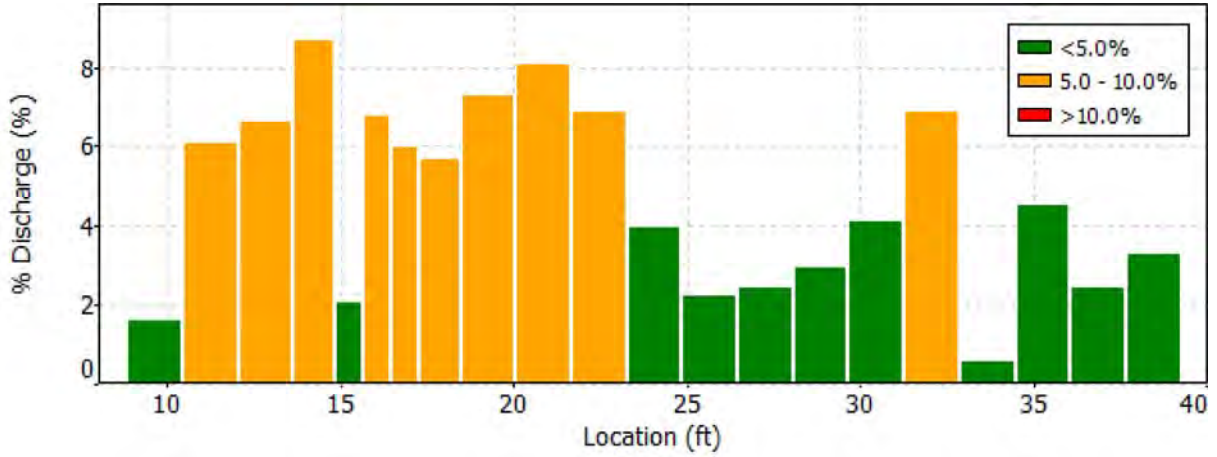
Date Generated: Mon Jan 19 2015

File Information

File Name: A49.WAD
 Start Date and Time: 2014/09/25 11:34:20

Site Details

Site Name: A49
 Operator(s): RB



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A49.WAD
Start Date and Time 2014/09/25 11:34:20

Site Details

Site Name A49
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
2	11.20	0.6	High standard error: 0.118
3	12.80	0.6	High standard error: 0.148
4	14.40	0.6	High angle: -22
5	15.20	0.6	High standard error: 0.110
8	17.60	0.6	High standard error: 0.148
10	20.80	0.6	High angle: -36
11	22.40	0.6	High number of spikes: 6
12	24.00	0.6	High number of spikes: 5
15	28.80	0.6	High angle: -28
17	32.00	0.6	High angle: -30
18	33.60	0.6	High angle: -59
21	38.40	0.6	High angle: -27

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A51.WAD
Start Date and Time 2014/09/25 10:12:57

Site Details

Site Name A71
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.2%	0.9%
Velocity	0.6%	1.8%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.2%	-
Overall	3.1%	2.2%

Summary

Averaging Int. 40 # Stations 23
Start Edge REW Total Width 28.500
Mean SNR 25.2 dB Total Area 29.006
Mean Temp 46.18 °F Mean Depth 1.018
Disch. Equation Mid-Section Mean Velocity 1.5354
Total Discharge 44.5354

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:12	10.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	10:12	11.50	0.6	0.300	0.6	0.120	0.9327	1.00	0.9327	0.450	0.4196	0.9
2	10:14	13.00	0.6	0.550	0.6	0.220	0.7507	1.00	0.7507	0.825	0.6191	1.4
3	10:15	14.50	0.6	0.650	0.6	0.260	1.4108	1.00	1.4108	0.975	1.3754	3.1
4	10:16	16.00	0.6	0.950	0.6	0.380	1.8583	1.00	1.8583	1.425	2.6484	5.9
5	10:17	17.50	0.6	1.200	0.6	0.480	2.2641	1.00	2.2641	1.800	4.0758	9.2
6	10:19	19.00	0.6	1.550	0.6	0.620	2.0157	1.00	2.0157	1.744	3.5147	7.9
7	10:34	19.75	0.6	1.750	0.6	0.700	1.7612	1.00	1.7612	1.313	2.3115	5.2
8	10:20	20.50	0.6	1.900	0.6	0.760	1.6870	1.00	1.6870	1.425	2.4039	5.4
9	10:35	21.25	0.6	1.900	0.6	0.760	1.6978	1.00	1.6978	1.425	2.4193	5.4
10	10:21	22.00	0.6	1.900	0.6	0.760	1.6096	1.00	1.6096	1.425	2.2936	5.1
11	10:37	22.75	0.6	1.950	0.6	0.780	1.5774	1.00	1.5774	1.463	2.3071	5.2
12	10:22	23.50	0.6	1.900	0.6	0.760	1.6427	1.00	1.6427	2.137	3.5112	7.9
13	10:23	25.00	0.6	1.700	0.6	0.680	1.5915	1.00	1.5915	2.550	4.0587	9.1
14	10:24	26.50	0.6	1.450	0.6	0.580	1.3586	1.00	1.3586	2.175	2.9552	6.6
15	10:25	28.00	0.6	1.150	0.6	0.460	1.3793	1.00	1.3793	1.725	2.3791	5.3
16	10:27	29.50	0.6	1.000	0.6	0.400	1.3648	1.00	1.3648	1.500	2.0472	4.6
17	10:28	31.00	0.6	0.750	0.6	0.300	1.3366	1.00	1.3366	1.125	1.5037	3.4
18	10:29	32.50	0.6	0.650	0.6	0.260	1.3711	1.00	1.3711	0.975	1.3367	3.0
19	10:30	34.00	0.6	0.600	0.6	0.240	1.2188	1.00	1.2188	0.900	1.0971	2.5
20	10:31	35.50	0.6	0.500	0.6	0.200	1.0518	1.00	1.0518	0.750	0.7889	1.8
21	10:32	37.00	0.6	0.600	0.6	0.240	0.5213	1.00	0.5213	0.900	0.4692	1.1
22	10:32	38.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

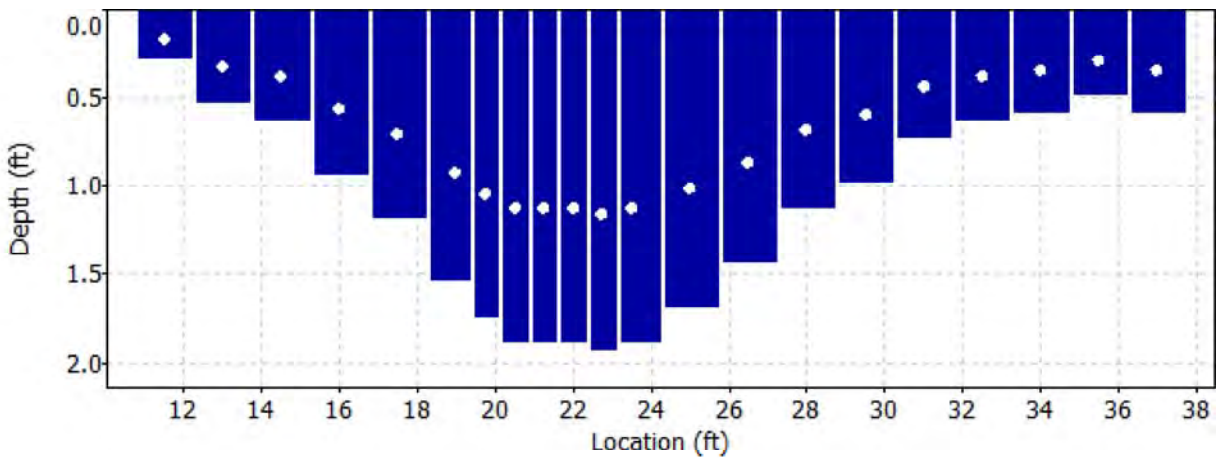
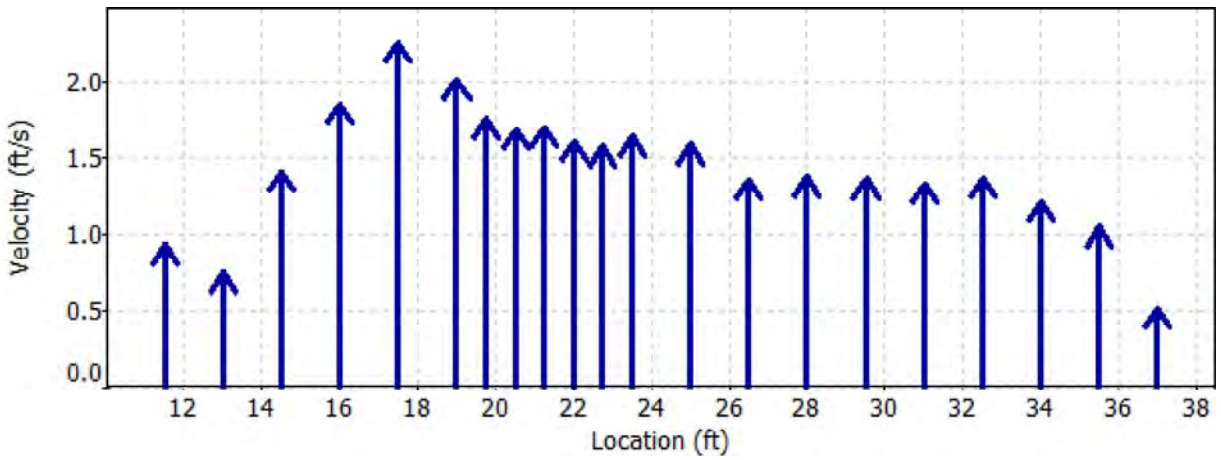
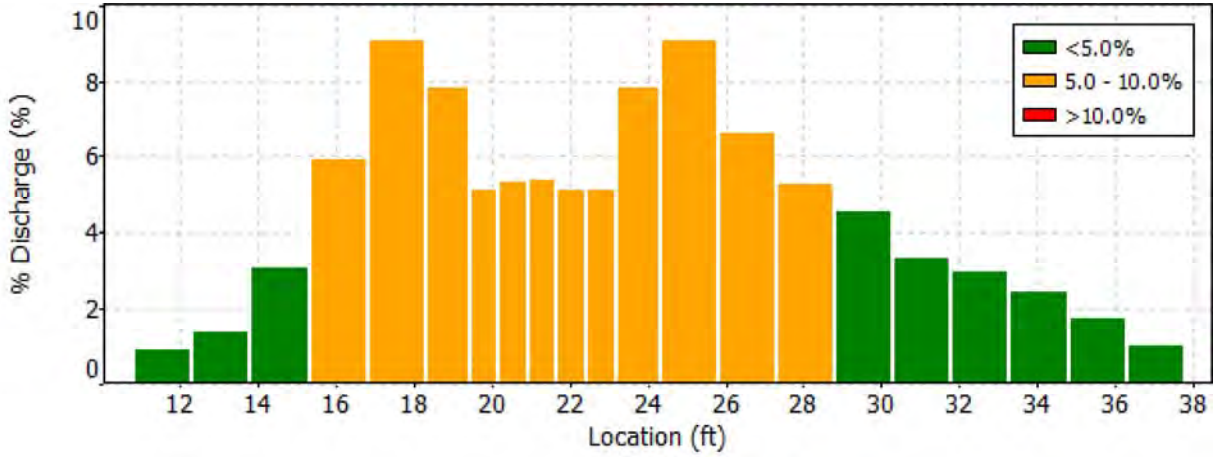
Date Generated: Mon Jan 19 2015

File Information

File Name A51.WAD
 Start Date and Time 2014/09/25 10:12:57

Site Details

Site Name A71
 Operator(s) RB



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A51.WAD
Start Date and Time 2014/09/25 10:12:57

Site Details

Site Name A71
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
11	22.75	0.6	High angle: -22
20	35.50	0.6	High angle: 21

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A53AC.WAD
Start Date and Time 2014/09/25 08:55:27

Site Details

Site Name A53AC
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.3%	2.9%
Velocity	1.1%	10.0%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.2%	-
Overall	3.3%	10.5%

Summary

Averaging Int. 40 # Stations 23
Start Edge REW Total Width 38.000
Mean SNR 27.2 dB Total Area 24.825
Mean Temp 42.84 °F Mean Depth 0.653
Disch. Equation Mid-Section Mean Velocity 2.1283
Total Discharge 52.8361

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:55	25.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	08:56	27.00	0.6	0.250	0.6	0.100	1.2116	1.00	1.2116	0.500	0.6058	1.1
2	08:57	29.00	0.6	0.300	0.6	0.120	0.9177	1.00	0.9177	0.600	0.5503	1.0
3	08:59	31.00	0.6	0.400	0.6	0.160	0.9882	1.00	0.9882	0.800	0.7904	1.5
4	09:00	33.00	0.6	0.600	0.6	0.240	0.8947	1.00	0.8947	1.200	1.0737	2.0
5	09:01	35.00	0.6	0.600	0.6	0.240	1.4147	1.00	1.4147	1.200	1.6978	3.2
6	09:03	37.00	0.6	0.400	0.6	0.160	1.9400	1.00	1.9400	0.800	1.5517	2.9
7	09:04	39.00	0.6	0.650	0.6	0.260	3.6476	1.00	3.6476	1.300	4.7415	9.0
8	09:07	41.00	0.6	0.800	0.6	0.320	0.7395	1.00	0.7395	1.600	1.1830	2.2
9	09:09	43.00	0.6	0.700	0.6	0.280	3.2454	1.00	3.2454	1.400	4.5444	8.6
10	09:10	45.00	0.6	0.950	0.6	0.380	2.8632	1.00	2.8632	1.425	4.0806	7.7
11	09:28	46.00	0.6	1.150	0.6	0.460	2.9682	1.00	2.9682	1.150	3.4132	6.5
12	09:11	47.00	0.6	1.050	0.6	0.420	3.3691	1.00	3.3691	1.050	3.5371	6.7
13	09:25	48.00	0.6	1.050	0.6	0.420	3.3835	1.00	3.3835	1.050	3.5523	6.7
14	09:13	49.00	0.6	0.900	0.6	0.360	4.6660	1.00	4.6660	0.900	4.1991	7.9
15	09:26	50.00	0.6	0.900	0.6	0.360	2.9452	1.00	2.9452	0.900	2.6505	5.0
16	09:16	51.00	0.6	1.100	0.6	0.440	2.8688	1.00	2.8688	1.650	4.7337	9.0
17	09:17	53.00	0.6	0.900	0.6	0.360	2.8465	1.00	2.8465	1.800	5.1232	9.7
18	09:19	55.00	0.6	0.650	0.6	0.260	0.3028	1.00	0.3028	1.300	0.3936	0.7
19	09:20	57.00	0.6	0.700	0.6	0.280	1.6775	1.00	1.6775	1.400	2.3489	4.4
20	09:21	59.00	0.6	0.700	0.6	0.280	0.8976	1.00	0.8976	1.400	1.2569	2.4
21	09:22	61.00	0.6	0.700	0.6	0.280	0.5771	1.00	0.5771	1.400	0.8081	1.5
22	09:22	63.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

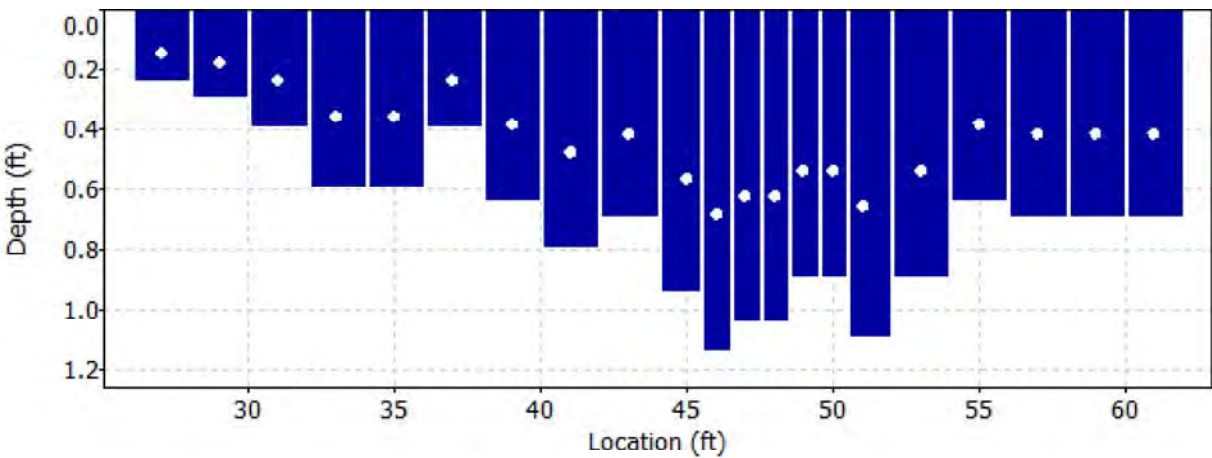
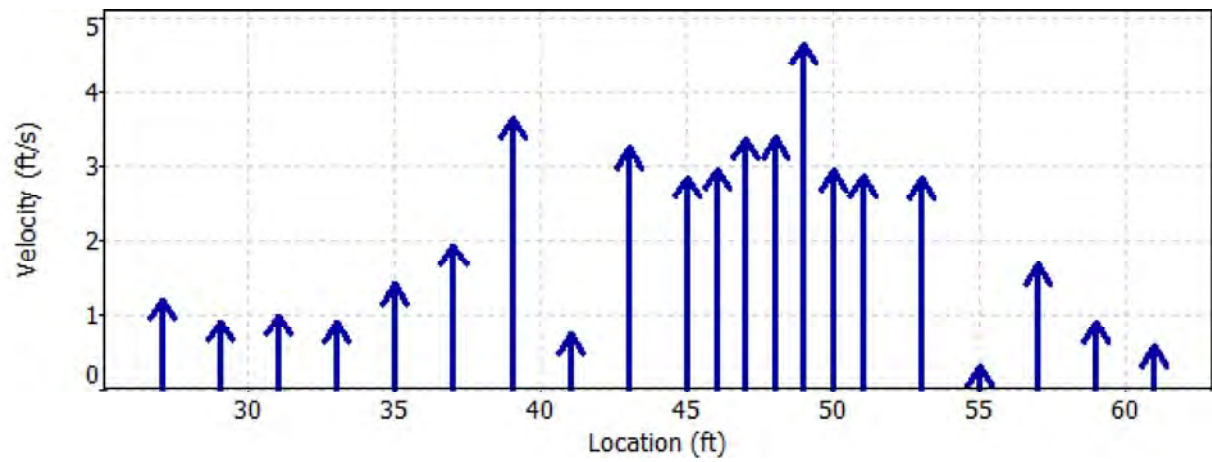
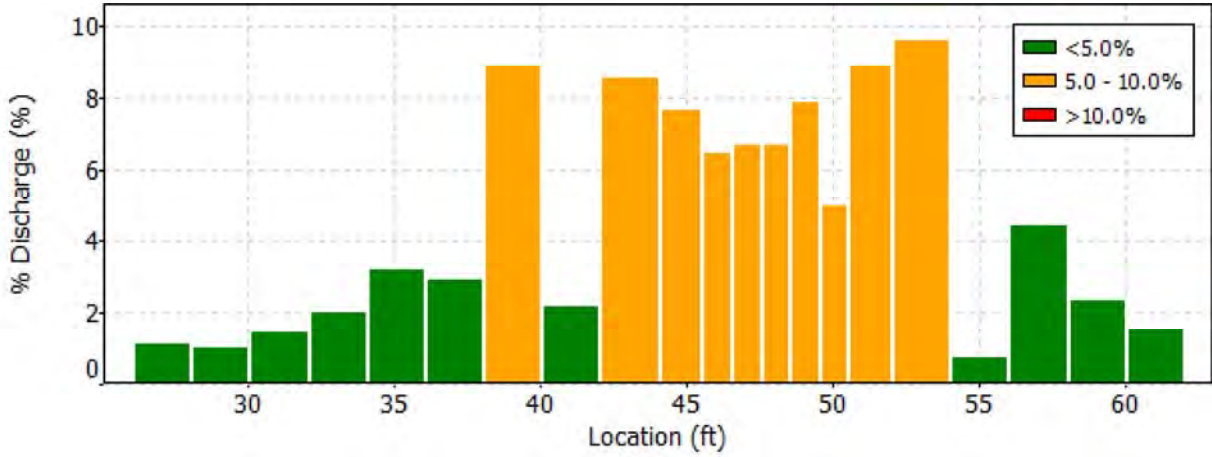
Date Generated: Mon Jan 19 2015

File Information

File Name: A53AC.WAD
 Start Date and Time: 2014/09/25 08:55:27

Site Details

Site Name: A53AC
 Operator(s): RB



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A53AC.WAD
Start Date and Time 2014/09/25 08:55:27

Site Details

Site Name A53AC
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
3	31.00	0.6	High angle: -38
5	35.00	0.6	High standard error: 0.135
13	48.00	0.6	High angle: -22
14	49.00	0.6	High angle: -22
15	50.00	0.6	High angle: -32
16	51.00	0.6	High angle: -28
18	55.00	0.6	High angle: -22
20	59.00	0.6	High angle: -25

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

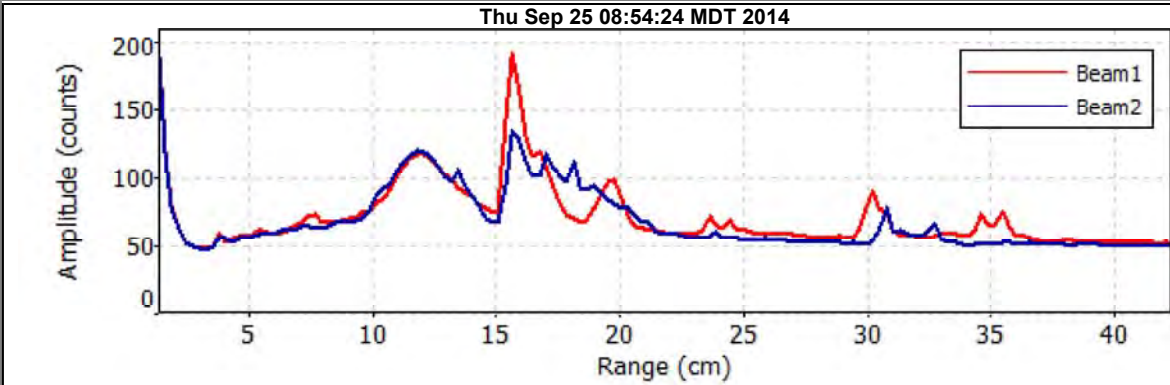
File Information

File Name A53AC.WAD
Start Date and Time 2014/09/25 08:55:27

Site Details

Site Name A53AC
Operator(s) RB

Automatic Quality Control Test (BeamCheck)



- ✔ Noise level check - Pass
- ✔ SNR check - Pass
- ✔ Peak location check - Pass
- ✔ Peak shape check - Pass

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A55.WAD
Start Date and Time 2014/09/23 08:35:52

Site Details

Site Name
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	1.9%
Velocity	1.0%	5.0%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.1%	-
Overall	3.1%	5.4%

Summary

Averaging Int.	40	# Stations	24
Start Edge	REW	Total Width	33.200
Mean SNR	31.9 dB	Total Area	38.824
Mean Temp	40.67 °F	Mean Depth	1.169
Disch. Equation	Mid-Section	Mean Velocity	2.2959
		Total Discharge	89.1352

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:35	8.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	08:35	8.20	0.6	0.500	0.6	0.200	0.9619	1.00	0.9619	0.425	0.4089	0.5
2	08:37	9.70	0.6	0.700	0.6	0.280	0.7766	1.00	0.7766	1.050	0.8156	0.9
3	08:39	11.20	0.6	0.600	0.6	0.240	1.1972	1.00	1.1972	0.900	1.0776	1.2
4	08:40	12.70	0.6	0.700	0.6	0.280	1.9442	1.00	1.9442	1.050	2.0418	2.3
5	08:42	14.20	0.6	1.200	0.6	0.480	2.3819	1.00	2.3819	1.800	4.2879	4.8
6	08:43	15.70	0.6	1.300	0.6	0.520	1.9081	1.00	1.9081	1.950	3.7205	4.2
7	08:45	17.20	0.6	1.300	0.6	0.520	2.5174	1.00	2.5174	1.950	4.9084	5.5
8	08:46	18.70	0.6	1.300	0.6	0.520	2.3766	1.00	2.3766	1.950	4.6340	5.2
9	08:47	20.20	0.6	1.300	0.6	0.520	3.0617	1.00	3.0617	1.950	5.9697	6.7
10	08:49	21.70	0.6	1.500	0.6	0.600	2.2438	1.00	2.2438	2.250	5.0485	5.7
11	08:51	23.20	0.6	1.300	0.6	0.520	3.4226	1.00	3.4226	1.950	6.6733	7.5
12	08:52	24.70	0.6	1.600	0.6	0.640	1.8970	1.00	1.8970	2.400	4.5529	5.1
13	08:53	26.20	0.6	1.500	0.6	0.600	2.9439	1.00	2.9439	2.250	6.6238	7.4
14	08:55	27.70	0.6	1.400	0.6	0.560	3.6430	1.00	3.6430	2.100	7.6500	8.6
15	08:57	29.20	0.6	1.500	0.6	0.600	3.0197	1.00	3.0197	2.250	6.7943	7.6
16	08:58	30.70	0.6	1.500	0.6	0.600	2.7851	1.00	2.7851	2.250	6.2665	7.0
17	08:59	32.20	0.6	1.400	0.6	0.560	2.9764	1.00	2.9764	2.100	6.2501	7.0
18	09:00	33.70	0.6	1.400	0.6	0.560	1.5912	1.00	1.5912	2.100	3.3414	3.7
19	09:02	35.20	0.6	1.300	0.6	0.520	1.8209	1.00	1.8209	1.950	3.5503	4.0
20	09:03	36.70	0.6	1.300	0.6	0.520	1.3622	1.00	1.3622	1.950	2.6560	3.0
21	09:04	38.20	0.6	0.900	0.6	0.360	0.9035	1.00	0.9035	1.350	1.2197	1.4
22	09:05	39.70	0.6	0.600	0.6	0.240	0.7156	1.00	0.7156	0.900	0.6441	0.7
23	09:05	41.20	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

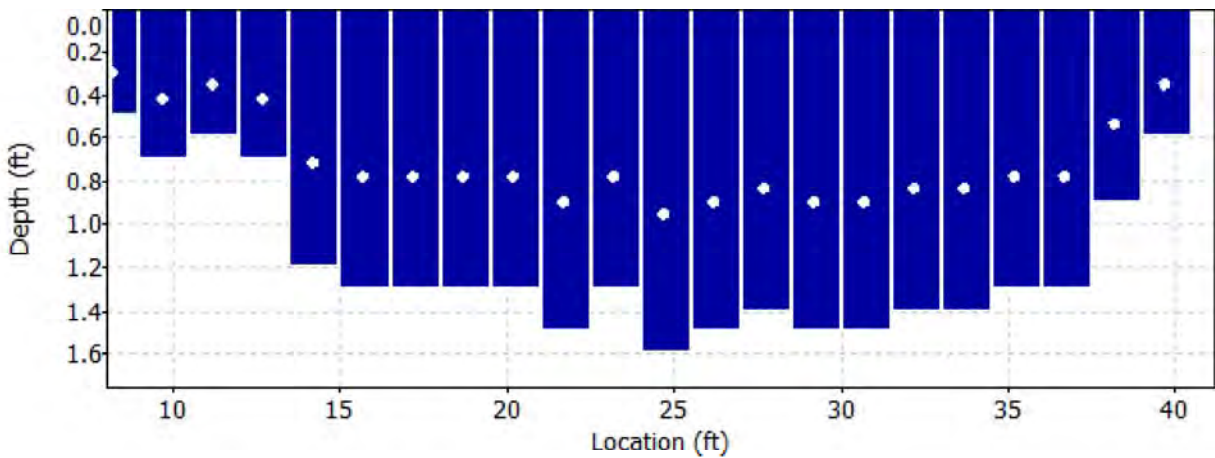
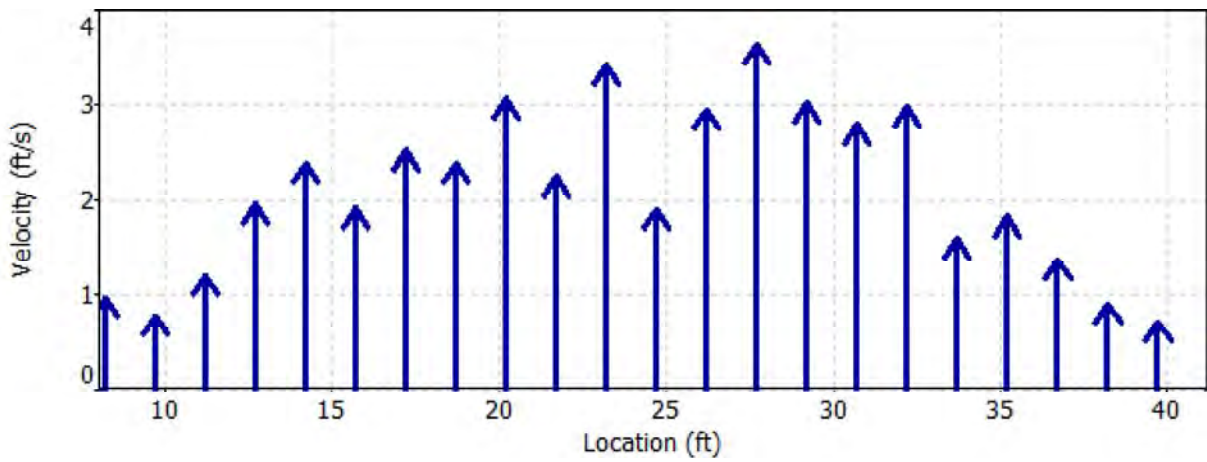
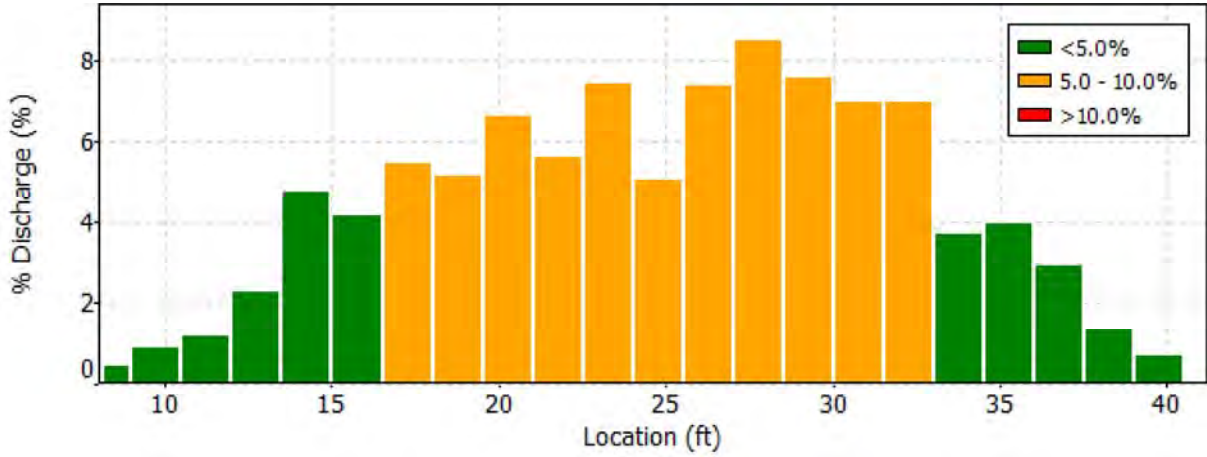
Date Generated: Mon Jan 19 2015

File Information

File Name: A55.WAD
 Start Date and Time: 2014/09/23 08:35:52

Site Details

Site Name:
 Operator(s): SA



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A55.WAD
Start Date and Time 2014/09/23 08:35:52

Site Details

Site Name
Operator(s) SA

Quality Control

St	Loc	%Dep	Message
8	18.70	0.6	High standard error: 0.120
10	21.70	0.6	High standard error: 0.119
12	24.70	0.6	High standard error: 0.145
15	29.20	0.6	High standard error: 0.163
18	33.70	0.6	High standard error: 0.122
20	36.70	0.6	High angle: 23
21	38.20	0.6	High angle: 27
22	39.70	0.6	High angle: 26

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

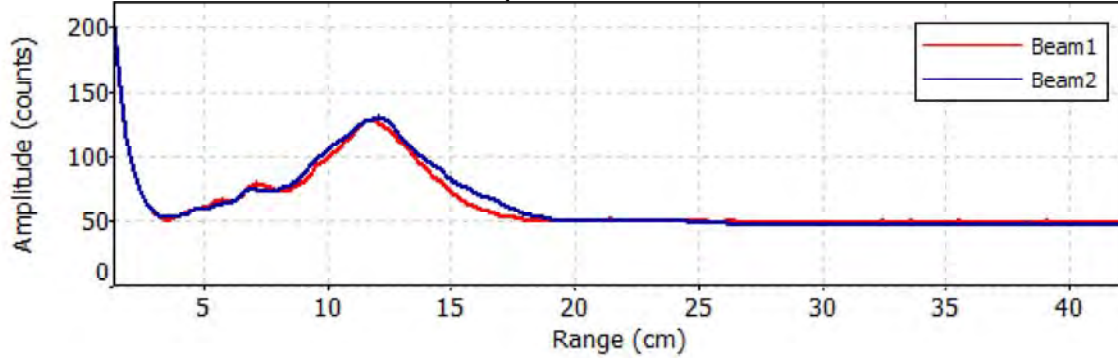
File Name A55.WAD
Start Date and Time 2014/09/23 08:35:52

Site Details

Site Name
Operator(s) SA

Automatic Quality Control Test (BeamCheck)

Tue Sep 23 08:34:26 MDT 2014



- ✔ Noise level check - Pass
- ✔ SNR check - Pass
- ✔ Peak location check - Pass
- ✔ Peak shape check - Pass

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A55.WAD
Start Date and Time 2014/09/23 08:35:52

Site Details

Site Name
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	1.9%
Velocity	1.0%	5.0%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.1%	-
Overall	3.1%	5.4%

Summary

Averaging Int.	40	# Stations	24
Start Edge	REW	Total Width	33.200
Mean SNR	31.9 dB	Total Area	38.824
Mean Temp	40.67 °F	Mean Depth	1.169
Disch. Equation	Mid-Section	Mean Velocity	2.2959
		Total Discharge	89.1352

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:35	8.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	08:35	8.20	0.6	0.500	0.6	0.200	0.9619	1.00	0.9619	0.425	0.4089	0.5
2	08:37	9.70	0.6	0.700	0.6	0.280	0.7766	1.00	0.7766	1.050	0.8156	0.9
3	08:39	11.20	0.6	0.600	0.6	0.240	1.1972	1.00	1.1972	0.900	1.0776	1.2
4	08:40	12.70	0.6	0.700	0.6	0.280	1.9442	1.00	1.9442	1.050	2.0418	2.3
5	08:42	14.20	0.6	1.200	0.6	0.480	2.3819	1.00	2.3819	1.800	4.2879	4.8
6	08:43	15.70	0.6	1.300	0.6	0.520	1.9081	1.00	1.9081	1.950	3.7205	4.2
7	08:45	17.20	0.6	1.300	0.6	0.520	2.5174	1.00	2.5174	1.950	4.9084	5.5
8	08:46	18.70	0.6	1.300	0.6	0.520	2.3766	1.00	2.3766	1.950	4.6340	5.2
9	08:47	20.20	0.6	1.300	0.6	0.520	3.0617	1.00	3.0617	1.950	5.9697	6.7
10	08:49	21.70	0.6	1.500	0.6	0.600	2.2438	1.00	2.2438	2.250	5.0485	5.7
11	08:51	23.20	0.6	1.300	0.6	0.520	3.4226	1.00	3.4226	1.950	6.6733	7.5
12	08:52	24.70	0.6	1.600	0.6	0.640	1.8970	1.00	1.8970	2.400	4.5529	5.1
13	08:53	26.20	0.6	1.500	0.6	0.600	2.9439	1.00	2.9439	2.250	6.6238	7.4
14	08:55	27.70	0.6	1.400	0.6	0.560	3.6430	1.00	3.6430	2.100	7.6500	8.6
15	08:57	29.20	0.6	1.500	0.6	0.600	3.0197	1.00	3.0197	2.250	6.7943	7.6
16	08:58	30.70	0.6	1.500	0.6	0.600	2.7851	1.00	2.7851	2.250	6.2665	7.0
17	08:59	32.20	0.6	1.400	0.6	0.560	2.9764	1.00	2.9764	2.100	6.2501	7.0
18	09:00	33.70	0.6	1.400	0.6	0.560	1.5912	1.00	1.5912	2.100	3.3414	3.7
19	09:02	35.20	0.6	1.300	0.6	0.520	1.8209	1.00	1.8209	1.950	3.5503	4.0
20	09:03	36.70	0.6	1.300	0.6	0.520	1.3622	1.00	1.3622	1.950	2.6560	3.0
21	09:04	38.20	0.6	0.900	0.6	0.360	0.9035	1.00	0.9035	1.350	1.2197	1.4
22	09:05	39.70	0.6	0.600	0.6	0.240	0.7156	1.00	0.7156	0.900	0.6441	0.7
23	09:05	41.20	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

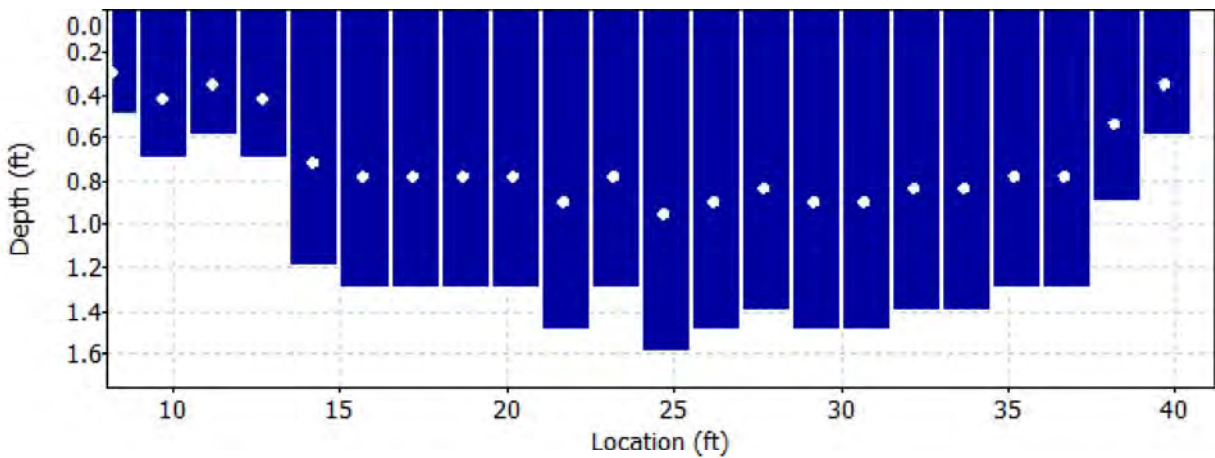
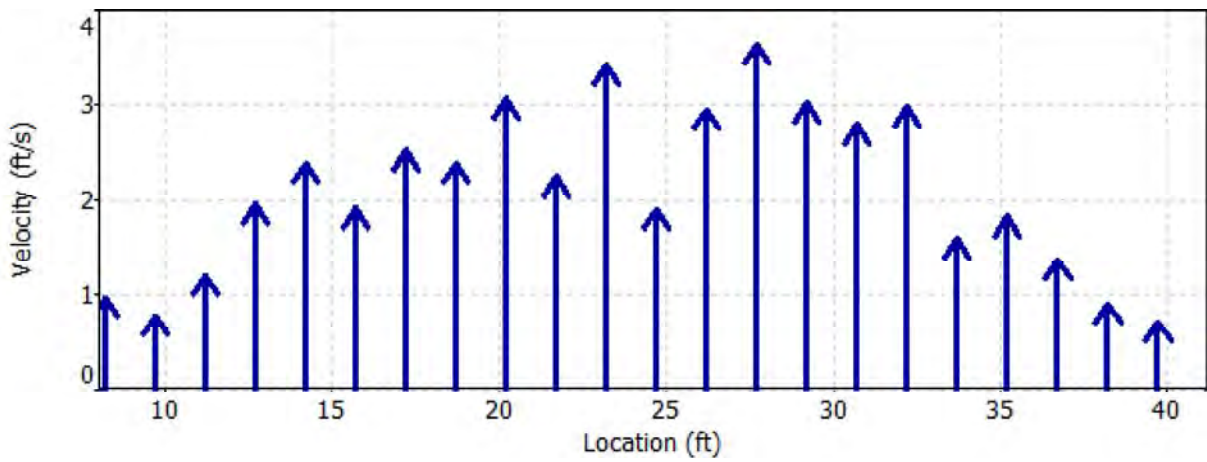
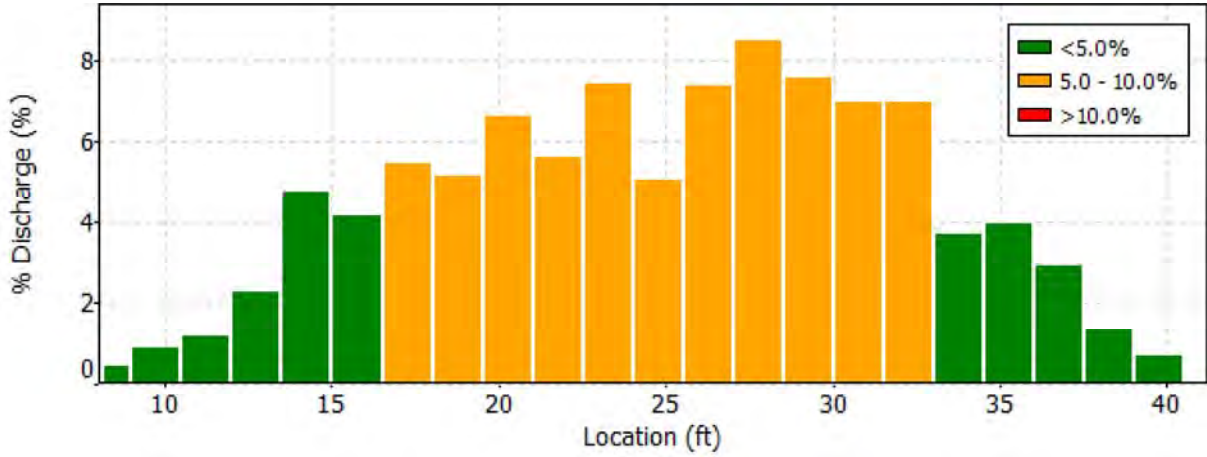
Date Generated: Mon Jan 19 2015

File Information

File Name: A55.WAD
 Start Date and Time: 2014/09/23 08:35:52

Site Details

Site Name:
 Operator(s): SA



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A55.WAD
Start Date and Time 2014/09/23 08:35:52

Site Details

Site Name
Operator(s) SA

Quality Control

St	Loc	%Dep	Message
8	18.70	0.6	High standard error: 0.120
10	21.70	0.6	High standard error: 0.119
12	24.70	0.6	High standard error: 0.145
15	29.20	0.6	High standard error: 0.163
18	33.70	0.6	High standard error: 0.122
20	36.70	0.6	High angle: 23
21	38.20	0.6	High angle: 27
22	39.70	0.6	High angle: 26

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

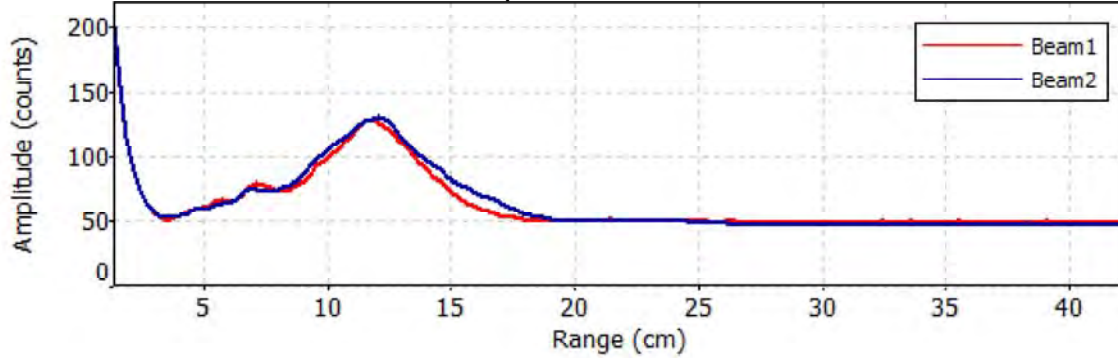
File Name A55.WAD
Start Date and Time 2014/09/23 08:35:52

Site Details

Site Name
Operator(s) SA

Automatic Quality Control Test (BeamCheck)

Tue Sep 23 08:34:26 MDT 2014



- ✔ Noise level check - Pass
- ✔ SNR check - Pass
- ✔ Peak location check - Pass
- ✔ Peak shape check - Pass

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A56.WAD
Start Date and Time 2014/09/23 13:41:01

Site Details

Site Name A56
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	2.7%
Velocity	1.1%	10.3%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.1%	-
Overall	3.2%	10.7%

Summary

Averaging Int.	40	# Stations	24
Start Edge	REW	Total Width	37.800
Mean SNR	34.1 dB	Total Area	41.326
Mean Temp	53.21 °F	Mean Depth	1.093
Disch. Equation	Mid-Section	Mean Velocity	2.2677
		Total Discharge	93.7173

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	13:41	7.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>13:41</i>	<i>7.60</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>1.4367</i>	<i>1.00</i>	<i>1.4367</i>	<i>0.480</i>	<i>0.6895</i>	<i>0.7</i>
<i>2</i>	<i>13:42</i>	<i>9.40</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.0466</i>	<i>1.00</i>	<i>0.0466</i>	<i>1.080</i>	<i>0.0503</i>	<i>0.1</i>
<i>3</i>	<i>13:43</i>	<i>11.20</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.4065</i>	<i>1.00</i>	<i>2.4065</i>	<i>1.620</i>	<i>3.8980</i>	<i>4.2</i>
<i>4</i>	<i>13:44</i>	<i>13.00</i>	<i>0.6</i>	<i>1.000</i>	<i>0.6</i>	<i>0.400</i>	<i>3.6115</i>	<i>1.00</i>	<i>3.6115</i>	<i>1.800</i>	<i>6.5003</i>	<i>6.9</i>
<i>5</i>	<i>13:45</i>	<i>14.80</i>	<i>0.6</i>	<i>1.400</i>	<i>0.6</i>	<i>0.560</i>	<i>1.3396</i>	<i>1.00</i>	<i>1.3396</i>	<i>2.520</i>	<i>3.3753</i>	<i>3.6</i>
<i>6</i>	<i>13:46</i>	<i>16.60</i>	<i>0.6</i>	<i>1.400</i>	<i>0.6</i>	<i>0.560</i>	<i>2.0489</i>	<i>1.00</i>	<i>2.0489</i>	<i>2.520</i>	<i>5.1626</i>	<i>5.5</i>
<i>7</i>	<i>13:47</i>	<i>18.40</i>	<i>0.6</i>	<i>1.900</i>	<i>0.6</i>	<i>0.760</i>	<i>2.3822</i>	<i>1.00</i>	<i>2.3822</i>	<i>3.420</i>	<i>8.1463</i>	<i>8.7</i>
<i>8</i>	<i>13:48</i>	<i>20.20</i>	<i>0.6</i>	<i>1.400</i>	<i>0.6</i>	<i>0.560</i>	<i>2.3698</i>	<i>1.00</i>	<i>2.3698</i>	<i>2.520</i>	<i>5.9711</i>	<i>6.4</i>
<i>9</i>	<i>13:49</i>	<i>22.00</i>	<i>0.6</i>	<i>1.400</i>	<i>0.6</i>	<i>0.560</i>	<i>2.2575</i>	<i>1.00</i>	<i>2.2575</i>	<i>2.520</i>	<i>5.6883</i>	<i>6.1</i>
<i>10</i>	<i>13:50</i>	<i>23.80</i>	<i>0.6</i>	<i>1.600</i>	<i>0.6</i>	<i>0.640</i>	<i>3.3028</i>	<i>1.00</i>	<i>3.3028</i>	<i>1.521</i>	<i>5.0229</i>	<i>5.4</i>
<i>11</i>	<i>14:06</i>	<i>23.90</i>	<i>0.6</i>	<i>1.600</i>	<i>0.6</i>	<i>0.640</i>	<i>3.5650</i>	<i>1.00</i>	<i>3.5650</i>	<i>1.440</i>	<i>5.1334</i>	<i>5.5</i>
<i>12</i>	<i>13:52</i>	<i>25.60</i>	<i>0.6</i>	<i>1.500</i>	<i>0.6</i>	<i>0.600</i>	<i>0.2395</i>	<i>1.00</i>	<i>0.2395</i>	<i>2.624</i>	<i>0.6285</i>	<i>0.7</i>
<i>13</i>	<i>13:53</i>	<i>27.40</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>3.8448</i>	<i>1.00</i>	<i>3.8448</i>	<i>1.980</i>	<i>7.6126</i>	<i>8.1</i>
<i>14</i>	<i>13:54</i>	<i>29.20</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>2.2910</i>	<i>1.00</i>	<i>2.2910</i>	<i>1.980</i>	<i>4.5361</i>	<i>4.8</i>
<i>15</i>	<i>13:55</i>	<i>31.00</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>3.4396</i>	<i>1.00</i>	<i>3.4396</i>	<i>1.980</i>	<i>6.8104</i>	<i>7.3</i>
<i>16</i>	<i>13:56</i>	<i>32.80</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>2.2579</i>	<i>1.00</i>	<i>2.2579</i>	<i>1.871</i>	<i>4.2244</i>	<i>4.5</i>
<i>17</i>	<i>13:57</i>	<i>34.40</i>	<i>0.6</i>	<i>1.200</i>	<i>0.6</i>	<i>0.480</i>	<i>1.7123</i>	<i>1.00</i>	<i>1.7123</i>	<i>1.922</i>	<i>3.2914</i>	<i>3.5</i>
<i>18</i>	<i>13:58</i>	<i>36.00</i>	<i>0.6</i>	<i>1.200</i>	<i>0.6</i>	<i>0.480</i>	<i>2.1765</i>	<i>1.00</i>	<i>2.1765</i>	<i>1.922</i>	<i>4.1838</i>	<i>4.5</i>
<i>19</i>	<i>13:59</i>	<i>37.60</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>2.9170</i>	<i>1.00</i>	<i>2.9170</i>	<i>1.759</i>	<i>5.1318</i>	<i>5.5</i>
<i>20</i>	<i>14:01</i>	<i>39.20</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>2.2631</i>	<i>1.00</i>	<i>2.2631</i>	<i>1.438</i>	<i>3.2555</i>	<i>3.5</i>
<i>21</i>	<i>14:02</i>	<i>41.20</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>1.8301</i>	<i>1.00</i>	<i>1.8301</i>	<i>1.330</i>	<i>2.4343</i>	<i>2.6</i>
<i>22</i>	<i>14:04</i>	<i>43.00</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.8245</i>	<i>1.00</i>	<i>1.8245</i>	<i>1.080</i>	<i>1.9705</i>	<i>2.1</i>
<i>23</i>	<i>14:04</i>	<i>44.80</i>	<i>None</i>	<i>0.000</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.000</i>	<i>0.0000</i>	<i>0.0</i>

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

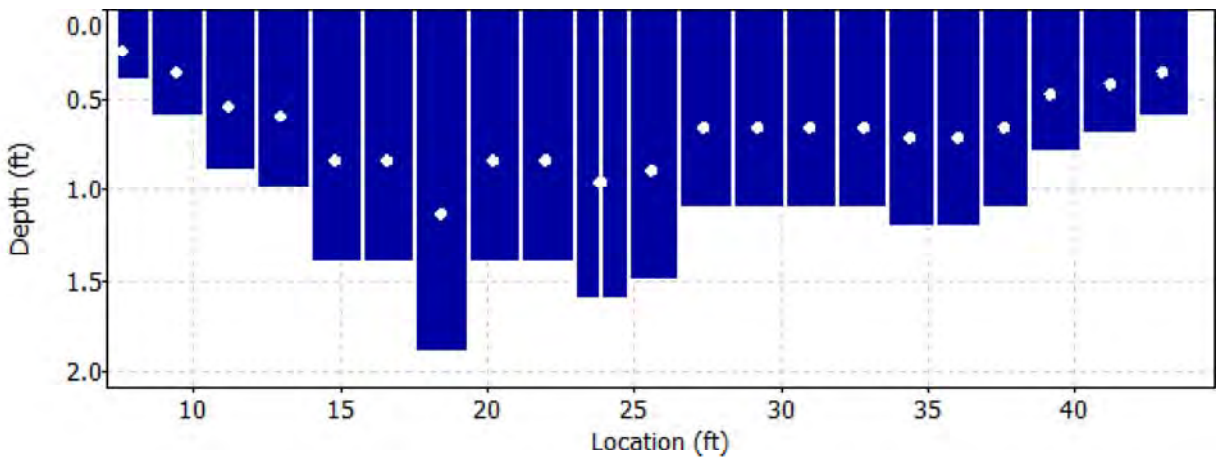
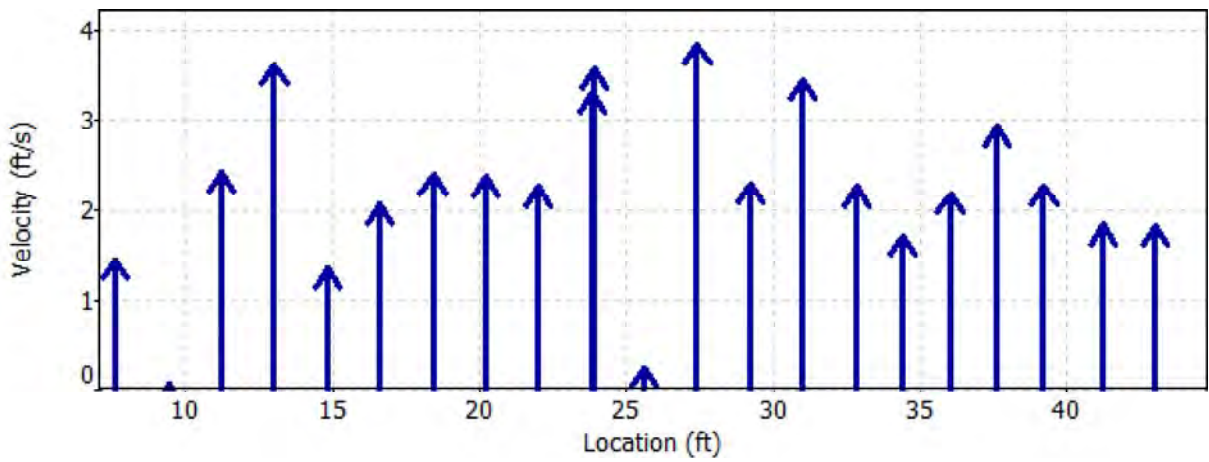
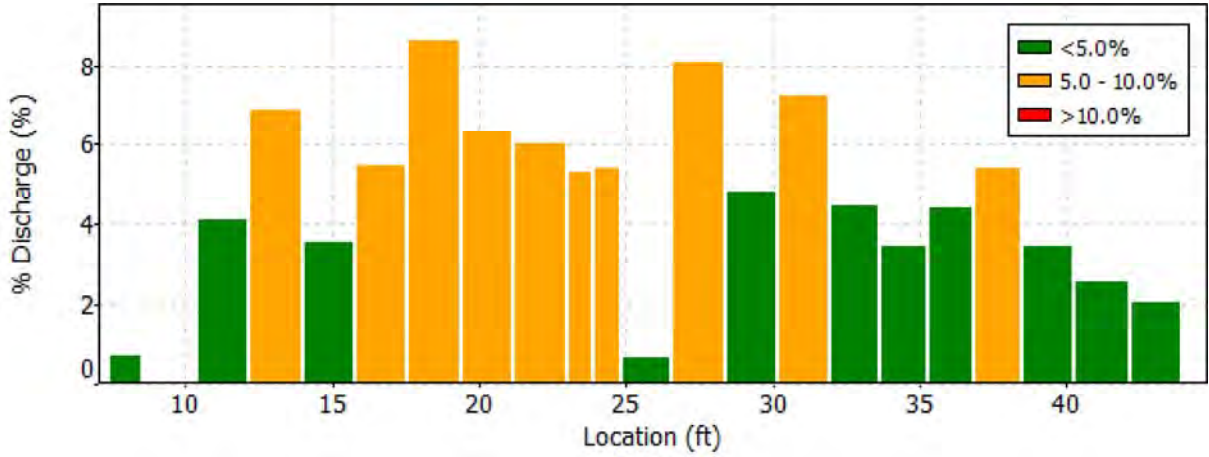
Date Generated: Mon Jan 19 2015

File Information

File Name: A56.WAD
 Start Date and Time: 2014/09/23 13:41:01

Site Details

Site Name: A56
 Operator(s): SA



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A56.WAD
Start Date and Time 2014/09/23 13:41:01

Site Details

Site Name A56
Operator(s) SA

Quality Control

St	Loc	%Dep	Message
1	7.60	0.6	High number of spikes: 5
		0.6	High angle: 20
2	9.40	0.6	High angle: -25
3	11.20	0.6	High standard error: 0.141
5	14.80	0.6	High angle: 34
6	16.60	0.6	High standard error: 0.153
7	18.40	0.6	High angle: 29
		0.6	High standard error: 0.172
9	22.00	0.6	High angle: 21
		0.6	High standard error: 0.126
12	25.60	0.6	High angle: 67
13	27.40	0.6	High SNR variation during measurement: 6.0,1.7
14	29.20	0.6	High angle: 22
16	32.80	0.6	High angle: 25
20	39.20	0.6	High angle: 30
21	41.20	0.6	High number of spikes: 5
		0.6	High angle: 25

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A58.WAD
Start Date and Time 2014/09/23 12:24:51

Site Details

Site Name A58
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.3%	3.4%
Velocity	1.0%	6.2%
Width	0.1%	0.1%
Method	1.7%	-
# Stations	1.7%	-
Overall	2.7%	7.1%

Summary

Averaging Int. 40 # Stations 31
Start Edge REW Total Width 13.300
Mean SNR 44.4 dB Total Area 7.709
Mean Temp 45.81 °F Mean Depth 0.580
Disch. Equation Mid-Section Mean Velocity 2.3269
Total Discharge 17.9388

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:24	9.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	12:24	9.80	0.6	0.400	0.6	0.160	1.8120	1.00	1.8120	0.120	0.2173	1.2
2	12:25	10.10	0.6	0.400	0.6	0.160	3.5961	1.00	3.5961	0.140	0.5035	2.8
3	12:27	10.50	0.6	0.400	0.6	0.160	1.2608	1.00	1.2608	0.160	0.2018	1.1
4	12:28	10.90	0.6	0.300	0.6	0.120	0.0164	1.00	0.0164	0.120	0.0020	0.0
5	<i>12:29</i>	<i>11.30</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.0827</i>	<i>1.00</i>	<i>1.0827</i>	<i>0.120</i>	<i>0.1299</i>	<i>0.7</i>
6	12:30	11.70	0.6	0.500	0.6	0.200	3.0377	1.00	3.0377	0.200	0.6079	3.4
7	12:32	12.10	0.6	0.400	0.6	0.160	2.5180	1.00	2.5180	0.160	0.4031	2.2
8	<i>12:33</i>	<i>12.50</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>2.2300</i>	<i>1.00</i>	<i>2.2300</i>	<i>0.160</i>	<i>0.3570</i>	<i>2.0</i>
9	<i>12:34</i>	<i>12.90</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>2.9619</i>	<i>1.00</i>	<i>2.9619</i>	<i>0.160</i>	<i>0.4741</i>	<i>2.6</i>
10	<i>12:35</i>	<i>13.30</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>2.5043</i>	<i>1.00</i>	<i>2.5043</i>	<i>0.200</i>	<i>0.5012</i>	<i>2.8</i>
11	<i>12:35</i>	<i>13.70</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>1.8406</i>	<i>1.00</i>	<i>1.8406</i>	<i>0.200</i>	<i>0.3684</i>	<i>2.1</i>
12	12:36	14.10	0.6	0.500	0.6	0.200	2.4291	1.00	2.4291	0.200	0.4861	2.7
13	<i>12:38</i>	<i>14.50</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.6280</i>	<i>1.00</i>	<i>0.6280</i>	<i>0.329</i>	<i>0.2068</i>	<i>1.2</i>
14	12:39	15.20	0.6	0.600	0.6	0.240	1.3264	1.00	1.3264	0.329	0.4368	2.4
15	12:40	15.60	0.6	0.700	0.6	0.280	2.1391	1.00	2.1391	0.350	0.7488	4.2
16	12:41	16.20	0.6	0.800	0.6	0.320	3.6447	1.00	3.6447	0.280	1.0201	5.7
17	<i>12:55</i>	<i>16.30</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>2.9843</i>	<i>1.00</i>	<i>2.9843</i>	<i>0.240</i>	<i>0.7162</i>	<i>4.0</i>
18	12:42	16.80	0.6	1.100	0.6	0.440	3.2910	1.00	3.2910	0.385	1.2674	7.1
19	<i>12:57</i>	<i>17.00</i>	<i>0.6</i>	<i>1.000</i>	<i>0.6</i>	<i>0.400</i>	<i>2.0341</i>	<i>1.00</i>	<i>2.0341</i>	<i>0.200</i>	<i>0.4068</i>	<i>2.3</i>
20	12:54	17.20	0.6	1.100	0.6	0.440	3.7297	1.00	3.7297	0.165	0.6152	3.4
21	13:00	17.30	0.6	1.200	0.6	0.480	3.8734	1.00	3.8734	0.120	0.4652	2.6
22	12:43	17.40	0.6	1.100	0.6	0.440	3.5961	1.00	3.5961	0.495	1.7807	9.9
23	<i>12:45</i>	<i>18.20</i>	<i>0.6</i>	<i>1.000</i>	<i>0.6</i>	<i>0.400</i>	<i>2.1476</i>	<i>1.00</i>	<i>2.1476</i>	<i>0.450</i>	<i>0.9660</i>	<i>5.4</i>
24	<i>12:52</i>	<i>18.30</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.6988</i>	<i>1.00</i>	<i>2.6988</i>	<i>0.405</i>	<i>1.0929</i>	<i>6.1</i>
25	12:58	19.10	0.6	0.700	0.6	0.280	3.3675	1.00	3.3675	0.420	1.4148	7.9
26	12:46	19.50	0.6	1.000	0.6	0.400	2.9636	1.00	2.9636	0.250	0.7409	4.1
27	12:50	19.60	0.6	0.600	0.6	0.240	3.1768	1.00	3.1768	0.390	1.2390	6.9
28	12:47	20.80	0.6	0.600	0.6	0.240	0.4813	1.00	0.4813	0.660	0.3177	1.8
29	12:48	21.80	0.6	0.300	0.6	0.120	0.8386	1.00	0.8386	0.300	0.2515	1.4
30	12:48	22.80	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

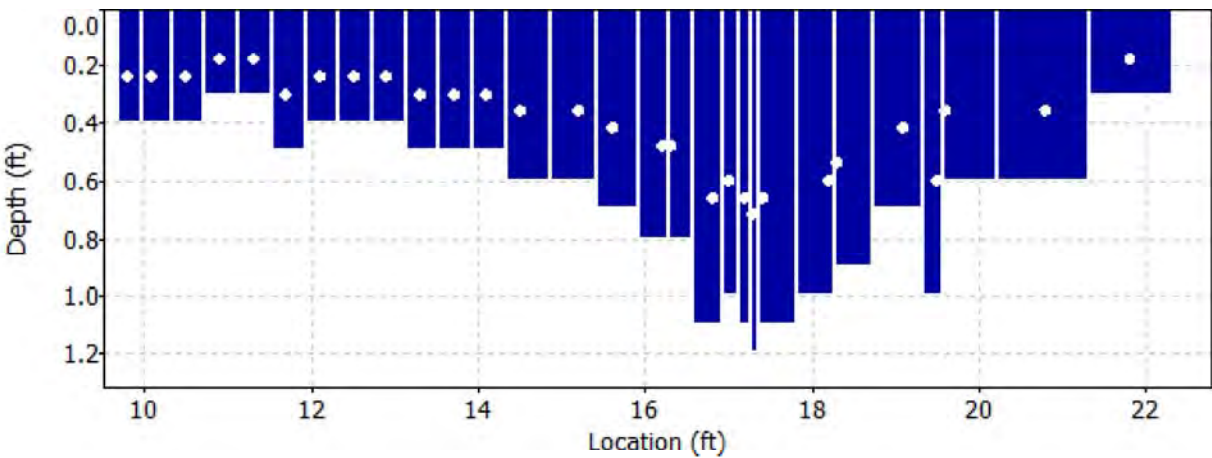
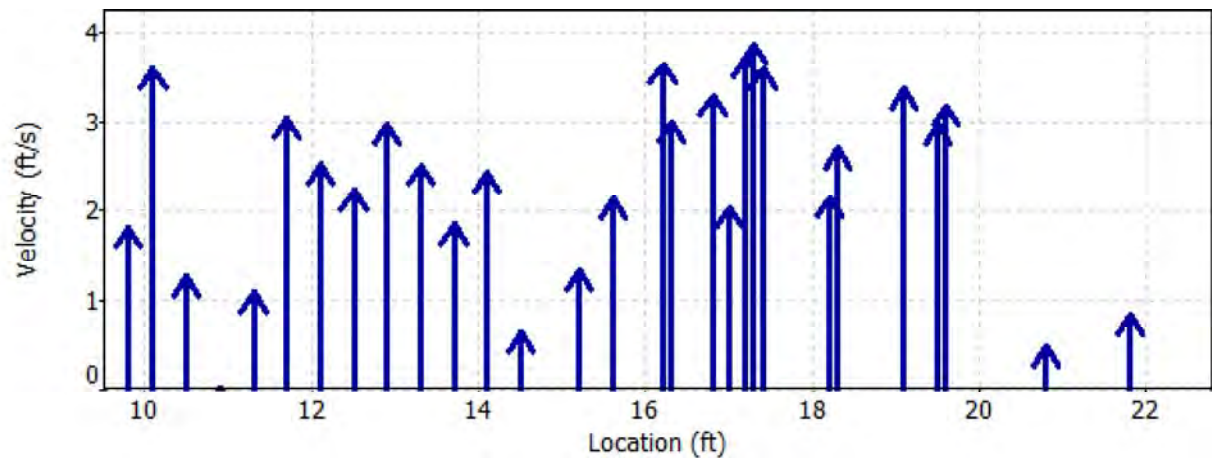
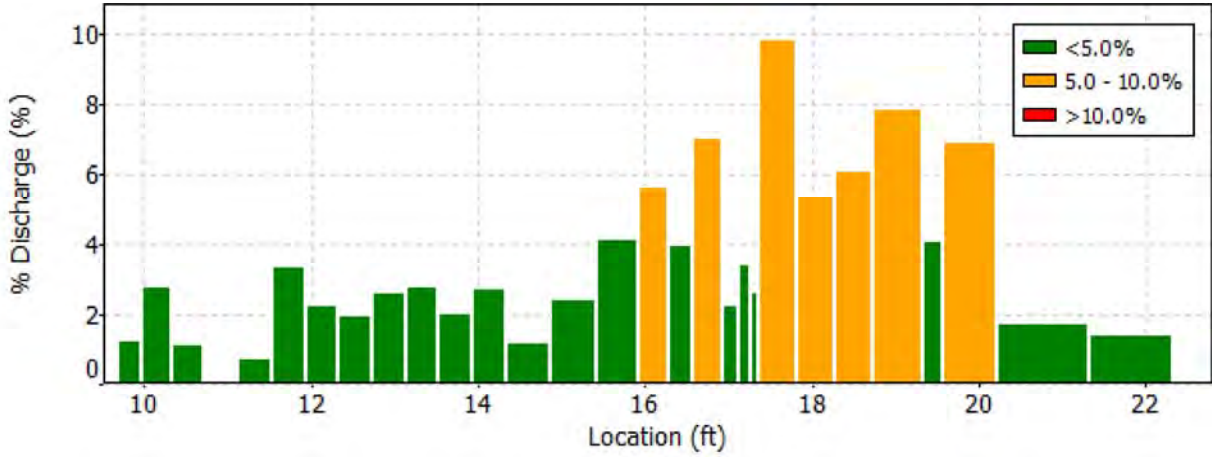
Date Generated: Mon Jan 19 2015

File Information

File Name: A58.WAD
 Start Date and Time: 2014/09/23 12:24:51

Site Details

Site Name: A58
 Operator(s): SA



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A58.WAD
Start Date and Time 2014/09/23 12:24:51

Site Details

Site Name A58
Operator(s) SA

Quality Control

St	Loc	%Dep	Message
5	11.30	0.6	High angle: 23
8	12.50	0.6	High angle: 30
9	12.90	0.6	High angle: 22
10	13.30	0.6	High angle: 27
11	13.70	0.6	High angle: 28
13	14.50	0.6	High angle: 22 High SNR variation during measurement: 6.5,6.5
17	16.30	0.6	High SNR variation during measurement: 10.8,2.6 High standard error: 0.155
19	17.00	0.6	High angle: -24 High standard error: 0.135
23	18.20	0.6	High standard error: 0.137
24	18.30	0.6	High standard error: 0.152

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A60.WAD
Start Date and Time 2014/09/23 10:32:32

Site Details

Site Name A60
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	2.2%
Velocity	0.8%	2.5%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.1%	-
Overall	3.1%	3.5%

Summary

Averaging Int. 40 # Stations 24
Start Edge REW Total Width 37.100
Mean SNR 33.5 dB Total Area 43.885
Mean Temp 43.06 °F Mean Depth 1.183
Disch. Equation Mid-Section Mean Velocity 2.9288
Total Discharge 128.5292

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:32	2.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>10:32</i>	<i>2.40</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>1.8274</i>	<i>1.00</i>	<i>1.8274</i>	<i>0.800</i>	<i>1.4617</i>	<i>1.1</i>
2	10:34	4.00	0.6	1.000	0.6	0.400	1.3031	1.00	1.3031	1.600	2.0851	1.6
3	10:35	5.60	0.6	0.900	0.6	0.360	1.7441	1.00	1.7441	1.440	2.5114	2.0
<i>4</i>	<i>10:37</i>	<i>7.20</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>2.0820</i>	<i>1.00</i>	<i>2.0820</i>	<i>0.960</i>	<i>1.9990</i>	<i>1.6</i>
5	10:38	8.80	0.6	1.000	0.6	0.400	2.3268	1.00	2.3268	1.600	3.7230	2.9
6	10:39	10.40	0.6	0.900	0.6	0.360	0.9888	1.00	0.9888	1.440	1.4239	1.1
7	10:40	12.00	0.6	0.900	0.6	0.360	1.4731	1.00	1.4731	1.440	2.1212	1.7
<i>8</i>	<i>10:41</i>	<i>13.60</i>	<i>0.6</i>	<i>1.000</i>	<i>0.6</i>	<i>0.400</i>	<i>1.6850</i>	<i>1.00</i>	<i>1.6850</i>	<i>1.600</i>	<i>2.6962</i>	<i>2.1</i>
<i>9</i>	<i>10:42</i>	<i>15.20</i>	<i>0.6</i>	<i>1.000</i>	<i>0.6</i>	<i>0.400</i>	<i>3.1798</i>	<i>1.00</i>	<i>3.1798</i>	<i>1.600</i>	<i>5.0879</i>	<i>4.0</i>
10	10:43	16.80	0.6	1.200	0.6	0.480	3.1604	1.00	3.1604	1.920	6.0689	4.7
11	10:44	18.40	0.6	1.500	0.6	0.600	3.0331	1.00	3.0331	2.400	7.2798	5.7
12	10:45	20.00	0.6	1.500	0.6	0.600	3.5397	1.00	3.5397	2.400	8.4956	6.6
13	10:46	21.60	0.6	1.900	0.6	0.760	3.7795	1.00	3.7795	3.040	11.4898	8.9
<i>14</i>	<i>10:47</i>	<i>23.20</i>	<i>0.6</i>	<i>1.900</i>	<i>0.6</i>	<i>0.760</i>	<i>3.9583</i>	<i>1.00</i>	<i>3.9583</i>	<i>3.040</i>	<i>12.0334</i>	<i>9.4</i>
15	10:48	24.80	0.6	1.700	0.6	0.680	4.1385	1.00	4.1385	2.720	11.2579	8.8
16	10:49	26.40	0.6	1.600	0.6	0.640	3.7772	1.00	3.7772	2.560	9.6705	7.5
17	10:51	28.00	0.6	1.500	0.6	0.600	3.5095	1.00	3.5095	2.400	8.4232	6.6
18	10:52	29.60	0.6	1.600	0.6	0.640	3.1545	1.00	3.1545	2.560	8.0763	6.3
19	10:53	31.20	0.6	1.400	0.6	0.560	3.4386	1.00	3.4386	2.240	7.7025	6.0
<i>20</i>	<i>10:54</i>	<i>32.80</i>	<i>0.6</i>	<i>1.500</i>	<i>0.6</i>	<i>0.600</i>	<i>2.9035</i>	<i>1.00</i>	<i>2.9035</i>	<i>3.374</i>	<i>9.7973</i>	<i>7.6</i>
<i>21</i>	<i>10:55</i>	<i>35.70</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>1.9718</i>	<i>1.00</i>	<i>1.9718</i>	<i>2.069</i>	<i>4.0802</i>	<i>3.2</i>
22	10:57	37.40	0.6	0.400	0.6	0.160	1.5361	1.00	1.5361	0.680	1.0442	0.8
23	10:57	39.10	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

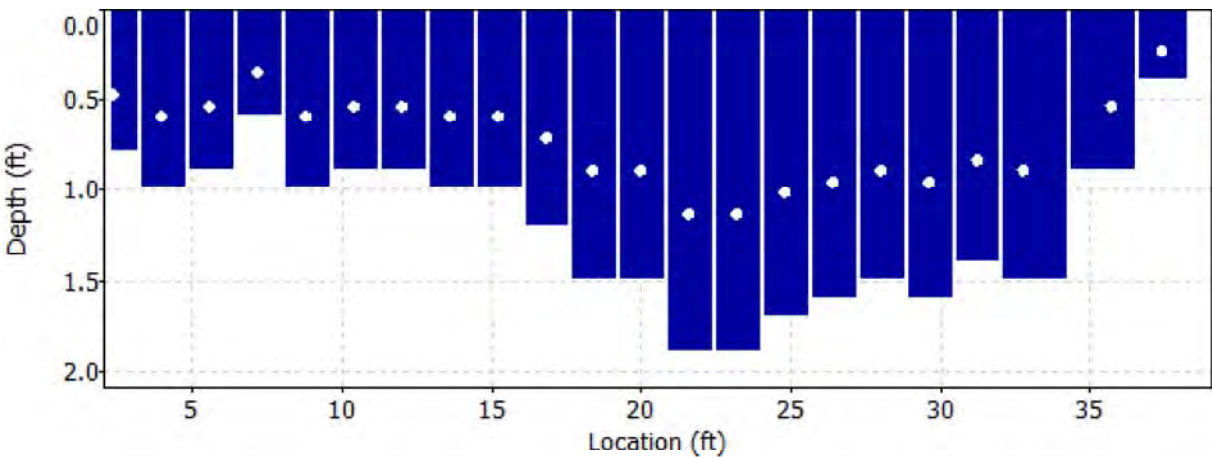
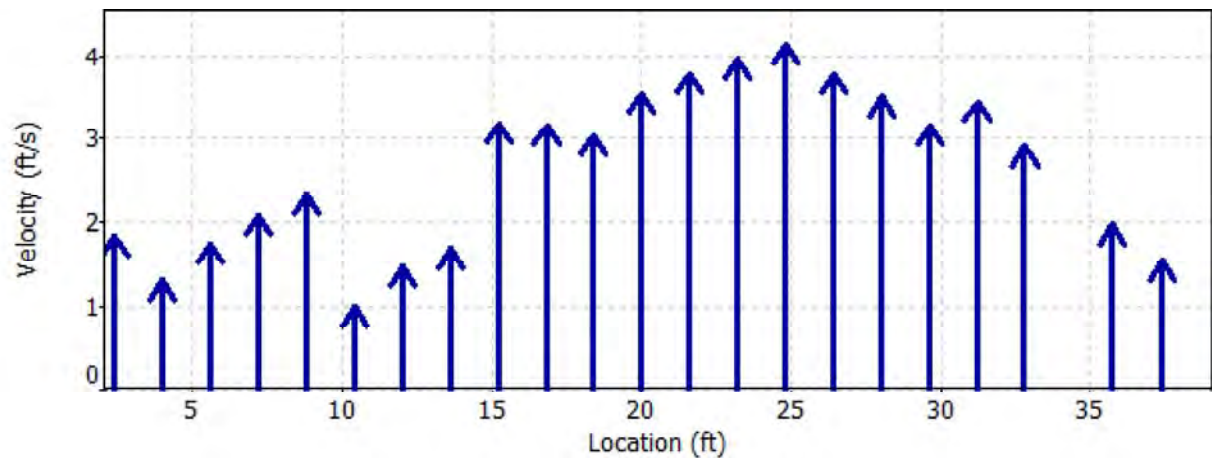
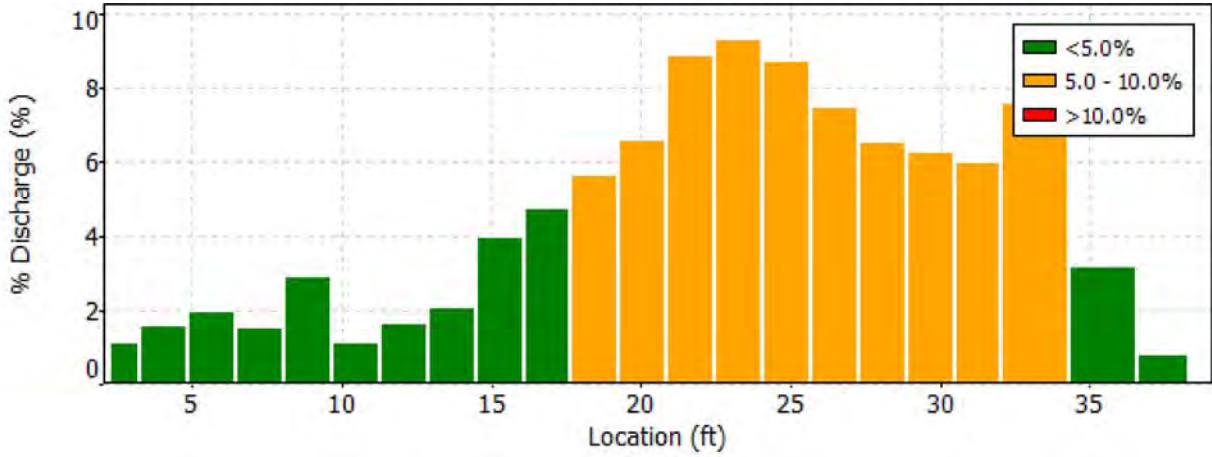
Date Generated: Mon Jan 19 2015

File Information

File Name: A60.WAD
 Start Date and Time: 2014/09/23 10:32:32

Site Details

Site Name: A60
 Operator(s): SA



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A60.WAD
Start Date and Time 2014/09/23 10:32:32

Site Details

Site Name A60
Operator(s) SA

Quality Control

St	Loc	%Dep	Message
1	2.40	0.6	High number of spikes: 5
		0.6	High angle: 26
4	7.20	0.6	High standard error: 0.208
8	13.60	0.6	High standard error: 0.177
9	15.20	0.6	High number of spikes: 5
14	23.20	0.6	High angle: 21
20	32.80	0.6	High angle: 29
21	35.70	0.6	High standard error: 0.169

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A61.WAD
Start Date and Time 2014/09/23 15:23:27

Site Details

Site Name A61
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	2.0%
Velocity	1.0%	3.2%
Width	0.1%	0.1%
Method	2.0%	-
# Stations	2.2%	-
Overall	3.3%	3.9%

Summary

Averaging Int. 40 # Stations 23
Start Edge REW Total Width 35.496
Mean SNR 32.3 dB Total Area 46.975
Mean Temp 53.84 °F Mean Depth 1.323
Disch. Equation Mid-Section Mean Velocity 2.1673
Total Discharge 101.8065

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	15:23	15.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>15:23</i>	<i>15.20</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0407</i>	<i>1.00</i>	<i>0.0407</i>	<i>0.170</i>	<i>0.0069</i>	<i>0.0</i>
2	15:24	16.70	0.6	0.300	0.6	0.120	1.4662	1.00	1.4662	0.450	0.6595	0.6
<i>3</i>	<i>15:25</i>	<i>18.20</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>2.0955</i>	<i>1.00</i>	<i>2.0955</i>	<i>0.800</i>	<i>1.6763</i>	<i>1.6</i>
<i>4</i>	<i>15:27</i>	<i>19.90</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>1.8278</i>	<i>1.00</i>	<i>1.8278</i>	<i>0.850</i>	<i>1.5534</i>	<i>1.5</i>
<i>5</i>	<i>15:28</i>	<i>21.60</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>1.9678</i>	<i>1.00</i>	<i>1.9678</i>	<i>1.190</i>	<i>2.3419</i>	<i>2.3</i>
6	15:29	23.30	0.6	1.300	0.6	0.520	1.4167	1.00	1.4167	2.210	3.1302	3.1
<i>7</i>	<i>15:30</i>	<i>25.00</i>	<i>0.6</i>	<i>1.400</i>	<i>0.6</i>	<i>0.560</i>	<i>2.2858</i>	<i>1.00</i>	<i>2.2858</i>	<i>2.380</i>	<i>5.4392</i>	<i>5.3</i>
<i>8</i>	<i>15:31</i>	<i>26.70</i>	<i>0.6</i>	<i>1.300</i>	<i>0.6</i>	<i>0.520</i>	<i>2.2356</i>	<i>1.00</i>	<i>2.2356</i>	<i>2.210</i>	<i>4.9395</i>	<i>4.9</i>
<i>9</i>	<i>15:33</i>	<i>28.40</i>	<i>0.6</i>	<i>1.500</i>	<i>0.6</i>	<i>0.600</i>	<i>1.7940</i>	<i>1.00</i>	<i>1.7940</i>	<i>2.550</i>	<i>4.5741</i>	<i>4.5</i>
10	15:34	30.10	0.6	2.000	0.6	0.800	1.9583	1.00	1.9583	3.400	6.6576	6.5
11	15:35	31.80	0.6	2.000	0.6	0.800	2.5210	1.00	2.5210	3.400	8.5704	8.4
<i>12</i>	<i>15:36</i>	<i>33.50</i>	<i>0.6</i>	<i>2.000</i>	<i>0.6</i>	<i>0.800</i>	<i>2.2096</i>	<i>1.00</i>	<i>2.2096</i>	<i>3.400</i>	<i>7.5119</i>	<i>7.4</i>
13	15:37	35.20	0.6	2.000	0.6	0.800	2.8091	1.00	2.8091	3.400	9.5497	9.4
<i>14</i>	<i>15:38</i>	<i>36.90</i>	<i>0.6</i>	<i>2.200</i>	<i>0.6</i>	<i>0.880</i>	<i>2.7060</i>	<i>1.00</i>	<i>2.7060</i>	<i>3.740</i>	<i>10.1200</i>	<i>9.9</i>
15	15:39	38.60	0.6	2.200	0.6	0.880	2.7123	1.00	2.7123	3.740	10.1433	10.0
16	15:40	40.30	0.6	1.900	0.6	0.760	2.4380	1.00	2.4380	3.230	7.8735	7.7
17	15:41	42.00	0.6	1.900	0.6	0.760	2.0948	1.00	2.0948	3.230	6.7652	6.6
18	15:42	43.70	0.6	1.500	0.6	0.600	1.8602	1.00	1.8602	2.550	4.7431	4.7
19	15:43	45.40	0.6	1.200	0.6	0.480	1.7379	1.00	1.7379	2.040	3.5452	3.5
20	15:44	47.10	0.6	0.600	0.6	0.240	1.6145	1.00	1.6145	1.020	1.6468	1.6
<i>21</i>	<i>15:45</i>	<i>48.80</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.3517</i>	<i>1.00</i>	<i>0.3517</i>	<i>1.020</i>	<i>0.3587</i>	<i>0.4</i>
22	15:45	50.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

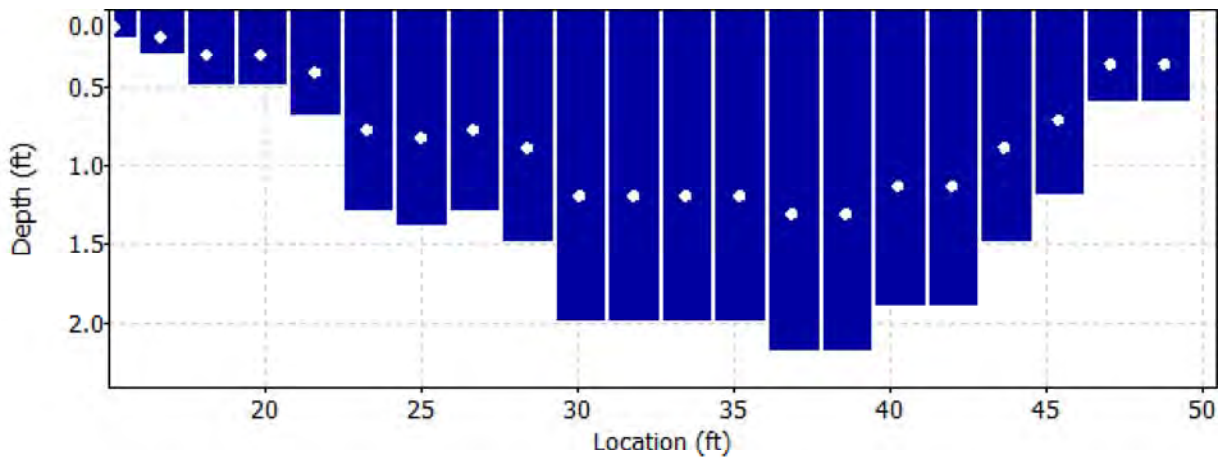
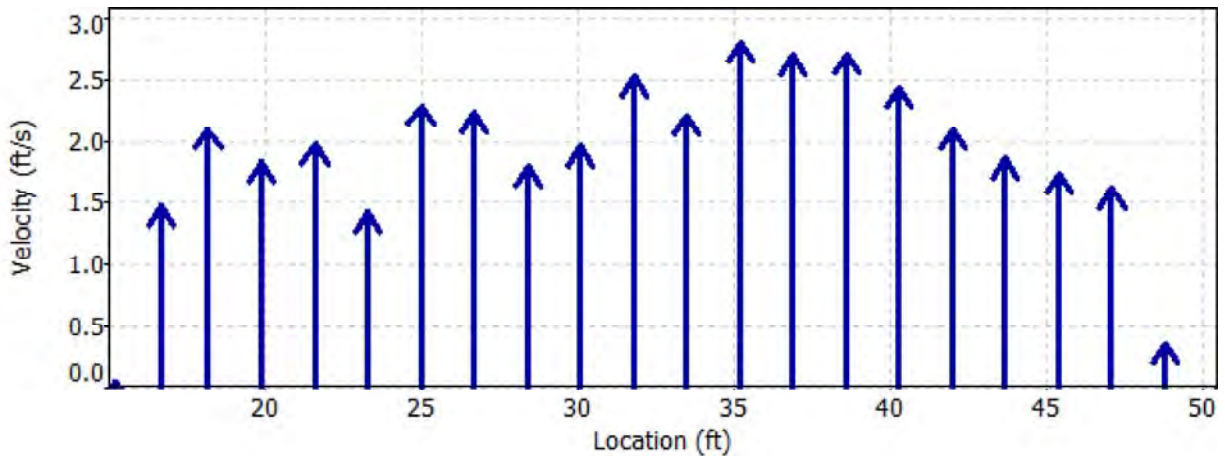
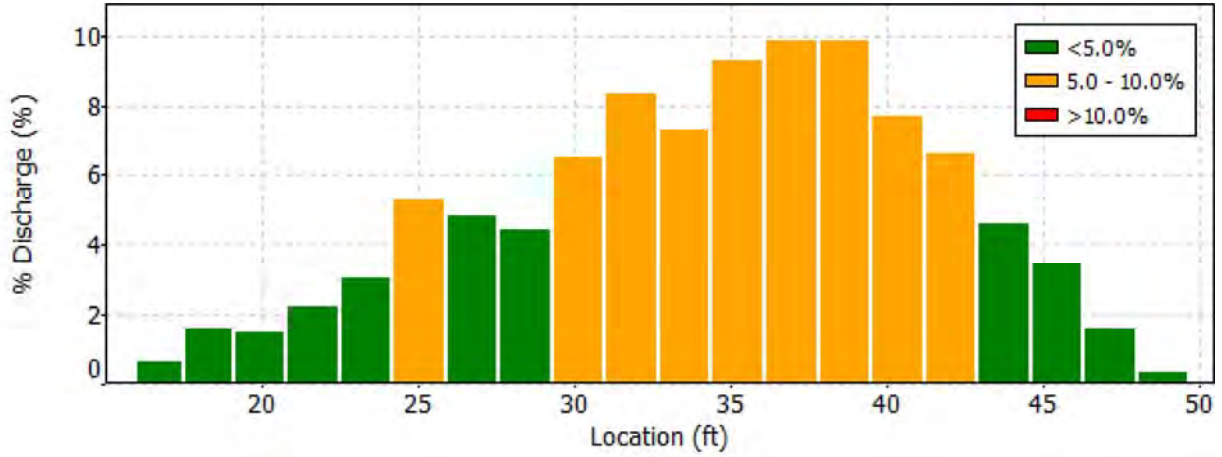
Date Generated: Mon Jan 19 2015

File Information

File Name: A61.WAD
 Start Date and Time: 2014/09/23 15:23:27

Site Details

Site Name: A61
 Operator(s): SA



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A61.WAD
Start Date and Time 2014/09/23 15:23:27

Site Details

Site Name A61
Operator(s) SA

Quality Control

St	Loc	%Dep	Message
1	15.20	0.6	High angle: 74
		0.6	High SNR variation during measurement: 4.3,6.5
3	18.20	0.6	High angle: 23
4	19.90	0.6	High angle: 25
5	21.60	0.6	High angle: 22
7	25.00	0.6	High angle: 27
8	26.70	0.6	High angle: 30
9	28.40	0.6	High angle: 31
		0.6	High standard error: 0.100
12	33.50	0.6	High angle: 24
		0.6	High standard error: 0.114
14	36.90	0.6	High angle: 23
21	48.80	0.6	High angle: 35

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A64.WAD
Start Date and Time 2014/09/23 16:37:34

Site Details

Site Name A64
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	3.0%
Velocity	1.1%	5.1%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.0%	-
Overall	3.1%	6.0%

Summary

Averaging Int. 40 # Stations 25
Start Edge REW Total Width 72.200
Mean SNR 33.2 dB Total Area 52.904
Mean Temp 53.14 °F Mean Depth 0.733
Disch. Equation Mid-Section Mean Velocity 2.0703
Total Discharge 109.5282

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	16:37	22.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>17:03</i>	<i>57.90</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.5098</i>	<i>1.00</i>	<i>0.5098</i>	<i>6.739</i>	<i>3.4358</i>	<i>3.1</i>
<i>2</i>	<i>17:02</i>	<i>56.20</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.8327</i>	<i>1.00</i>	<i>0.8327</i>	<i>1.020</i>	<i>0.8495</i>	<i>0.8</i>
<i>3</i>	<i>17:01</i>	<i>54.50</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.2825</i>	<i>1.00</i>	<i>1.2825</i>	<i>1.020</i>	<i>1.3084</i>	<i>1.2</i>
<i>4</i>	<i>17:00</i>	<i>52.80</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>1.1434</i>	<i>1.00</i>	<i>1.1434</i>	<i>1.870</i>	<i>2.1384</i>	<i>2.0</i>
<i>5</i>	<i>16:59</i>	<i>51.10</i>	<i>0.6</i>	<i>1.300</i>	<i>0.6</i>	<i>0.520</i>	<i>1.3406</i>	<i>1.00</i>	<i>1.3406</i>	<i>2.210</i>	<i>2.9623</i>	<i>2.7</i>
<i>6</i>	<i>16:58</i>	<i>49.40</i>	<i>0.6</i>	<i>1.400</i>	<i>0.6</i>	<i>0.560</i>	<i>2.0600</i>	<i>1.00</i>	<i>2.0600</i>	<i>2.380</i>	<i>4.9021</i>	<i>4.5</i>
<i>7</i>	<i>16:56</i>	<i>47.70</i>	<i>0.6</i>	<i>1.500</i>	<i>0.6</i>	<i>0.600</i>	<i>2.7188</i>	<i>1.00</i>	<i>2.7188</i>	<i>2.475</i>	<i>6.7288</i>	<i>6.1</i>
<i>8</i>	<i>16:55</i>	<i>46.10</i>	<i>0.6</i>	<i>1.800</i>	<i>0.6</i>	<i>0.720</i>	<i>1.4390</i>	<i>1.00</i>	<i>1.4390</i>	<i>2.880</i>	<i>4.1441</i>	<i>3.8</i>
<i>9</i>	<i>16:54</i>	<i>44.50</i>	<i>0.6</i>	<i>1.700</i>	<i>0.6</i>	<i>0.680</i>	<i>2.1184</i>	<i>1.00</i>	<i>2.1184</i>	<i>2.805</i>	<i>5.9430</i>	<i>5.4</i>
<i>10</i>	<i>16:53</i>	<i>42.80</i>	<i>0.6</i>	<i>1.700</i>	<i>0.6</i>	<i>0.680</i>	<i>3.7785</i>	<i>1.00</i>	<i>3.7785</i>	<i>1.530</i>	<i>5.7812</i>	<i>5.3</i>
<i>11</i>	<i>17:06</i>	<i>42.70</i>	<i>0.6</i>	<i>1.800</i>	<i>0.6</i>	<i>0.720</i>	<i>4.4619</i>	<i>1.00</i>	<i>4.4619</i>	<i>1.530</i>	<i>6.8268</i>	<i>6.2</i>
<i>12</i>	<i>16:52</i>	<i>41.10</i>	<i>0.6</i>	<i>1.600</i>	<i>0.6</i>	<i>0.640</i>	<i>2.9836</i>	<i>1.00</i>	<i>2.9836</i>	<i>2.640</i>	<i>7.8775</i>	<i>7.2</i>
<i>13</i>	<i>16:51</i>	<i>39.40</i>	<i>0.6</i>	<i>1.500</i>	<i>0.6</i>	<i>0.600</i>	<i>3.3983</i>	<i>1.00</i>	<i>3.3983</i>	<i>2.550</i>	<i>8.6646</i>	<i>7.9</i>
<i>14</i>	<i>16:49</i>	<i>37.70</i>	<i>0.6</i>	<i>2.000</i>	<i>0.6</i>	<i>0.800</i>	<i>2.6165</i>	<i>1.00</i>	<i>2.6165</i>	<i>3.300</i>	<i>8.6340</i>	<i>7.9</i>
<i>15</i>	<i>16:48</i>	<i>36.10</i>	<i>0.6</i>	<i>2.000</i>	<i>0.6</i>	<i>0.800</i>	<i>2.3110</i>	<i>1.00</i>	<i>2.3110</i>	<i>3.500</i>	<i>8.0886</i>	<i>7.4</i>
<i>16</i>	<i>16:46</i>	<i>34.20</i>	<i>0.6</i>	<i>1.700</i>	<i>0.6</i>	<i>0.680</i>	<i>2.3927</i>	<i>1.00</i>	<i>2.3927</i>	<i>2.975</i>	<i>7.1189</i>	<i>6.5</i>
<i>17</i>	<i>16:45</i>	<i>32.60</i>	<i>0.6</i>	<i>1.600</i>	<i>0.6</i>	<i>0.640</i>	<i>2.3635</i>	<i>1.00</i>	<i>2.3635</i>	<i>2.560</i>	<i>6.0511</i>	<i>5.5</i>
<i>18</i>	<i>16:44</i>	<i>31.00</i>	<i>0.6</i>	<i>1.400</i>	<i>0.6</i>	<i>0.560</i>	<i>2.5715</i>	<i>1.00</i>	<i>2.5715</i>	<i>2.240</i>	<i>5.7602</i>	<i>5.3</i>
<i>19</i>	<i>16:43</i>	<i>29.40</i>	<i>0.6</i>	<i>1.500</i>	<i>0.6</i>	<i>0.600</i>	<i>1.8504</i>	<i>1.00</i>	<i>1.8504</i>	<i>2.400</i>	<i>4.4411</i>	<i>4.1</i>
<i>20</i>	<i>16:41</i>	<i>27.80</i>	<i>0.6</i>	<i>1.000</i>	<i>0.6</i>	<i>0.400</i>	<i>2.6207</i>	<i>1.00</i>	<i>2.6207</i>	<i>1.550</i>	<i>4.0622</i>	<i>3.7</i>
<i>21</i>	<i>16:40</i>	<i>26.30</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>2.4724</i>	<i>1.00</i>	<i>2.4724</i>	<i>0.450</i>	<i>1.1121</i>	<i>1.0</i>
<i>22</i>	<i>16:39</i>	<i>24.80</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>1.2667</i>	<i>1.00</i>	<i>1.2667</i>	<i>1.470</i>	<i>1.8624</i>	<i>1.7</i>
<i>23</i>	<i>16:37</i>	<i>22.10</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.0315</i>	<i>1.00</i>	<i>1.0315</i>	<i>0.810</i>	<i>0.8351</i>	<i>0.8</i>
<i>24</i>	<i>16:37</i>	<i>19.40</i>	<i>None</i>	<i>0.000</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.000</i>	<i>0.0000</i>	<i>0.0</i>

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

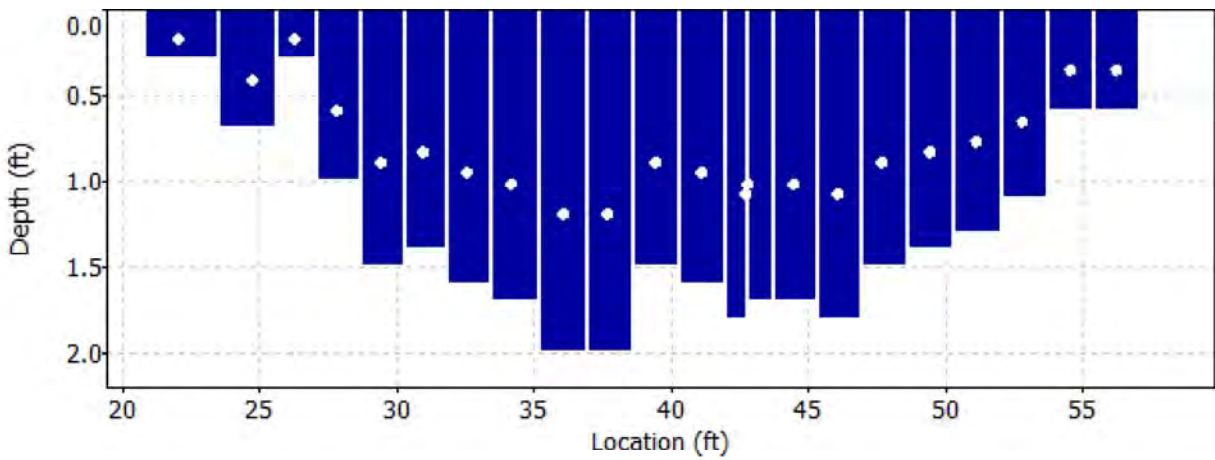
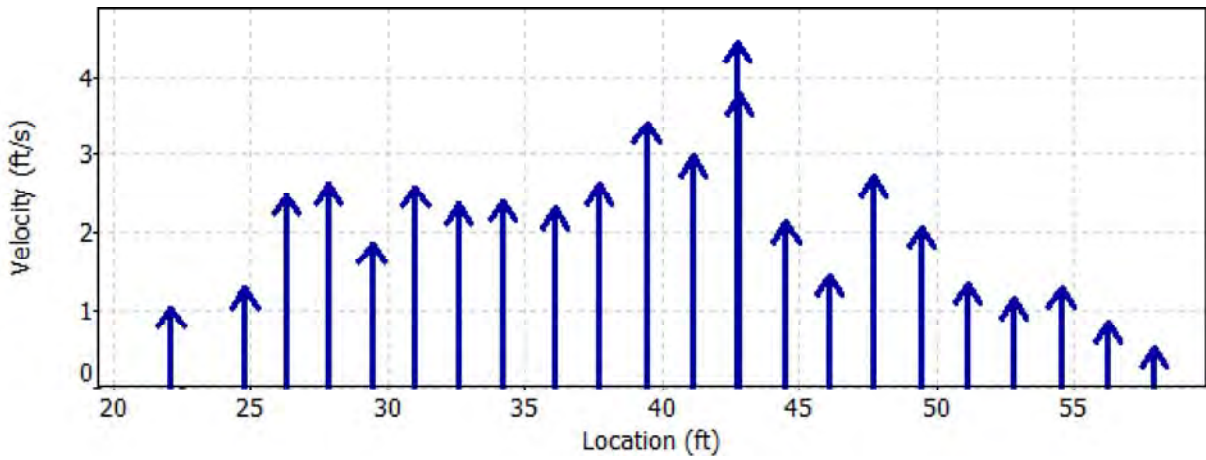
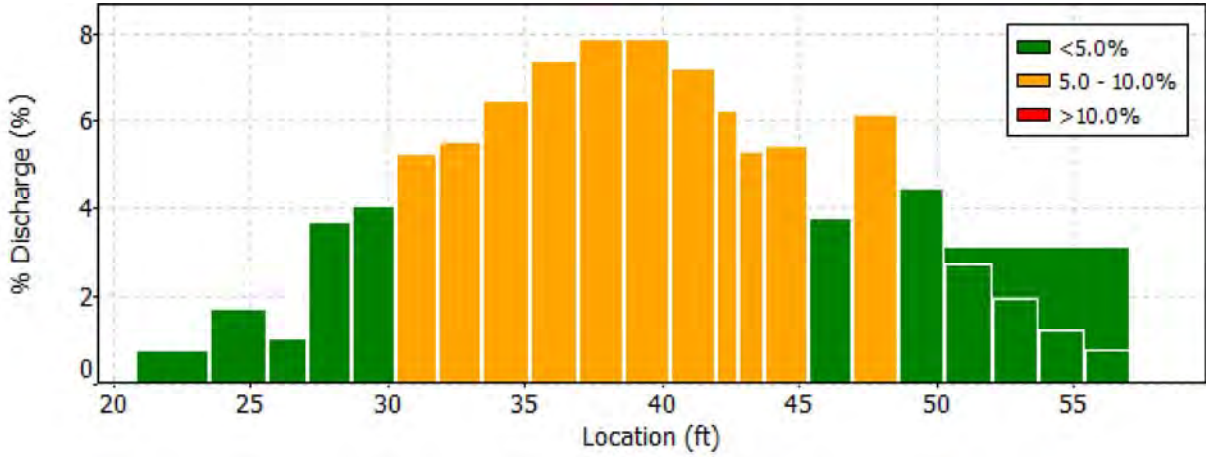
Date Generated: Mon Jan 19 2015

File Information

File Name: A64.WAD
 Start Date and Time: 2014/09/23 16:37:34

Site Details

Site Name: A64
 Operator(s): SA



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File InformationFile Name A64.WAD
Start Date and Time 2014/09/23 16:37:34**Site Details**Site Name A64
Operator(s) SA**Quality Control**

St	Loc	%Dep	Message
1	57.90	0.6	High angle: 44
2	56.20	0.6	High angle: 44
3	54.50	0.6	High angle: 34
5	51.10	0.6	High angle: 30
6	49.40	0.6	High angle: 32
8	46.10	0.6	High angle: 26
9	44.50	0.6	High standard error: 0.122
12	41.10	0.6	High standard error: 0.160
13	39.40	0.6	High angle: 21
14	37.70	0.6	High standard error: 0.157
15	36.10	0.6	High standard error: 0.152
16	34.20	0.6	High standard error: 0.131
17	32.60	0.6	High standard error: 0.124
22	24.80	0.6	High standard error: 0.119

Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A66.WAD
Start Date and Time 2014/09/25 09:40:16

Site Details

Site Name A66
Operator(s) SG

System Information

Sensor Type FlowTracker
Serial # P3513
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	1.7%
Velocity	2.2%	22.8%
Width	0.1%	0.1%
Method	2.2%	-
# Stations	1.8%	-
Overall	3.7%	22.9%

Summary

Averaging Int. 40 # Stations 28
Start Edge REW Total Width 34.000
Mean SNR 28.5 dB Total Area 66.248
Mean Temp 43.14 °F Mean Depth 1.948
Disch. Equation Mid-Section Mean Velocity 0.6268
Total Discharge 41.5218

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:40	12.50	None	0.700	0.0	0.0	0.0000	1.00	0.2644	0.525	0.1389	0.3
1	09:40	14.00	0.6	2.100	0.6	0.840	0.2644	1.00	0.2644	3.150	0.8330	2.0
2	09:41	15.50	0.6	2.000	0.6	0.800	0.7336	1.00	0.7336	3.000	2.2008	5.3
3	09:43	17.00	0.6	2.300	0.6	0.920	1.0449	1.00	1.0449	2.300	2.4032	5.8
4	10:20	17.50	0.6	2.300	0.6	0.920	1.6237	1.00	1.6237	1.725	2.8007	6.7
5	09:44	18.50	0.6	2.300	0.6	0.920	1.3310	1.00	1.3310	2.875	3.8265	9.2
6	09:46	20.00	0.6	2.000	0.6	0.800	0.8717	1.00	0.8717	2.500	2.1793	5.2
7	10:26	21.00	0.6	2.300	0.6	0.920	1.4455	1.00	1.4455	1.725	2.4934	6.0
8	09:47	21.50	0.6	2.300	0.6	0.920	-0.1506	1.00	-0.1506	2.300	-0.3463	-0.8
9	09:49	23.00	0.6	2.300	0.6	0.920	-0.4160	1.00	-0.4160	2.300	-0.9568	-2.3
10	10:23	23.50	0.6	2.300	0.6	0.920	1.9790	1.00	1.9790	1.725	3.4136	8.2
11	09:50	24.50	0.6	2.300	0.6	0.920	-0.3615	1.00	-0.3615	2.875	-1.0394	-2.5
12	09:52	26.00	0.6	2.300	0.6	0.920	-0.4081	1.00	-0.4081	3.450	-1.4080	-3.4
13	09:53	27.50	0.6	2.300	0.6	0.920	-0.4800	1.00	-0.4800	3.450	-1.6559	-4.0
14	09:55	29.00	0.6	2.000	0.6	0.800	1.1729	1.00	1.1729	2.200	2.5805	6.2
15	10:18	29.70	0.6	2.000	0.6	0.800	2.0732	1.00	2.0732	1.500	3.1097	7.5
16	09:57	30.50	0.6	2.000	0.6	0.800	1.0522	1.00	1.0522	2.300	2.4198	5.8
17	09:59	32.00	0.6	1.800	0.6	0.720	0.9324	1.00	0.9324	2.700	2.5173	6.1
18	10:00	33.50	0.6	1.900	0.6	0.760	-0.0810	1.00	-0.0810	2.850	-0.2309	-0.6
19	10:01	35.00	0.6	1.900	0.6	0.760	-0.0725	1.00	-0.0725	2.850	-0.2066	-0.5
20	10:02	36.50	0.6	1.900	0.6	0.760	0.4272	1.00	0.4272	2.850	1.2174	2.9
21	10:04	38.00	0.6	2.000	0.6	0.800	1.2697	1.00	1.2697	2.250	2.8568	6.9
22	10:15	38.75	0.6	2.000	0.6	0.800	1.0052	1.00	1.0052	1.500	1.5079	3.6
23	10:05	39.50	0.6	2.000	0.6	0.800	1.1552	1.00	1.1552	2.250	2.5992	6.3
24	10:07	41.00	0.6	1.600	0.6	0.640	0.6499	1.00	0.6499	2.400	1.5599	3.8
25	10:08	42.50	0.6	1.400	0.6	0.560	0.2083	1.00	0.2083	2.100	0.4375	1.1
26	10:28	44.00	0.6	2.300	0.6	0.920	1.3632	1.00	1.3632	4.600	6.2703	15.1
27	10:28	46.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

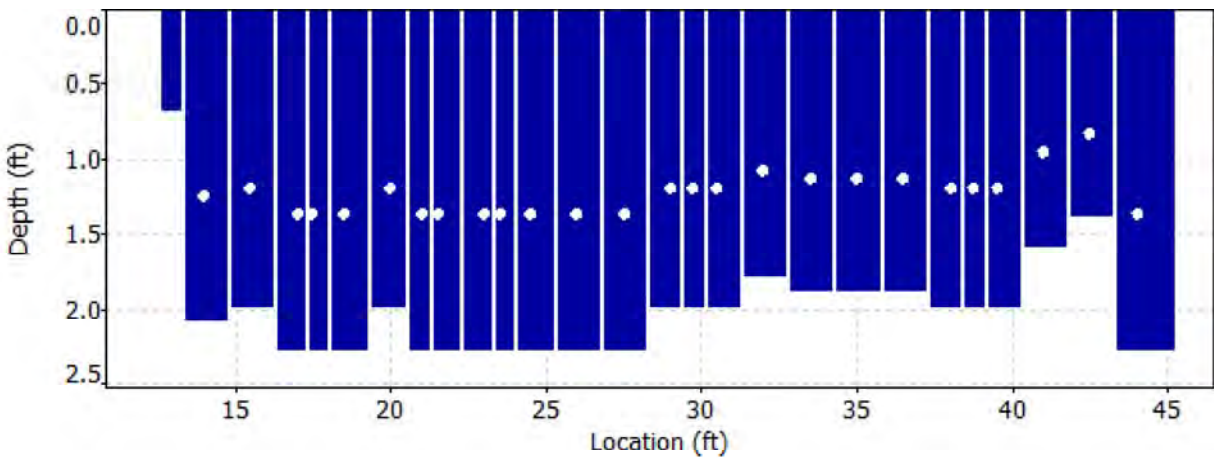
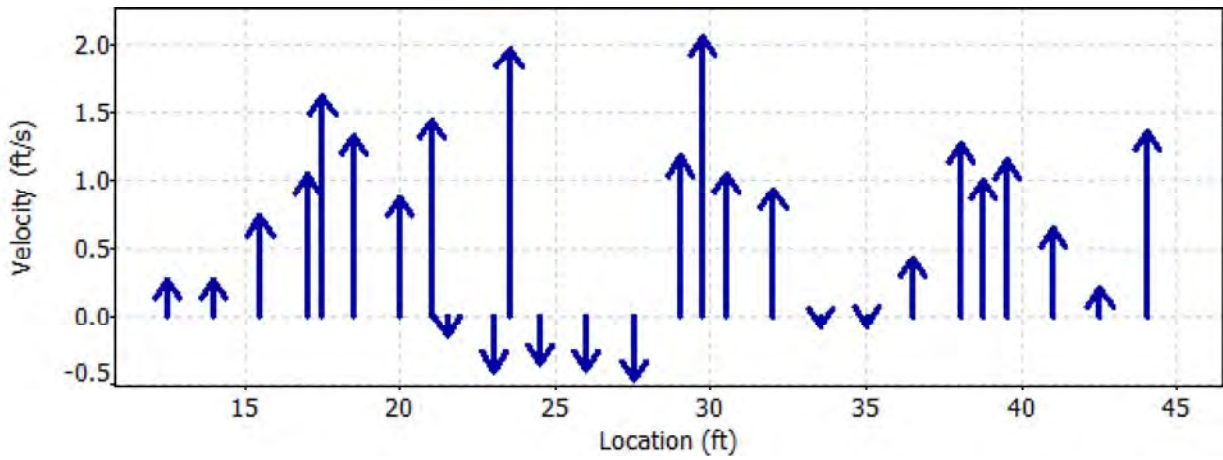
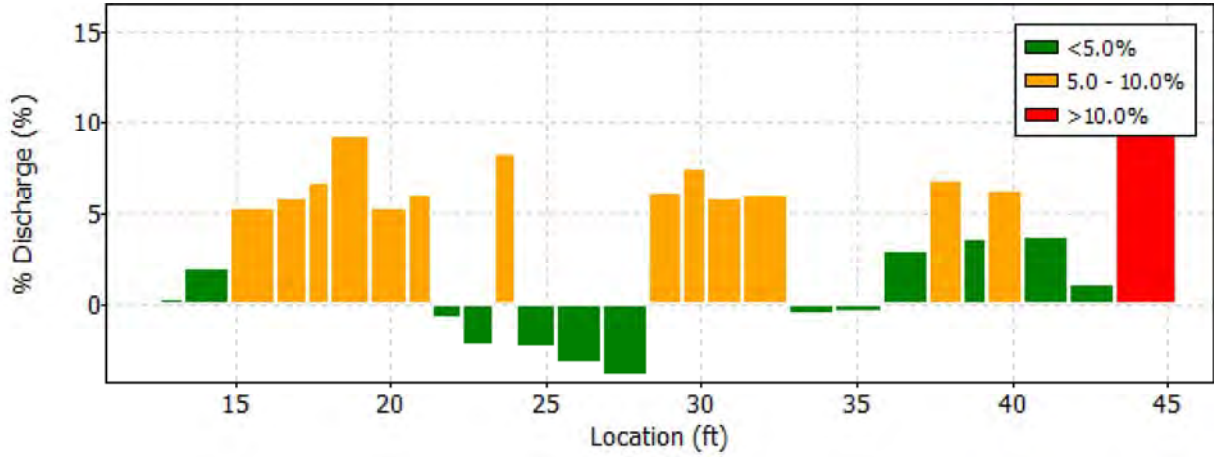
Date Generated: Mon Jan 19 2015

File Information

File Name A66.WAD
 Start Date and Time 2014/09/25 09:40:16

Site Details

Site Name A66
 Operator(s) SG



Discharge Measurement Summary

Date Generated: Mon Jan 19 2015

File Information

File Name A66.WAD
Start Date and Time 2014/09/25 09:40:16

Site Details

Site Name A66
Operator(s) SG

Quality Control

St	Loc	%Dep	Message
3	17.00	0.6	High angle: 30
5	18.50	0.6	High angle: 24
6	20.00	0.6	High angle: 57
8	21.50	0.6	High angle: 99
9	23.00	0.6	High angle: 108 High standard error: 0.099
11	24.50	0.6	High angle: 104
12	26.00	0.6	High angle: 106
13	27.50	0.6	High angle: 110
14	29.00	0.6	High angle: 55
16	30.50	0.6	High angle: 57
17	32.00	0.6	High angle: 55
18	33.50	0.6	High angle: 116
19	35.00	0.6	High angle: 128
20	36.50	0.6	High angle: 73
21	38.00	0.6	High angle: 33
23	39.50	0.6	High angle: 31
24	41.00	0.6	High angle: 34
25	42.50	0.6	High angle: 46

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC01T.WAD
Start Date and Time 2014/09/24 09:49:19

Site Details

Site Name CC01T
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	1.4%
Velocity	1.1%	4.3%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.3%	-
Overall	3.3%	4.6%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 6.100
Mean SNR 33.2 dB Total Area 1.794
Mean Temp 42.73 °F Mean Depth 0.294
Disch. Equation Mid-Section Mean Velocity 0.9110
Total Discharge 1.6347

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:49	3.90	None	0.150	0.0	0.0	0.0000	1.00	0.2736	0.023	0.0062	0.4
1	09:49	4.20	0.6	0.250	0.6	0.100	0.2736	1.00	0.2736	0.075	0.0205	1.3
2	09:50	4.50	0.6	0.250	0.6	0.100	0.4488	1.00	0.4488	0.075	0.0337	2.1
3	09:51	4.80	0.6	0.250	0.6	0.100	0.6916	1.00	0.6916	0.075	0.0519	3.2
4	09:52	5.10	0.6	0.250	0.6	0.100	0.7408	1.00	0.7408	0.075	0.0556	3.4
5	09:52	5.40	0.6	0.300	0.6	0.120	0.9199	1.00	0.9199	0.090	0.0828	5.1
6	09:54	5.70	0.6	0.350	0.6	0.140	1.3675	1.00	1.3675	0.105	0.1437	8.8
7	09:54	6.00	0.6	0.300	0.6	0.120	1.3323	1.00	1.3323	0.090	0.1199	7.3
8	09:55	6.30	0.6	0.350	0.6	0.140	1.2457	1.00	1.2457	0.105	0.1309	8.0
9	09:56	6.60	0.6	0.300	0.6	0.120	1.8789	1.00	1.8789	0.067	0.1263	7.7
10	10:08	6.75	0.6	0.300	0.6	0.120	1.3287	1.00	1.3287	0.045	0.0598	3.7
11	09:58	6.90	0.6	0.300	0.6	0.120	1.4593	1.00	1.4593	0.068	0.0989	6.1
12	10:00	7.20	0.6	0.300	0.6	0.120	1.4298	1.00	1.4298	0.090	0.1287	7.9
13	10:01	7.50	0.6	0.300	0.6	0.120	0.8871	1.00	0.8871	0.090	0.0799	4.9
14	10:01	7.80	0.6	0.300	0.6	0.120	0.7717	1.00	0.7717	0.090	0.0695	4.2
15	10:02	8.10	0.6	0.300	0.6	0.120	0.6549	1.00	0.6549	0.090	0.0589	3.6
16	10:03	8.40	0.6	0.300	0.6	0.120	0.8474	1.00	0.8474	0.090	0.0763	4.7
17	10:04	8.70	0.6	0.300	0.6	0.120	1.0226	1.00	1.0226	0.090	0.0921	5.6
18	10:05	9.00	0.6	0.300	0.6	0.120	0.9957	1.00	0.9957	0.090	0.0896	5.5
19	10:06	9.30	0.6	0.300	0.6	0.120	0.7713	1.00	0.7713	0.090	0.0694	4.2
20	10:07	9.60	0.6	0.350	0.6	0.140	0.2205	1.00	0.2205	0.122	0.0269	1.6
21	10:07	10.00	None	0.300	0.0	0.0	0.0000	1.00	0.2205	0.059	0.0131	0.8

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

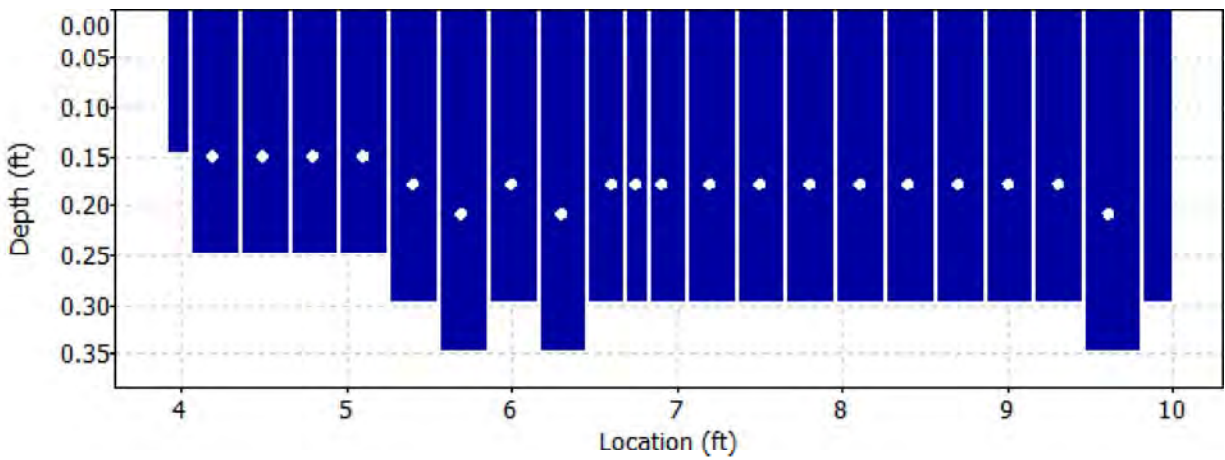
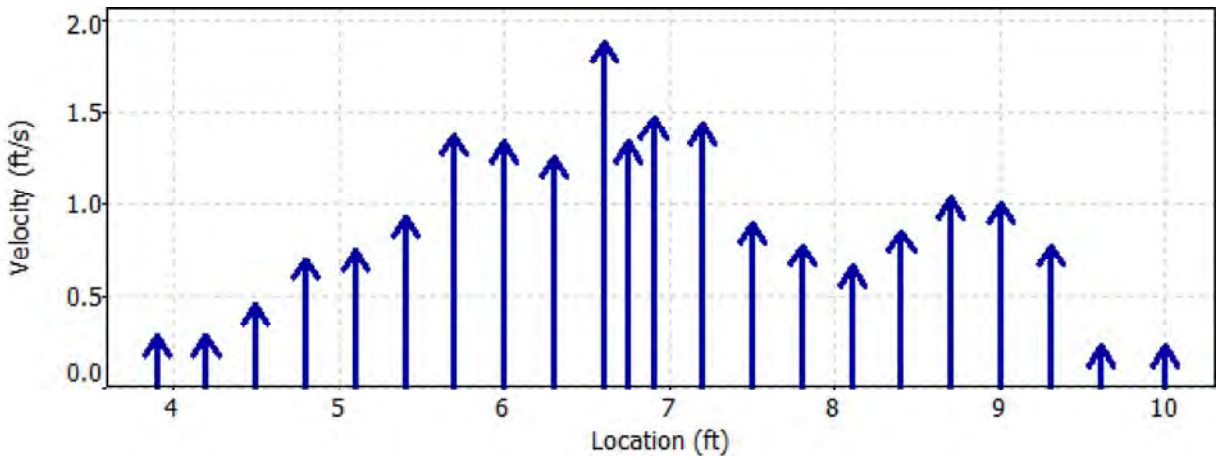
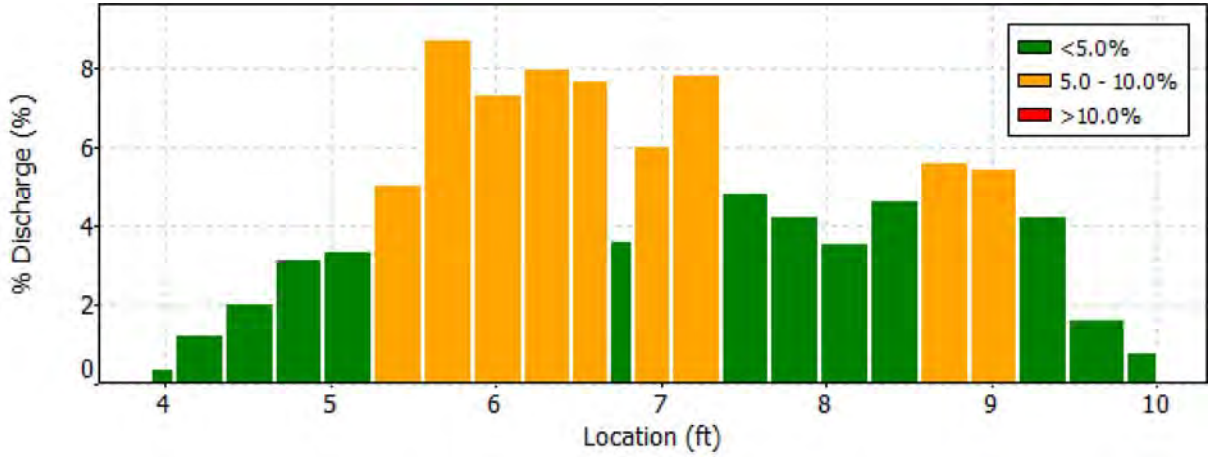
Date Generated: Tue Jan 20 2015

File Information

File Name CC01T.WAD
 Start Date and Time 2014/09/24 09:49:19

Site Details

Site Name CC01T
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC01T.WAD
Start Date and Time 2014/09/24 09:49:19

Site Details

Site Name CC01T
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
8	6.30	0.6	High angle: 23
10	6.75	0.6	High angle: 21
		0.6	High standard error: 0.087
11	6.90	0.6	High angle: 25
12	7.20	0.6	High standard error: 0.079
13	7.50	0.6	High angle: 23

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC01U.WAD
Start Date and Time 2014/09/24 08:41:58

Site Details

Site Name CC01U
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	2.5%
Velocity	1.9%	10.7%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.2%	-
Overall	3.6%	11.0%

Summary

Averaging Int. 40 # Stations 23
Start Edge LEW Total Width 3.996
Mean SNR 35.2 dB Total Area 1.813
Mean Temp 38.11 °F Mean Depth 0.454
Disch. Equation Mid-Section Mean Velocity 0.9108
Total Discharge 1.6511

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:41	3.00	None	0.250	0.0	0.0	0.0000	1.00	0.7087	0.025	0.0177	1.1
1	08:41	3.20	0.6	0.400	0.6	0.160	0.7087	1.00	0.7087	0.080	0.0567	3.4
2	<i>08:43</i>	<i>3.40</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.4262</i>	<i>1.00</i>	<i>1.4262</i>	<i>0.090</i>	<i>0.1283</i>	<i>7.8</i>
3	08:44	3.50	0.6	0.600	0.6	0.240	1.9938	1.00	1.9938	0.060	0.1193	7.2
4	08:45	3.60	0.6	0.600	0.6	0.240	2.1545	1.00	2.1545	0.060	0.1289	7.8
5	08:46	3.70	0.6	0.500	0.6	0.200	2.0115	1.00	2.0115	0.050	0.1003	6.1
6	08:47	3.80	0.6	0.500	0.6	0.200	1.8727	1.00	1.8727	0.050	0.0934	5.7
7	08:48	3.90	0.6	0.450	0.6	0.180	2.3986	1.00	2.3986	0.045	0.1084	6.6
8	09:04	4.00	0.6	0.450	0.6	0.180	2.2808	1.00	2.2808	0.045	0.1032	6.3
9	<i>08:50</i>	<i>4.10</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>2.4439</i>	<i>1.00</i>	<i>2.4439</i>	<i>0.050</i>	<i>0.1223</i>	<i>7.4</i>
10	<i>09:05</i>	<i>4.20</i>	<i>0.6</i>	<i>0.550</i>	<i>0.6</i>	<i>0.220</i>	<i>2.4318</i>	<i>1.00</i>	<i>2.4318</i>	<i>0.055</i>	<i>0.1345</i>	<i>8.1</i>
11	<i>08:51</i>	<i>4.30</i>	<i>0.6</i>	<i>0.550</i>	<i>0.6</i>	<i>0.220</i>	<i>0.8596</i>	<i>1.00</i>	<i>0.8596</i>	<i>0.110</i>	<i>0.0945</i>	<i>5.7</i>
12	08:52	4.60	0.6	0.600	0.6	0.240	-0.0177	1.00	-0.0177	0.150	-0.0027	-0.2
13	<i>09:02</i>	<i>4.80</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>1.7277</i>	<i>1.00</i>	<i>1.7277</i>	<i>0.075</i>	<i>0.1291</i>	<i>7.8</i>
14	<i>08:53</i>	<i>4.90</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>1.8333</i>	<i>1.00</i>	<i>1.8333</i>	<i>0.063</i>	<i>0.1146</i>	<i>6.9</i>
15	09:07	5.05	0.6	0.500	0.6	0.200	1.0436	1.00	1.0436	0.075	0.0780	4.7
16	08:55	5.20	0.6	0.450	0.6	0.180	0.1791	1.00	0.1791	0.101	0.0180	1.1
17	08:56	5.50	0.6	0.500	0.6	0.200	0.0039	1.00	0.0039	0.149	0.0006	0.0
18	08:57	5.80	0.6	0.400	0.6	0.160	0.4938	1.00	0.4938	0.121	0.0596	3.6
19	<i>08:58</i>	<i>6.10</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>0.1591</i>	<i>1.00</i>	<i>0.1591</i>	<i>0.152</i>	<i>0.0242</i>	<i>1.5</i>
20	<i>08:59</i>	<i>6.40</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.5197</i>	<i>1.00</i>	<i>0.5197</i>	<i>0.090</i>	<i>0.0468</i>	<i>2.8</i>
21	<i>09:00</i>	<i>6.70</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.2090</i>	<i>1.00</i>	<i>-0.2090</i>	<i>0.089</i>	<i>-0.0185</i>	<i>-1.1</i>
22	09:00	7.00	None	0.200	0.0	0.0	0.0000	1.00	-0.2090	0.030	-0.0062	-0.4

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

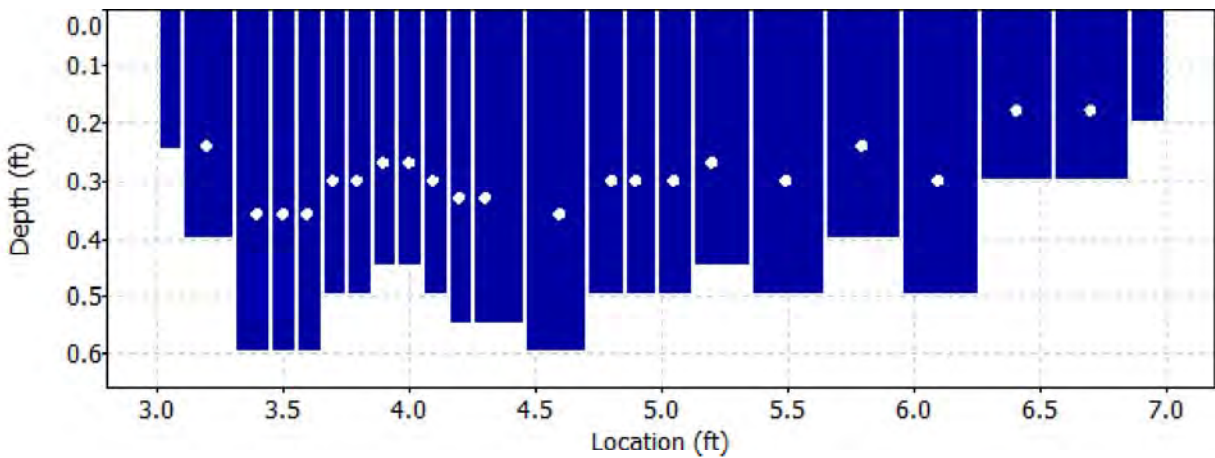
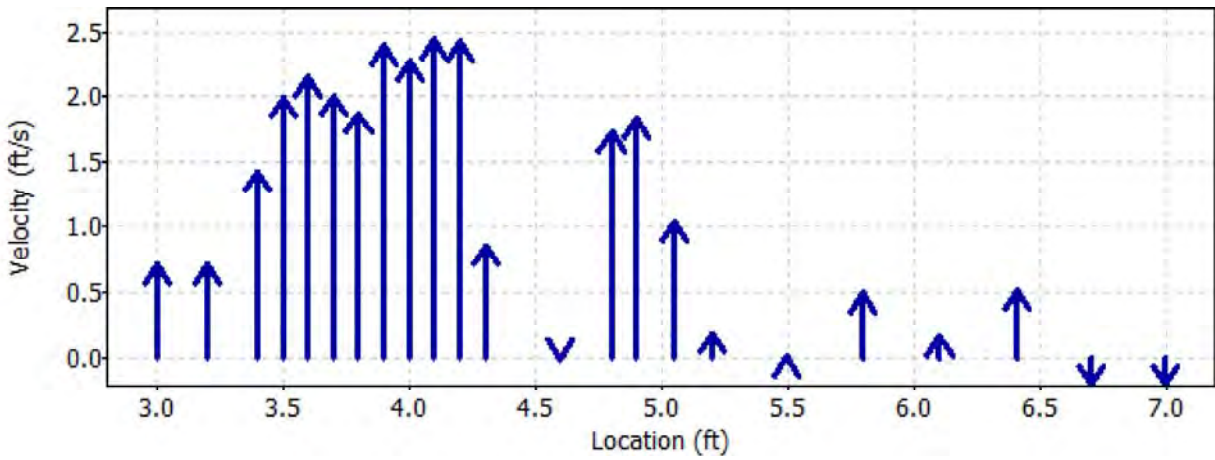
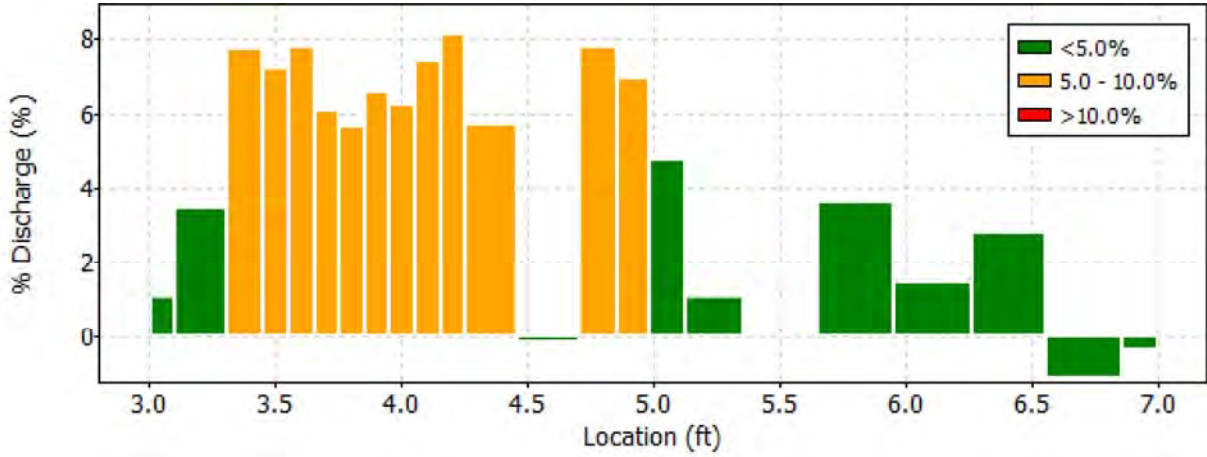
Date Generated: Tue Jan 20 2015

File Information

File Name: CC01U.WAD
 Start Date and Time: 2014/09/24 08:41:58

Site Details

Site Name: CC01U
 Operator(s): LC



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC01U.WAD
Start Date and Time 2014/09/24 08:41:58

Site Details

Site Name CC01U
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
2	3.40	0.6	High standard error: 0.121
9	4.10	0.6	High standard error: 0.126
10	4.20	0.6	High standard error: 0.126
11	4.30	0.6	High angle: -29
13	4.80	0.6	High angle: -21
14	4.90	0.6	High angle: -21
19	6.10	0.6	High angle: 46
20	6.40	0.6	High angle: 28
21	6.70	0.6	High angle: 163

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

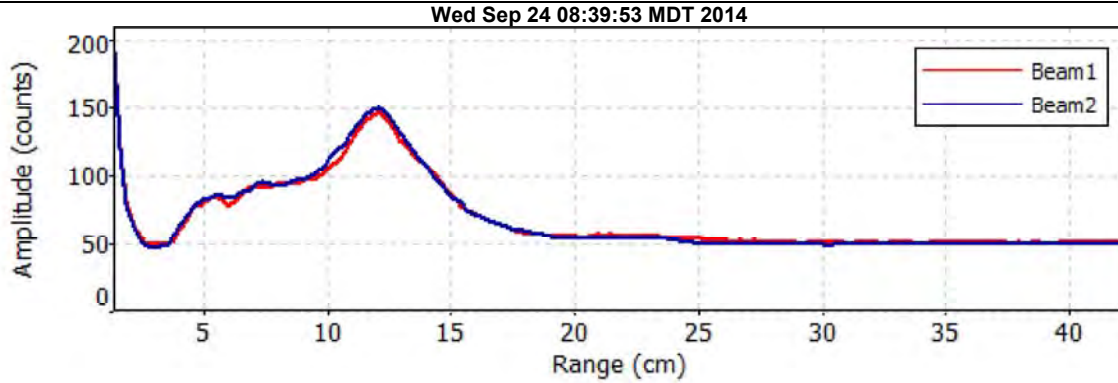
File Information

File Name CC01U.WAD
Start Date and Time 2014/09/24 08:41:58

Site Details

Site Name CC01U
Operator(s) LC

Automatic Quality Control Test (BeamCheck)



- ✔ Noise level check - Pass
- ✔ SNR check - Pass
- ✔ Peak location check - Pass
- ✔ Peak shape check - Pass

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC02B.WAD
Start Date and Time 2014/09/23 15:00:48

Site Details

Site Name CC02B
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3513
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	1.9%
Velocity	1.1%	11.3%
Width	0.1%	0.1%
Method	2.0%	-
# Stations	2.5%	-
Overall	3.5%	11.5%

Summary

Averaging Int.	40	# Stations	20
Start Edge	REW	Total Width	3.402
Mean SNR	41.6 dB	Total Area	1.168
Mean Temp	52.91 °F	Mean Depth	0.343
Disch. Equation	Mid-Section	Mean Velocity	2.2339
		Total Discharge	2.6098

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	15:00	3.40	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	15:00	3.60	0.6	0.500	0.6	0.200	2.7953	1.00	2.7953	0.075	0.2098	8.0
2	15:18	3.70	0.6	0.450	0.6	0.180	2.8081	1.00	2.8081	0.045	0.1265	4.8
3	15:01	3.80	0.6	0.500	0.6	0.200	2.5587	1.00	2.5587	0.075	0.1920	7.4
4	15:02	4.00	0.6	0.400	0.6	0.160	2.1220	1.00	2.1220	0.080	0.1698	6.5
5	15:03	4.20	0.6	0.400	0.6	0.160	2.3727	1.00	2.3727	0.080	0.1899	7.3
6	15:04	4.40	0.6	0.400	0.6	0.160	2.8025	1.00	2.8025	0.080	0.2243	8.6
7	15:05	4.60	0.6	0.400	0.6	0.160	1.9124	1.00	1.9124	0.080	0.1531	5.9
8	15:06	4.80	0.6	0.400	0.6	0.160	4.0331	1.00	4.0331	0.060	0.2413	9.2
9	15:19	4.90	0.6	0.400	0.6	0.160	0.2018	1.00	0.2018	0.040	0.0081	0.3
10	15:08	5.00	0.6	0.350	0.6	0.140	2.5387	1.00	2.5387	0.053	0.1338	5.1
11	15:08	5.20	0.6	0.350	0.6	0.140	2.9275	1.00	2.9275	0.070	0.2051	7.9
12	15:10	5.40	0.6	0.400	0.6	0.160	2.9042	1.00	2.9042	0.080	0.2325	8.9
13	15:11	5.60	0.6	0.350	0.6	0.140	2.5046	1.00	2.5046	0.070	0.1755	6.7
14	15:12	5.80	0.6	0.350	0.6	0.140	1.6637	1.00	1.6637	0.070	0.1166	4.5
15	15:13	6.00	0.6	0.350	0.6	0.140	1.2723	1.00	1.2723	0.070	0.0891	3.4
16	15:14	6.20	0.6	0.250	0.6	0.100	1.0587	1.00	1.0587	0.050	0.0530	2.0
17	15:15	6.40	0.6	0.250	0.6	0.100	1.5472	1.00	1.5472	0.050	0.0774	3.0
18	15:16	6.60	0.6	0.200	0.6	0.080	0.3009	1.00	0.3009	0.040	0.0120	0.5
19	15:16	6.80	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

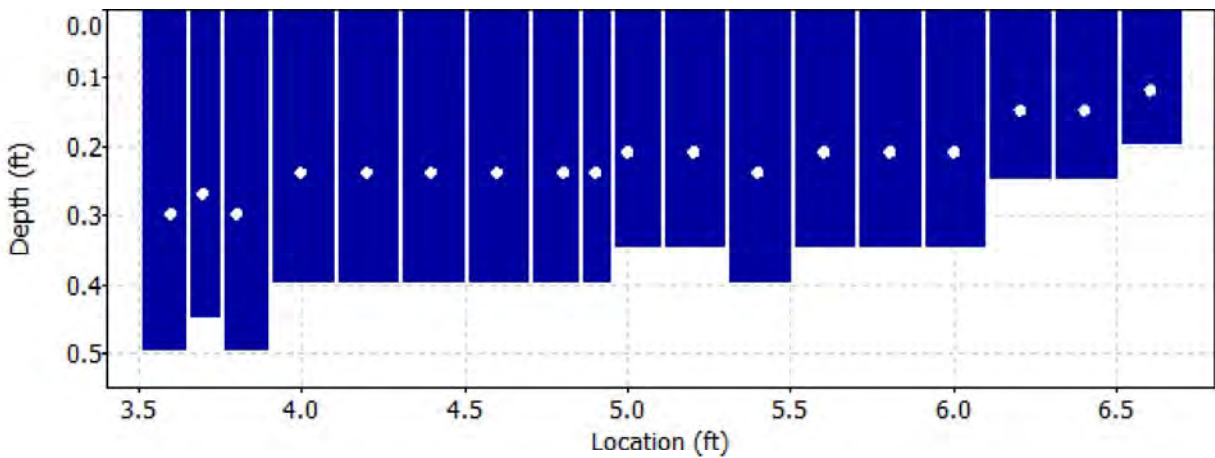
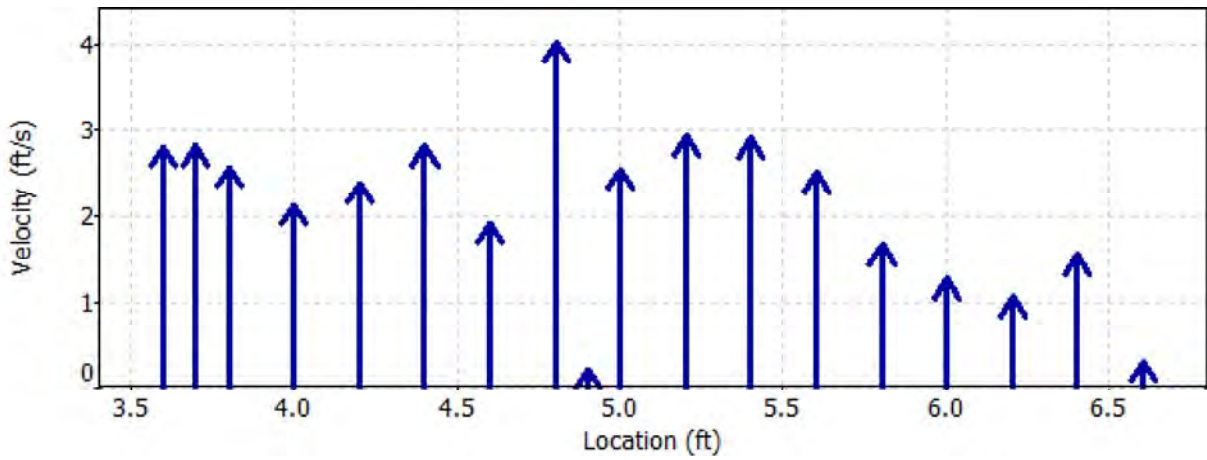
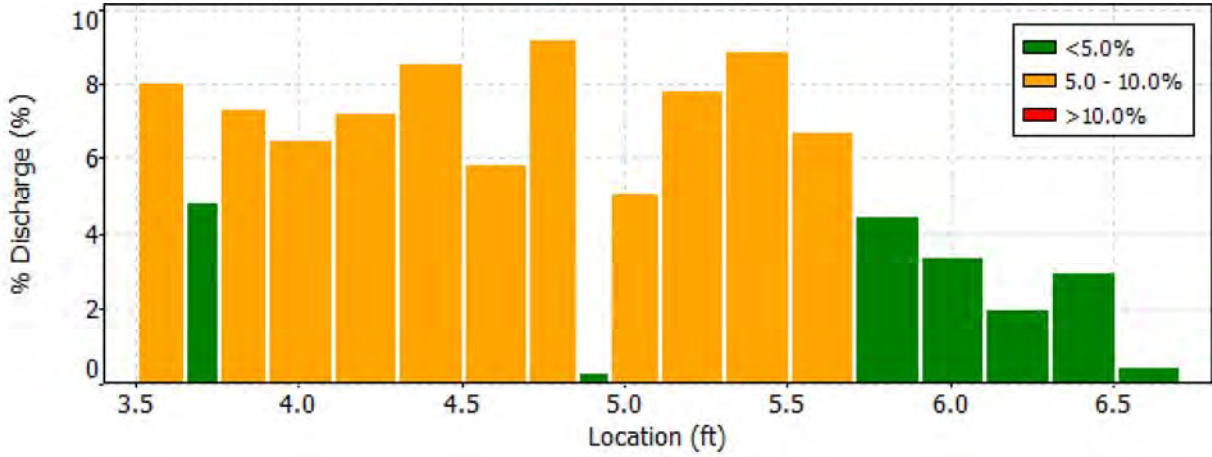
Date Generated: Tue Jan 20 2015

File Information

File Name CC02B.WAD
 Start Date and Time 2014/09/23 15:00:48

Site Details

Site Name CC02B
 Operator(s) RB



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC02B.WAD
Start Date and Time 2014/09/23 15:00:48

Site Details

Site Name CC02B
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
2	3.70	0.6	High angle: 27
4	4.00	0.6	High angle: 28
6	4.40	0.6	High standard error: 0.181
7	4.60	0.6	High standard error: 0.138
9	4.90	0.6	High angle: 41
16	6.20	0.6	High angle: -23
18	6.60	0.6	High angle: -28

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC03.WAD
Start Date and Time 2014/09/23 11:46:12

Site Details

Site Name CC03
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3513
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	2.9%
Velocity	2.2%	8.0%
Width	0.1%	0.1%
Method	2.0%	-
# Stations	2.4%	-
Overall	4.0%	8.6%

Summary

Averaging Int. 40 # Stations 21
Start Edge REW Total Width 6.199
Mean SNR 39.4 dB Total Area 3.155
Mean Temp 45.80 °F Mean Depth 0.509
Disch. Equation Mid-Section Mean Velocity 1.1007
Total Discharge 3.4723

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:46	6.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>11:46</i>	<i>6.20</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>-0.0922</i>	<i>1.00</i>	<i>-0.0922</i>	<i>0.105</i>	<i>-0.0097</i>	<i>-0.3</i>
<i>2</i>	<i>11:47</i>	<i>6.60</i>	<i>0.6</i>	<i>0.450</i>	<i>0.6</i>	<i>0.180</i>	<i>0.0876</i>	<i>1.00</i>	<i>0.0876</i>	<i>0.180</i>	<i>0.0158</i>	<i>0.5</i>
<i>3</i>	<i>11:48</i>	<i>7.00</i>	<i>0.6</i>	<i>0.550</i>	<i>0.6</i>	<i>0.220</i>	<i>0.6217</i>	<i>1.00</i>	<i>0.6217</i>	<i>0.220</i>	<i>0.1367</i>	<i>3.9</i>
<i>4</i>	<i>11:49</i>	<i>7.40</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.2411</i>	<i>1.00</i>	<i>1.2411</i>	<i>0.240</i>	<i>0.2979</i>	<i>8.6</i>
<i>5</i>	<i>11:50</i>	<i>7.80</i>	<i>0.6</i>	<i>0.750</i>	<i>0.6</i>	<i>0.300</i>	<i>1.1631</i>	<i>1.00</i>	<i>1.1631</i>	<i>0.225</i>	<i>0.2617</i>	<i>7.5</i>
<i>6</i>	<i>12:02</i>	<i>8.00</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.7129</i>	<i>1.00</i>	<i>1.7129</i>	<i>0.120</i>	<i>0.2055</i>	<i>5.9</i>
<i>7</i>	<i>11:51</i>	<i>8.20</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>1.3366</i>	<i>1.00</i>	<i>1.3366</i>	<i>0.210</i>	<i>0.2806</i>	<i>8.1</i>
<i>8</i>	<i>11:52</i>	<i>8.60</i>	<i>0.6</i>	<i>0.550</i>	<i>0.6</i>	<i>0.220</i>	<i>1.3507</i>	<i>1.00</i>	<i>1.3507</i>	<i>0.220</i>	<i>0.2970</i>	<i>8.6</i>
<i>9</i>	<i>11:53</i>	<i>9.00</i>	<i>0.6</i>	<i>0.550</i>	<i>0.6</i>	<i>0.220</i>	<i>1.4426</i>	<i>1.00</i>	<i>1.4426</i>	<i>0.165</i>	<i>0.2381</i>	<i>6.9</i>
<i>10</i>	<i>12:07</i>	<i>9.20</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.2425</i>	<i>1.00</i>	<i>1.2425</i>	<i>0.120</i>	<i>0.1491</i>	<i>4.3</i>
<i>11</i>	<i>11:54</i>	<i>9.40</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.9846</i>	<i>1.00</i>	<i>1.9846</i>	<i>0.120</i>	<i>0.2381</i>	<i>6.9</i>
<i>12</i>	<i>12:04</i>	<i>9.60</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>2.1243</i>	<i>1.00</i>	<i>2.1243</i>	<i>0.120</i>	<i>0.2549</i>	<i>7.3</i>
<i>13</i>	<i>11:55</i>	<i>9.80</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>1.7838</i>	<i>1.00</i>	<i>1.7838</i>	<i>0.180</i>	<i>0.3208</i>	<i>9.2</i>
<i>14</i>	<i>11:56</i>	<i>10.20</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.0692</i>	<i>1.00</i>	<i>0.0692</i>	<i>0.240</i>	<i>0.0166</i>	<i>0.5</i>
<i>15</i>	<i>11:57</i>	<i>10.60</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.8556</i>	<i>1.00</i>	<i>0.8556</i>	<i>0.120</i>	<i>0.1027</i>	<i>3.0</i>
<i>16</i>	<i>12:05</i>	<i>10.80</i>	<i>0.6</i>	<i>0.450</i>	<i>0.6</i>	<i>0.180</i>	<i>1.7047</i>	<i>1.00</i>	<i>1.7047</i>	<i>0.090</i>	<i>0.1534</i>	<i>4.4</i>
<i>17</i>	<i>11:58</i>	<i>11.00</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>2.2651</i>	<i>1.00</i>	<i>2.2651</i>	<i>0.120</i>	<i>0.2715</i>	<i>7.8</i>
<i>18</i>	<i>11:59</i>	<i>11.40</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>1.0043</i>	<i>1.00</i>	<i>1.0043</i>	<i>0.200</i>	<i>0.2008</i>	<i>5.8</i>
<i>19</i>	<i>12:01</i>	<i>11.80</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.2536</i>	<i>1.00</i>	<i>0.2536</i>	<i>0.160</i>	<i>0.0406</i>	<i>1.2</i>
<i>20</i>	<i>12:01</i>	<i>12.20</i>	<i>None</i>	<i>0.000</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.000</i>	<i>0.0000</i>	<i>0.0</i>

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

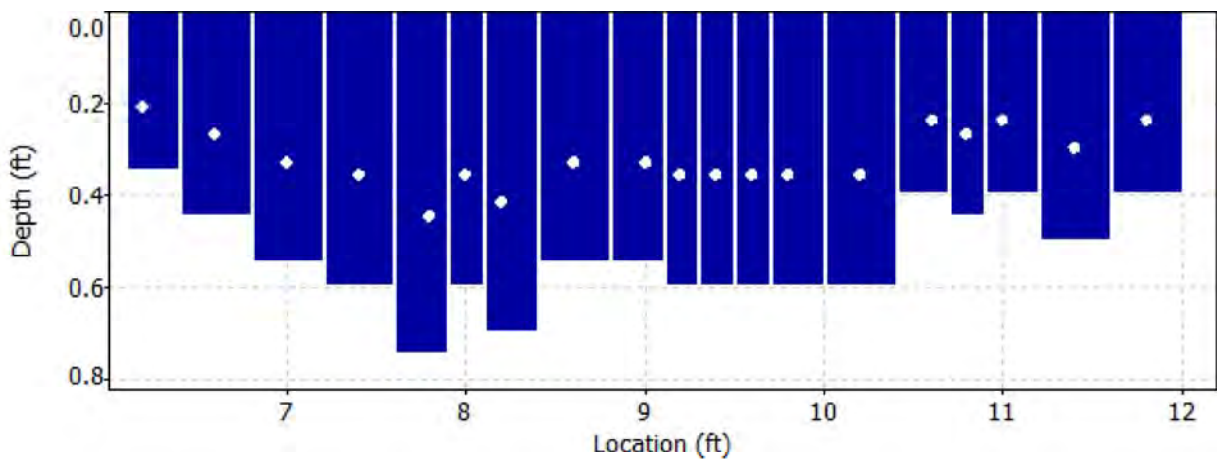
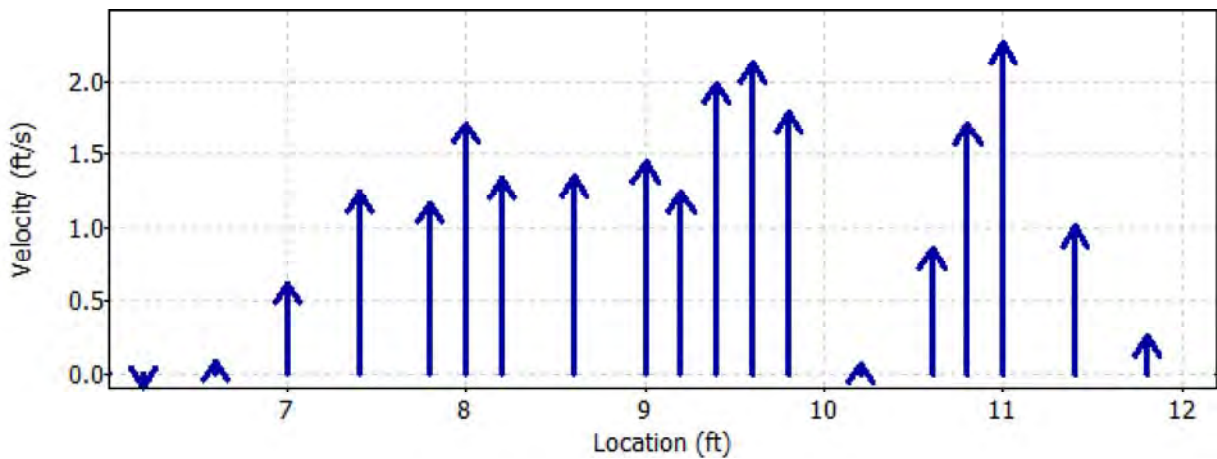
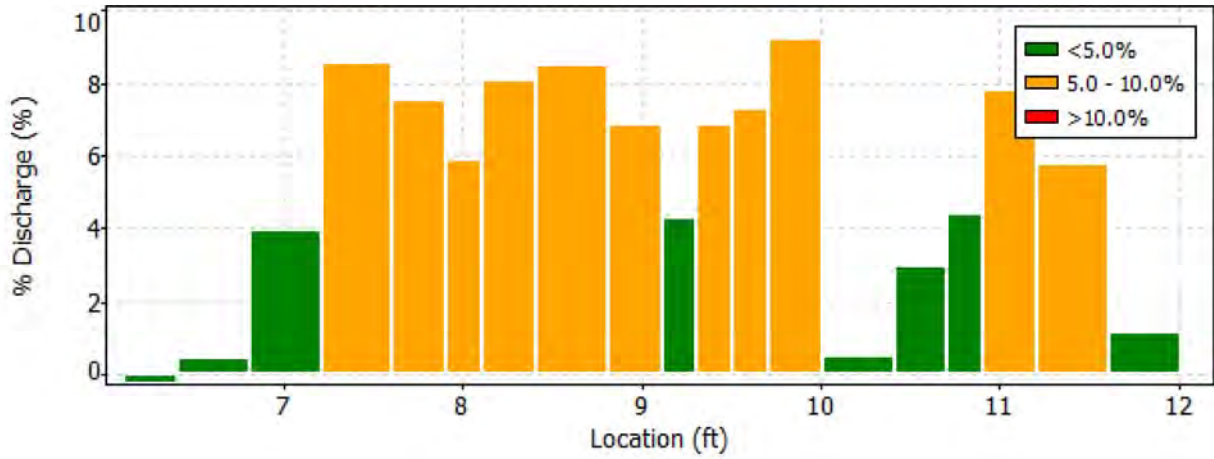
Date Generated: Tue Jan 20 2015

File Information

File Name CC03.WAD
 Start Date and Time 2014/09/23 11:46:12

Site Details

Site Name CC03
 Operator(s) RB



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC03.WAD
Start Date and Time 2014/09/23 11:46:12

Site Details

Site Name CC03
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
1	6.20	0.6	High angle: -105
2	6.60	0.6	High angle: -64
7	8.20	0.6	High angle: -20 High standard error: 0.151
8	8.60	0.6	High angle: -23
11	9.40	0.6	High angle: -24
13	9.80	0.6	High standard error: 0.148
14	10.20	0.6	High angle: -22
15	10.60	0.6	High angle: -25 High standard error: 0.137
18	11.40	0.6	High angle: -31
19	11.80	0.6	High angle: -39

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC03B.WAD
Start Date and Time 2014/09/23 14:59:01

Site Details

Site Name CC03B
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	2.5%
Velocity	1.4%	10.1%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.3%	-
Overall	3.5%	10.4%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 7.400
Mean SNR 39.5 dB Total Area 2.587
Mean Temp 53.46 °F Mean Depth 0.350
Disch. Equation Mid-Section Mean Velocity 1.3130
Total Discharge 3.3964

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	14:59	11.20	None	0.200	0.0	0.0	0.0000	1.00	0.2329	0.035	0.0082	0.2
1	14:59	10.85	0.6	0.250	0.6	0.100	0.2329	1.00	0.2329	0.088	0.0204	0.6
2	14:59	10.50	0.6	0.250	0.6	0.100	1.7726	1.00	1.7726	0.088	0.1551	4.6
3	15:01	10.15	0.6	0.300	0.6	0.120	1.4324	1.00	1.4324	0.105	0.1504	4.4
4	15:02	9.80	0.6	0.350	0.6	0.140	1.2628	1.00	1.2628	0.123	0.1548	4.6
5	15:03	9.45	0.6	0.400	0.6	0.160	0.8517	1.00	0.8517	0.140	0.1192	3.5
6	15:04	9.10	0.6	0.450	0.6	0.180	0.7562	1.00	0.7562	0.158	0.1192	3.5
7	15:05	8.75	0.6	0.600	0.6	0.240	1.5233	1.00	1.5233	0.210	0.3200	9.4
8	15:06	8.40	0.6	0.600	0.6	0.240	2.4396	1.00	2.4396	0.135	0.3292	9.7
9	15:23	8.30	0.6	0.600	0.6	0.240	2.1532	1.00	2.1532	0.105	0.2262	6.7
10	15:07	8.05	0.6	0.600	0.6	0.240	1.4514	1.00	1.4514	0.180	0.2615	7.7
11	15:09	7.70	0.6	0.500	0.6	0.200	0.2490	1.00	0.2490	0.175	0.0436	1.3
12	15:10	7.35	0.6	0.350	0.6	0.140	1.6696	1.00	1.6696	0.123	0.2046	6.0
13	15:12	7.00	0.6	0.400	0.6	0.160	0.9409	1.00	0.9409	0.140	0.1317	3.9
14	15:14	6.65	0.6	0.400	0.6	0.160	2.2612	1.00	2.2612	0.140	0.3166	9.3
15	15:14	6.30	0.6	0.300	0.6	0.120	2.4190	1.00	2.4190	0.105	0.2539	7.5
16	15:16	5.95	0.6	0.350	0.6	0.140	0.7671	1.00	0.7671	0.123	0.0940	2.8
17	15:17	5.60	0.6	0.250	0.6	0.100	1.0620	1.00	1.0620	0.106	0.1127	3.3
18	15:18	5.10	0.6	0.200	0.6	0.080	1.0128	1.00	1.0128	0.100	0.1011	3.0
19	15:20	4.60	0.6	0.200	0.6	0.080	2.0709	1.00	2.0709	0.100	0.2068	6.1
20	15:21	4.10	0.6	0.200	0.6	0.080	0.6089	1.00	0.6089	0.080	0.0488	1.4
21	15:21	3.80	None	0.200	0.0	0.0	0.0000	1.00	0.6089	0.030	0.0184	0.5

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

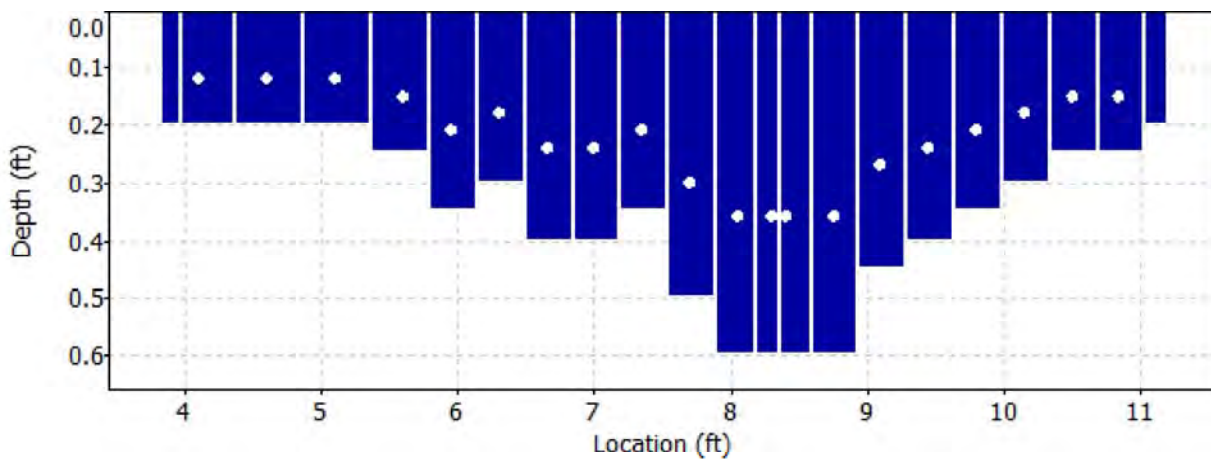
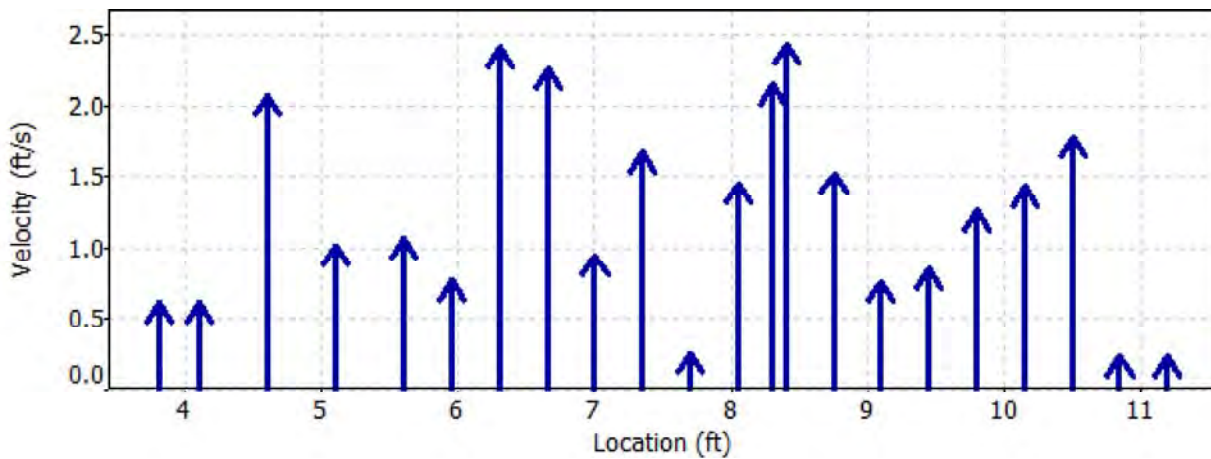
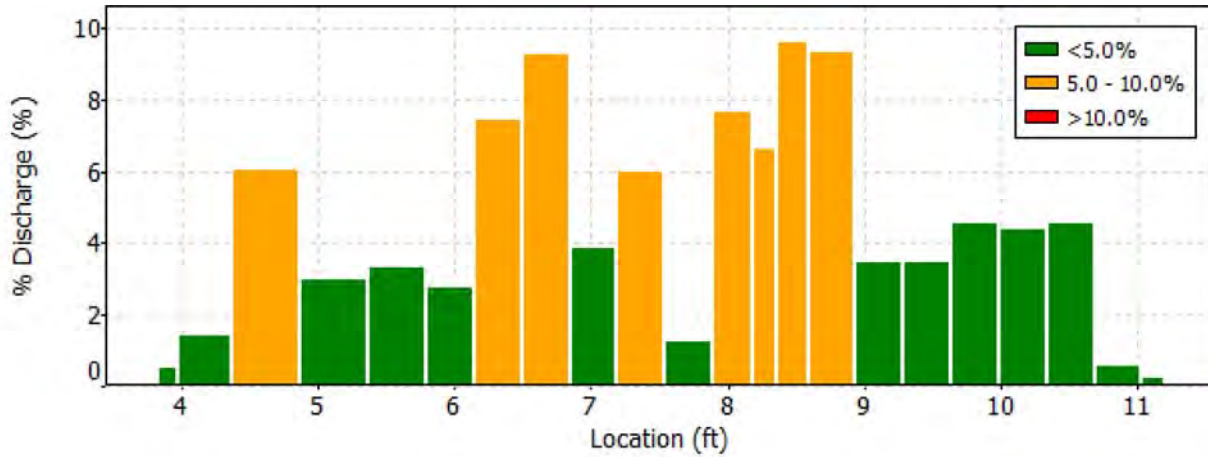
Date Generated: Tue Jan 20 2015

File Information

File Name CC03B.WAD
 Start Date and Time 2014/09/23 14:59:01

Site Details

Site Name CC03B
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC03B.WAD
Start Date and Time 2014/09/23 14:59:01

Site Details

Site Name CC03B
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	10.85	0.6	High angle: 47
2	10.50	0.6	High angle: 26
3	10.15	0.6	High standard error: 0.130
4	9.80	0.6	High angle: -22
6	9.10	0.6	High angle: -25
9	8.30	0.6	High standard error: 0.120
10	8.05	0.6	High standard error: 0.111
12	7.35	0.6	High angle: -34
13	7.00	0.6	High angle: -33
16	5.95	0.6	High angle: -26
18	5.10	0.6	High angle: -30
19	4.60	0.6	High standard error: 0.114
20	4.10	0.6	High angle: -43

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC03C.WAD
Start Date and Time 2014/09/23 13:41:20

Site Details

Site Name CC03C
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	5.6%
Velocity	1.0%	8.0%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.0%	-
Overall	3.1%	9.9%

Summary

Averaging Int.	40	# Stations	25
Start Edge	LEW	Total Width	4.050
Mean SNR	37.0 dB	Total Area	1.187
Mean Temp	43.16 °F	Mean Depth	0.293
Disch. Equation	Mid-Section	Mean Velocity	1.2341
		Total Discharge	1.4648

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	13:41	6.20	None	0.300	0.0	0.0	0.0000	1.00	-0.2283	0.030	-0.0068	-0.5
<i>1</i>	<i>13:41</i>	<i>6.40</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.2283</i>	<i>1.00</i>	<i>-0.2283</i>	<i>0.060</i>	<i>-0.0137</i>	<i>-0.9</i>
<i>2</i>	<i>13:42</i>	<i>6.60</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.1257</i>	<i>1.00</i>	<i>-0.1257</i>	<i>0.060</i>	<i>-0.0075</i>	<i>-0.5</i>
<i>3</i>	<i>13:44</i>	<i>6.80</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0666</i>	<i>1.00</i>	<i>0.0666</i>	<i>0.060</i>	<i>0.0040</i>	<i>0.3</i>
4	13:45	7.00	0.6	0.300	0.6	0.120	1.0656	1.00	1.0656	0.060	0.0640	4.4
5	13:46	7.20	0.6	0.300	0.6	0.120	1.2726	1.00	1.2726	0.060	0.0763	5.2
6	13:47	7.40	0.6	0.300	0.6	0.120	1.2110	1.00	1.2110	0.060	0.0726	5.0
7	13:47	7.60	0.6	0.300	0.6	0.120	1.1631	1.00	1.1631	0.060	0.0697	4.8
8	13:49	7.80	0.6	0.300	0.6	0.120	0.6391	1.00	0.6391	0.060	0.0383	2.6
9	13:50	8.00	0.6	0.300	0.6	0.120	1.2940	1.00	1.2940	0.060	0.0777	5.3
10	13:51	8.20	0.6	0.300	0.6	0.120	2.0131	1.00	2.0131	0.060	0.1207	8.2
11	13:52	8.40	0.6	0.300	0.6	0.120	2.5682	1.00	2.5682	0.045	0.1155	7.9
12	14:11	8.50	0.6	0.300	0.6	0.120	2.3678	1.00	2.3678	0.030	0.0710	4.9
13	13:53	8.60	0.6	0.300	0.6	0.120	2.1850	1.00	2.1850	0.045	0.0982	6.7
14	13:54	8.80	0.6	0.300	0.6	0.120	1.5249	1.00	1.5249	0.060	0.0914	6.2
15	13:55	9.00	0.6	0.300	0.6	0.120	0.7569	1.00	0.7569	0.060	0.0454	3.1
16	13:56	9.20	0.6	0.300	0.6	0.120	1.7024	1.00	1.7024	0.060	0.1021	7.0
17	13:56	9.40	0.6	0.300	0.6	0.120	1.8205	1.00	1.8205	0.045	0.0819	5.6
18	14:14	9.50	0.6	0.400	0.6	0.160	0.9882	1.00	0.9882	0.040	0.0395	2.7
<i>19</i>	<i>13:57</i>	<i>9.60</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>2.7664</i>	<i>1.00</i>	<i>2.7664</i>	<i>0.045</i>	<i>0.1244</i>	<i>8.5</i>
20	13:59	9.80	0.6	0.300	0.6	0.120	1.6033	1.00	1.6033	0.060	0.0961	6.6
21	13:59	10.00	0.6	0.300	0.6	0.120	1.4662	1.00	1.4662	0.045	0.0660	4.5
<i>22</i>	<i>14:08</i>	<i>10.10</i>	<i>0.6</i>	<i>0.000</i>	<i>0.6</i>	<i>0.120</i>	<i>1.0725</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.000</i>	<i>0.0000</i>	<i>0.0</i>
<i>23</i>	<i>14:02</i>	<i>10.20</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.6880</i>	<i>1.00</i>	<i>1.6880</i>	<i>0.022</i>	<i>0.0379</i>	<i>2.6</i>
24	14:02	10.25	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

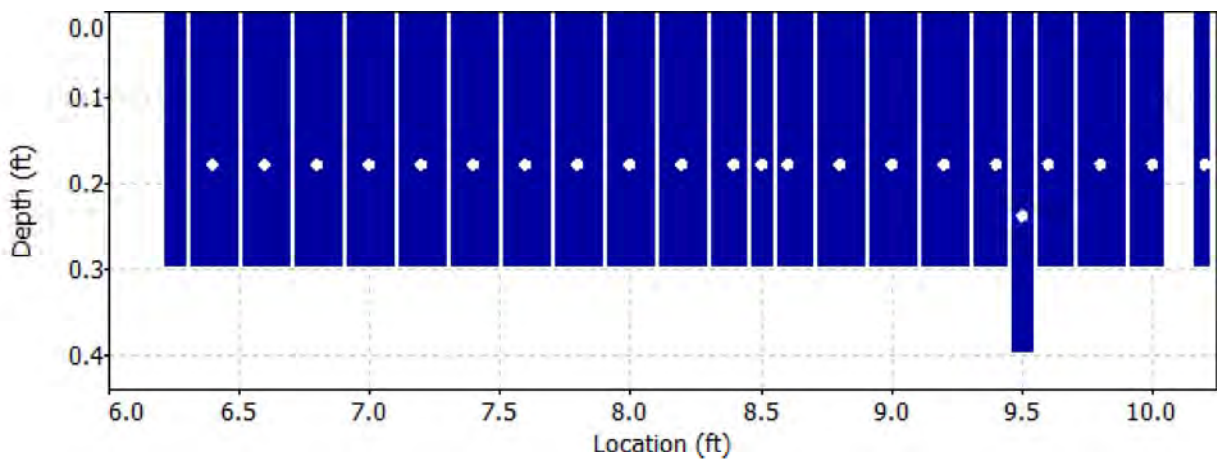
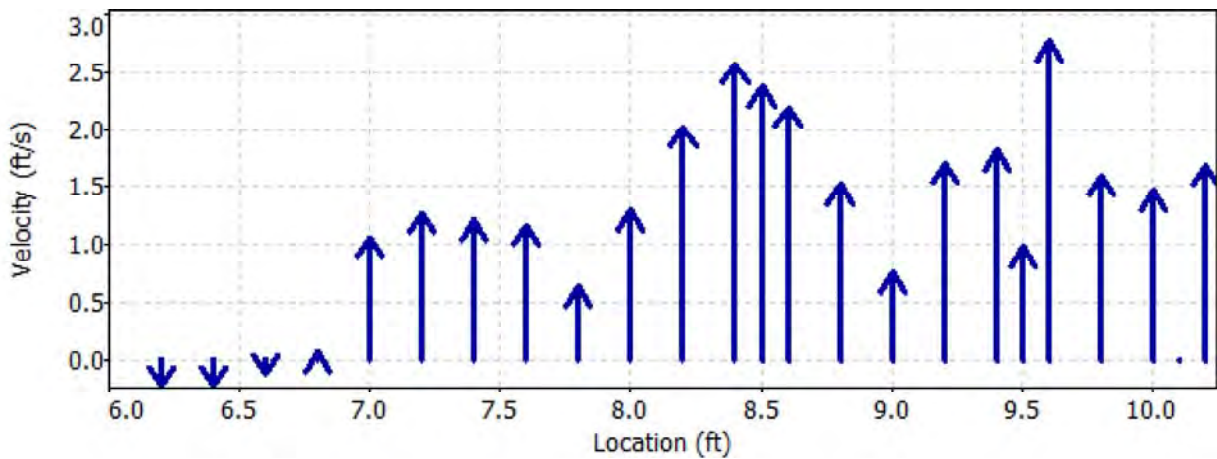
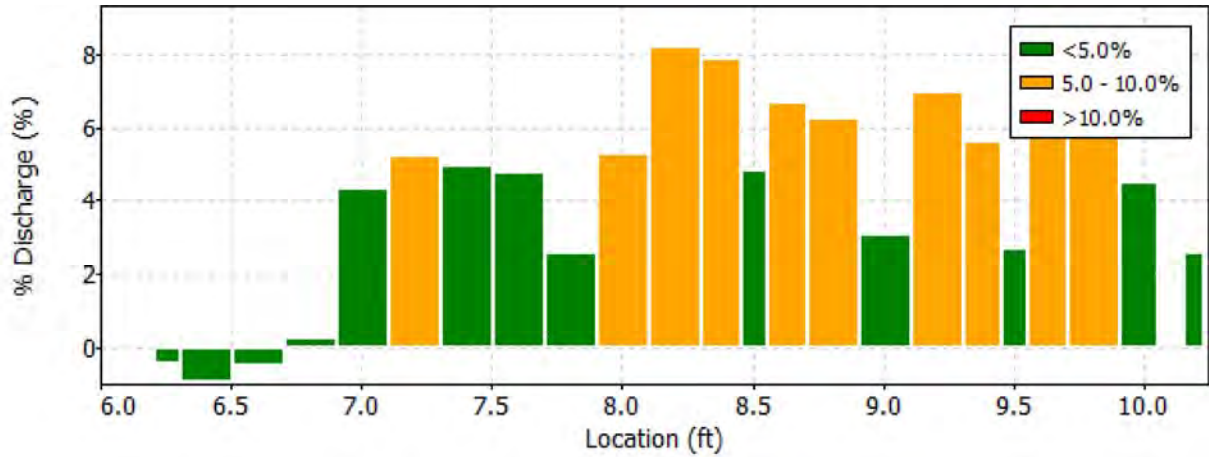
Date Generated: Tue Jan 20 2015

File Information

File Name CC03C.WAD
 Start Date and Time 2014/09/23 13:41:20

Site Details

Site Name CC03C
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC03C.WAD
Start Date and Time 2014/09/23 13:41:20

Site Details

Site Name CC03C
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	6.40	0.6	High angle: -163
2	6.60	0.6	High angle: -151
3	6.80	0.6	High angle: -61
7	7.60	0.6	High angle: -22
8	7.80	0.6	High angle: -37
9	8.00	0.6	High angle: -20
19	9.60	0.6	Boundary QC is Good; possible boundary interference
22	10.10	0.6	High number of spikes: 5
23	10.20	0.6	High standard error: 0.092

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC03D.WAD
Start Date and Time 2014/09/23 12:54:47

Site Details

Site Name CC03D
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	1.1%
Velocity	1.0%	3.6%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.4%	-
Overall	3.4%	3.9%

Summary

Averaging Int. 40 # Stations 21
Start Edge LEW Total Width 2.100
Mean SNR 34.2 dB Total Area 0.588
Mean Temp 45.10 °F Mean Depth 0.280
Disch. Equation Mid-Section Mean Velocity 1.5335
Total Discharge 0.9010

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:54	3.90	None	0.200	0.0	0.0	0.0000	1.00	0.8438	0.010	0.0084	0.9
<i>1</i>	<i>12:54</i>	<i>4.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.8438</i>	<i>1.00</i>	<i>0.8438</i>	<i>0.020</i>	<i>0.0169</i>	<i>1.9</i>
2	12:55	4.10	0.6	0.200	0.6	0.080	0.7838	1.00	0.7838	0.020	0.0157	1.7
3	12:56	4.20	0.6	0.200	0.6	0.080	2.1923	1.00	2.1923	0.020	0.0439	4.9
4	12:57	4.30	0.6	0.200	0.6	0.080	2.2402	1.00	2.2402	0.020	0.0449	5.0
5	12:58	4.40	0.6	0.200	0.6	0.080	2.0761	1.00	2.0761	0.020	0.0416	4.6
6	12:59	4.50	0.6	0.250	0.6	0.100	2.2123	1.00	2.2123	0.025	0.0553	6.1
7	13:00	4.60	0.6	0.300	0.6	0.120	2.4183	1.00	2.4183	0.030	0.0726	8.1
8	13:01	4.70	0.6	0.300	0.6	0.120	2.1381	1.00	2.1381	0.030	0.0642	7.1
<i>9</i>	<i>13:02</i>	<i>4.80</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.4603</i>	<i>1.00</i>	<i>1.4603</i>	<i>0.030</i>	<i>0.0438</i>	<i>4.9</i>
10	13:03	4.90	0.6	0.350	0.6	0.140	1.9150	1.00	1.9150	0.035	0.0671	7.4
11	13:04	5.00	0.6	0.350	0.6	0.140	2.1568	1.00	2.1568	0.035	0.0756	8.4
<i>12</i>	<i>13:05</i>	<i>5.10</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>1.9790</i>	<i>1.00</i>	<i>1.9790</i>	<i>0.035</i>	<i>0.0693</i>	<i>7.7</i>
<i>13</i>	<i>13:06</i>	<i>5.20</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>2.0016</i>	<i>1.00</i>	<i>2.0016</i>	<i>0.035</i>	<i>0.0701</i>	<i>7.8</i>
14	13:07	5.30	0.6	0.350	0.6	0.140	1.7995	1.00	1.7995	0.035	0.0630	7.0
15	13:08	5.40	0.6	0.300	0.6	0.120	1.9396	1.00	1.9396	0.030	0.0582	6.5
16	13:09	5.50	0.6	0.300	0.6	0.120	1.4800	1.00	1.4800	0.030	0.0444	4.9
17	13:10	5.60	0.6	0.300	0.6	0.120	1.0600	1.00	1.0600	0.030	0.0318	3.5
18	13:11	5.70	0.6	0.300	0.6	0.120	0.4806	1.00	0.4806	0.030	0.0144	1.6
19	13:12	5.80	0.6	0.250	0.6	0.100	-0.0039	1.00	-0.0039	0.037	-0.0001	0.0
20	13:12	6.00	None	0.300	0.0	0.0	0.0000	1.00	-0.0039	0.030	-0.0001	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

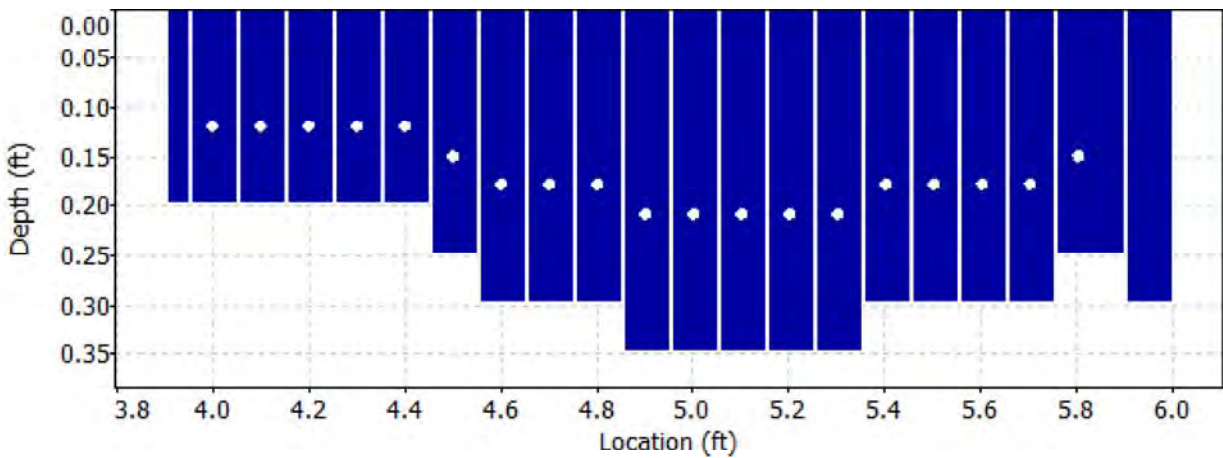
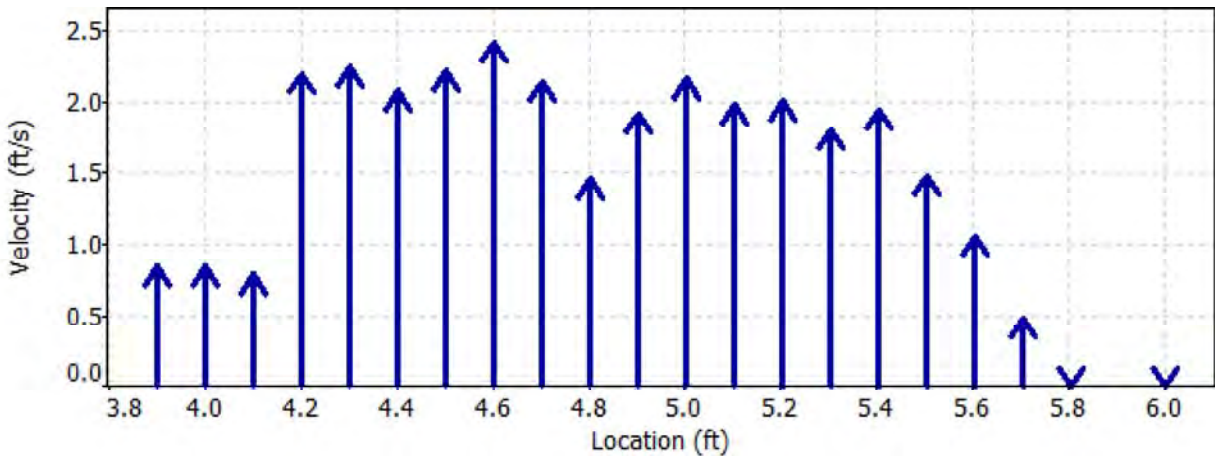
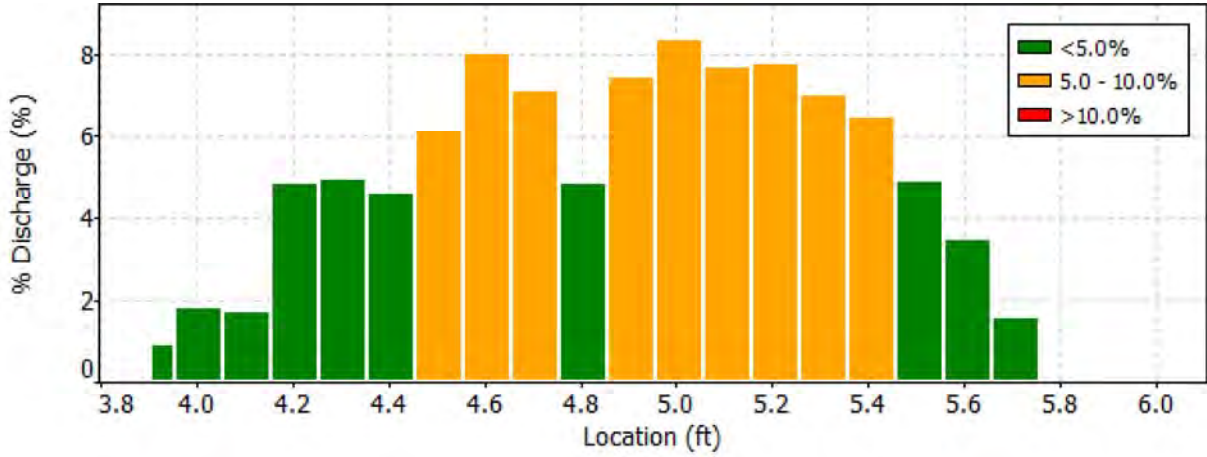
Date Generated: Tue Jan 20 2015

File Information

File Name CC03D.WAD
 Start Date and Time 2014/09/23 12:54:47

Site Details

Site Name CC03D
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC03D.WAD
Start Date and Time 2014/09/23 12:54:47

Site Details

Site Name CC03D
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	4.00	0.6	High number of spikes: 5
9	4.80	0.6	High standard error: 0.110
12	5.10	0.6	High number of spikes: 5
13	5.20	0.6	High number of spikes: 5

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC07.WAD
Start Date and Time 2014/09/23 11:21:03

Site Details

Site Name CC07
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3513
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.5%	8.6%
Velocity	3.6%	7.7%
Width	0.2%	0.2%
Method	2.4%	-
# Stations	2.6%	-
Overall	5.2%	11.6%

Summary

Averaging Int.	40	# Stations	19
Start Edge	REW	Total Width	2.802
Mean SNR	42.4 dB	Total Area	0.808
Mean Temp	45.18 °F	Mean Depth	0.288
Disch. Equation	Mid-Section	Mean Velocity	0.4760
		Total Discharge	0.3846

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:21	3.80	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>11:21</i>	<i>4.00</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>-0.2536</i>	<i>1.00</i>	<i>-0.2536</i>	<i>0.070</i>	<i>-0.0178</i>	<i>-4.6</i>
2	11:21	4.20	0.6	0.350	0.6	0.140	0.0079	1.00	0.0079	0.070	0.0006	0.1
3	11:22	4.40	0.6	0.350	0.6	0.140	0.3688	1.00	0.3688	0.070	0.0258	6.7
4	11:23	4.60	0.6	0.400	0.6	0.160	0.5135	1.00	0.5135	0.060	0.0308	8.0
5	11:36	4.70	0.6	0.250	0.6	0.100	0.7707	1.00	0.7707	0.025	0.0193	5.0
<i>6</i>	<i>11:25</i>	<i>4.80</i>	<i>0.6</i>	<i>0.450</i>	<i>0.6</i>	<i>0.180</i>	<i>0.8868</i>	<i>1.00</i>	<i>0.8868</i>	<i>0.045</i>	<i>0.0399</i>	<i>10.4</i>
7	11:37	4.90	0.6	0.250	0.6	0.100	0.9692	1.00	0.9692	0.025	0.0242	6.3
<i>8</i>	<i>11:25</i>	<i>5.00</i>	<i>0.6</i>	<i>0.450</i>	<i>0.6</i>	<i>0.180</i>	<i>0.8881</i>	<i>1.00</i>	<i>0.8881</i>	<i>0.045</i>	<i>0.0400</i>	<i>10.4</i>
9	11:38	5.10	0.6	0.350	0.6	0.140	1.1486	1.00	1.1486	0.035	0.0402	10.5
<i>10</i>	<i>11:26</i>	<i>5.20</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.9590</i>	<i>1.00</i>	<i>0.9590</i>	<i>0.040</i>	<i>0.0383</i>	<i>10.0</i>
<i>11</i>	<i>11:39</i>	<i>5.30</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>1.1470</i>	<i>1.00</i>	<i>1.1470</i>	<i>0.035</i>	<i>0.0402</i>	<i>10.4</i>
<i>12</i>	<i>11:29</i>	<i>5.40</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>0.9281</i>	<i>1.00</i>	<i>0.9281</i>	<i>0.038</i>	<i>0.0349</i>	<i>9.1</i>
<i>13</i>	<i>11:30</i>	<i>5.60</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>0.7644</i>	<i>1.00</i>	<i>0.7644</i>	<i>0.050</i>	<i>0.0382</i>	<i>9.9</i>
<i>14</i>	<i>11:31</i>	<i>5.80</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>0.6473</i>	<i>1.00</i>	<i>0.6473</i>	<i>0.050</i>	<i>0.0324</i>	<i>8.4</i>
<i>15</i>	<i>11:32</i>	<i>6.00</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>0.4078</i>	<i>1.00</i>	<i>0.4078</i>	<i>0.050</i>	<i>0.0204</i>	<i>5.3</i>
<i>16</i>	<i>11:33</i>	<i>6.20</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>-0.3202</i>	<i>1.00</i>	<i>-0.3202</i>	<i>0.050</i>	<i>-0.0160</i>	<i>-4.2</i>
<i>17</i>	<i>11:34</i>	<i>6.40</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>-0.1381</i>	<i>1.00</i>	<i>-0.1381</i>	<i>0.050</i>	<i>-0.0069</i>	<i>-1.8</i>
18	11:34	6.60	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

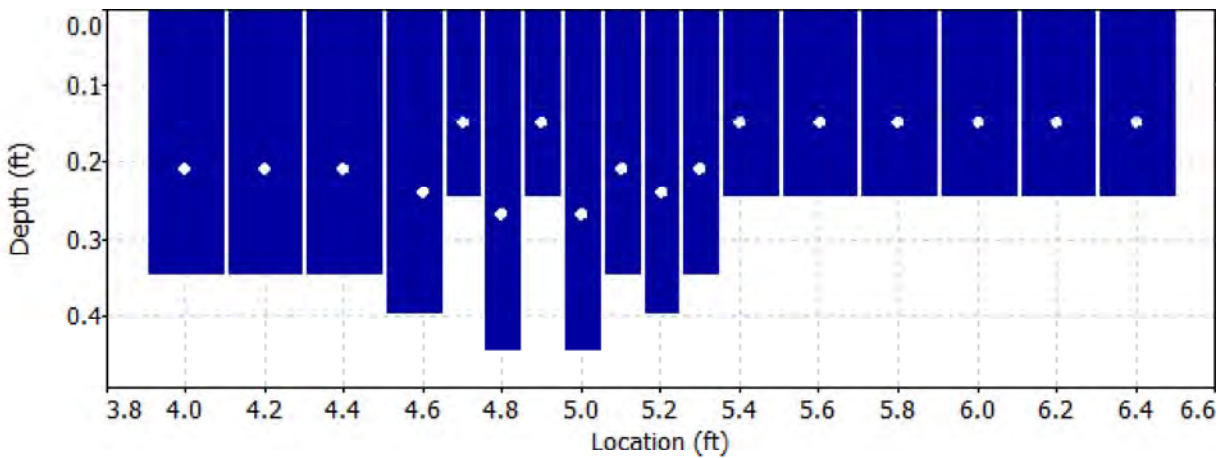
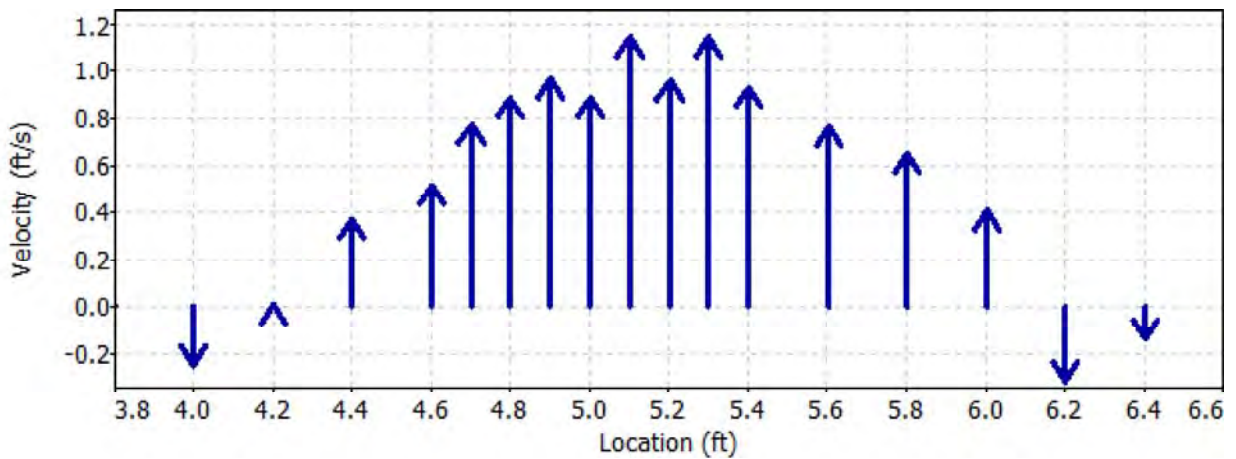
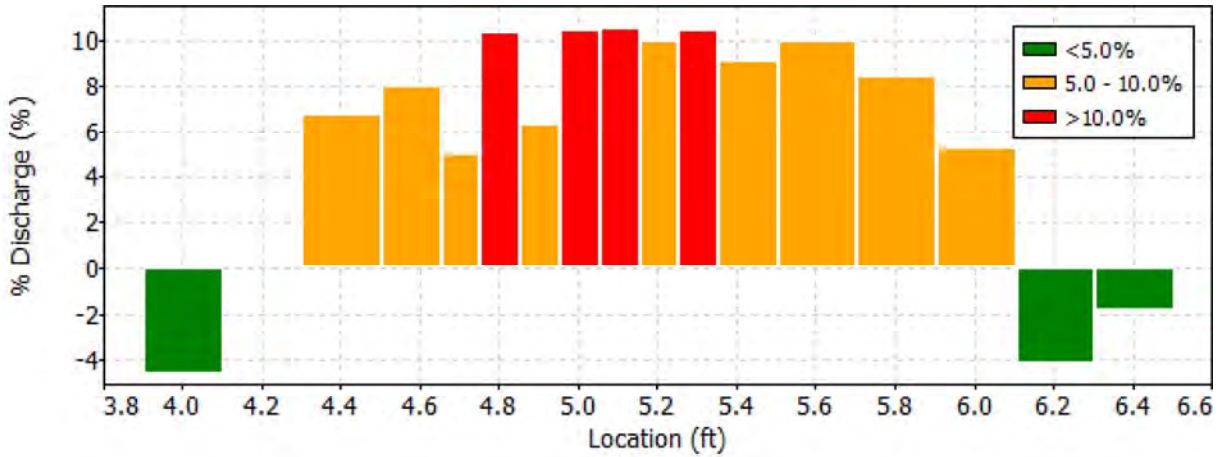
Date Generated: Tue Jan 20 2015

File Information

File Name CC07.WAD
 Start Date and Time 2014/09/23 11:21:03

Site Details

Site Name CC07
 Operator(s) RB



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC07.WAD
Start Date and Time 2014/09/23 11:21:03

Site Details

Site Name CC07
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
1	4.00	0.6	High angle: -176
6	4.80	0.6	High standard error: 0.118
8	5.00	0.6	High angle: 22
		0.6	High standard error: 0.107
10	5.20	0.6	High angle: 24
11	5.30	0.6	High standard error: 0.100
12	5.40	0.6	High angle: 36
13	5.60	0.6	High angle: 40
14	5.80	0.6	High angle: 53
15	6.00	0.6	High angle: 61
16	6.20	0.6	High angle: 166
		0.6	SNR (53.7) is different from typical SNR (42.4)
		0.6	High SNR variation during measurement: 7.3,6.0
17	6.40	0.6	High angle: 163

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC15.WAD
Start Date and Time 2014/09/23 11:58:02

Site Details

Site Name CC15
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	7.3%
Velocity	1.9%	10.3%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.2%	-
Overall	3.6%	12.7%

Summary

Averaging Int. 40 # Stations 23
Start Edge LEW Total Width 3.905
Mean SNR 41.7 dB Total Area 0.891
Mean Temp 49.29 °F Mean Depth 0.228
Disch. Equation Mid-Section Mean Velocity 1.0485
Total Discharge 0.9347

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:58	2.80	None	0.100	0.0	0.0	0.0000	1.00	0.0020	0.010	0.0000	0.0
<i>1</i>	<i>11:58</i>	<i>3.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0020</i>	<i>1.00</i>	<i>0.0020</i>	<i>0.040</i>	<i>0.0001</i>	<i>0.0</i>
<i>2</i>	<i>11:59</i>	<i>3.20</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.040</i>	<i>0.0000</i>	<i>0.0</i>
3	12:00	3.40	0.6	0.200	0.6	0.080	1.8530	1.00	1.8530	0.040	0.0742	7.9
4	12:02	3.60	0.6	0.250	0.6	0.100	0.9551	1.00	0.9551	0.050	0.0478	5.1
5	12:03	3.80	0.6	0.250	0.6	0.100	1.1368	1.00	1.1368	0.050	0.0569	6.1
<i>6</i>	<i>12:04</i>	<i>4.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>1.2185</i>	<i>1.00</i>	<i>1.2185</i>	<i>0.040</i>	<i>0.0488</i>	<i>5.2</i>
<i>7</i>	<i>12:05</i>	<i>4.20</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>1.1522</i>	<i>1.00</i>	<i>1.1522</i>	<i>0.050</i>	<i>0.0576</i>	<i>6.2</i>
<i>8</i>	<i>12:06</i>	<i>4.40</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>1.6112</i>	<i>1.00</i>	<i>1.6112</i>	<i>0.050</i>	<i>0.0806</i>	<i>8.6</i>
<i>9</i>	<i>12:08</i>	<i>4.60</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>1.5607</i>	<i>1.00</i>	<i>1.5607</i>	<i>0.050</i>	<i>0.0781</i>	<i>8.4</i>
10	12:09	4.80	0.6	0.250	0.6	0.100	1.3058	1.00	1.3058	0.050	0.0653	7.0
<i>11</i>	<i>12:10</i>	<i>5.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>2.0174</i>	<i>1.00</i>	<i>2.0174</i>	<i>0.030</i>	<i>0.0603</i>	<i>6.5</i>
<i>12</i>	<i>12:24</i>	<i>5.10</i>	<i>0.6</i>	<i>0.000</i>	<i>0.6</i>	<i>0.120</i>	<i>0.8783</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.000</i>	<i>0.0000</i>	<i>0.0</i>
13	12:11	5.20	0.6	0.300	0.6	0.120	1.6424	1.00	1.6424	0.045	0.0742	7.9
14	12:12	5.40	0.6	0.250	0.6	0.100	1.7864	1.00	1.7864	0.050	0.0894	9.6
<i>15</i>	<i>12:13</i>	<i>5.60</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.4806</i>	<i>1.00</i>	<i>0.4806</i>	<i>0.060</i>	<i>0.0288</i>	<i>3.1</i>
16	12:15	5.80	0.6	0.300	0.6	0.120	0.5144	1.00	0.5144	0.060	0.0309	3.3
<i>17</i>	<i>12:16</i>	<i>6.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.6795</i>	<i>1.00</i>	<i>0.6795</i>	<i>0.040</i>	<i>0.0272</i>	<i>2.9</i>
18	12:17	6.20	0.6	0.200	0.6	0.080	0.3635	1.00	0.3635	0.040	0.0146	1.6
19	12:19	6.40	0.6	0.200	0.6	0.080	0.5194	1.00	0.5194	0.030	0.0155	1.7
20	12:23	6.50	0.6	0.250	0.6	0.100	0.5413	1.00	0.5413	0.025	0.0135	1.4
21	12:21	6.60	0.6	0.300	0.6	0.120	1.7277	1.00	1.7277	0.031	0.0530	5.7
<i>22</i>	<i>12:21</i>	<i>6.70</i>	<i>None</i>	<i>0.200</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0000</i>	<i>1.00</i>	<i>1.7277</i>	<i>0.010</i>	<i>0.0177</i>	<i>1.9</i>

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

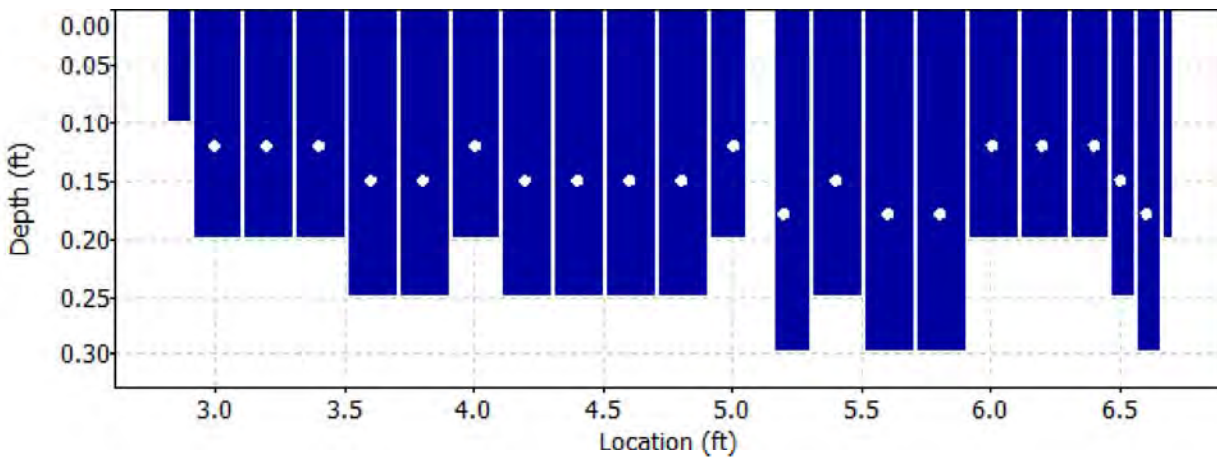
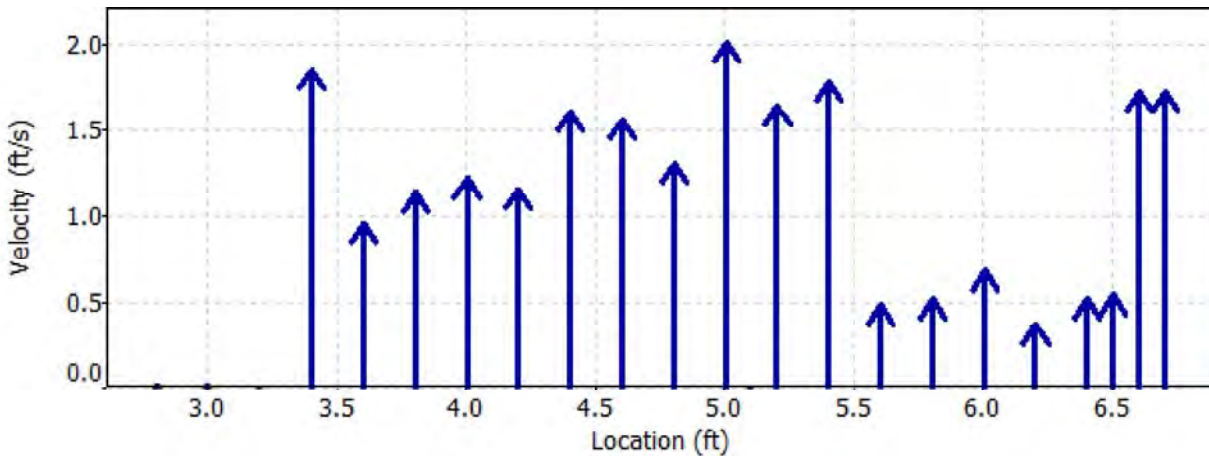
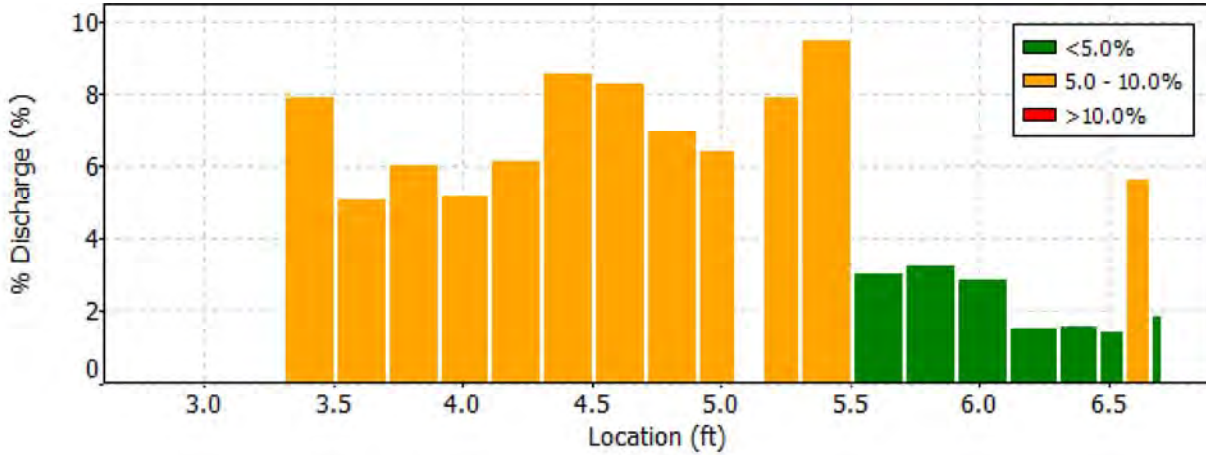
Date Generated: Tue Jan 20 2015

File Information

File Name CC15.WAD
 Start Date and Time 2014/09/23 11:58:02

Site Details

Site Name CC15
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC15.WAD
Start Date and Time 2014/09/23 11:58:02

Site Details

Site Name CC15
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	3.00	0.6	SNR (61.9) is different from typical SNR (41.7)
2	3.20	0.6	SNR (65.6) is different from typical SNR (41.7)
6	4.00	0.6	High standard error: 0.133
7	4.20	0.6	High standard error: 0.129
8	4.40	0.6	High standard error: 0.126
9	4.60	0.6	High standard error: 0.105
11	5.00	0.6	High angle: -21
12	5.10	0.6	High angle: -30
15	5.60	0.6	High standard error: 0.108
17	6.00	0.6	High angle: -24

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC16B.WAD
Start Date and Time 2014/09/23 11:27:39

Site Details

Site Name CC16B
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	1.4%
Velocity	1.5%	2.9%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.4%	-
Overall	3.6%	3.3%

Summary

Averaging Int.	40	# Stations	21
Start Edge	REW	Total Width	4.100
Mean SNR	37.8 dB	Total Area	1.559
Mean Temp	45.77 °F	Mean Depth	0.380
Disch. Equation	Mid-Section	Mean Velocity	1.0849
		Total Discharge	1.6912

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:27	5.60	None	0.100	0.0	0.0	0.0000	1.00	0.3871	0.013	0.0048	0.3
1	11:27	5.85	0.6	0.200	0.6	0.080	0.3871	1.00	0.3871	0.050	0.0194	1.1
2	11:28	6.10	0.6	0.200	0.6	0.080	0.9692	1.00	0.9692	0.050	0.0485	2.9
3	11:29	6.35	0.6	0.200	0.6	0.080	1.3566	1.00	1.3566	0.050	0.0679	4.0
4	11:30	6.60	0.6	0.250	0.6	0.100	1.4101	1.00	1.4101	0.063	0.0881	5.2
5	11:31	6.85	0.6	0.300	0.6	0.120	1.3320	1.00	1.3320	0.075	0.0999	5.9
6	11:32	7.10	0.6	0.350	0.6	0.140	1.4272	1.00	1.4272	0.088	0.1249	7.4
7	11:33	7.35	0.6	0.450	0.6	0.180	1.4495	1.00	1.4495	0.113	0.1631	9.6
8	11:34	7.60	0.6	0.500	0.6	0.200	1.7848	1.00	1.7848	0.088	0.1562	9.2
9	11:45	7.70	0.6	0.500	0.6	0.200	1.7172	1.00	1.7172	0.063	0.1073	6.3
10	11:35	7.85	0.6	0.500	0.6	0.200	2.0505	1.00	2.0505	0.075	0.1537	9.1
11	11:46	8.00	0.6	0.500	0.6	0.200	2.0177	1.00	2.0177	0.063	0.1261	7.5
12	11:36	8.10	0.6	0.500	0.6	0.200	1.7539	1.00	1.7539	0.050	0.0878	5.2
13	11:47	8.20	0.6	0.550	0.6	0.220	1.2523	1.00	1.2523	0.069	0.0861	5.1
14	11:37	8.35	0.6	0.550	0.6	0.220	1.0039	1.00	1.0039	0.110	0.1104	6.5
15	11:38	8.60	0.6	0.550	0.6	0.220	0.9472	1.00	0.9472	0.137	0.1302	7.7
16	11:39	8.85	0.6	0.450	0.6	0.180	0.3510	1.00	0.3510	0.113	0.0395	2.3
17	11:40	9.10	0.6	0.400	0.6	0.160	0.4072	1.00	0.4072	0.100	0.0407	2.4
18	11:41	9.35	0.6	0.450	0.6	0.180	0.2815	1.00	0.2815	0.113	0.0317	1.9
19	11:43	9.60	0.6	0.400	0.6	0.160	0.0614	1.00	0.0614	0.070	0.0043	0.3
20	11:43	9.70	None	0.200	0.0	0.0	0.0000	1.00	0.0614	0.010	0.0006	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

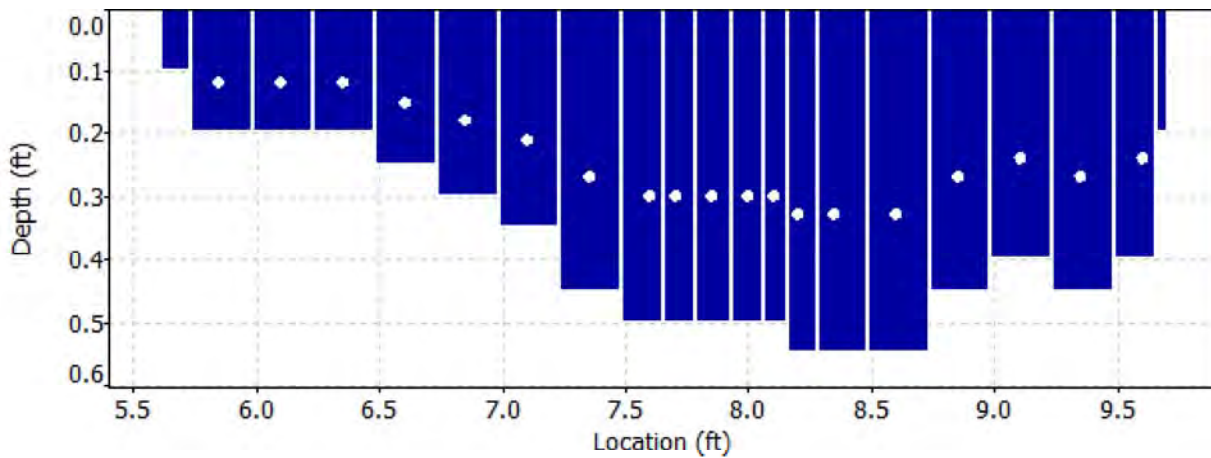
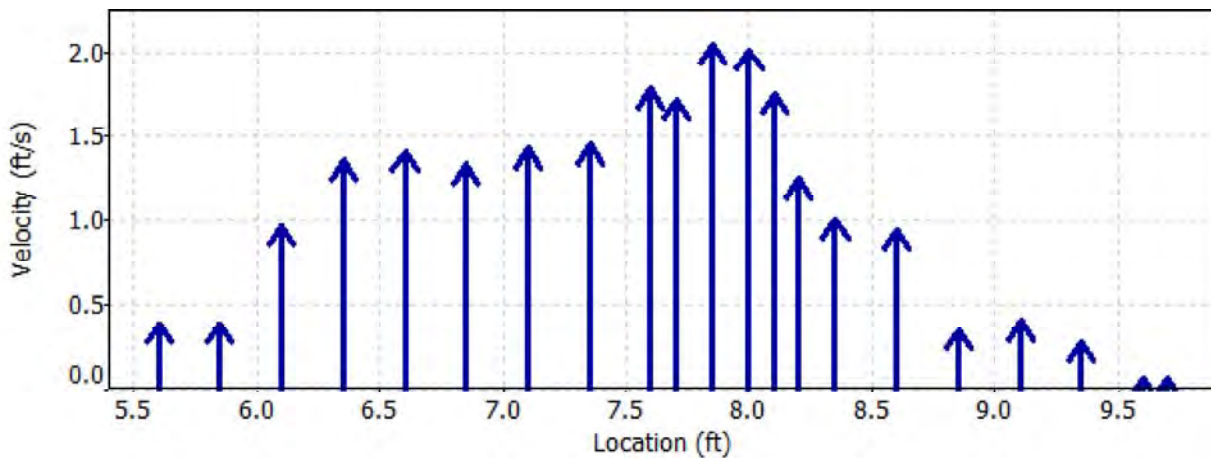
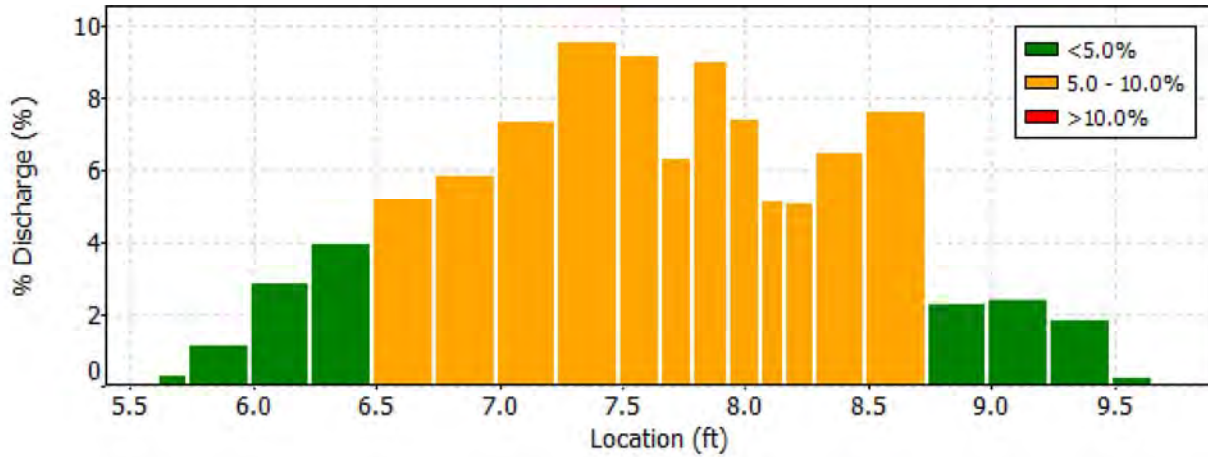
Date Generated: Tue Jan 20 2015

File Information

File Name CC16B.WAD
 Start Date and Time 2014/09/23 11:27:39

Site Details

Site Name CC16B
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC16B.WAD
Start Date and Time 2014/09/23 11:27:39

Site Details

Site Name CC16B
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
8	7.60	0.6	High angle: 24
9	7.70	0.6	High angle: 25
10	7.85	0.6	High angle: 27
11	8.00	0.6	High number of spikes: 5
14	8.35	0.6	High angle: 25
15	8.60	0.6	High angle: 22
16	8.85	0.6	High angle: 36
18	9.35	0.6	High angle: 50
19	9.60	0.6	High angle: 74

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC17.WAD
Start Date and Time 2014/09/23 10:14:22

Site Details

Site Name CC17
Operator(s) SG

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.3%	2.2%
Velocity	0.8%	6.5%
Width	0.1%	0.1%
Method	1.7%	-
# Stations	2.3%	-
Overall	3.1%	7.0%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 8.900
Mean SNR 36.4 dB Total Area 3.634
Mean Temp 41.66 °F Mean Depth 0.408
Disch. Equation Mid-Section Mean Velocity 2.2300
Total Discharge 8.1045

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:14	3.00	None	0.400	0.0	0.0	0.0000	1.00	0.6585	0.080	0.0527	0.6
1	10:14	3.40	0.6	0.400	0.6	0.160	0.6585	1.00	0.6585	0.160	0.1053	1.3
2	10:16	3.80	0.6	0.500	0.6	0.200	0.0141	1.00	0.0141	0.200	0.0028	0.0
3	10:19	4.20	0.6	0.400	0.6	0.160	3.2008	1.00	3.2008	0.160	0.5120	6.3
4	10:20	4.60	0.6	0.400	0.6	0.160	2.0715	1.00	2.0715	0.160	0.3313	4.1
5	10:22	5.00	0.6	0.500	0.6	0.200	2.6240	1.00	2.6240	0.200	0.5247	6.5
6	10:23	5.40	0.6	0.400	0.6	0.160	3.2910	1.00	3.2910	0.160	0.5264	6.5
7	10:24	5.80	0.6	0.400	0.6	0.160	2.7001	1.00	2.7001	0.160	0.4319	5.3
8	10:26	6.20	0.6	0.400	0.6	0.160	2.5840	1.00	2.5840	0.160	0.4133	5.1
9	10:27	6.60	0.6	0.400	0.6	0.160	1.6427	1.00	1.6427	0.160	0.2627	3.2
10	10:28	7.00	0.6	0.400	0.6	0.160	2.4872	1.00	2.4872	0.160	0.3978	4.9
11	10:29	7.40	0.6	0.400	0.6	0.160	2.8356	1.00	2.8356	0.160	0.4536	5.6
12	10:30	7.80	0.6	0.400	0.6	0.160	2.0489	1.00	2.0489	0.160	0.3277	4.0
13	10:31	8.20	0.6	0.400	0.6	0.160	2.3766	1.00	2.3766	0.160	0.3801	4.7
14	10:33	8.60	0.6	0.500	0.6	0.200	2.5112	1.00	2.5112	0.200	0.5021	6.2
15	10:34	9.00	0.6	0.400	0.6	0.160	1.4606	1.00	1.4606	0.160	0.2336	2.9
16	10:36	9.40	0.6	0.400	0.6	0.160	2.3127	1.00	2.3127	0.160	0.3699	4.6
17	10:37	9.80	0.6	0.400	0.6	0.160	2.4619	1.00	2.4619	0.160	0.3938	4.9
18	10:38	10.20	0.6	0.400	0.6	0.160	2.3353	1.00	2.3353	0.160	0.3735	4.6
19	10:39	10.60	0.6	0.400	0.6	0.160	2.7375	1.00	2.7375	0.160	0.4379	5.4
20	10:40	11.00	0.6	0.400	0.6	0.160	2.7100	1.00	2.7100	0.260	0.7051	8.7
21	10:40	11.90	None	0.300	0.0	0.0	0.0000	1.00	2.7100	0.135	0.3662	4.5

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

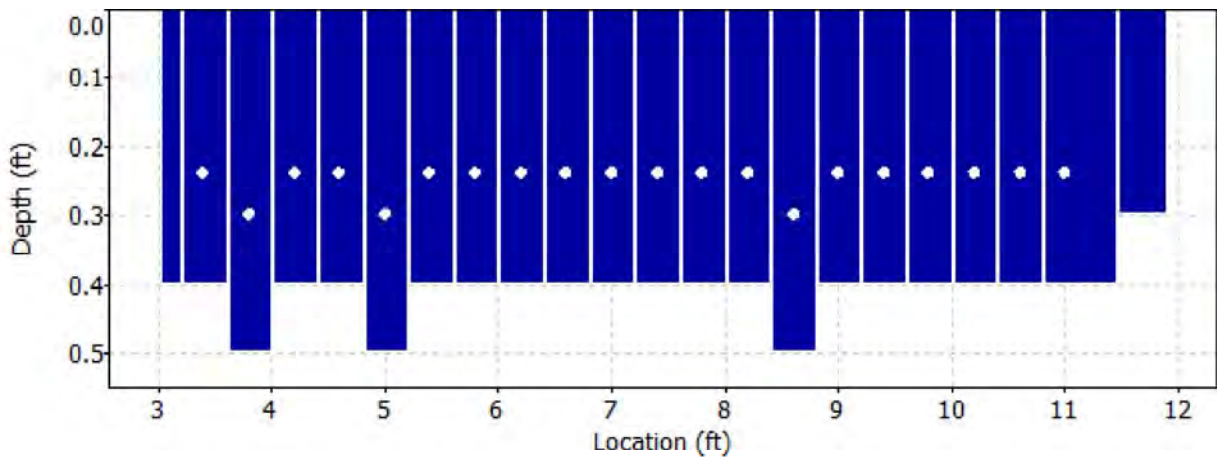
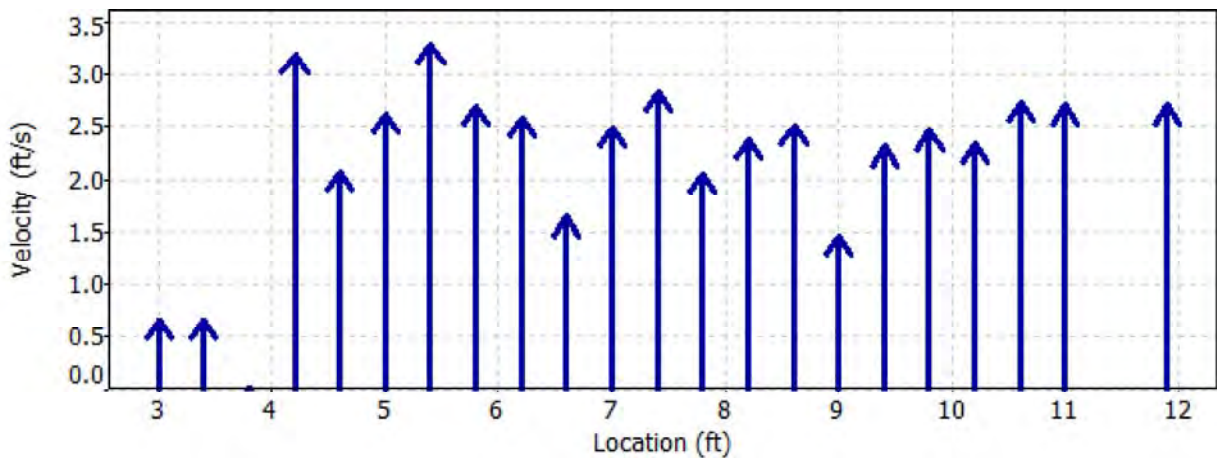
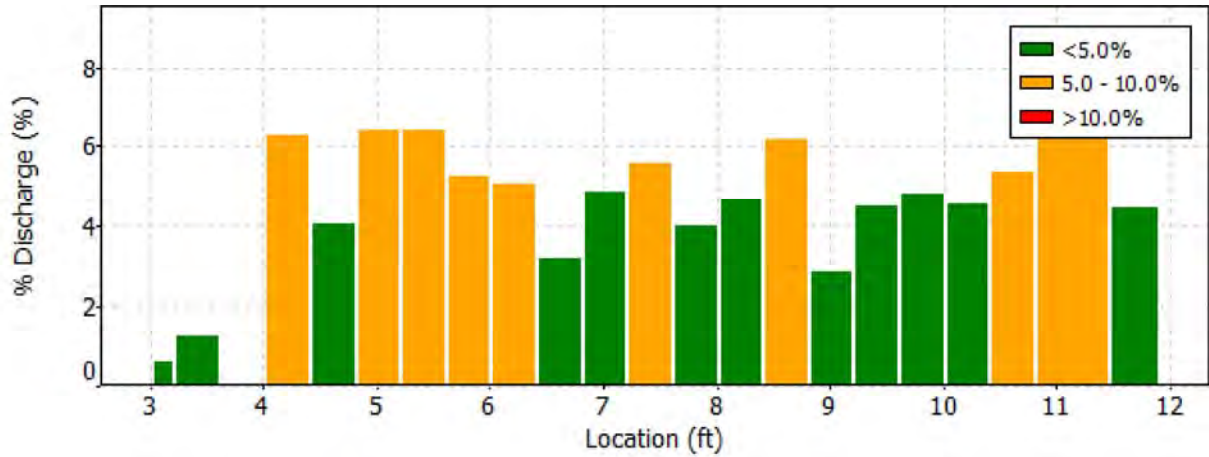
Date Generated: Tue Jan 20 2015

File Information

File Name CC17.WAD
 Start Date and Time 2014/09/23 10:14:22

Site Details

Site Name CC17
 Operator(s) SG



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC17.WAD
Start Date and Time 2014/09/23 10:14:22

Site Details

Site Name CC17
Operator(s) SG

Quality Control

St	Loc	%Dep	Message
2	3.80	0.6	High standard error: 0.136
		0.6	Boundary QC is Poor; possible boundary interference
4	4.60	0.6	High standard error: 0.147
9	6.60	0.6	High angle: 30
11	7.40	0.6	High angle: 21
13	8.20	0.6	High angle: 32
14	8.60	0.6	High angle: 34
15	9.00	0.6	High angle: 40
16	9.40	0.6	High angle: 22

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC18.WAD
Start Date and Time 2014/09/23 09:42:40

Site Details

Site Name CC18
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3513
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	2.4%
Velocity	2.0%	9.3%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.3%	-
Overall	3.7%	9.6%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 8.500
Mean SNR 40.4 dB Total Area 3.655
Mean Temp 39.86 °F Mean Depth 0.430
Disch. Equation Mid-Section Mean Velocity 1.2749
Total Discharge 4.6595

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:42	3.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>09:42</i>	<i>3.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.0249</i>	<i>1.00</i>	<i>-0.0249</i>	<i>0.150</i>	<i>-0.0037</i>	<i>-0.1</i>
2	09:43	4.00	0.6	0.500	0.6	0.200	1.2828	1.00	1.2828	0.250	0.3207	6.9
3	09:44	4.50	0.6	0.550	0.6	0.220	0.6499	1.00	0.6499	0.275	0.1787	3.8
4	09:46	5.00	0.6	0.500	0.6	0.200	2.3438	1.00	2.3438	0.188	0.4395	9.4
5	10:01	5.25	0.6	0.500	0.6	0.200	2.2073	1.00	2.2073	0.125	0.2759	5.9
6	09:47	5.50	0.6	0.550	0.6	0.220	1.2044	1.00	1.2044	0.206	0.2483	5.3
7	09:48	6.00	0.6	0.550	0.6	0.220	0.9639	1.00	0.9639	0.275	0.2650	5.7
8	09:49	6.50	0.6	0.550	0.6	0.220	1.0489	1.00	1.0489	0.275	0.2884	6.2
9	09:50	7.00	0.6	0.400	0.6	0.160	1.5666	1.00	1.5666	0.200	0.3133	6.7
10	09:52	7.50	0.6	0.350	0.6	0.140	0.3389	1.00	0.3389	0.175	0.0593	1.3
11	09:53	8.00	0.6	0.500	0.6	0.200	1.0446	1.00	1.0446	0.188	0.1959	4.2
12	10:04	8.25	0.6	0.600	0.6	0.240	1.3179	1.00	1.3179	0.150	0.1977	4.2
13	09:54	8.50	0.6	0.550	0.6	0.220	2.1608	1.00	2.1608	0.151	0.3267	7.0
14	10:02	8.80	0.6	0.500	0.6	0.200	1.0925	1.00	1.0925	0.125	0.1366	2.9
15	09:55	9.00	0.6	0.600	0.6	0.240	1.1339	1.00	1.1339	0.135	0.1531	3.3
16	10:05	9.25	0.6	0.600	0.6	0.240	2.2001	1.00	2.2001	0.150	0.3301	7.1
17	09:56	9.50	0.6	0.500	0.6	0.200	2.1322	1.00	2.1322	0.188	0.3998	8.6
18	09:57	10.00	0.6	0.400	0.6	0.160	2.0758	1.00	2.0758	0.200	0.4151	8.9
19	09:58	10.50	0.6	0.250	0.6	0.100	1.1965	1.00	1.1965	0.125	0.1496	3.2
20	09:59	11.00	0.6	0.250	0.6	0.100	-0.2425	1.00	-0.2425	0.125	-0.0303	-0.7
21	09:59	11.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

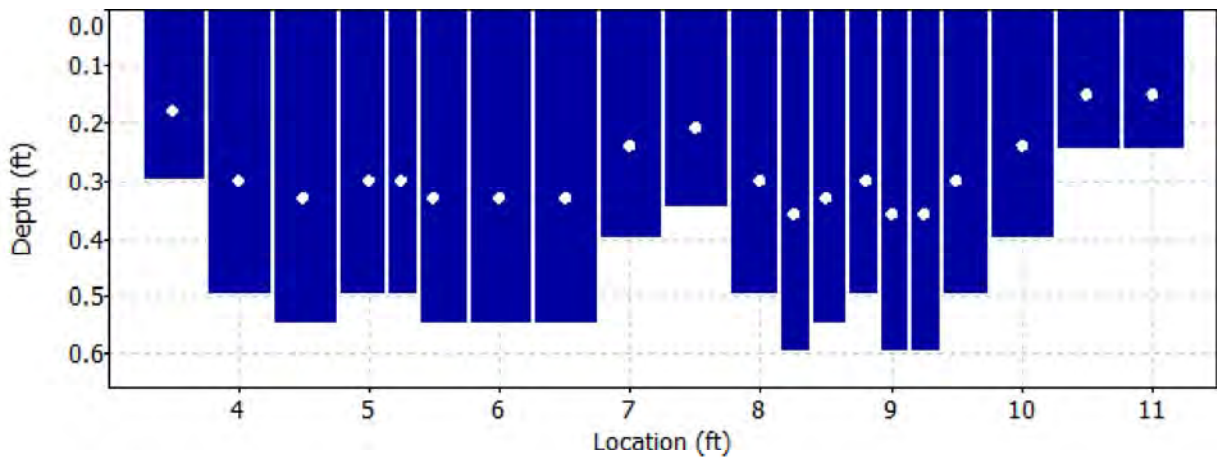
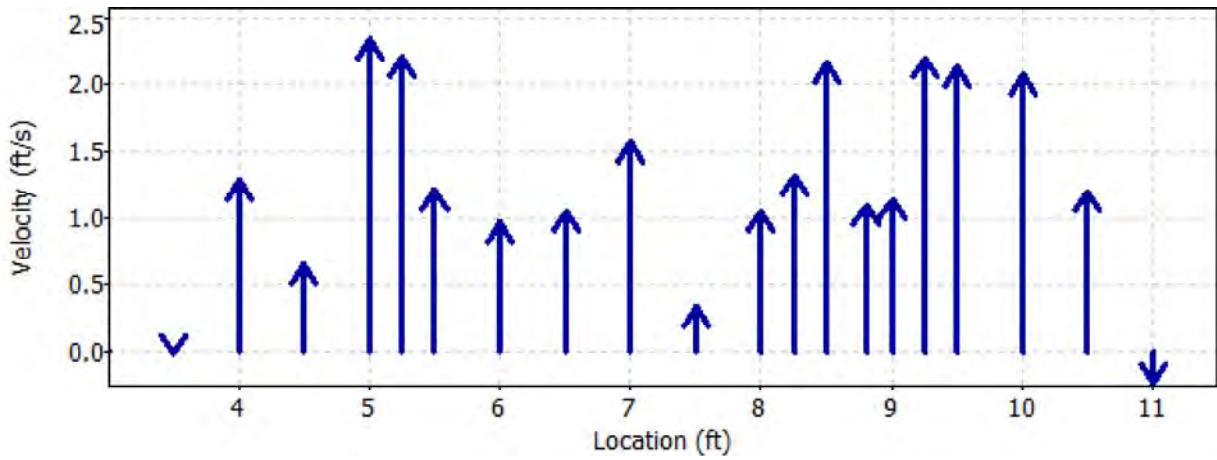
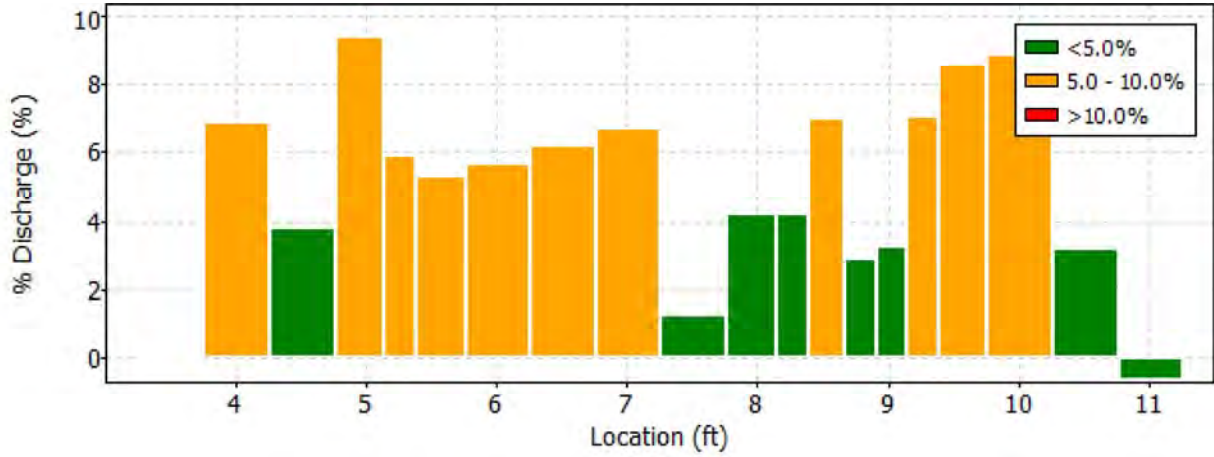
Date Generated: Tue Jan 20 2015

File Information

File Name CC18.WAD
 Start Date and Time 2014/09/23 09:42:40

Site Details

Site Name CC18
 Operator(s) RB



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC18.WAD
Start Date and Time 2014/09/23 09:42:40

Site Details

Site Name CC18
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
1	3.50	0.6	High angle: 100
3	4.50	0.6	High number of spikes: 5
		0.6	High standard error: 0.171
4	5.00	0.6	High angle: 28
6	5.50	0.6	High angle: 25
11	8.00	0.6	High angle: -33
12	8.25	0.6	High angle: -28
13	8.50	0.6	High angle: -31
14	8.80	0.6	High standard error: 0.181
16	9.25	0.6	High angle: -24
20	11.00	0.6	High angle: -166

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CB18B.WAD
Start Date and Time 2014/09/23 10:42:01

Site Details

Site Name CC18B
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3513
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	2.2%
Velocity	1.7%	6.0%
Width	0.1%	0.1%
Method	2.0%	-
# Stations	2.3%	-
Overall	3.6%	6.4%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 5.103
Mean SNR 40.5 dB Total Area 3.081
Mean Temp 44.38 °F Mean Depth 0.604
Disch. Equation Mid-Section Mean Velocity 1.5608
Total Discharge 4.8091

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:42	3.90	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>10:42</i>	<i>4.20</i>	<i>0.6</i>	<i>0.450</i>	<i>0.6</i>	<i>0.180</i>	<i>0.3609</i>	<i>1.00</i>	<i>0.3609</i>	<i>0.135</i>	<i>0.0488</i>	<i>1.0</i>
<i>2</i>	<i>10:43</i>	<i>4.50</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>0.4380</i>	<i>1.00</i>	<i>0.4380</i>	<i>0.150</i>	<i>0.0657</i>	<i>1.4</i>
<i>3</i>	<i>10:44</i>	<i>4.80</i>	<i>0.6</i>	<i>0.650</i>	<i>0.6</i>	<i>0.260</i>	<i>3.1867</i>	<i>1.00</i>	<i>3.1867</i>	<i>0.146</i>	<i>0.4658</i>	<i>9.7</i>
<i>4</i>	<i>11:04</i>	<i>4.95</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>3.1411</i>	<i>1.00</i>	<i>3.1411</i>	<i>0.105</i>	<i>0.3301</i>	<i>6.9</i>
<i>5</i>	<i>10:45</i>	<i>5.10</i>	<i>0.6</i>	<i>0.750</i>	<i>0.6</i>	<i>0.300</i>	<i>2.5758</i>	<i>1.00</i>	<i>2.5758</i>	<i>0.169</i>	<i>0.4354</i>	<i>9.1</i>
<i>6</i>	<i>10:46</i>	<i>5.40</i>	<i>0.6</i>	<i>0.750</i>	<i>0.6</i>	<i>0.300</i>	<i>1.2047</i>	<i>1.00</i>	<i>1.2047</i>	<i>0.225</i>	<i>0.2712</i>	<i>5.6</i>
<i>7</i>	<i>10:47</i>	<i>5.70</i>	<i>0.6</i>	<i>0.750</i>	<i>0.6</i>	<i>0.300</i>	<i>0.5627</i>	<i>1.00</i>	<i>0.5627</i>	<i>0.225</i>	<i>0.1267</i>	<i>2.6</i>
<i>8</i>	<i>10:49</i>	<i>6.00</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.3251</i>	<i>1.00</i>	<i>0.3251</i>	<i>0.180</i>	<i>0.0586</i>	<i>1.2</i>
<i>9</i>	<i>10:50</i>	<i>6.30</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.1211</i>	<i>1.00</i>	<i>0.1211</i>	<i>0.180</i>	<i>0.0218</i>	<i>0.5</i>
<i>10</i>	<i>10:52</i>	<i>6.60</i>	<i>0.6</i>	<i>0.750</i>	<i>0.6</i>	<i>0.300</i>	<i>1.2162</i>	<i>1.00</i>	<i>1.2162</i>	<i>0.225</i>	<i>0.2738</i>	<i>5.7</i>
<i>11</i>	<i>10:53</i>	<i>6.90</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>2.3120</i>	<i>1.00</i>	<i>2.3120</i>	<i>0.180</i>	<i>0.4165</i>	<i>8.7</i>
<i>12</i>	<i>10:54</i>	<i>7.20</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>3.5000</i>	<i>1.00</i>	<i>3.5000</i>	<i>0.112</i>	<i>0.3921</i>	<i>8.2</i>
<i>13</i>	<i>11:06</i>	<i>7.35</i>	<i>0.6</i>	<i>0.550</i>	<i>0.6</i>	<i>0.220</i>	<i>3.7913</i>	<i>1.00</i>	<i>3.7913</i>	<i>0.083</i>	<i>0.3129</i>	<i>6.5</i>
<i>14</i>	<i>10:56</i>	<i>7.50</i>	<i>0.6</i>	<i>0.750</i>	<i>0.6</i>	<i>0.300</i>	<i>4.1539</i>	<i>1.00</i>	<i>4.1539</i>	<i>0.112</i>	<i>0.4671</i>	<i>9.7</i>
<i>15</i>	<i>11:07</i>	<i>7.65</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>4.0489</i>	<i>1.00</i>	<i>4.0489</i>	<i>0.105</i>	<i>0.4255</i>	<i>8.8</i>
<i>16</i>	<i>10:57</i>	<i>7.80</i>	<i>0.6</i>	<i>0.650</i>	<i>0.6</i>	<i>0.260</i>	<i>3.4386</i>	<i>1.00</i>	<i>3.4386</i>	<i>0.098</i>	<i>0.3355</i>	<i>7.0</i>
<i>17</i>	<i>11:09</i>	<i>7.95</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>2.0883</i>	<i>1.00</i>	<i>2.0883</i>	<i>0.105</i>	<i>0.2195</i>	<i>4.6</i>
<i>18</i>	<i>10:59</i>	<i>8.10</i>	<i>0.6</i>	<i>0.750</i>	<i>0.6</i>	<i>0.300</i>	<i>0.8353</i>	<i>1.00</i>	<i>0.8353</i>	<i>0.170</i>	<i>0.1418</i>	<i>2.9</i>
<i>19</i>	<i>11:01</i>	<i>8.40</i>	<i>0.6</i>	<i>0.650</i>	<i>0.6</i>	<i>0.260</i>	<i>-0.1332</i>	<i>1.00</i>	<i>-0.1332</i>	<i>0.195</i>	<i>-0.0260</i>	<i>-0.5</i>
<i>20</i>	<i>11:02</i>	<i>8.70</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.1460</i>	<i>1.00</i>	<i>0.1460</i>	<i>0.180</i>	<i>0.0263</i>	<i>0.5</i>
<i>21</i>	<i>11:02</i>	<i>9.00</i>	<i>None</i>	<i>0.000</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.000</i>	<i>0.0000</i>	<i>0.0</i>

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CB18B.WAD
Start Date and Time 2014/09/23 10:42:01

Site Details

Site Name CC18B
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
1	4.20	0.6	High angle: 49
2	4.50	0.6	High number of spikes: 5
		0.6	High angle: 40
6	5.40	0.6	High angle: 30
7	5.70	0.6	High angle: 28
8	6.00	0.6	High angle: 37
9	6.30	0.6	High angle: 37
11	6.90	0.6	High angle: -20
		0.6	High standard error: 0.166
12	7.20	0.6	High angle: -25
13	7.35	0.6	High angle: -21
15	7.65	0.6	High angle: -21
17	7.95	0.6	High standard error: 0.151
18	8.10	0.6	High standard error: 0.140
19	8.40	0.6	High angle: -115
20	8.70	0.6	High angle: -69

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC21.WAD
Start Date and Time 2014/09/23 08:58:06

Site Details

Site Name CC21
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3513
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	3.5%
Velocity	1.4%	6.9%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.4%	-
Overall	3.5%	7.8%

Summary

Averaging Int. 40 # Stations 21
Start Edge REW Total Width 9.601
Mean SNR 35.6 dB Total Area 6.173
Mean Temp 39.64 °F Mean Depth 0.643
Disch. Equation Mid-Section Mean Velocity 1.7801
Total Discharge 10.9888

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:58	6.80	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	08:58	7.40	0.6	0.600	0.6	0.240	0.7598	1.00	0.7598	0.360	0.2736	2.5
2	08:59	8.00	0.6	0.800	0.6	0.320	1.6631	1.00	1.6631	0.480	0.7982	7.3
3	09:00	8.60	0.6	0.750	0.6	0.300	1.8766	1.00	1.8766	0.450	0.8446	7.7
4	09:01	9.20	0.6	0.750	0.6	0.300	0.2740	1.00	0.2740	0.450	0.1233	1.1
5	09:02	9.80	0.6	0.900	0.6	0.360	1.8189	1.00	1.8189	0.540	0.9822	8.9
6	09:04	10.40	0.6	0.900	0.6	0.360	1.6919	1.00	1.6919	0.540	0.9137	8.3
7	09:05	11.00	0.6	0.750	0.6	0.300	2.5591	1.00	2.5591	0.337	0.8633	7.9
8	09:16	11.30	0.6	0.750	0.6	0.300	2.6007	1.00	2.6007	0.225	0.5852	5.3
9	09:06	11.60	0.6	0.850	0.6	0.340	2.2090	1.00	2.2090	0.255	0.5634	5.1
10	09:18	11.90	0.6	0.750	0.6	0.300	2.5509	1.00	2.5509	0.225	0.5740	5.2
11	09:07	12.20	0.6	1.000	0.6	0.400	2.0502	1.00	2.0502	0.300	0.6151	5.6
12	09:19	12.50	0.6	0.950	0.6	0.380	1.6598	1.00	1.6598	0.285	0.4726	4.3
13	09:20	12.80	0.6	0.800	0.6	0.320	1.9816	1.00	1.9816	0.120	0.2382	2.2
14	09:09	12.80	0.6	0.850	0.6	0.340	2.0935	1.00	2.0935	0.255	0.5345	4.9
15	09:10	13.40	0.6	0.750	0.6	0.300	2.1857	1.00	2.1857	0.450	0.9837	9.0
16	09:11	14.00	0.6	0.800	0.6	0.320	1.9259	1.00	1.9259	0.480	0.9244	8.4
17	09:12	14.60	0.6	0.450	0.6	0.180	1.8701	1.00	1.8701	0.270	0.5051	4.6
18	09:13	15.20	0.6	0.000	0.6	0.000	0.6890	1.00	0.0000	0.000	0.0000	0.0
19	09:14	15.80	0.6	0.250	0.6	0.100	1.2907	1.00	1.2907	0.150	0.1936	1.8
20	09:14	16.40	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

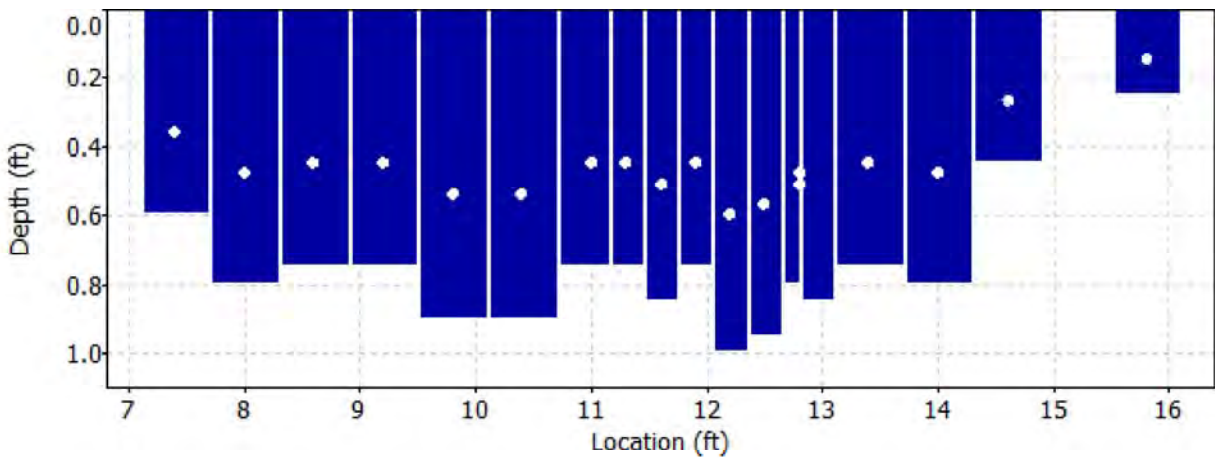
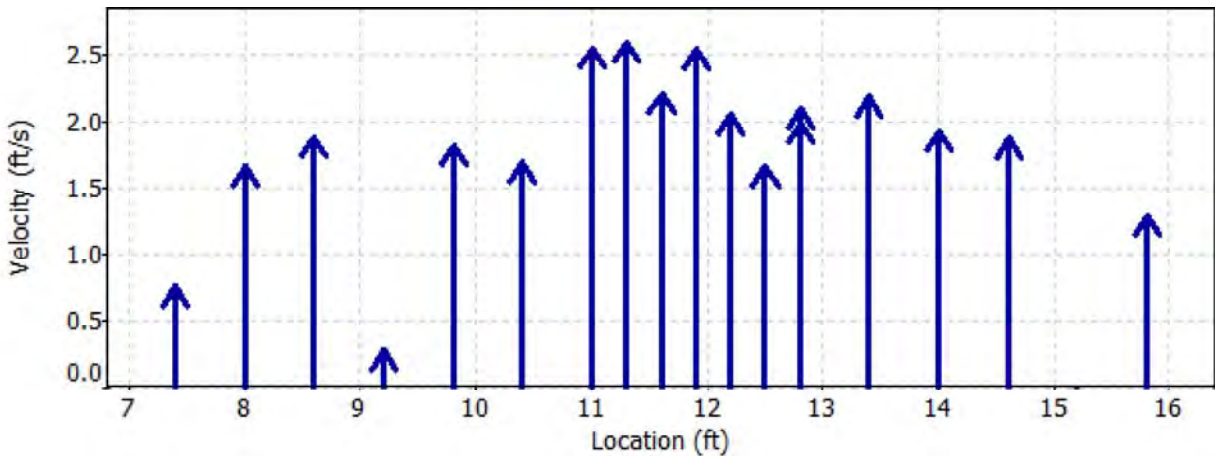
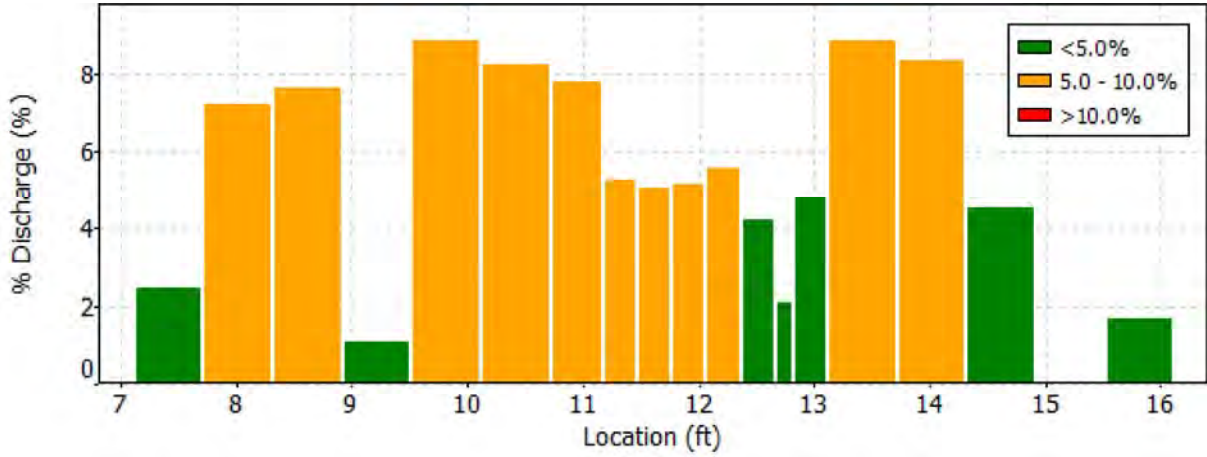
Date Generated: Tue Jan 20 2015

File Information

File Name CC21.WAD
 Start Date and Time 2014/09/23 08:58:06

Site Details

Site Name CC21
 Operator(s) RB



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC21.WAD
Start Date and Time 2014/09/23 08:58:06

Site Details

Site Name CC21
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
4	9.20	0.6	High angle: -42
5	9.80	0.6	High angle: -21
6	10.40	0.6	High standard error: 0.145
7	11.00	0.6	High angle: -21
8	11.30	0.6	High angle: -20
10	11.90	0.6	High angle: -25
18	15.20	0.6	High angle: -31
19	15.80	0.6	High angle: -34

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC21B.WAD
Start Date and Time 2014/09/23 09:08:39

Site Details

Site Name CC21B
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.3%	1.3%
Velocity	1.2%	7.4%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.3%	-
Overall	3.4%	7.6%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 11.845
Mean SNR 31.6 dB Total Area 8.311
Mean Temp 39.60 °F Mean Depth 0.702
Disch. Equation Mid-Section Mean Velocity 1.5812
Total Discharge 13.1408

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:08	3.00	None	0.500	0.0	0.0	0.0000	1.00	0.9514	0.137	0.1308	1.0
<i>1</i>	<i>09:08</i>	<i>3.55</i>	<i>0.6</i>	<i>0.550</i>	<i>0.6</i>	<i>0.220</i>	<i>0.9514</i>	<i>1.00</i>	<i>0.9514</i>	<i>0.302</i>	<i>0.2877</i>	<i>2.2</i>
<i>2</i>	<i>09:11</i>	<i>4.10</i>	<i>0.6</i>	<i>0.650</i>	<i>0.6</i>	<i>0.260</i>	<i>0.9222</i>	<i>1.00</i>	<i>0.9222</i>	<i>0.357</i>	<i>0.3296</i>	<i>2.5</i>
<i>3</i>	<i>09:12</i>	<i>4.65</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>0.8182</i>	<i>1.00</i>	<i>0.8182</i>	<i>0.385</i>	<i>0.3150</i>	<i>2.4</i>
<i>4</i>	<i>09:14</i>	<i>5.20</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>0.1329</i>	<i>1.00</i>	<i>0.1329</i>	<i>0.440</i>	<i>0.0584</i>	<i>0.4</i>
<i>5</i>	<i>09:15</i>	<i>5.75</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>0.8068</i>	<i>1.00</i>	<i>0.8068</i>	<i>0.495</i>	<i>0.3992</i>	<i>3.0</i>
<i>6</i>	<i>09:16</i>	<i>6.30</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.2398</i>	<i>1.00</i>	<i>2.2398</i>	<i>0.495</i>	<i>1.1084</i>	<i>8.4</i>
<i>7</i>	<i>09:17</i>	<i>6.85</i>	<i>0.6</i>	<i>1.000</i>	<i>0.6</i>	<i>0.400</i>	<i>2.5942</i>	<i>1.00</i>	<i>2.5942</i>	<i>0.375</i>	<i>0.9737</i>	<i>7.4</i>
<i>8</i>	<i>09:32</i>	<i>7.05</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>2.5663</i>	<i>1.00</i>	<i>2.5663</i>	<i>0.302</i>	<i>0.7762</i>	<i>5.9</i>
<i>9</i>	<i>09:18</i>	<i>7.40</i>	<i>0.6</i>	<i>1.050</i>	<i>0.6</i>	<i>0.420</i>	<i>2.6581</i>	<i>1.00</i>	<i>2.6581</i>	<i>0.315</i>	<i>0.8373</i>	<i>6.4</i>
<i>10</i>	<i>09:33</i>	<i>7.65</i>	<i>0.6</i>	<i>1.050</i>	<i>0.6</i>	<i>0.420</i>	<i>2.6634</i>	<i>1.00</i>	<i>2.6634</i>	<i>0.289</i>	<i>0.7688</i>	<i>5.9</i>
<i>11</i>	<i>09:19</i>	<i>7.95</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.4852</i>	<i>1.00</i>	<i>2.4852</i>	<i>0.382</i>	<i>0.9491</i>	<i>7.2</i>
<i>12</i>	<i>09:20</i>	<i>8.50</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>2.0069</i>	<i>1.00</i>	<i>2.0069</i>	<i>0.495</i>	<i>0.9931</i>	<i>7.6</i>
<i>13</i>	<i>09:22</i>	<i>9.05</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>2.2513</i>	<i>1.00</i>	<i>2.2513</i>	<i>0.440</i>	<i>0.9902</i>	<i>7.5</i>
<i>14</i>	<i>09:23</i>	<i>9.60</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>2.1375</i>	<i>1.00</i>	<i>2.1375</i>	<i>0.440</i>	<i>0.9401</i>	<i>7.2</i>
<i>15</i>	<i>09:24</i>	<i>10.15</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>2.1161</i>	<i>1.00</i>	<i>2.1161</i>	<i>0.456</i>	<i>0.9641</i>	<i>7.3</i>
<i>16</i>	<i>09:26</i>	<i>10.90</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>1.8629</i>	<i>1.00</i>	<i>1.8629</i>	<i>0.526</i>	<i>0.9803</i>	<i>7.5</i>
<i>17</i>	<i>09:27</i>	<i>11.65</i>	<i>0.6</i>	<i>0.650</i>	<i>0.6</i>	<i>0.260</i>	<i>1.3310</i>	<i>1.00</i>	<i>1.3310</i>	<i>0.489</i>	<i>0.6502</i>	<i>4.9</i>
<i>18</i>	<i>09:28</i>	<i>12.40</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.0207</i>	<i>1.00</i>	<i>0.0207</i>	<i>0.451</i>	<i>0.0093</i>	<i>0.1</i>
<i>19</i>	<i>09:29</i>	<i>13.15</i>	<i>0.6</i>	<i>0.450</i>	<i>0.6</i>	<i>0.180</i>	<i>1.9124</i>	<i>1.00</i>	<i>1.9124</i>	<i>0.359</i>	<i>0.6873</i>	<i>5.2</i>
<i>20</i>	<i>09:30</i>	<i>14.00</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>-0.0210</i>	<i>1.00</i>	<i>-0.0210</i>	<i>0.296</i>	<i>-0.0062</i>	<i>0.0</i>
<i>21</i>	<i>09:30</i>	<i>14.85</i>	<i>None</i>	<i>0.200</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0000</i>	<i>1.00</i>	<i>-0.0210</i>	<i>0.085</i>	<i>-0.0018</i>	<i>0.0</i>

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

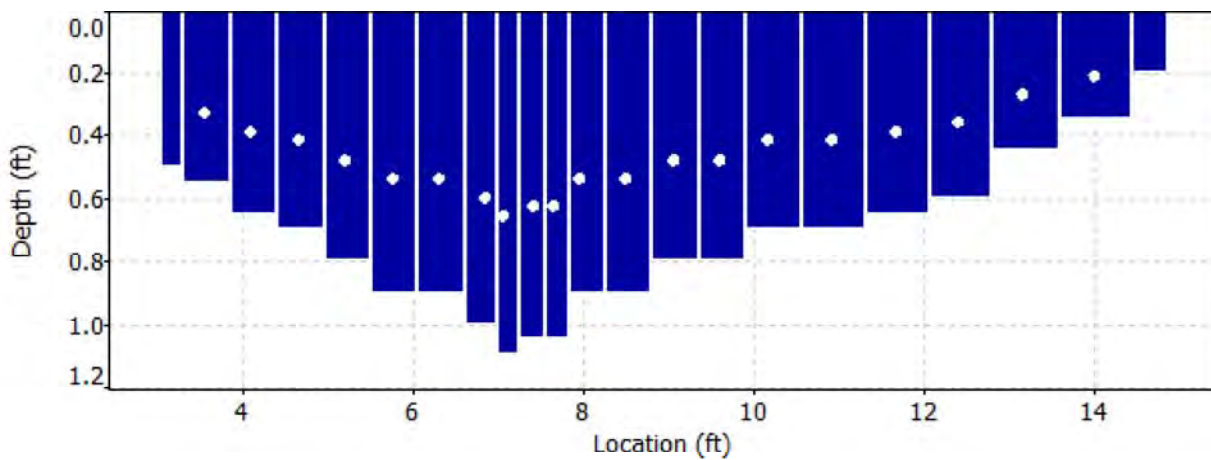
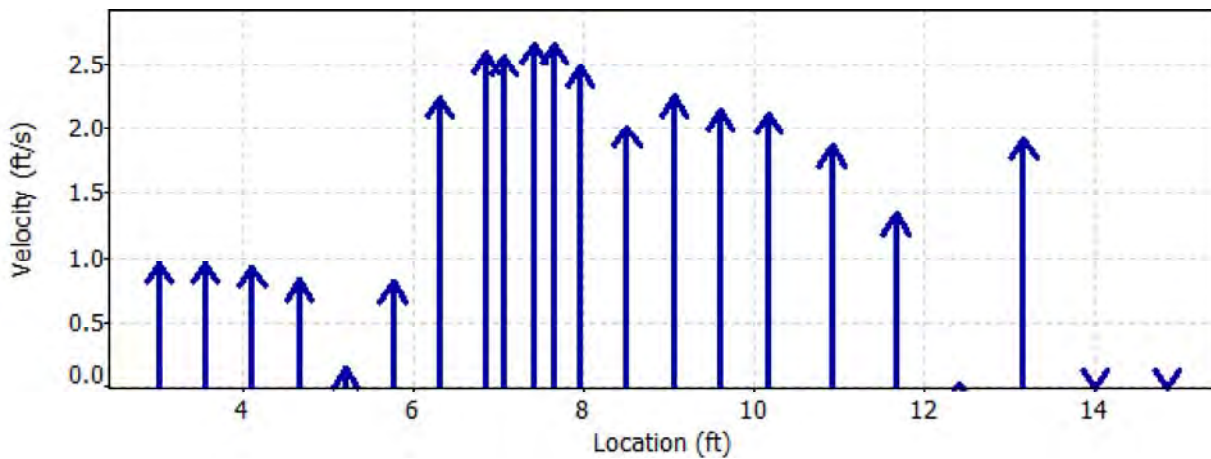
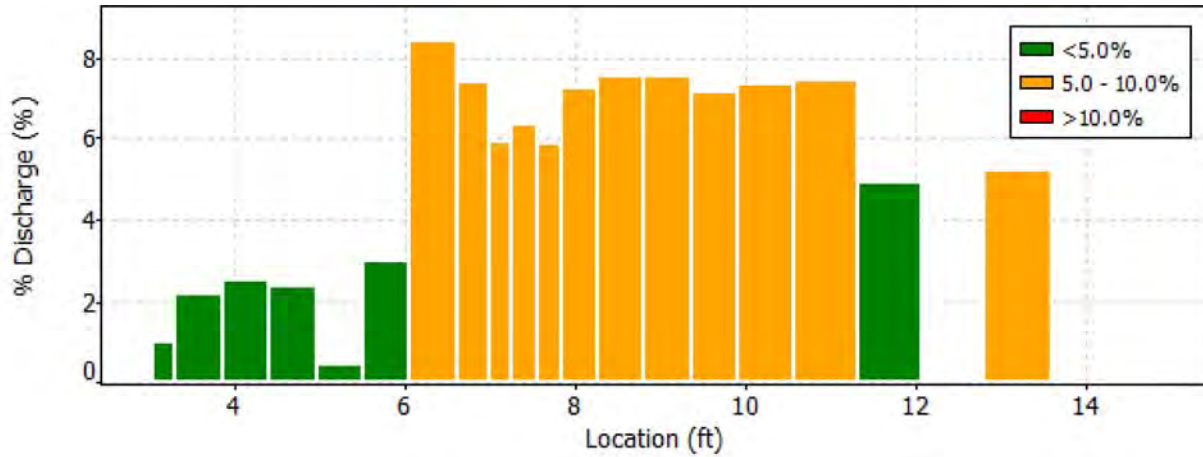
Date Generated: Tue Jan 20 2015

File Information

File Name CC21B.WAD
 Start Date and Time 2014/09/23 09:08:39

Site Details

Site Name CC21B
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC21B.WAD
Start Date and Time 2014/09/23 09:08:39

Site Details

Site Name CC21B
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	3.55	0.6	High angle: 25
2	4.10	0.6	High angle: 23
3	4.65	0.6	High standard error: 0.110
4	5.20	0.6	High angle: 80
5	5.75	0.6	High standard error: 0.144
6	6.30	0.6	High standard error: 0.115
7	6.85	0.6	High angle: 21
8	7.05	0.6	High angle: 24
12	8.50	0.6	High angle: 23
13	9.05	0.6	High standard error: 0.121
15	10.15	0.6	High angle: 20
18	12.40	0.6	High angle: -81
20	14.00	0.6	High angle: -104

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC26.WAD
Start Date and Time 2014/09/23 08:35:55

Site Details

Site Name CC26
Operator(s) LC

System Information

Sensor Type FlowTracker
Serial # P3512
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	2.8%
Velocity	1.1%	6.7%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.4%	-
Overall	3.4%	7.3%

Summary

Averaging Int. 40 # Stations 21
Start Edge LEW Total Width 6.300
Mean SNR 36.2 dB Total Area 1.663
Mean Temp 39.79 °F Mean Depth 0.264
Disch. Equation Mid-Section Mean Velocity 0.6141
Total Discharge 1.0212

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:35	6.00	None	0.100	0.0	0.0	0.0000	1.00	0.2392	0.018	0.0042	0.4
<i>1</i>	<i>08:35</i>	<i>6.35</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.2392</i>	<i>1.00</i>	<i>0.2392</i>	<i>0.070</i>	<i>0.0168</i>	<i>1.6</i>
<i>2</i>	<i>08:37</i>	<i>6.70</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.3960</i>	<i>1.00</i>	<i>0.3960</i>	<i>0.105</i>	<i>0.0416</i>	<i>4.1</i>
<i>3</i>	<i>08:39</i>	<i>7.05</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.7523</i>	<i>1.00</i>	<i>0.7523</i>	<i>0.070</i>	<i>0.0527</i>	<i>5.2</i>
<i>4</i>	<i>08:42</i>	<i>7.40</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.7697</i>	<i>1.00</i>	<i>0.7697</i>	<i>0.070</i>	<i>0.0539</i>	<i>5.3</i>
<i>5</i>	<i>08:43</i>	<i>7.75</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.6237</i>	<i>1.00</i>	<i>0.6237</i>	<i>0.105</i>	<i>0.0655</i>	<i>6.4</i>
<i>6</i>	<i>08:44</i>	<i>8.10</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>0.5863</i>	<i>1.00</i>	<i>0.5863</i>	<i>0.123</i>	<i>0.0718</i>	<i>7.0</i>
<i>7</i>	<i>08:45</i>	<i>8.45</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>0.7710</i>	<i>1.00</i>	<i>0.7710</i>	<i>0.096</i>	<i>0.0742</i>	<i>7.3</i>
<i>8</i>	<i>09:00</i>	<i>8.65</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>0.8622</i>	<i>1.00</i>	<i>0.8622</i>	<i>0.061</i>	<i>0.0528</i>	<i>5.2</i>
<i>9</i>	<i>08:46</i>	<i>8.80</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>0.8537</i>	<i>1.00</i>	<i>0.8537</i>	<i>0.088</i>	<i>0.0748</i>	<i>7.3</i>
<i>10</i>	<i>08:47</i>	<i>9.15</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.0974</i>	<i>1.00</i>	<i>0.0974</i>	<i>0.140</i>	<i>0.0136</i>	<i>1.3</i>
<i>11</i>	<i>08:48</i>	<i>9.50</i>	<i>0.6</i>	<i>0.350</i>	<i>0.6</i>	<i>0.140</i>	<i>0.1325</i>	<i>1.00</i>	<i>0.1325</i>	<i>0.123</i>	<i>0.0162</i>	<i>1.6</i>
<i>12</i>	<i>08:49</i>	<i>9.85</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.6401</i>	<i>1.00</i>	<i>0.6401</i>	<i>0.075</i>	<i>0.0479</i>	<i>4.7</i>
<i>13</i>	<i>08:59</i>	<i>10.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.5187</i>	<i>1.00</i>	<i>0.5187</i>	<i>0.052</i>	<i>0.0272</i>	<i>2.7</i>
<i>14</i>	<i>08:50</i>	<i>10.20</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.8458</i>	<i>1.00</i>	<i>0.8458</i>	<i>0.052</i>	<i>0.0444</i>	<i>4.3</i>
<i>15</i>	<i>08:58</i>	<i>10.35</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.5909</i>	<i>1.00</i>	<i>0.5909</i>	<i>0.052</i>	<i>0.0310</i>	<i>3.0</i>
<i>16</i>	<i>08:51</i>	<i>10.55</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.0925</i>	<i>1.00</i>	<i>1.0925</i>	<i>0.083</i>	<i>0.0902</i>	<i>8.8</i>
<i>17</i>	<i>08:53</i>	<i>10.90</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>1.0528</i>	<i>1.00</i>	<i>1.0528</i>	<i>0.070</i>	<i>0.0738</i>	<i>7.2</i>
<i>18</i>	<i>08:54</i>	<i>11.25</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>1.0735</i>	<i>1.00</i>	<i>1.0735</i>	<i>0.070</i>	<i>0.0752</i>	<i>7.4</i>
<i>19</i>	<i>08:56</i>	<i>11.60</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.6667</i>	<i>1.00</i>	<i>0.6667</i>	<i>0.105</i>	<i>0.0700</i>	<i>6.9</i>
20	08:56	12.30	None	0.100	0.0	0.0	0.0000	1.00	0.6667	0.035	0.0233	2.3

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

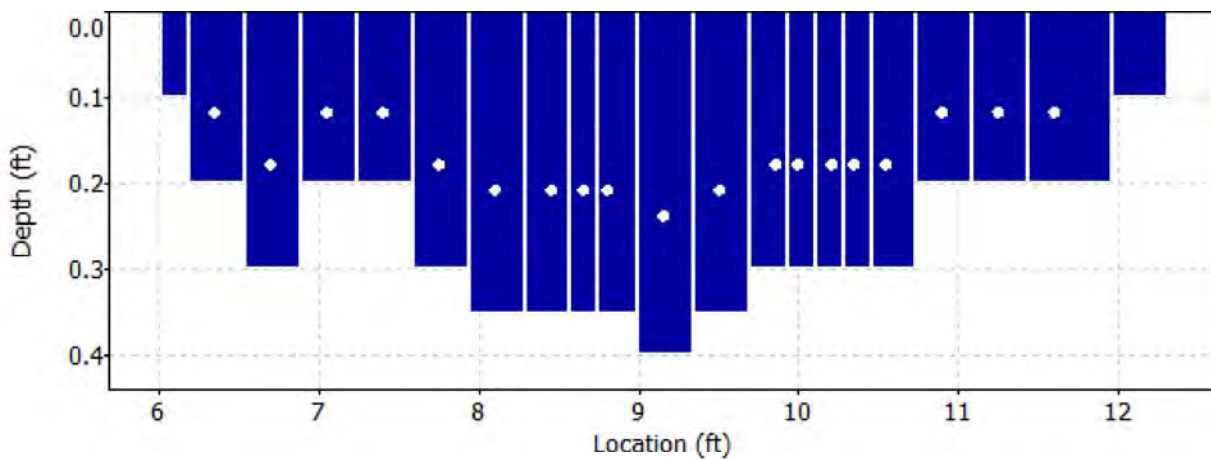
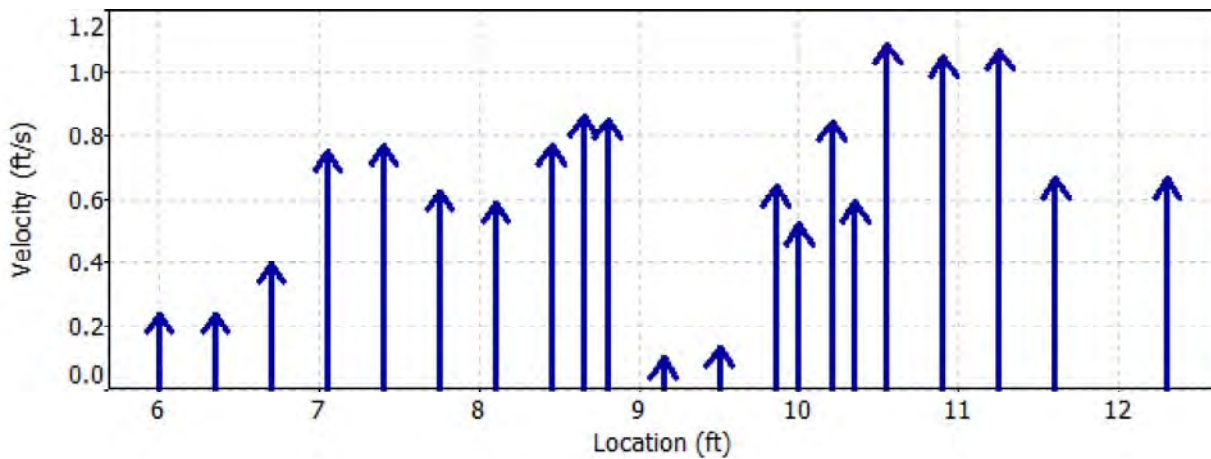
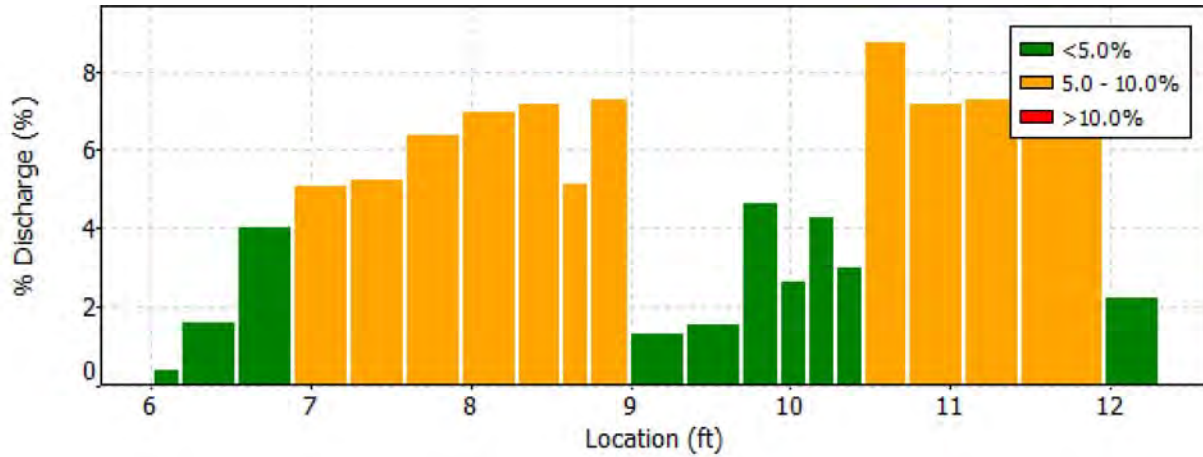
Date Generated: Tue Jan 20 2015

File Information

File Name CC26.WAD
 Start Date and Time 2014/09/23 08:35:55

Site Details

Site Name CC26
 Operator(s) LC



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC26.WAD
Start Date and Time 2014/09/23 08:35:55

Site Details

Site Name CC26
Operator(s) LC

Quality Control

St	Loc	%Dep	Message
1	6.35	0.6	High angle: 26
2	6.70	0.6	High angle: 33
3	7.05	0.6	High angle: 20
4	7.40	0.6	High angle: 28
5	7.75	0.6	High angle: 30
6	8.10	0.6	High standard error: 0.032
10	9.15	0.6	High standard error: 0.041
11	9.50	0.6	High angle: 49
		0.6	High standard error: 0.030
12	9.85	0.6	High angle: 33
		0.6	High standard error: 0.036
13	10.00	0.6	High angle: 47
		0.6	High standard error: 0.040
14	10.20	0.6	High angle: 33
15	10.35	0.6	High angle: 37
		0.6	High standard error: 0.046
16	10.55	0.6	High angle: 28
17	10.90	0.6	High angle: 32
19	11.60	0.6	High standard error: 0.037

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

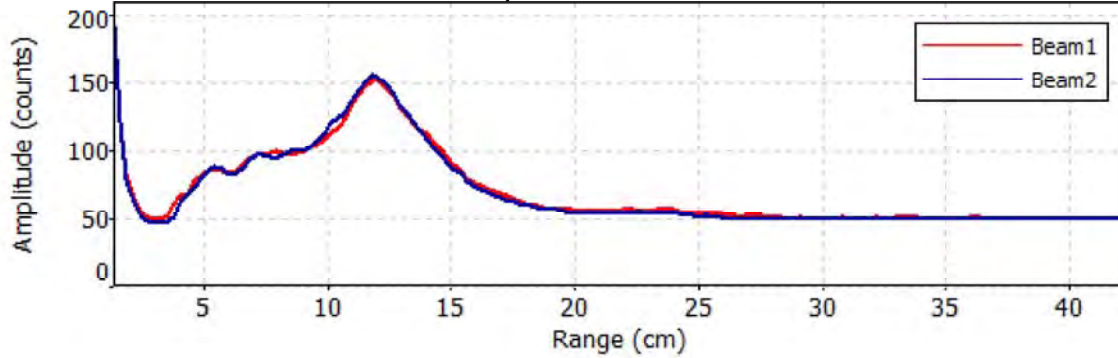
File Name CC26.WAD
Start Date and Time 2014/09/23 08:35:55

Site Details

Site Name CC26
Operator(s) LC

Automatic Quality Control Test (BeamCheck)

Tue Sep 23 08:33:46 MDT 2014



- ✔ Noise level check - Pass
- ✔ SNR check - Pass
- ✔ Peak location check - Pass
- ✔ Peak shape check - Pass

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC41.WAD
Start Date and Time 2014/09/23 08:05:56

Site Details

Site Name CC41
Operator(s) RB

System Information

Sensor Type FlowTracker
Serial # P3513
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.3%	2.4%
Velocity	0.7%	4.0%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.4%	-
Overall	3.3%	4.8%

Summary

Averaging Int. 40 # Stations 21
Start Edge REW Total Width 14.398
Mean SNR 37.9 dB Total Area 8.889
Mean Temp 40.48 °F Mean Depth 0.617
Disch. Equation Mid-Section Mean Velocity 2.7201
Total Discharge 24.1786

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:05	5.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	08:05	5.80	0.6	0.250	0.6	0.100	1.0236	1.00	1.0236	0.200	0.2047	0.8
2	08:07	6.60	0.6	0.250	0.6	0.100	0.8675	1.00	0.8675	0.200	0.1735	0.7
3	08:08	7.40	0.6	0.350	0.6	0.140	1.5322	1.00	1.5322	0.280	0.4290	1.8
4	08:09	8.20	0.6	0.600	0.6	0.240	1.9341	1.00	1.9341	0.480	0.9283	3.8
5	08:10	9.00	0.6	0.550	0.6	0.220	1.6926	1.00	1.6926	0.440	0.7444	3.1
6	08:11	9.80	0.6	0.600	0.6	0.240	2.5659	1.00	2.5659	0.480	1.2316	5.1
7	08:13	10.60	0.6	0.700	0.6	0.280	2.4291	1.00	2.4291	0.560	1.3603	5.6
8	08:14	11.40	0.6	0.850	0.6	0.340	2.6772	1.00	2.6772	0.680	1.8203	7.5
9	08:17	12.20	0.6	1.050	0.6	0.420	2.8196	1.00	2.8196	0.631	1.7777	7.4
10	08:28	12.60	0.6	1.200	0.6	0.480	3.2388	1.00	3.2388	0.480	1.5546	6.4
11	08:18	13.00	0.6	1.200	0.6	0.480	3.3084	1.00	3.3084	0.480	1.5879	6.6
12	08:30	13.40	0.6	1.200	0.6	0.480	4.1873	1.00	4.1873	0.480	2.0098	8.3
13	08:19	13.80	0.6	1.100	0.6	0.440	2.6253	1.00	2.6253	0.659	1.7306	7.2
14	08:20	14.60	0.6	0.900	0.6	0.360	2.4577	1.00	2.4577	0.720	1.7691	7.3
15	08:22	15.40	0.6	0.600	0.6	0.240	3.0673	1.00	3.0673	0.480	1.4722	6.1
16	08:23	16.20	0.6	0.400	0.6	0.160	4.1886	1.00	4.1886	0.320	1.3399	5.5
17	08:24	17.00	0.6	0.600	0.6	0.240	4.1152	1.00	4.1152	0.480	1.9752	8.2
18	08:25	17.80	0.6	0.650	0.6	0.260	3.4738	1.00	3.4738	0.520	1.8059	7.5
19	08:26	18.60	0.6	0.400	0.6	0.160	0.8235	1.00	0.8235	0.320	0.2634	1.1
20	08:26	19.40	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

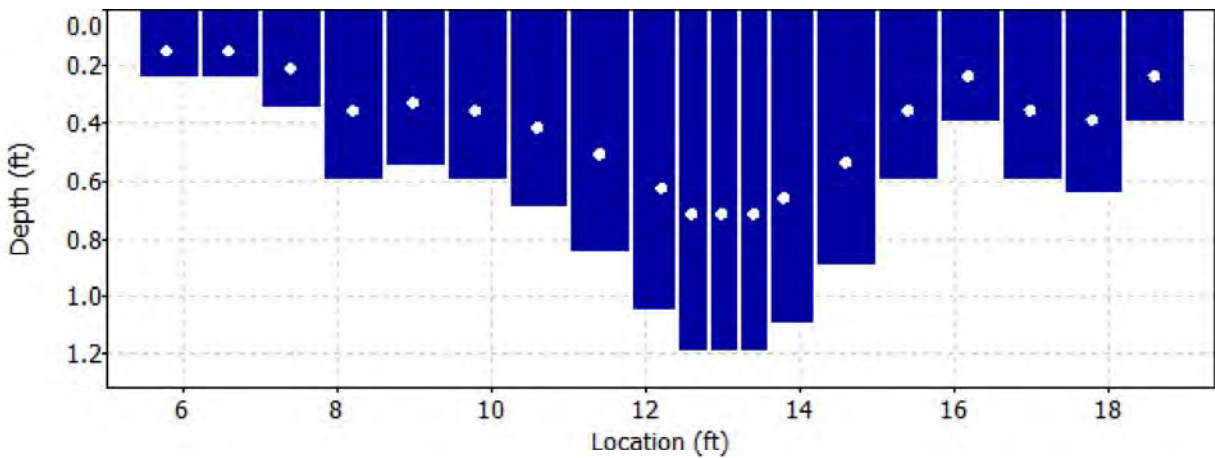
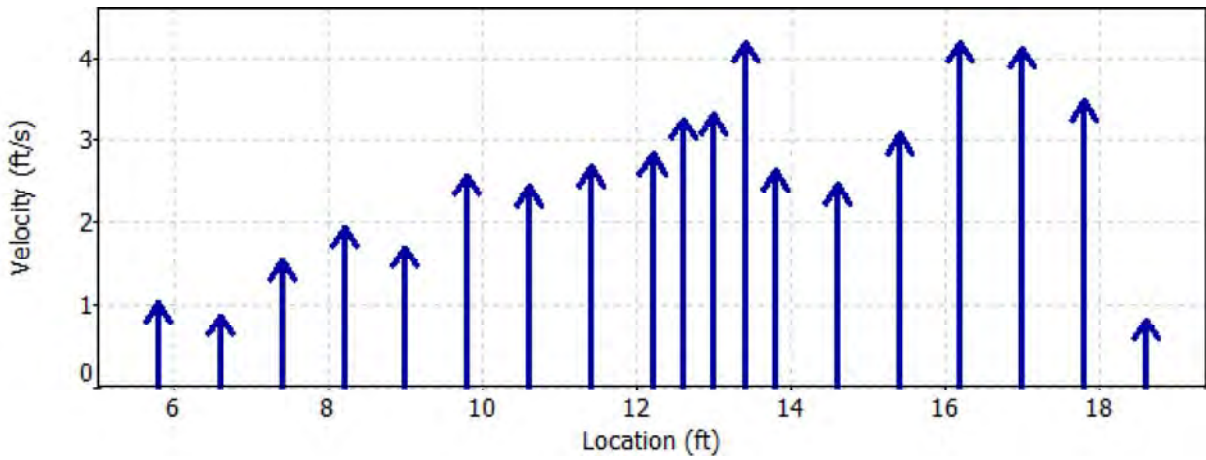
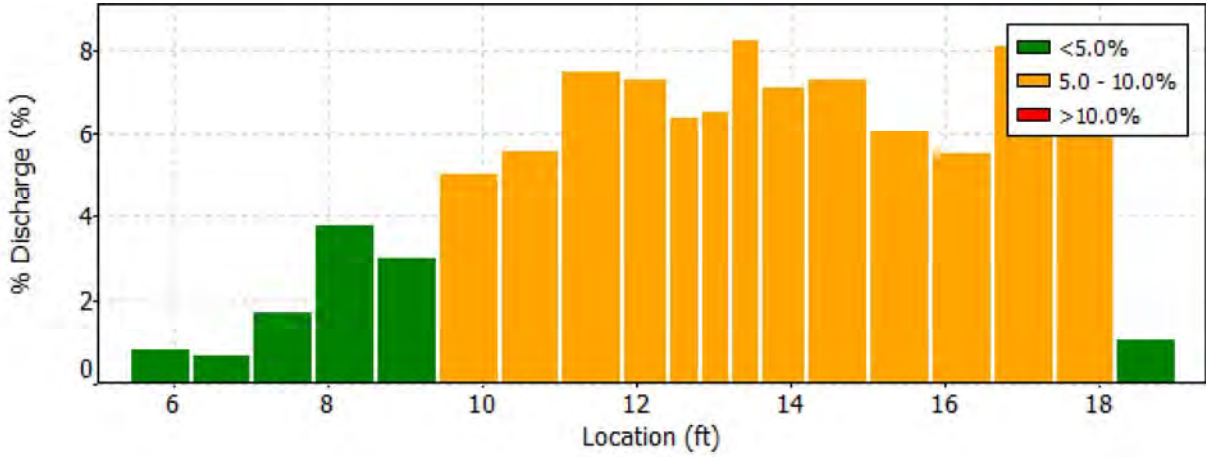
Date Generated: Tue Jan 20 2015

File Information

File Name CC41.WAD
Start Date and Time 2014/09/23 08:05:56

Site Details

Site Name CC41
Operator(s) RB



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name CC41.WAD
Start Date and Time 2014/09/23 08:05:56

Site Details

Site Name CC41
Operator(s) RB

Quality Control

St	Loc	%Dep	Message
2	6.60	0.6	High standard error: 0.119
3	7.40	0.6	High number of spikes: 5
4	8.20	0.6	High standard error: 0.109
6	9.80	0.6	High number of spikes: 5
9	12.20	0.6	High angle: -26
10	12.60	0.6	High angle: -24
11	13.00	0.6	High angle: -25
12	13.40	0.6	High angle: -22
13	13.80	0.6	High angle: -35
14	14.60	0.6	High angle: -32
19	18.60	0.6	High standard error: 0.134

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

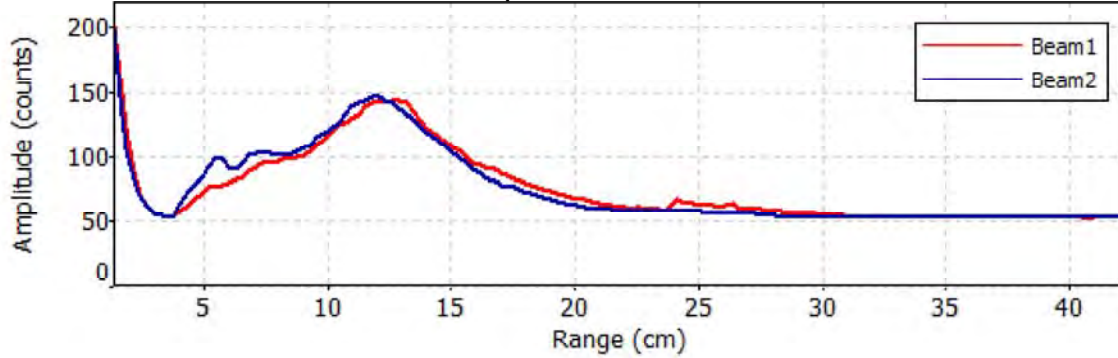
File Name CC41.WAD
Start Date and Time 2014/09/23 08:05:56

Site Details

Site Name CC41
Operator(s) RB

Automatic Quality Control Test (BeamCheck)

Tue Sep 23 08:04:37 MDT 2014



- ✔ Noise level check - Pass
- ✔ SNR check - Pass
- ✔ Peak location check - Pass
- ✔ Peak shape check - Pass

Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name P1.WAD
Start Date and Time 2014/09/25 15:09:51

Site Details

Site Name P1
Operator(s) SA

System Information

Sensor Type FlowTracker
Serial # P3533
CPU Firmware Version 3.7
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	3.9%
Velocity	1.0%	13.9%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	2.0%	-
Overall	3.2%	14.5%

Summary

Averaging Int.	40	# Stations	25
Start Edge	REW	Total Width	4.200
Mean SNR	45.2 dB	Total Area	1.520
Mean Temp	57.77 °F	Mean Depth	0.362
Disch. Equation	Mid-Section	Mean Velocity	1.5071
		Total Discharge	2.2910

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	15:09	2.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>15:09</i>	<i>2.70</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>-0.0295</i>	<i>1.00</i>	<i>-0.0295</i>	<i>0.050</i>	<i>-0.0015</i>	<i>-0.1</i>
<i>2</i>	<i>15:10</i>	<i>2.90</i>	<i>0.6</i>	<i>0.250</i>	<i>0.6</i>	<i>0.100</i>	<i>-0.0994</i>	<i>1.00</i>	<i>-0.0994</i>	<i>0.075</i>	<i>-0.0075</i>	<i>-0.3</i>
3	15:12	3.30	0.6	0.250	0.6	0.100	-0.0069	1.00	-0.0069	0.100	-0.0007	0.0
<i>4</i>	<i>15:13</i>	<i>3.70</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.4603</i>	<i>1.00</i>	<i>0.4603</i>	<i>0.160</i>	<i>0.0736</i>	<i>3.2</i>
<i>5</i>	<i>15:14</i>	<i>4.10</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>1.2346</i>	<i>1.00</i>	<i>1.2346</i>	<i>0.175</i>	<i>0.2162</i>	<i>9.4</i>
<i>6</i>	<i>15:27</i>	<i>4.40</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>1.2395</i>	<i>1.00</i>	<i>1.2395</i>	<i>0.100</i>	<i>0.1238</i>	<i>5.4</i>
7	15:15	4.50	0.6	0.500	0.6	0.200	2.6286	1.00	2.6286	0.050	0.1315	5.7
<i>8</i>	<i>15:31</i>	<i>4.60</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>0.7592</i>	<i>1.00</i>	<i>0.7592</i>	<i>0.050</i>	<i>0.0382</i>	<i>1.7</i>
9	15:37	4.70	0.6	0.300	0.6	0.120	3.9285	1.00	3.9285	0.030	0.1177	5.1
10	15:16	4.80	0.6	0.500	0.6	0.200	3.8182	1.00	3.8182	0.050	0.1907	8.3
11	15:29	4.90	0.6	0.500	0.6	0.200	3.7283	1.00	3.7283	0.050	0.1865	8.1
12	15:36	5.00	0.6	0.500	0.6	0.200	3.2467	1.00	3.2467	0.050	0.1632	7.1
13	15:17	5.10	0.6	0.400	0.6	0.160	2.8812	1.00	2.8812	0.040	0.1153	5.0
14	15:26	5.20	0.6	0.200	0.6	0.080	0.4058	1.00	0.4058	0.020	0.0081	0.4
15	15:30	5.30	0.6	0.400	0.6	0.160	2.8045	1.00	2.8045	0.040	0.1133	4.9
16	15:18	5.40	0.6	0.400	0.6	0.160	1.9337	1.00	1.9337	0.081	0.1560	6.8
17	15:19	5.70	0.6	0.400	0.6	0.160	2.1946	1.00	2.1946	0.100	0.2184	9.5
18	15:20	5.90	0.6	0.400	0.6	0.160	1.9508	1.00	1.9508	0.079	0.1533	6.7
19	15:20	6.10	0.6	0.400	0.6	0.160	1.7871	1.00	1.7871	0.080	0.1429	6.2
20	15:21	6.30	0.6	0.400	0.6	0.160	1.5594	1.00	1.5594	0.061	0.0946	4.1
<i>21</i>	<i>15:23</i>	<i>6.40</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>1.0656</i>	<i>1.00</i>	<i>1.0656</i>	<i>0.030</i>	<i>0.0320</i>	<i>1.4</i>
<i>22</i>	<i>15:23</i>	<i>6.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.4649</i>	<i>1.00</i>	<i>0.4649</i>	<i>0.030</i>	<i>0.0139</i>	<i>0.6</i>
23	15:25	6.60	0.6	0.200	0.6	0.080	0.5568	1.00	0.5568	0.020	0.0111	0.5
24	15:25	6.70	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Discharge Measurement Summary

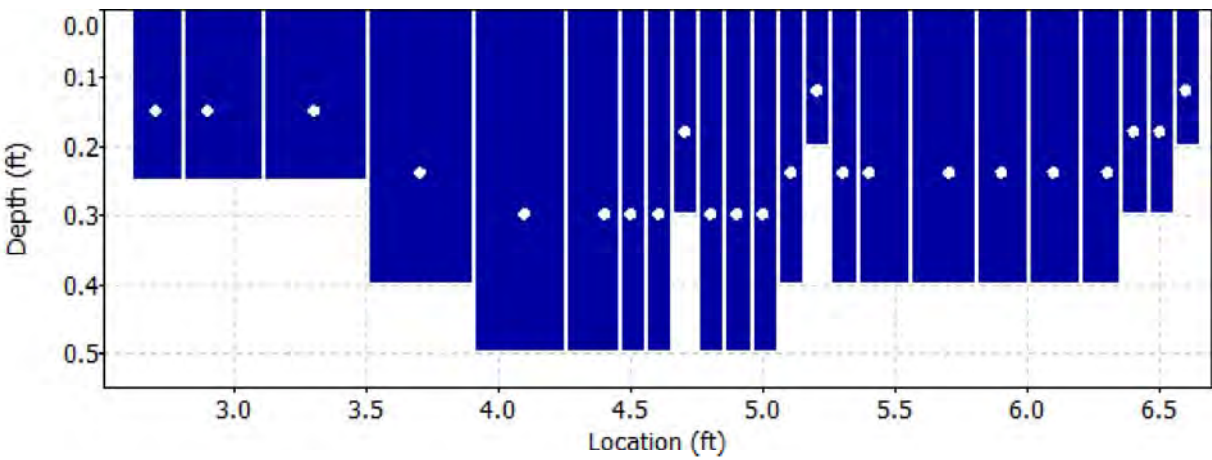
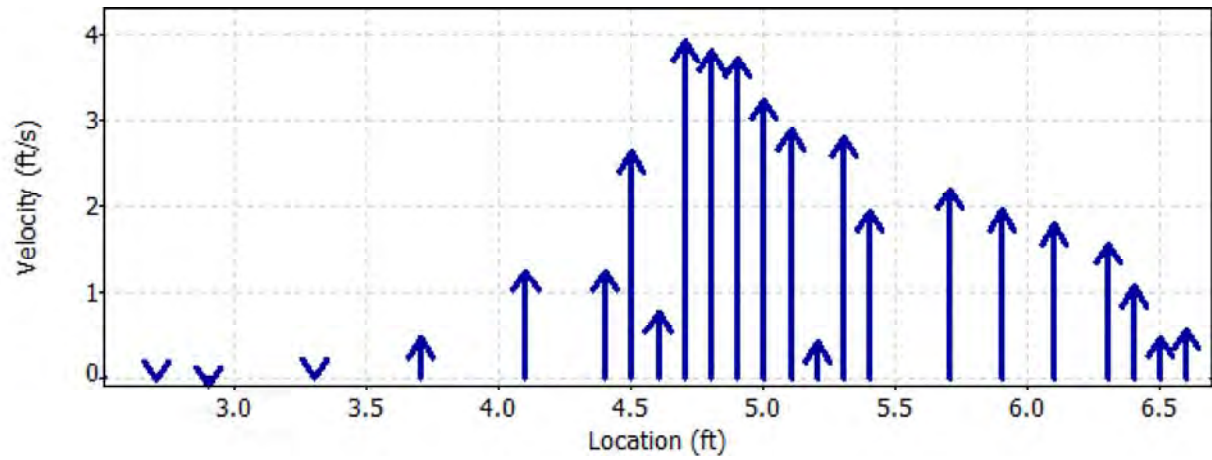
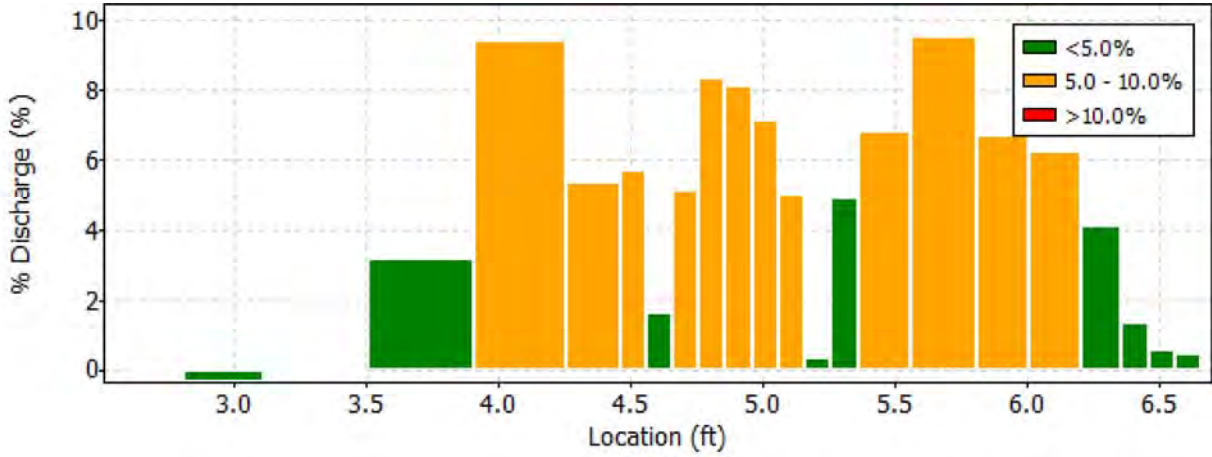
Date Generated: Tue Jan 20 2015

File Information

File Name P1.WAD
 Start Date and Time 2014/09/25 15:09:51

Site Details

Site Name P1
 Operator(s) SA



Discharge Measurement Summary

Date Generated: Tue Jan 20 2015

File Information

File Name P1.WAD
Start Date and Time 2014/09/25 15:09:51

Site Details

Site Name P1
Operator(s) SA

Quality Control

St	Loc	%Dep	Message
1	2.70	0.6	High angle: 99
2	2.90	0.6	High angle: 113
4	3.70	0.6	High angle: 26
5	4.10	0.6	High angle: 23
6	4.40	0.6	High angle: 25
8	4.60	0.6	High angle: 29
		0.6	High standard error: 0.138
21	6.40	0.6	High angle: 20
22	6.50	0.6	High angle: 22

Appendix C
Site Photos

Appendix C
Upper Animas
April 2014 Photo Log



A55 Across



A55 Downstream



A55 Upstream



A56 Downstream



A56 Upstream



A58 Downstream



A58 Upstream Culvert



A60 Downstream



A60 Upstream



A61 Downstream



A61 Upstream



A64 Downstream



A64 Upstream



A65 Downstream



A65 Upstream



A66 Downstream



A66 Upstream



A68 Downstream



A68 Upstream



A73 MiniSipper



A73 MiniSipper2



A73 Upstream



A73



A75D downstream



A75D upstream



Arastra plugged adit



Baker Bridge downstream



Baker Bridge upstream



Drainage above Cunningham



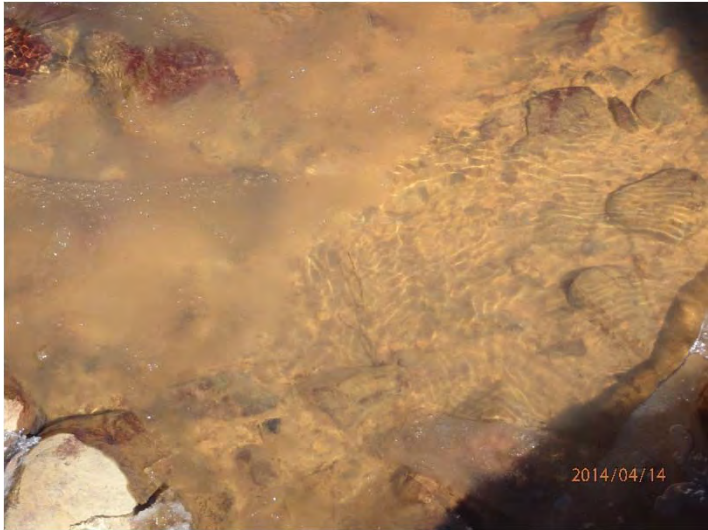
Drainage above Cunningham



Drainage overview above Cunningham



Overview of Howardsville



STIL downstream of Needle Creek



STIL downstream of Needle Creek



Staining above Cunningham



Staining Looking down from input above Cunningham



STIL 1



STIL above No Name



STIL upstream Ruby Creek

Appendix C
Upper Animas
May 2014 Photo Log



A72 upstream



A72 downstream



M34 upstream



M34 downstream



A68 upstream



A68 downstream



CC 48 upstream



CC48 downstream



CC41 upstream



CC41 downstream



CC26 flow location



CC26 flow location



CC26 upstream



CC26 downstream



CC21B downstream



CC21B upstream



CC21 downstream



CC21 upstream



CC17 upstream



CC17 downstream



CC18 upstream



CC18 downstream



CC19 upstream



CC19 downstream



A66 upstream



A66 downstream



A65 upstream



A65 downstream



A64 upstream



A64 downstream



A61 upstream



A61 downstream



A60 upstream



A60 downstream



A58 upstream



A58 downstream



A56 upstream



A56 downstream



A55 upstream



A55 downstream



CC07 upstream



CC07 downstream



CC03 upstream



CC03 downstream



CC03C upstream



CC03C snow covering adit



CC03C downstream



CC03C downstream



CC03D flows only



CC03B downstream



CC03B downstream



CC03B upstream



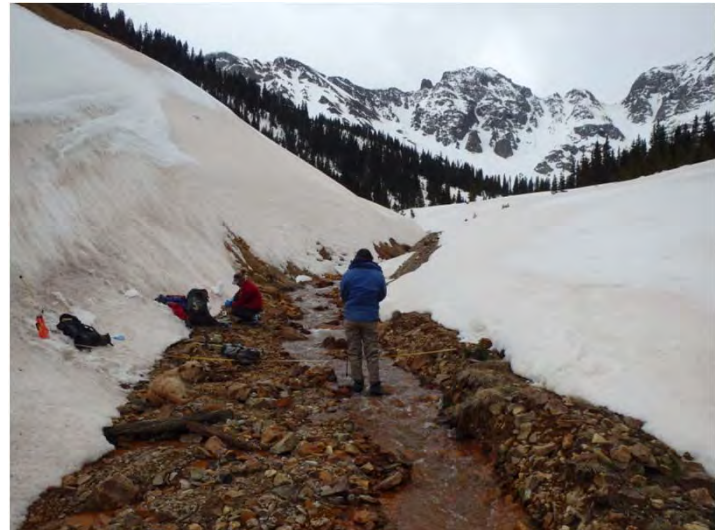
CC03B downstream



CC03B flow location



CC03B flow location



CC16B upstream



CC16B downstream



CC16B upstream



CC16B upstream



CC14 Silver Ledge adit



A75B upstream



A75B downstream



A75 D



A75D upstream



A75D downstream



A73 upstream



A73 downstream



A73B upstream



A73B downstream



STIL 3 upstream



STIL 3 downstream



STIL 4 upstream



STIL 4 downstream



STIL 4-1 upstream



STIL 4-1 downstream



A75CC upstream



A75CC downstream



Bbridge upstream



Bbridge downstream

Appendix C
Upper Animas
September 2014 Photo Log



CC-48 upstream



CC-48 downstream



CC-26 upstream



CC-26 downstream



CC-21B upstream



CC-21B downstream



CC-17 upstream



CC-17 downstream



CC-16B upstream



CC-16B downstream



CC-14 upstream



CC-14 downstream



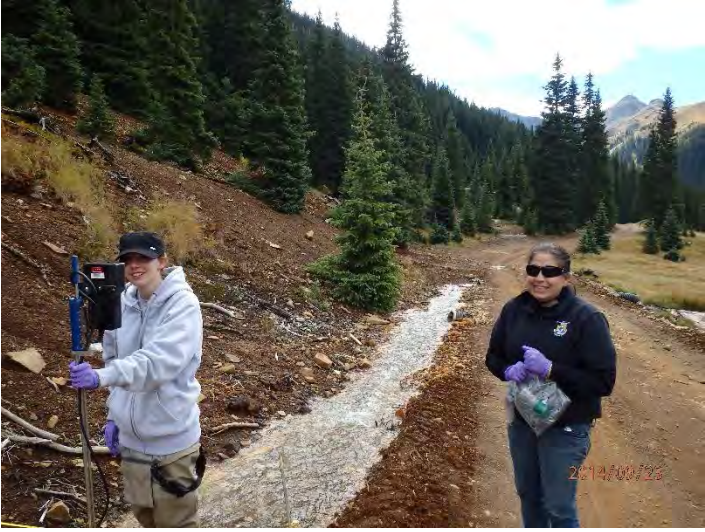
CC-15 upstream



CC-15 downstream



CC-03D upstream



CC-03D downstream



CC-03C upstream



CC-03C downstream



CC-02K upstream



CC-02K downstream



CC-02E upstream



CC-02E downstream



A55 downstream



A55 upstream



A60 upstream



A60 downstream



A58 upstream



A58 downstream



A56 upstream



A56 downstream



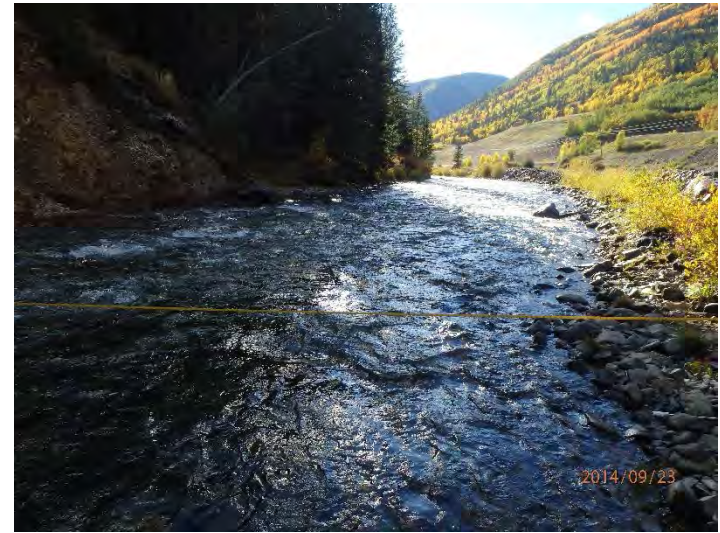
A61 upstream



A61 downstream



A64 upstream



A64 downstream



CC01U upstream



CC01U downstream



CC02i upstream



CC02i downstream



CC01T upstream



CC01T downstream



CC01C2 upstream



CC01C2 downstream



M34 upstream



M34 downstream



A72 upstream



A72 downstream



Dead porcupine found at A72



A68 upstream



A68 downstream



Animas @ Purple Cliffs upstream



Animas @ Purple Cliffs downstream



Animas @ Lightner Creek upstream



Animas @ Lightner Creek downstream



James Ranch upstream



James Ranch downstream



James Ranch downstream



A73B downstream



A73B upstream



A73B downstream



A75EC upstream



A75EC downstream



A73 upstream



A73 downstream



PG-01 upstream



PG-01 downstream



CC41 upstream



CC41 downstream



CC21 upstream



CC21 downstream



CC18 upstream



CC18 downstream



CC19 upstream



CC19 flume



CC19 downstream



CC18B upstream



CC18B downstream



CC07 upstream



CC07 downstream



CC03 upstream



CC03 downstream



CC06B upstream



CC06B downstream



CC06 upstream



CC06 flume



CC06 downstream



Gold King



Gold King



Gold King



Gold King



Gold King



CC04 upstream



CC04 downstream



FD-1 upstream



FD-1 downstream



CC02B upstream



CC02B downstream



MTD-4 upstream



MTD-4 downstream



CC02D upstream



CC02D downstream



A75B upstream



A75B downstream



A75CC upstream



A75CC downstream



A75D upstream



A53A downstream



A53A upstream



A51 upstream



A51 downstream



A47 upstream



A47 downstream



A45 upstream



A45 downstream



A43 upstream



A43 downstream



A41 upstream



A41 downstream



A39 upstream



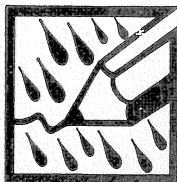
A39 downstream

Appendix D
Water Quality Meter Calibration Logbook

In-Situ

SLN ~~48832~~

Unit 2 50817



"Rite in the Rain"

ALL-WEATHER
ENVIRONMENTAL

No. 550F

Calibration
Log Book

Location Clear Creek Date 4/1/14

Project / Client _____

Parameter	Stimulus	Response
pH 4.0	4.0	4.0
	response: 70.1327 mV	
	7.0	7.0
	response: -78.0135 mV	
	slope: -49.422 mV/pH	
	offset: 267.361 mV	
Condo	999 1000 $\mu\text{S}/\text{cm}$	999 1000 $\mu\text{S}/\text{cm}$
	response: 308.313 ohm	
	temp: 11.7526 C	
	Kcell: 0.28977	
DO	Sat point: 7.89 mg/L	
	temp: 20.71 C	
	pressure: 221.45 mbar	
	slope: 0.92 (mg/L)/(mg/L)	
	offset: 0.00 mg/L	

Post cal: reading

Condo	999 $\mu\text{S}/\text{cm}$	999 $\mu\text{S}/\text{cm}$
pH 7	su	7.05 su
pH 4	su	4.08 su

Location Upper Animas Date 5/5/14 75

Project / Client _____

Parameter	Stimulus	Response
pH 4.0	4.0	4.0
	response: 76.2512 mV	
	7.0	7.0
	response: -88.3124 mV	
	slope: -55.0545 mV/pH	
	offset: 297.069 mV	
Condo	998 $\mu\text{S}/\text{cm}$	998 $\mu\text{S}/\text{cm}$
	response: 313.03 ohm	
	temp: 20.147 C	
	Kcell: 0.283446	
DO	Sat point: 7.32 mg/L	
	temp: 20.39 C	
	pressure: 721.53 mbar	
	slope: 0.87 (mg/L)/(mg/L)	
	offset: 0.00 mg/L	

Location Upper AnimusDate 5/6/14

Project / Client _____

parameter	Stimulus	Response
pH 4.0	4.0	4.0
	response: 69.8916mV	
pH 7.0	7.0	7.0
	response: -91.6815mV	
	slope: -53.86 mV/pH	
	offset: 285.322 mV	

Condo	998 μ s/cm	998 μ s/cm
	response: 307.145 ohms	
	temp: 21.124°C	
	K-cell: 0.2838	

DO	sat point: 7.16mg/L
	21.00°C
	718.92 mbar
	slope: 0.87 (mg/L) / (mg/L)
	offset: 0.00 mg/L

Post Cal	reading
Condo 998 μ s/cm	999 μ s/cm
pH 7.0	7.02
pH 4.0	4.01

Location Upper AnimusDate 5/7/14

Project / Client _____

parameter	Stimulus	Final Reading
pH 4.0	4.0	4.0
	response: 72.9782 mV	
pH 7.0	7.0	7.0
	response: -89.6158mV	
	slope: -54.198 mV/pH	
	offset: 289.77mV	

Condo	998 μ s/cm	998 μ s/cm
	response: 311.849 ohms	
	temp: 20.9682°C	
	K-cell: 0.2873	

DO	Sat point: 7.03mg/L
	20.76°C
	715.56 mbar
	slope: 0.89 (mg/L) / (mg/L)
	offset: 0.00 mg/L

Post Cal	reading
Condo 998 μ s/cm	994.2 μ s/cm
pH 7.0	7.04
pH 4.0	4.06

Location UPPER ANIMASDate 5/6/14

Project / Client _____

parameterStimulusResponse

pH 4.0

4.0

4.0

response: 102.812 mV

pH 7.0

7.0

7.0

response: -72.2096 mV

slope: -58.3406 mV/pH

offset: 336.175 mV

Condo:

998 μ S/cm998 μ S/cm

response: 313.975 ohm

temp: 21.1321 °C

Kcell: 0.290198

DO:

sat point: 6.82 mg/L

21.05 °C

726.21 mbar

slope: 0.92 (mg/L)/(mg/L)

offset: 0.00 mg/L

Post Cal

pH 4.0

reading

4.12 su

pH 7.0

7.06 su

Condo μ S/cm981.7 μ S/cm

998

Location Upper AnimasDate 5/7/14

Project / Client _____

parameterStimulusResponse

pH 4.0

4.0

4.0

response: 102.86 mV

pH 7.0

7.0

7.0

response: -71.1816 mV

slope: -58.014 mV/pH

offset: 334.916 mV

Condo

998 μ S/cm998 μ S/cm

response: 314.866 ohm

temp: 20.6411 °C

Kcell: 0.288074

DO:

sat point: 6.79 mg/L

20.77 °C

717.00 mbar

slope: 0.92 (mg/L)/(mg/L)

offset: 0.00 mg/L

Post Cal

pH 4.0

Reading

4.08 su

pH 7.0

7.06 su

Condo 998 μ S/cm981.1 μ S/cm

Date 9/23/14

Project / Client Upper Animas

Calibration for 50817

	stimulus initial	Final
pH 4.0	4.0	4.0

response: 155.486 mV

	7.0	7.0
pH 7.0	7.0	7.0

response: 5.45535 mV

slope: -53.647 mV/pH

offset: 370.074 mV

Condo

998 μ s/cm 998 μ s/cm

response: 383.539 ohms

temp: 21.2259°C

k-cell: 0.355

DO

sat point: 6.85 mg/L

21.05°C

731.36 mbar

slope: 0.93 (mg/L) / (mg/L)

offset: 0.00 mg/L

Post cal:

Cond 998 μ s/cm

pH 7.0

pH 4.0

~~1010~~ ^{ca} μ s/cm 9227

6.81

4.11

Date 9/24/14

Project / Client Upper Animas

Calibration for 50817

	Stimulus	Final
pH 4.0		

response: 151.361 mV

pH 7.0

response: -11.4082

slope: -54.2563

offset: 368.386 mV

Condo

999 μ s/cm999 μ s/cm

response: 377.748 ohms

temp: 22.2429°C

k-cell: 0.357 ~~0.357~~ ^{ca}

DO

sat point: 6.82 mg/L

21.79°C

713.24 mbar

slope: 0.90 (mg/L) / (mg/L)

offset: 0.00 mg/L

Post Cal

Cond 998

pH 7.0

pH 4.0

reading

972 μ s/cm

6.94

3.98

Location

Date

9/25/14

Project / Client

Upper Animals

calibration for 50817

	stimulus	Final
pH 4.0	4.0	4.0
	response: 137.812 mV	
pH 7.0	7.0	7.0
	response: -14.8197 mV	
	slope: -54.2157 mV/pH	
	offset: 364.645 mV	

Condo	1000 us/cm	1000 us/cm	1000 us/cm
	response: 3573.06 ohms		
	temp: 22.44 °C		
	k-cell: 0.335		

DO	sat point	6.7 mg/L
	22.37 °C	
	713.62 mbar	
	slope: 0.90 (mg/L)/(mg/L)	
	offset: 0.00 mg/L	

Location

R8 Laboratory

Date

10/6/14

Project / Client

51016

	stimulus	Final
pH 4.0	4.00	4.00
	response: 136.868 mV	
pH 7.0	7.00	7.00
	response: -25.5089 mV	
	slope: -54.1255 mV/pH	
	offset: 353.37 mV	

Condo@998

998 us/cm

998 us/cm

response: 368.932 ohms
temp: 20.5287
k-cell: 0.337

DO

sat point: 7.20 mg/L

21.80 °C

826.51 mbar

slope: 0.99 (mg/L)/(mg/L)

offset: 0.00 mg/L

Location Illinois Gulch Date 9/18/14

Project / Client _____

Parameter

pH 4.0

Stimulus

4.0

Final

4.0

response: 143.757 mV

pH 7.0

7.0

7.0

response: -17.7969 mV

slope: -53.8511 mV/pH

offset: 359.161 mV

condo

998 $\mu\text{s/cm}$ 998 $\mu\text{s/cm}$

response: 416.431 ohms

temp: 15.8724 °C

Kcell: 0.343144

DO

Satpoint: 6.95 mg/L

17.79 °C

718.72 mbar

Slope: 0.96 (mg/L)/(mg/L)

offset: 0.00 mg/L

Location AnimasDate 9/24/14 111

Project / Client _____

pH 4.0

end 4.00

pH 7.0

end 7.00

slope -51.53

offset 341.14

Comp

1000 $\mu\text{s/cm}$

Response 456.431 ohms

Final 1000 $\mu\text{s/cm}$

Kcell 0.340357

D.O.

Temp 17.5 241" Hg

SD 3.90 mg/L

17.51 °C

814.71 mbar

slope 0.97

9/18/14 Illinois Golek

	initial	Final
pH 4.0	4.06	4.00
pH 7.0	6.95	7.00

offset: 229.7 gain: -4.97

	972 us/cm	1000 us/cm
Conductivity:	1000 us/cm	1000 us/cm

cell constant: 4.8535

D.O. 118%

90.1% 70.1%

gain: 0.769

Post Cal

Reading	
Conds @ 1000 us/cm	786 us/cm
pH 7	6.70 su
pH 4	3.73 su

9/23/14 Animas

	Initial	Final
Cond 1000 us/cm	98.5 us/cm	1000 us/cm
Cal constant	4.7266	

pH 4.0 4.01 4.00

pH 7.0 7.01 7.00

pH offset K: -231.526

gain: -4.9716

D.O. 93.6% 71.8%

D.O. Gain 0.5897 0.60536

9/24/14 Animas

	Initial	Final
Cond	896	1000 us/cm
	4.88127	

pH 4.0 4.07 4.00

pH 6.97 7.00

offset: -209.65

Gain: -4.932

09/25/14 Animas

	Initial	Final
Conds	1060	1000

pH 4 4.09 4.00

pH 7 6.93 7.0

pH offset K: -29.755
gain K/mv: -3.673

D.O. 69.0% 72.0%

9/18/14 Illinois Gulch

	initial	Final
pH 4.0	3.90	4.00
pH 7.0	7.13	7.00

pH Gain: -4.8692 offset: -194.415

Conduct	998 us/cm	989 us/cm	999 us/cm
cal constant:		4.64497	

DO	70.7%	70.0%
gain:	0.85809	

Post Cal

Reading

condo @ 1000 us/cm	943 us/cm
pH 7	7.01 su
pH 4	4.03 su

9/23/2014

Animas River

	initial	Final
pH 4.0	4.02	4.0
pH 7.0	6.99	7.00

pH gain -4.8692 offset: -194.24

Conductivity 1000 us/cm 999 1000

cal constant 4.84456

DO	121.9%	71%
DO gain:	0.50947	

10/6/14 R8 Lab

	initial	Final
pH 4.0	4.45	4.00
	114.8 mV	115.1 mV

pH 7.0	7.04	7.00
	-57.3 mV	-57.1 mV
pH gain:	-5.0953	offset: -291.102

mV out of Range

Readings after half hour

pH 4	6.94 su	3.83 su
pH 7	6.94 su	

Condo @ 998 us/cm	987 us/cm	flashes between
constant:	5.06366	1020 us/cm and 998 us/cm

DO	87.4%	81.3%
gain:	0.70945	

Appendix E
Habitat Evaluation Form

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (FRONT)

STREAM NAME <i>Mississippi River</i>	LOCATION <i>James Reynolds</i>	
STATION # _____ RIVERMILE _____	STREAM CLASS _____	
LAT _____ LONG _____	RIVER BASIN _____	
STORET # _____	AGENCY _____	
INVESTIGATORS <i>Steve Hauer Sherry Skippes</i>		
FORM COMPLETED BY <i>Steve Hauer</i>	DATE <i>9/24/14</i> TIME _____ AM PM	REASON FOR SURVEY _____

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
1. Epifaunal Substrate/ Available Cover Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient). SCORE <i>17</i>	20 19 18 <i>17</i> 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	2. Embeddedness Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space. SCORE <i>17</i>	20 19 18 <i>17</i> 16	15 14 13 12 11	10 9 8 7 6
3. Velocity/Depth Regime All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.) SCORE <i>20</i>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	4. Sediment Deposition Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition. SCORE <i>15</i>	20 19 18 17 16	<i>15</i> 14 13 12 11	10 9 8 7 6
5. Channel Flow Status Water reaches base of both lower banks, and minimal amount of channel substrate is exposed. SCORE <i>17</i>	20 19 18 <i>17</i> 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	Water fills >75% of the available channel; or <25% of channel substrate is exposed. SCORE <i>17</i>	20 19 18 <i>17</i> 16	15 14 13 12 11	10 9 8 7 6

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.																				
	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.																				
Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.																					
Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.																					
SCORE <u>10</u>	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.																				
	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.																				
Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.																					
Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.																					
SCORE <u>19</u>	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.																				
	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.																				
	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.																				
	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.																				
Note: determine left or right side by facing downstream.																					
SCORE <u>5</u> (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
SCORE <u>4</u> (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.																				
	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.																				
	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.																				
	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.																				
SCORE <u>4</u> (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
SCORE <u>3</u> (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.																				
	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.																				
	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.																				
Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.																					
SCORE <u>5</u> (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
SCORE <u>4</u> (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			

Parameters to be evaluated broader than sampling reach

Total Score 142

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (FRONT)

STREAM NAME <i>Aguas River</i>		LOCATION <i>Purple Cliffs</i>	
STATION # _____ RIVERMILE _____		STREAM CLASS _____	
LAT _____ LONG _____		RIVER BASIN _____	
STORET # _____		AGENCY _____	
INVESTIGATORS _____			
FORM COMPLETED BY <i>Steve [Signature]</i>		DATE <i>9/24/14</i> TIME _____ AM PM	REASON FOR SURVEY _____

	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
Parameters to be evaluated in sampling reach	1. Epifaunal Substrate/ Available Cover Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
	SCORE <i>12</i>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	2. Embeddedness Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.	
	SCORE <i>2</i>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	3. Velocity/Depth Regime All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).	
	SCORE <i>20</i>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.		
SCORE <i>1</i>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	
5. Channel Flow Status Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.		
SCORE <i>20</i>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.																				
	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.																				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.																				
	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.																				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8. Bank Stability (score each bank) <small>Note: determine left or right side by facing downstream.</small>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.																				
	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.																				
	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.																				
	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.																				
SCORE (LB)	Left Bank 10 9					8 7 6					5 4 3					2 1 0					
SCORE (RB)	Right Bank 10 9					8 7 6					5 4 3					2 1 0					
9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.																				
	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.																				
	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.																				
	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.																				
SCORE (LB)	Left Bank 10 9					8 7 6					5 4 3					2 1 0					
SCORE (RB)	Right Bank 10 9					8 7 6					5 4 3					2 1 0					
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.																				
	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.																				
	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.																				
SCORE (LB)	Left Bank 10 9					8 7 6					5 4 3					2 1 0					
SCORE (RB)	Right Bank 10 9					8 7 6					5 4 3					2 1 0					

Total Score 123

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (FRONT)

STREAM NAME <i>Ammonoosuc River</i>	LOCATION <i>Lighttree Creek</i>	
STATION # _____ RIVERMILE _____	STREAM CLASS _____	
LAT _____ LONG _____	RIVER BASIN _____	
STORET # _____	AGENCY <i>EPA</i>	
INVESTIGATORS <i>Steve Hulse, Sherry Silliman, Dan Wall</i>		
FORM COMPLETED BY <i>Steve Hulse</i>	DATE <i>7/29/14</i> TIME <i>12:05</i> AM PM	REASON FOR SURVEY _____

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
1. Epifaunal Substrate/ Available Cover Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and not transient). SCORE <i>15</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	20 19 18 17 16	<i>15</i> 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2. Embeddedness Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space. SCORE <i>13</i>	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
	20 19 18 17 16	15 14 <i>13</i> 12 11	10 9 8 7 6	5 4 3 2 1 0
3. Velocity/Depth Regime All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.) SCORE <i>20</i>	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).
	<i>20</i> 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition. SCORE <i>15</i>	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
	20 19 18 17 16	<i>15</i> 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5. Channel Flow Status Water reaches base of both lower banks, and minimal amount of channel substrate is exposed. SCORE <i>20</i>	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
	<i>20</i> 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.																				
	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.																				
Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.																					
Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.																					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.																				
	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.																				
Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.																					
Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.																					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.																				
	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.																				
Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.																					
Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.																					
Note: determine left or right side by facing downstream.																					
SCORE (LB)	Left Bank	10	9	8	7	6	5	4	3	2	1	0									
SCORE (RB)	Right Bank	10	9	8	7	6	5	4	3	2	1	0									
9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.																				
	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.																				
50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.																					
Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.																					
SCORE (LB)	Left Bank	10	9	8	7	6	5	4	3	2	1	0									
SCORE (RB)	Right Bank	10	9	8	7	6	5	4	3	2	1	0									
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.																				
	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.																				
Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.																					
Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.																					
SCORE (LB)	Left Bank	10	9	8	7	6	5	4	3	2	1	0									
SCORE (RB)	Right Bank	10	9	8	7	6	5	4	3	2	1	0									

Total Score 149

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (FRONT)

STREAM NAME <i>Lincoln Riv</i>		LOCATION <i>A 56</i>	
STATION # _____ RIVERMILE _____		STREAM CLASS _____	
LAT _____ LONG _____		RIVER BASIN _____	
STORET # _____		AGENCY <i>EPH</i>	
INVESTIGATORS <i>Steve Aron Sherry Skyles</i>			
FORM COMPLETED BY <i>Steve Aron</i>		DATE <i>7/24/94</i> TIME <i>12:50</i> AM PM	REASON FOR SURVEY _____

	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
Parameters to be evaluated in sampling reach	1. Epifaunal Substrate/ Available Cover <i>18</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	SCORE	20 19 <i>18</i> 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	2. Embeddedness <i>20</i>	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	3. Velocity/Depth Regime <i>20</i>	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition <i>18</i>	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
SCORE	20 19 <i>18</i> 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	
5. Channel Flow Status <i>20</i>	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
6. Channel Alteration <div style="text-align: right; font-size: 2em; font-weight: bold;">16</div>	Channelization or dredging absent or minimal; stream with normal pattern.					Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.					Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.					Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.					
	SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
7. Frequency of Riffles (or bends) <div style="text-align: right; font-size: 2em; font-weight: bold;">17</div>	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.					Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.					Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.					Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.					
	SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
8. Bank Stability (score each bank) Note: determine left or right side by facing downstream.	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.					Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.					Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.					
	SCORE <u>8</u> (LB)	Left Bank	10	9	8	7	6	5	4	3	2	1	0								
	SCORE <u>8</u> (RB)	Right Bank	10	9	8	7	6	5	4	3	2	1	0								
9. Vegetative Protection (score each bank) <div style="text-align: right; font-size: 2em; font-weight: bold;">5</div>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.					
	SCORE <u>5</u> (LB)	Left Bank	10	9	8	7	6	5	4	3	2	1	0								
	SCORE <u>3</u> (RB)	Right Bank	10	9	8	7	6	5	4	3	2	1	0								
10. Riparian Vegetative Zone Width (score each bank riparian zone) <div style="text-align: right; font-size: 2em; font-weight: bold;">5</div>	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.					Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.					Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.					Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.					
	SCORE <u>5</u> (LB)	Left Bank	10	9	8	7	6	5	4	3	2	1	0								
	SCORE <u>1</u> (RB)	Right Bank	10	9	8	7	6	5	4	3	2	1	0								

location in canyon and no human influence low

Total Score 156

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (FRONT)

STREAM NAME <u>Ammonia</u>	LOCATION <u>A 60</u>	
STATION # <u>9-60</u> RIVERMILE	STREAM CLASS	
LAT _____ LONG _____	RIVER BASIN	
STORET #	AGENCY <u>ETA</u>	
INVESTIGATORS		
FORM COMPLETED BY <u>Steve Auer</u>	DATE <u>7/23/14</u> TIME _____ AM PM	REASON FOR SURVEY

	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
Parameters to be evaluated in sampling reach	1. Epifaunal Substrate/ Available Cover Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and not transient).	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	SCORE <u>19</u>				
	2. Embeddedness Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	SCORE <u>22</u>				
	3. Velocity/Depth Regime All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	SCORE <u>21</u>				
4. Sediment Deposition Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	
SCORE <u>17</u>					
5. Channel Flow Status Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	
SCORE <u>17</u>					

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.																			
	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.																			
SCORE	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
	14																			
7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.																			
	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.																			
SCORE	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
	19																			
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.																			
	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.																			
	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.																			
	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.																			
Note: determine left or right side by facing downstream.																				
SCORE (LB)	Left Bank 10 9					8 7 6					5 4 3					2 1 0				
SCORE (RB)	Right Bank 10 9					8 7 6					5 4 3					2 1 0				
9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.																			
	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.																			
	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.																			
	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.																			
SCORE (LB)	Left Bank 10 9					8 7 6					5 4 3					2 1 0				
SCORE (RB)	Right Bank 10 9					8 7 6					5 4 3					2 1 0				
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.																			
	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.																			
	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.																			
	Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.																			
SCORE (LB)	Left Bank 10 9					8 7 6					5 4 3					2 1 0				
SCORE (RB)	Right Bank 10 9					8 7 6					5 4 3					2 1 0				

Parameters to be evaluated broader than sampling reach

Total Score 162

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (FRONT)

STREAM NAME <u>Little River</u>	LOCATION <u>557</u>	
STATION # _____ RIVERMILE _____	STREAM CLASS _____	
LAT _____ LONG _____	RIVER BASIN _____	
STORET # _____	AGENCY <u>EPB</u>	
INVESTIGATORS _____		
FORM COMPLETED BY <u>[Signature]</u>	DATE <u>7/23/14</u> TIME <u>1:00</u> AM PM	REASON FOR SURVEY _____

	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
Parameters to be evaluated in sampling reach	1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	SCORE <u>16</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
	SCORE <u>17</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	3. Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).
	SCORE <u>17</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
SCORE <u>17</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
SCORE <u>12</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.					Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.					Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.					Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.					Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.					Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.					Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.					Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.					Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.					
Note: determine left or right side by facing downstream.																					
SCORE (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
SCORE (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.					
SCORE (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
SCORE (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.					Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.					Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.					Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.					
SCORE (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
SCORE (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			

Parameters to be evaluated broader than sampling reach

Total Score 184

Appendix F
MiniSipper Results

Appendix F
MiniSipper Analytical Data

STATION_ID	ANALYSIS	UNITS	Date and Time	Aluminum	Cadmium	Calcium	Chromium	Copper	Hardness (mg/L)	Lead	Magnesium	Zinc
A55-01	Dissolved Metals	ug/L	7/9/14 8:35	<50.0U	<1.00U	25000D	<10.0U	<5.00U	70D	1.11JD	1930JD	231D
A55-02	Dissolved Metals	ug/L	7/8/14 8:17	<25.0U	<0.500U	24200D	<5.00U	<2.50U	68D	0.548JD	1790D	124D
A55-03	Dissolved Metals	ug/L	7/7/14 8:00	<25.0U	<0.500U	23600D	<5.00U	<2.50U	66D	1.56D	1790D	201D
A55-04	Dissolved Metals	ug/L	7/6/14 7:42	<25.0U	<0.500U	24000D	<5.00U	<2.50U	68D	0.687JD	1850D	216D
A55-05	Dissolved Metals	ug/L	7/5/14 7:25	<25.0U	<0.500U	23700D	<5.00U	<2.50U	67D	0.921JD	1860D	143D
A55-06	Dissolved Metals	ug/L	7/4/14 7:08	<25.0U	<0.500U	23500D	<5.00U	<2.50U	66D	<0.500U	1780D	174D
A55-07	Dissolved Metals	ug/L	7/3/14 6:50	<25.0U	<0.500U	21400D	<5.00U	<2.50U	60D	0.740JD	1650D	158D
A55-08	Dissolved Metals	ug/L	7/2/14 6:33	<25.0U	<0.500U	21300D	<5.00U	<2.50U	60D	<0.500U	1590D	187D
A55-09	Dissolved Metals	ug/L	7/1/14 6:16	<25.0U	<0.500U	21000D	<5.00U	<2.50U	59D	<0.500U	1550D	201D
A55-10	Dissolved Metals	ug/L	6/30/14 5:58	<25.0U	<0.500U	20800D	<5.00U	<2.50U	58D	<0.500U	1570D	204D
A55-11	Dissolved Metals	ug/L	6/29/14 5:41	<25.0U	<0.500U	21200D	<5.00U	<2.50U	59D	<0.500U	1570D	210D
A55-12	Dissolved Metals	ug/L	6/28/14 5:24	<25.0U	<0.500U	21500D	<5.00U	<2.50U	60D	<0.500U	1590D	220D
A55-13	Dissolved Metals	ug/L	6/27/14 5:06	<25.0U	<0.500U	21400D	<5.00U	<2.50U	60D	<0.500U	1630D	203D
A55-14	Dissolved Metals	ug/L	6/26/14 4:49	<25.0U	<0.500U	21100D	<5.00U	<2.50U	59D	<0.500U	1550D	195D
A55-15	Dissolved Metals	ug/L	6/25/14 4:32	<25.0U	<0.500U	20800D	<5.00U	<2.50U	58D	<0.500U	1550D	198D
A55-16	Dissolved Metals	ug/L	6/24/14 4:14	<25.0U	<0.500U	20800D	<5.00U	2.55JD	58D	<0.500U	1530D	189D
A55-17	Dissolved Metals	ug/L	6/23/14 3:57	<25.0U	<0.500U	21300D	<5.00U	<2.50U	60D	<0.500U	1540D	185D
A55-18	Dissolved Metals	ug/L	6/22/14 3:40	<25.0U	<0.500U	20700D	<5.00U	<2.50U	58D	<0.500U	1510D	200D
A55-19	Dissolved Metals	ug/L	6/21/14 3:22	<25.0U	<0.500U	20100D	<5.00U	<2.50U	56D	<0.500U	1490D	205D
A55-20	Dissolved Metals	ug/L	6/20/14 3:05	<25.0U	<0.500U	20400D	<5.00U	2.58JD	57D	<0.500U	1500D	190D
A55-21	Dissolved Metals	ug/L	6/19/14 2:48	<50.0U	<1.00U	20500D	<10.0U	<5.00U	57D	<1.00U	1510JD	191D
A55-22	Dissolved Metals	ug/L	6/17/14 2:13	<25.0U	<0.500U	19700D	<5.00U	2.72JD	55D	<0.500U	1500D	197D
A55-24	Dissolved Metals	ug/L	6/16/14 1:55	<25.0U	<0.500U	18900D	<5.00U	2.56JD	53D	<0.500U	1440D	195D
A55-25	Dissolved Metals	ug/L	6/15/14 1:38	<25.0U	<0.500U	18900D	<5.00U	5.11D	53D	<0.500U	1460D	197D
A55-26	Dissolved Metals	ug/L	6/14/14 1:21	<25.0U	<0.500U	17100D	<5.00U	2.88JD	48D	<0.500U	1320D	197D
A55-27	Dissolved Metals	ug/L	6/13/14 1:03	<25.0U	<0.500U	17200D	<5.00U	3.43JD	48D	<0.500U	1310D	187D
A55-28	Dissolved Metals	ug/L	6/12/14 0:46	<25.0UJ	<0.500UJ	17800JD	<5.00UJ	3.08JD	50JD	<0.500UJ	1340JD	178JD
A55-29	Dissolved Metals	ug/L	6/11/14 0:29	<25.0UJ	<0.500UJ	18800JD	<5.00UJ	3.14JD	53JD	<0.500UJ	1360JD	184JD
A55-30	Dissolved Metals	ug/L	6/10/14 0:11	<25.0UJ	<0.500UJ	19100JD	<5.00UJ	3.44JD	54JD	<0.500UJ	1450JD	188JD
A55-31	Dissolved Metals	ug/L	6/8/14 23:54	<25.0UJ	<0.500UJ	18100JD	<5.00UJ	58.7JD	51JD	7.55JD	1350JD	187JD
A55-32	Dissolved Metals	ug/L	6/7/14 23:37	<25.0UJ	<0.500UJ	18200JD	<5.00UJ	3.52JD	51JD	<0.500UJ	1340JD	191JD
A55-33	Dissolved Metals	ug/L	6/6/14 23:19	<25.0UJ	<0.500UJ	16500JD	<5.00UJ	3.94JD	46JD	<0.500UJ	1230JD	190JD
A55-34	Dissolved Metals	ug/L	6/5/14 23:02	<25.0UJ	<0.500UJ	15800JD	<5.00UJ	3.94JD	44JD	<0.500UJ	1220JD	188JD
A55-35	Dissolved Metals	ug/L	6/4/14 22:45	<25.0UJ	<0.500UJ	15900JD	<5.00UJ	4.01JD	45JD	<0.500UJ	1200JD	174JD
A55-36	Dissolved Metals	ug/L	6/3/14 22:27	<25.0UJ	<0.500UJ	16000JD	<5.00UJ	4.83JD	45JD	<0.500UJ	1190JD	159JD
A55-37	Dissolved Metals	ug/L	6/2/14 22:10	<25.0UJ	<0.500UJ	16100JD	<5.00UJ	5.03JD	45JD	<0.500UJ	1180JD	158JD
A55-38	Dissolved Metals	ug/L	6/1/14 21:53	<25.0UJ	<0.500UJ	15300JD	<5.00UJ	5.48JD	43JD	<0.500UJ	1150JD	150JD
A55-39	Dissolved Metals	ug/L	5/31/14 21:35	<25.0UJ	<0.500UJ	15500JD	<5.00UJ	5.04JD	43JD	<0.500UJ	1140JD	145JD
A55-40	Dissolved Metals	ug/L	5/30/14 21:18	<25.0UJ	<0.500UJ	15600JD	<5.00UJ	5.83JD	44JD	<0.500UJ	1140JD	151JD
A55-41	Dissolved Metals	ug/L	5/29/14 21:01	<25.0UJ	<0.500UJ	16000JD	<5.00UJ	6.34JD	45JD	<0.500UJ	1130JD	155JD
A55-42	Dissolved Metals	ug/L	5/28/14 20:43	<50.0UJ	<1.00UJ	16300JD	<10.0UJ	5.74JD	46JD	<1.00UJ	1190JD	149JD
A55-43	Dissolved Metals	ug/L	5/27/14 20:26	<25.0UJ	<0.500UJ	19100JD	<5.00UJ	5.89JD	53JD	<0.500UJ	1340JD	210JD
A55-44	Dissolved Metals	ug/L	5/26/14 20:08	<25.0UJ	<0.500UJ	18600JD	<5.00UJ	5.49JD	52JD	<0.500UJ	1260JD	236JD
A55-45	Dissolved Metals	ug/L	5/25/14 19:51	<25.0UJ	<0.500UJ	18800JD	<5.00UJ	5.91JD	52JD	<0.500UJ	1310JD	240JD
A55-46	Dissolved Metals	ug/L	5/24/14 19:34	<25.0UJ	0.543JD	22200JD	<5.00UJ	5.78JD	62JD	<0.500UJ	1490JD	285JD
A55-47	Dissolved Metals	ug/L	5/23/14 19:16	<25.0UJ	0.517JD	22000JD	<5.00UJ	5.58JD	61JD	<0.500UJ	1440JD	299JD
A55-48	Dissolved Metals	ug/L	5/22/14 18:59	<25.0UJ	0.661JD	22300JD	<5.00UJ	5.82JD	62JD	<0.500UJ	1430JD	309JD
A55-49	Dissolved Metals	ug/L	5/21/14 18:42	<25.0UJ	0.689JD	21300JD	<5.00UJ	6.35JD	59JD	0.632JD	1380JD	322JD
A55-50	Dissolved Metals	ug/L	5/20/14 18:24	<25.0UJ	0.739JD	22000JD	<5.00UJ	6.63JD	61JD	<0.500UJ	1420JD	327JD
A55-51	Dissolved Metals	ug/L	5/19/14 18:07	<25.0UJ	0.701JD	22600JD	<5.00UJ	4.20JD	62JD	<0.500UJ	1430JD	314JD
A55-52	Dissolved Metals	ug/L	5/18/14 17:50	<25.0UJ	0.846JD	25300JD	<5.00UJ	3.61JD	69JD	<0.500UJ	1510JD	312JD
A55-53	Dissolved Metals	ug/L	5/17/14 17:32	<25.0UJ	0.821JD	26800JD	<5.00UJ	5.12JD	73JD	<0.500UJ	1560JD	292JD
A55-54	Dissolved Metals	ug/L	5/16/14 17:15	<25.0UJ	0.849JD	27400JD	<5.00UJ	3.61JD	76JD	<0.500UJ	1750JD	241JD
A55-55	Dissolved Metals	ug/L	5/15/14 16:58	<25.0UJ	0.713JD	31500JD	<5.00UJ	3.10JD	87JD	<0.500UJ	1910JD	236JD
A55-56	Dissolved Metals	ug/L	5/14/14 16:40	<25.0UJ	<0.500UJ	35600JD	<5.00UJ	<2.50UJ	97JD	<0.500UJ	2010JD	217JD
A55-57	Dissolved Metals	ug/L	5/13/14 16:23	<25.0UJ	0.737JD	34400JD	<5.00UJ	<2.50UJ	94JD	<0.500UJ	2000JD	251JD
A55-58	Dissolved Metals	ug/L	5/12/14 16:06	<25.0UJ	0.766JD	33200JD	<5.00UJ	<2.50UJ	91JD	<0.500UJ	1950JD	279JD
A55-59	Dissolved Metals	ug/L	5/11/14 15:48	<25.0UJ	0.899JD	32900JD	<5.00UJ	3.04JD	90JD	<0.500UJ	1880JD	335JD
A55-60	Dissolved Metals	ug/L	5/10/14 15:31	<25.0UJ	0.883JD	32000JD	<5.00UJ	3.18JD	88JD	<0.500UJ	1860JD	352JD
A55-61	Dissolved Metals	ug/L	5/9/14 15:14	<25.0UJ	0.936JD	31900JD	<5.00UJ	3.42JD	87JD	<0.500UJ	1850JD	359JD
A55-62	Dissolved Metals	ug/L	5/8/14 14:56	<50.0UJ	1.07JD	30100JD	<10.0UJ	<5.00UJ	83JD	<1.00UJ	1950JD	353JD
A55-63	Dissolved Metals	ug/L	5/7/14 14:39	<25.0UJ	0.995JD	29800JD	<5.00UJ	4.16JD	82JD	<0.500UJ	1800JD	372JD
A55-64	Dissolved Metals	ug/L	5/6/14 14:21	<25.0UJ	1.03JD	27400JD	<5.00UJ	4.54JD	75JD	<0.500UJ	1690JD	374JD
A55-65	Dissolved Metals	ug/L	5/5/14 14:04	<25.0UJ	1.12JD	26600JD	<5.00UJ	4.47JD	74JD	<0.500UJ	1700JD	338JD
A55-66	Dissolved Metals	ug/L	5/4/14 13:47	<25.0UJ	0.888JD	29000JD	<5.00UJ	3.33JD	80JD	<0.500UJ	1770JD	309JD
A55-67	Dissolved Metals	ug/L	5/3/14 13:29	<25.0UJ	0.799JD	31000JD	<5.00UJ	3.43JD	85JD	<0.500UJ	1850JD	304JD
A55-68	Dissolved Metals	ug/L	5/2/14 13:12	<25.0UJ	0.884JD	35900JD	<5.00UJ	3.50JD	98JD	<0.500UJ	2090JD	321JD
A55-69	Dissolved Metals	ug/L	5/1/14 12:55	<25.0UJ	0.834JD	37700JD	<5.00UJ	2.58JD	103JD	<0.500UJ	2080JD	331JD
A55-70	Dissolved Metals	ug/L	4/30/14 12:37	<25.0UJ	0.746JD	39100JD	<5.00UJ	<2.50UJ	107JD	<0.500UJ	2170JD	371JD
A55-71	Dissolved Metals	ug/L	4/29/14 12:20	<25.0UJ	1.01JD	39000JD	<5.00UJ	2.52JD	107JD	<0.500UJ	2200JD	383JD
A55-72	Dissolved Metals	ug/L	4/28/14 12:03	<25.0UJ	0.853JD	37600JD	<5.00UJ	3.58JD	103JD	<0.500UJ	2120JD	396JD
A55-73	Dissolved Metals	ug/L	4/27/14 11:45	<25.0UJ	1.10JD	36400JD	<5.00UJ	2.93JD	99JD	<0.500UJ	2080JD	437JD
A55-74	Dissolved Metals	ug/L	4/26/14 11:28	<25.0UJ	1.16JD	33600JD	<5.00UJ	3.11JD	93JD	<0.500UJ	2090JD	424JD
A55-75	Dissolved Metals	ug/L	4/25/14 11:11	<25.0UJ	1.15JD	31000JD	<5.00UJ	3.66JD	85JD	<0.500UJ	1910JD	432JD
A55-76	Dissolved Metals	ug/L	4/24/14 10:53	<25.0UJ	1.06JD	32500JD	<5.00UJ	3.35JD	89JD	<0.500UJ	1970JD	420JD
A55-77	Dissolved Metals	ug/L	4/23/14 10:36	<25.0UJ	1.10JD	33100JD	<5.00UJ	3.26JD	91JD	<0.500UJ	1950JD	411JD
A55-78	Dissolved Metals	ug/L	4/22/14 10:19	<25.0UJ	1.15JD	31400JD	<5.00UJ	3.47JD	86JD	<0.500UJ	1820JD	391JD
A55-79	Dissolved Metals	ug/L	4/21/14 10:01	<25.0UJ	0.795JD	30400JD	<5.00UJ	3.57JD	83JD	<0.500UJ	1800JD	374JD
A55-80	Dissolved Metals	ug/L	4/20/14 9:44	<25.0UJ	1.04JD	32900JD	<5.00UJ	2.73JD	90JD	<0.500UJ	1840JD	318JD
A55-81	Dissolved Metals	ug/L	4/19/14 9:27	<25.0UJ	0.759JD	34600JD	<5.00UJ	<2.50UJ	94JD	<0.500UJ	1950JD	284JD
A55-82	Dissolved Metals	ug/L	4/18/14 9:09	<50.0UJ	1.05JD	37800JD	<10.0UJ	<5.00UJ	104JD	<1.00UJ	2290JD	231JD
A55-83	Dissolved Metals	ug/L	4/17/14 8:52	<25.0UJ	0.569JD	41000JD	<5.00UJ	23.8JD	111JD	4.24JD	2210JD	217JD
A55-84	Dissolved Metals	ug/L	4/16/14 8:35	<25.0UJ	0.633JD	43000JD	<5.00UJ	<2.50UJ	117JD	<0.500UJ	22	

Appendix F
MiniSipper Analytical Data

STATION_ID	ANALYSIS	UNITS	Date and Time	Aluminum	Cadmium	Calcium	Chromium	Copper	Hardness (mg/L)	Lead	Magnesium	Zinc
A56-11	Dissolved Metals	ug/L	6/20/2014 17:46	<25.0U	<0.500U	23900D	<5.00U	<2.50U	67D	4.30D	1650D	105D
A56-12	Dissolved Metals	ug/L	6/20/2014 0:20	25.4JD	<0.500U	24000D	<5.00U	<2.50U	67D	4.59D	1660D	107D
A56-13	Dissolved Metals	ug/L	6/19/2014 6:55	<25.0U	<0.500U	23400D	<5.00U	<2.50U	65D	5.08D	1620D	105D
A56-14	Dissolved Metals	ug/L	6/18/2014 13:30	38.0JD	<0.500U	23300D	<5.00U	<2.50U	64D	5.16D	1520D	92.8D
A56-15	Dissolved Metals	ug/L	6/17/2014 20:04	27.2JD	<0.500U	23800D	<5.00U	<2.50U	66D	6.30D	1570D	115D
A56-16	Dissolved Metals	ug/L	6/17/2014 2:39	<25.0U	<0.500U	22300D	<5.00U	<2.50U	62D	6.51D	1520D	92.5D
A56-17	Dissolved Metals	ug/L	6/16/2014 9:14	<25.0U	<0.500U	21100D	<5.00U	<2.50U	58D	8.23D	1380D	94.0D
A56-18	Dissolved Metals	ug/L	6/15/2014 15:48	29.7JD	<0.500U	20700D	<5.00U	<2.50U	58D	10.5D	1490D	92.3D
A56-19	Dissolved Metals	ug/L	6/14/2014 22:23	40.8JD	<0.500U	20100D	<5.00U	<2.50U	56D	10.6D	1480D	82.9D
A56-20	Dissolved Metals	ug/L	6/14/2014 4:58	199D	<0.500U	19300D	<5.00U	10.3D	54D	17.9D	1350D	151D
A56-21	Dissolved Metals	ug/L	6/13/2014 11:32	113D	0.558JD	19400D	<5.00U	8.40D	54D	9.88D	1330D	179D
A56-22	Dissolved Metals	ug/L	6/12/2014 18:07	66.6JD	0.589JD	19300D	<5.00U	5.28D	53D	8.33D	1250D	196D
A56-23	Dissolved Metals	ug/L	6/12/2014 0:41	67.3JD	0.571JD	18500D	<5.00U	5.86D	52D	8.19D	1290D	201D
A56-24	Dissolved Metals	ug/L	6/11/2014 7:16	65.4JD	0.661JD	19100D	<5.00U	5.20D	53D	7.93D	1310D	203D
A56-25	Dissolved Metals	ug/L	6/10/2014 13:51	67.4JD	0.684JD	18700D	<5.00U	5.61D	52D	7.72D	1290D	212D
A56-26	Dissolved Metals	ug/L	6/9/2014 20:25	136JD	1.25JD	17200D	<10.0U	7.18JD	48D	7.91D	1320JD	244D
A56-27	Dissolved Metals	ug/L	6/9/2014 3:00	88.5JD	0.792JD	16800D	<5.00U	6.12D	47D	8.15D	1250D	225D
A56-28	Dissolved Metals	ug/L	6/8/2014 9:35	82.6JD	0.751JD	17500D	<5.00U	5.57D	49D	9.58D	1220JD	229D
A56-29	Dissolved Metals	ug/L	6/7/2014 16:09	81.4JD	0.932JD	18000D	<5.00U	5.48D	50D	11.1D	1290D	230D
A56-30	Dissolved Metals	ug/L	6/6/2014 22:44	87.3JD	0.937JD	17800D	<5.00U	6.07D	50D	11.7D	1280D	238D
A56-31	Dissolved Metals	ug/L	6/6/2014 5:19	123D	0.951JD	18900D	<5.00U	10.2D	52D	12.8D	1270D	252D
A56-32	Dissolved Metals	ug/L	6/5/2014 11:53	255D	1.19D	14700D	<5.00U	16.8D	41D	15.5D	1050JD	288D
A56-33	Dissolved Metals	ug/L	6/4/2014 18:28	295D	1.02D	14700D	<5.00U	20.5D	41D	11.3D	1050JD	274D
A56-34	Dissolved Metals	ug/L	6/4/2014 1:02	210D	0.773JD	14900D	<5.00U	17.3D	41D	8.27D	1040JD	230D
A56-35	Dissolved Metals	ug/L	6/3/2014 7:37	175D	0.584JD	15400D	<5.00U	14.1D	43D	6.26D	1050JD	197D
A56-36	Dissolved Metals	ug/L	6/2/2014 14:12	145D	0.679JD	15800D	<5.00U	19.8D	44D	6.11D	1090JD	181D
A56-37	Dissolved Metals	ug/L	6/1/2014 20:46	143D	<0.500U	15500D	<5.00U	11.1D	43D	4.83D	1060JD	178D
A56-38	Dissolved Metals	ug/L	6/1/2014 3:21	142D	<0.500U	15500D	<5.00U	11.3D	43D	4.79D	1100JD	181D
A56-39	Dissolved Metals	ug/L	5/31/2014 9:56	127D	<0.500U	15400D	<5.00U	10.3D	43D	4.44D	1060JD	176D
A56-40	Dissolved Metals	ug/L	5/30/2014 16:30	105D	0.634JD	16700D	<5.00U	9.62D	46D	3.44D	1120JD	177D
A56-41	Dissolved Metals	ug/L	5/29/2014 23:05	62.3JD	<0.500U	17500D	<5.00U	7.31D	49D	2.11D	1150JD	175D
A56-42	Dissolved Metals	ug/L	5/29/2014 5:39	64.5JD	<0.500U	17400JD	<5.00U	7.87JD	48JD	2.08JD	1120JD	175JD
A56-43	Dissolved Metals	ug/L	5/28/2014 12:14	44.5JD	<0.500U	18400JD	<5.00U	6.80JD	51JD	1.58JD	1190JD	206JD
A56-44	Dissolved Metals	ug/L	5/27/2014 18:49	29.8JD	0.542JD	19800JD	<5.00U	6.13JD	54JD	1.38JD	1220JD	236JD
A56-45	Dissolved Metals	ug/L	5/27/2014 1:23	28.7JD	0.540JD	19500JD	<5.00U	6.52JD	54JD	1.28JD	1230JD	235JD
A56-46	Dissolved Metals	ug/L	5/26/2014 7:58	56.0JD	<1.00U	20000JD	<10.0U	6.62JD	56JD	1.42JD	1390JD	233JD
A56-47	Dissolved Metals	ug/L	5/25/2014 14:33	34.7JD	0.609JD	19900JD	<5.00U	8.09JD	55JD	1.52JD	1310JD	239JD
A56-48	Dissolved Metals	ug/L	5/24/2014 21:07	34.0JD	0.551JD	20300JD	<5.00U	6.47JD	56JD	1.25JD	1360JD	240JD
A56-49	Dissolved Metals	ug/L	5/24/2014 3:42	35.8JD	0.664JD	20200JD	<5.00U	6.61JD	56JD	1.16JD	1340JD	233JD
A56-50	Dissolved Metals	ug/L	5/23/2014 10:17	30.6JD	0.531JD	21000JD	<5.00U	6.63JD	58JD	1.20JD	1320JD	242JD
A56-51	Dissolved Metals	ug/L	5/22/2014 16:51	57.2JD	0.926JD	22200JD	<5.00U	6.92JD	61JD	1.25JD	1370JD	242JD
A56-52	Dissolved Metals	ug/L	5/21/2014 23:26	27.6JD	0.654JD	24300JD	<5.00U	6.76JD	67JD	1.19JD	1450JD	268JD
A56-53	Dissolved Metals	ug/L	5/21/2014 6:00	25.9JD	0.633JD	24800JD	<5.00U	6.22JD	68JD	1.09JD	1450JD	274JD
A56-54	Dissolved Metals	ug/L	5/20/2014 12:35	28.8JD	0.660JD	24700JD	<5.00U	6.98JD	68JD	2.39JD	1490JD	276JD
A56-55	Dissolved Metals	ug/L	5/19/2014 19:10	31.1JD	0.513JD	25300JD	<5.00U	7.76JD	69JD	4.39JD	1450JD	282JD
A56-56	Dissolved Metals	ug/L	5/19/2014 1:44	28.3JD	0.649JD	25700JD	<5.00U	6.56JD	70JD	2.60JD	1440JD	278JD
A56-57	Dissolved Metals	ug/L	5/18/2014 8:19	<25.0U	0.714JD	29700JD	<5.00U	5.58JD	81JD	1.09JD	1690JD	255JD
A56-58	Dissolved Metals	ug/L	5/17/2014 14:54	34.2JD	0.766JD	31400JD	<5.00U	4.71JD	86JD	2.61JD	1890JD	278JD
A56-59	Dissolved Metals	ug/L	5/16/2014 21:28	<25.0U	0.727JD	31700JD	<5.00U	25.3JD	87JD	58.9JD	1830JD	592JD
A56-60	Dissolved Metals	ug/L	5/16/2014 4:03	<25.0U	0.676JD	32300JD	<5.00U	4.76JD	88JD	1.25JD	1850JD	294JD
A56-61	Dissolved Metals	ug/L	5/15/2014 10:38	<25.0U	0.764JD	32900JD	<5.00U	4.56JD	90JD	0.958JD	1860JD	302JD
A56-62	Dissolved Metals	ug/L	5/14/2014 17:12	<25.0U	0.745JD	31100JD	<5.00U	5.00JD	85JD	0.861JD	1760JD	304JD
A56-63	Dissolved Metals	ug/L	5/13/2014 23:47	<25.0U	0.772JD	30400JD	<5.00U	5.27JD	83JD	0.752JD	1730JD	326JD
A56-64	Dissolved Metals	ug/L	5/13/2014 6:21	<25.0U	0.808JD	30400JD	<5.00U	5.53JD	83JD	0.782JD	1780JD	343JD
A56-65	Dissolved Metals	ug/L	5/12/2014 12:56	<25.0U	0.922JD	31600JD	<5.00U	7.38JD	86JD	1.88JD	1780JD	344JD
A56-66	Dissolved Metals	ug/L	5/11/2014 19:31	<50.0U	1.08JD	31300JD	<10.0U	6.43JD	86JD	<1.00U	1950JD	332JD
A56-67	Dissolved Metals	ug/L	5/11/2014 2:05	<25.0U	0.842JD	32500JD	<5.00U	5.94JD	89JD	0.690JD	1960JD	339JD
A56-68	Dissolved Metals	ug/L	5/10/2014 8:40	27.3JD	1.03JD	28700JD	<5.00U	6.75JD	79JD	0.788JD	1760JD	351JD
A56-69	Dissolved Metals	ug/L	5/9/2014 15:15	27.6JD	0.751JD	28700JD	<5.00U	7.04JD	79JD	0.792JD	1790JD	345JD
A56-70	Dissolved Metals	ug/L	5/8/2014 21:49	25.3JD	0.895JD	28100JD	<5.00U	6.61JD	77JD	0.672JD	1740JD	355JD
A56-71	Dissolved Metals	ug/L	5/8/2014 4:24	27.7JD	0.828JD	27700JD	<5.00U	7.27JD	76JD	0.833JD	1710JD	355JD
A56-72	Dissolved Metals	ug/L	5/7/2014 10:58	27.6JD	0.936JD	28300JD	<5.00U	6.42JD	77JD	0.782JD	1670JD	339JD
A56-73	Dissolved Metals	ug/L	5/6/2014 17:33	32.7JD	0.662JD	27600JD	<5.00U	6.59JD	76JD	0.676JD	1630JD	348JD
A56-74	Dissolved Metals	ug/L	5/6/2014 0:08	33.8JD	0.844JD	27000JD	<5.00U	5.09JD	74JD	0.673JD	1610JD	304JD
A56-75	Dissolved Metals	ug/L	5/5/2014 6:42	27.8JD	0.744JD	29900JD	<5.00U	4.46JD	82JD	0.605JD	1730JD	276JD
A56-76	Dissolved Metals	ug/L	5/4/2014 13:17	<25.0U	0.560JD	32600JD	<5.00U	4.01JD	89JD	0.666JD	1840JD	248JD
A56-77	Dissolved Metals	ug/L	5/3/2014 19:52	<25.0U	0.754JD	36400JD	<5.00U	4.52JD	99JD	0.635JD	1990JD	289JD
A56-78	Dissolved Metals	ug/L	5/3/2014 2:26	<25.0U	0.740JD	38600JD	<5.00U	3.90JD	105JD	0.614JD	2190JD	321JD
A56-79	Dissolved Metals	ug/L	5/2/2014 9:01	<25.0U	0.891JD	38800JD	<5.00U	4.16JD	106JD	0.688JD	2190JD	363JD
A56-80	Dissolved Metals	ug/L	5/1/2014 15:36	<25.0U	0.748JD	38400JD	<5.00U	4.63JD	105JD	0.676JD	2200JD	353JD
A56-81	Dissolved Metals	ug/L	4/30/2014 22:10	<25.0U	0.947JD	39100JD	<5.00U	4.71JD	107JD	0.711JD	2220JD	357JD
A56-82	Dissolved Metals	ug/L	4/30/2014 4:45	<25.0U	0.883JD	37700JD	<5.00U	4.22JD	102JD	0.579JD	2050JD	381JD
A56-83	Dissolved Metals	ug/L	4/29/2014 11:19	<25.0U	0.873JD	36800JD	<5.00U	4.43JD	101JD	0.575JD	2100JD	389JD
A56-84	Dissolved Metals	ug/L	4/28/2014 17:54	<25.0U	1.05JD	35800JD	<5.00U	5.89JD	97JD	0.687JD	1940JD	373JD
A56-85	Dissolved Metals	ug/L	4/28/2014 0:29	<25.0U	0.961JD	34700JD	<5.00U	4.59JD	95JD	0.685JD	1970JD	376JD
A56-86	Dissolved Metals	ug/L	4/27/2014 7:03	<50.0U	<1.00U	33300JD	<10.0U	<5.00U	92JD	<1.00U	2160JD	367JD
A56-87	Dissolved Metals	ug/L	4/26/2014 13:38	26.5JD	0.911JD	31200JD	<5.00U	4.77JD	86JD	0.799JD	1950JD	357JD
A56-88	Dissolved Metals	ug/L	4/25/2014 20:13	30.7JD	1.02JD	30100JD	<5.00U	6.24JD	83JD	0.955JD	1850JD	476JD
A56-89	Dissolved Metals	ug/L	4/25/2014 2:47	26.2JD	0.716JD	32600JD	<5.00U	4.15JD	90JD	0.706JD	2000JD	291JD
A56-90	Dissolved Metals	ug/L	4/24/2014 9:22	25.1JD	0.860JD	32100JD	<5.00U	3.71JD	88JD	0.608JD	2020JD	305JD
A56-91	Dissolved Metals	ug/L	4/23/2014 15:57	26.8JD	0.911JD	31900JD	<5.00U	3.54JD	88JD	0.635JD	1950JD	300JD
A56-92	Dissolved Metals	ug/L	4/22/2014 22:31	59.6JD	0.649JD	30500JD	<5.00U	4.59JD	84JD	1.14JD	1870JD	246JD
A56-93	Dissolved Metals	ug/L	4/22/2014 5:06	28.5JD	0.622JD	30500JD	<5.00U	3.69JD	84JD	1.05JD	1830JD	236JD
A56-94	Dissolved Metals	ug/L	4/21/2014 11:40	26.4JD	0.622JD	29500JD	<5.00U	3.59JD	81JD	1.02JD	1790JD	231JD
A56-95	Dissolved Metals	ug/L	4/20/2014 18:15	<25.0U	0.591JD	32900JD	<5.00U	2.96JD	90JD	0.964JD	1960JD	210JD
A56-96	Dissolved Metals	ug/L	4/20/2014 0:50	<25.0U	<0.500U	34200JD	<5.00U	15.2JD	94JD	0.937JD		

Appendix F
MiniSipper Analytical Data

STATION_ID	ANALYSIS	UNITS	Date and Time	Aluminum	Cadmium	Calcium	Chromium	Copper	Hardness (mg/L)	Lead	Magnesium	Zinc
A73-01	Dissolved Metals	ug/L	6/13/14 14:05	350D	0.869JD	33000D	<5.00U	18.6D	92D	10.1D	2260D	427D
A73-02	Dissolved Metals	ug/L	6/12/14 18:05	104JD	1.05JD	34700D	<10.0U	7.49JD	97D	1.37JD	2560D	371D
A73-03	Dissolved Metals	ug/L	6/11/14 22:05	82.4JD	0.774JD	32700D	<5.00U	7.53D	91D	0.943JD	2280D	357D
A73-04	Dissolved Metals	ug/L	6/11/14 2:05	55.8JD	0.708JD	30800D	<5.00U	27.9D	86D	26.9D	2150D	343D
A73-05	Dissolved Metals	ug/L	6/10/14 6:05	45.4JD	0.613JD	27400D	<5.00U	2.82JD	77D	0.896JD	2000D	300D
A73-06	Dissolved Metals	ug/L	6/9/14 10:05	47.1JD	<0.500U	24000D	<5.00U	2.82JD	67D	0.898JD	1690D	275D
A73-07	Dissolved Metals	ug/L	6/8/14 14:05	59.8JD	0.654JD	21800D	<5.00U	3.42JD	61D	1.52D	1560D	279D
A73-08	Dissolved Metals	ug/L	6/7/14 18:05	47.6JD	<0.500U	18400D	<5.00U	3.03JD	51D	0.705JD	1330D	274D
A73-09	Dissolved Metals	ug/L	6/6/14 22:05	51.3JD	0.602JD	19000D	<5.00U	3.21JD	53D	0.817JD	1400D	300D
A73-10	Dissolved Metals	ug/L	6/6/14 2:05	47.8JD	<0.500U	19800D	<5.00U	3.48JD	55D	0.786JD	1440D	286D
A73-11	Dissolved Metals	ug/L	6/5/14 6:05	47.3JD	<0.500U	20200D	<5.00U	3.09JD	57D	0.750JD	1450D	292D
A73-12	Dissolved Metals	ug/L	6/4/14 10:05	45.6JD	<0.500U	16400D	<5.00U	4.63JD	46D	1.43D	1220JD	286D
A73-13	Dissolved Metals	ug/L	6/3/14 14:05	44.4JD	0.589JD	17000D	<5.00U	3.01JD	47D	0.726JD	1180JD	295D
A73-14	Dissolved Metals	ug/L	6/2/14 18:05	48.9JD	0.527JD	15900D	<5.00U	3.66JD	45D	0.692JD	1210JD	283D
A73-15	Dissolved Metals	ug/L	6/1/14 22:05	45.1JD	0.577JD	16300D	<5.00U	3.54JD	46D	0.523JD	1170JD	288D
A73-16	Dissolved Metals	ug/L	6/1/14 2:05	56.2JD	0.604JD	16400D	<5.00U	3.60JD	46D	0.610JD	1180JD	298D
A73-17	Dissolved Metals	ug/L	5/31/14 6:05	40.4JD	0.586JD	16300D	<5.00U	2.84JD	45D	<0.500U	1160JD	299D
A73-18	Dissolved Metals	ug/L	5/30/14 10:05	39.8JD	0.541JD	17200D	<5.00U	2.79JD	48D	<0.500U	1220JD	295D
A73-19	Dissolved Metals	ug/L	5/29/14 14:05	39.4JD	0.647JD	18200D	<5.00U	2.93JD	51D	<0.500U	1260D	301D
A73-20	Dissolved Metals	ug/L	5/28/14 18:05	33.0JD	0.587JD	18100D	<5.00U	2.57JD	50D	<0.500U	1250D	298D
A73-21	Dissolved Metals	ug/L	5/27/14 22:05	33.1JD	0.693JD	19300D	<5.00U	<2.50U	54D	<0.500U	1300D	296D
A73-22	Dissolved Metals	ug/L	5/27/14 2:05	62.9JD	<1.00U	20400D	<10.0U	<5.00U	58D	<1.00U	1620JD	276D
A73-23	Dissolved Metals	ug/L	5/26/14 6:05	32.9JD	0.598JD	21500D	<5.00U	2.70JD	61D	<0.500U	1650D	279D
A73-24	Dissolved Metals	ug/L	5/25/14 10:05	37.1JD	0.801JD	23800D	<5.00U	3.34JD	67D	<0.500U	1760D	284D
A73-25	Dissolved Metals	ug/L	5/24/14 14:05	39.3JD	0.724JD	25900D	<5.00U	3.58JD	73D	<0.500U	2020D	301D
A73-26	Dissolved Metals	ug/L	5/23/14 18:05	42.8JD	0.790JD	28500JD	<5.00UJ	3.40JD	80JD	0.502JD	2180JD	329JD
A73-27	Dissolved Metals	ug/L	5/22/14 22:05	48.2JD	0.901JD	30100JD	<5.00UJ	3.69JD	85JD	0.522JD	2280JD	353JD
A73-28	Dissolved Metals	ug/L	5/22/14 2:05	49.6JD	0.888JD	30700JD	<5.00UJ	3.84JD	86JD	0.510JD	2230JD	374JD
A73-29	Dissolved Metals	ug/L	5/21/14 6:05	52.3JD	0.747JD	31400JD	<5.00UJ	4.05JD	88JD	0.617JD	2300JD	398JD
A73-30	Dissolved Metals	ug/L	5/20/14 10:05	51.0JD	0.955JD	31200JD	<5.00UJ	4.13JD	87JD	0.531JD	2320JD	415JD
A73-31	Dissolved Metals	ug/L	5/19/14 14:05	51.2JD	1.02JD	32600JD	<5.00UJ	4.34JD	91JD	0.543JD	2380JD	448JD
A73-32	Dissolved Metals	ug/L	5/18/14 18:05	56.1JD	1.06JD	32000JD	<5.00UJ	4.40JD	89JD	0.538JD	2250JD	470JD
A73-33	Dissolved Metals	ug/L	5/17/14 22:05	48.2JD	0.971JD	33600JD	<5.00UJ	4.38JD	94JD	0.520JD	2470JD	505JD
A73-34	Dissolved Metals	ug/L	5/17/14 2:05	48.4JD	0.955JD	35700JD	<5.00UJ	4.70JD	100JD	0.516JD	2600JD	528JD
A73-35	Dissolved Metals	ug/L	5/16/14 6:05	46.4JD	0.985JD	36500JD	<5.00UJ	4.96JD	102JD	0.531JD	2570JD	556JD
A73-36	Dissolved Metals	ug/L	5/15/14 10:05	44.1JD	1.10JD	38000JD	<5.00UJ	5.60JD	106JD	0.566JD	2720JD	603JD
A73-37	Dissolved Metals	ug/L	5/14/14 14:05	46.3JD	1.14JD	38100JD	<5.00UJ	5.26JD	106JD	0.781JD	2710JD	617JD
A73-38	Dissolved Metals	ug/L	5/13/14 18:05	48.7JD	1.25JD	38300JD	<5.00UJ	6.34JD	107JD	1.96JD	2630JD	602JD
A73-39	Dissolved Metals	ug/L	5/12/14 22:05	42.8JD	1.35JD	40200JD	<5.00UJ	5.30JD	112JD	0.671JD	2760JD	622JD
A73-40	Dissolved Metals	ug/L	5/12/14 2:05	46.0JD	1.29JD	39300JD	<5.00UJ	5.39JD	110JD	2.51JD	2790JD	631JD
A73-41	Dissolved Metals	ug/L	5/11/14 6:05	31.9JD	1.25JD	38400JD	<5.00UJ	4.99JD	107JD	<0.500UJ	2670JD	624JD
A73-42	Dissolved Metals	ug/L	5/10/14 10:05	53.4JD	1.48JD	37000JD	<10.0UJ	5.99JD	104JD	<1.00UJ	2760JD	564JD
A73-43	Dissolved Metals	ug/L	5/9/14 14:05	28.3JD	1.35JD	36800JD	<5.00UJ	4.80JD	103JD	<0.500UJ	2640JD	556JD
A73-44	Dissolved Metals	ug/L	5/8/14 18:05	<25.0UJ	1.35JD	35400JD	<5.00UJ	4.32JD	99JD	<0.500UJ	2530JD	538JD
A73-45	Dissolved Metals	ug/L	5/7/14 22:05	<25.0UJ	1.21JD	35400JD	<5.00UJ	4.19JD	99JD	<0.500UJ	2630JD	493JD
A73-46	Dissolved Metals	ug/L	5/7/14 2:05	<25.0UJ	1.14JD	35700JD	<5.00UJ	3.76JD	100JD	<0.500UJ	2610JD	494JD
A73-47	Dissolved Metals	ug/L	5/6/14 6:05	<25.0UJ	1.33JD	35300JD	<5.00UJ	4.21JD	99JD	<0.500UJ	2640JD	478JD
A73-48	Dissolved Metals	ug/L	5/5/14 10:05	<25.0UJ	1.29JD	35500JD	<5.00UJ	4.10JD	100JD	<0.500UJ	2660JD	454JD
A73-49	Dissolved Metals	ug/L	5/4/14 14:05	<25.0UJ	1.28JD	38000JD	<5.00UJ	3.20JD	106JD	<0.500UJ	2720JD	449JD
A73-50	Dissolved Metals	ug/L	5/3/14 18:05	<25.0UJ	1.38JD	37100JD	<5.00UJ	2.96JD	103JD	<0.500UJ	2580JD	424JD
A73-51	Dissolved Metals	ug/L	5/2/14 22:05	<25.0UJ	1.44JD	38400JD	<5.00UJ	2.88JD	107JD	<0.500UJ	2630JD	423JD
A73-52	Dissolved Metals	ug/L	5/2/14 2:05	<25.0UJ	1.27JD	39500JD	<5.00UJ	2.57JD	110JD	<0.500UJ	2780JD	430JD
A73-53	Dissolved Metals	ug/L	5/1/14 6:05	<50.0UJ	1.57JD	39600JD	<10.0UJ	<5.00UJ	112JD	<1.00UJ	3100JD	398JD
A73-54	Dissolved Metals	ug/L	4/30/14 10:05	<25.0UJ	1.29JD	38000JD	<5.00UJ	2.57JD	106JD	<0.500UJ	2730JD	394JD
A73-55	Dissolved Metals	ug/L	4/29/14 14:05	<25.0UJ	1.32JD	38900JD	<5.00UJ	2.65JD	108JD	<0.500UJ	2760JD	397JD
A73-56	Dissolved Metals	ug/L	4/28/14 18:05	<25.0UJ	1.16JD	37300JD	<5.00UJ	2.78JD	104JD	<0.500UJ	2730JD	391JD
A73-57	Dissolved Metals	ug/L	4/27/14 22:05	<25.0UJ	1.26JD	36100JD	<5.00UJ	77.3JD	101JD	16.1JD	2610JD	383JD
A73-58	Dissolved Metals	ug/L	4/27/14 2:05	<25.0UJ	1.07JD	36200JD	<5.00UJ	2.90JD	101JD	0.502JD	2570JD	379JD
A73-59	Dissolved Metals	ug/L	4/26/14 6:05	<25.0UJ	1.09JD	35600JD	<5.00UJ	2.96JD	99JD	0.560JD	2400JD	369JD
A73-60	Dissolved Metals	ug/L	4/25/14 10:05	<25.0UJ	1.08JD	33800JD	<5.00UJ	3.28JD	94JD	0.664JD	2440JD	372JD
A73-61	Dissolved Metals	ug/L	4/24/14 14:05	<25.0UJ	1.10JD	34100JD	<5.00UJ	4.01JD	95JD	0.702JD	2450JD	362JD
A73-62	Dissolved Metals	ug/L	4/23/14 18:05	<25.0UJ	1.12JD	33500JD	<5.00UJ	3.75JD	94JD	0.900JD	2420JD	366JD
A73-63	Dissolved Metals	ug/L	4/22/14 22:05	<25.0UJ	0.967JD	35100JD	<5.00UJ	4.04JD	97JD	1.06JD	2350JD	376JD
A73-64	Dissolved Metals	ug/L	4/22/14 2:05	<25.0UJ	1.22JD	35700JD	<5.00UJ	4.50JD	99JD	1.27JD	2400JD	376JD
A73-65	Dissolved Metals	ug/L	4/21/14 6:05	<25.0UJ	1.01JD	36300JD	<5.00UJ	5.50JD	102JD	1.72JD	2810JD	384JD
A73-66	Dissolved Metals	ug/L	4/20/14 10:05	<25.0UJ	1.23JD	38100JD	<5.00UJ	5.94JD	106JD	1.97JD	2670JD	403JD
A73-67	Dissolved Metals	ug/L	4/19/14 14:05	27.2JD	1.15JD	40000JD	<5.00UJ	7.09JD	111JD	2.66JD	2730JD	428JD
A73-68	Dissolved Metals	ug/L	4/18/14 18:05	30.7JD	1.15JD	41200JD	<5.00UJ	7.67JD	114JD	3.14JD	2810JD	429JD
A73-69	Dissolved Metals	ug/L	4/17/14 22:05	35.5JD	1.27JD	42500JD	<5.00UJ	9.16JD	119JD	3.70JD	2990JD	459JD
A73-70	Dissolved Metals	ug/L	4/17/14 2:05	39.2JD	1.37JD	47000JD	<5.00UJ	10.5JD	130JD	5.26JD	3030JD	467JD
A73-71	Dissolved Metals	ug/L	4/16/14 6:05	43.0JD	1.53JD	44600JD	<5.00UJ	9.14JD	124JD	4.58JD	3040JD	478JD
A73-72	Dissolved Metals	ug/L	4/15/14 10:05	42.2JD	1.35JD	46200JD	<5.00UJ	10.2JD	128JD	4.58JD	3010JD	493JD
A75D-01	Dissolved Metals	ug/L	7/30/14 14:12	356D	0.708JD	25400D	<5.00U	12.9D	72D	5.09D	2000D	124D
A75D-02	Dissolved Metals	ug/L	7/29/14 14:12	152D	<0.500U	27900D	<5.00U	3.00JD	79D	1.90D	2180D	76.5D
A75D-03	Dissolved Metals	ug/L	7/28/14 14:12	78.1JD	<0.500U	31300D	<5.00U	4.74JD	87D	1.30D	2270D	48.5D
A75D-04	Dissolved Metals	ug/L	7/27/14 14:12	64.2JD	<0.500U	32000D	<5.00U	<2.50U	90D	0.813JD	2370D	52.4D
A75D-05	Dissolved Metals	ug/L	7/26/14 14:12	33.2JD	<0.500U	32600D	<5.00U	<2.50U	91D	0.531JD	2340D	36.1D
A75D-06	Dissolved Metals	ug/L	7/25/14 14:12	42.5JD	<0.500U	29700D	<5.00U	<2.50U	83D	0.542JD	2170D	49.2D
A75D-07	Dissolved Metals	ug/L	7/24/14 14:12	37.2JD	<0.500U	33700D	<5.00U	<2.50U	95D	<0.500U	2620D	38.2D
A75D-08	Dissolved Metals	ug/L	7/23/14 14:12	40.6JD	<0.500U	34600D	<5.00U	<2.50U	97D	<0.500U	2560D	43.0D
A75D-09	Dissolved Metals	ug/L	7/22/14 14:12	44.1JD	<0.500U	34900D	<5.00U	<2.50U	97D	<0.500U	2480D	46.9D
A75D-10	Dissolved Metals	ug/L	7/21/14 14:12	29.3JD	<0.500U	35000D	<5.00U	<2.50U	98D	<0.500U	2560D	50.6D
A75D-11	Dissolved Metals	ug/L	7/20/14 14:12	25.5JD	<0.500U	32900D	<5.00U	<2.50U	92D	<0.500U	2410D	51.1D
A75D-12	Dissolved Metals	ug/L	7/19/14 14:12	42.2JD	<0.500U	31300D	<5.00U	<2.50U	88D	0.590JD	2280D	46.9D
A75D-13	Dissolved Metals	ug/L	7/18/14 14:12	42.3JD	<0.500U	30600D	<5.00U	<2.50U	85D	<0.500U	2180D	40.0D
A75D-14	Dissolved Metals	ug/L	7/17/14 14:12	40.1JD	<0.500U	29300D						

Appendix F
MiniSipper Analytical Data

STATION_ID	ANALYSIS	UNITS	Date and Time	Aluminum	Cadmium	Calcium	Chromium	Copper	Hardness (mg/L)	Lead	Magnesium	Zinc
A75D-23	Dissolved Metals	ug/L	7/8/14 14:12	37.9JD	<0.500U	23300D	<5.00U	<2.50U	66D	<0.500U	1790D	61.1D
A75D-24	Dissolved Metals	ug/L	7/7/14 14:12	42.8JD	<0.500U	24400D	<5.00U	<2.50U	68D	<0.500U	1810D	63.5D
A75D-25	Dissolved Metals	ug/L	7/6/14 14:12	32.5JD	<0.500U	24900D	<5.00U	<2.50U	70D	<0.500U	1890D	64.9D
A75D-26	Dissolved Metals	ug/L	7/5/14 14:12	32.7JD	<0.500U	24300D	<5.00U	<2.50U	68D	<0.500U	1800D	75.2D
A75D-27	Dissolved Metals	ug/L	7/4/14 14:12	67.1JD	<1.00U	23300D	<10.0U	<5.00U	67D	<1.00U	2080JD	70.4D
A75D-28	Dissolved Metals	ug/L	7/3/14 14:12	52.4JD	<0.500U	21400D	<5.00U	<2.50U	61D	0.625JD	1830D	65.8D
A75D-29	Dissolved Metals	ug/L	7/2/14 14:12	55.7JD	<0.500U	19500D	<5.00U	<2.50U	56D	0.593JD	1690D	58.5D
A75D-30	Dissolved Metals	ug/L	7/1/14 14:12	53.0JD	<0.500U	19500D	<5.00U	<2.50U	56D	0.514JD	1760D	56.8D
A75D-31	Dissolved Metals	ug/L	6/30/14 14:12	55.4JD	<0.500U	20300D	<5.00U	<2.50U	58D	<0.500U	1720D	59.8D
A75D-32	Dissolved Metals	ug/L	6/29/14 14:12	62.4JD	<0.500U	20100D	<5.00U	2.52JD	57D	0.640JD	1730D	60.1D
A75D-33	Dissolved Metals	ug/L	6/28/14 14:12	56.3JD	<0.500U	19200D	<5.00U	<2.50U	54D	0.549JD	1560D	60.2D
A75D-34	Dissolved Metals	ug/L	6/27/14 14:12	57.9JD	<0.500U	19800D	<5.00U	<2.50U	56D	0.564JD	1660D	74.6D
A75D-35	Dissolved Metals	ug/L	6/26/14 14:12	59.2JD	<0.500U	18300D	<5.00U	<2.50U	52D	0.635JD	1530D	67.4D
A75D-36	Dissolved Metals	ug/L	6/25/14 14:12	66.9JD	<0.500U	18700JD	<5.00U	3.12JD	53JD	0.780JD	1600JD	81.0JD
A75D-37	Dissolved Metals	ug/L	6/24/14 14:12	61.5JD	<0.500U	20000JD	<5.00U	<2.50U	57JD	0.710JD	1630JD	86.1JD
A75D-38	Dissolved Metals	ug/L	6/23/14 14:12	62.4JD	<0.500U	18200JD	<5.00U	<2.50U	52JD	0.744JD	1540JD	85.8JD
A75D-39	Dissolved Metals	ug/L	6/22/14 14:12	71.7JD	<0.500U	18200JD	<5.00U	3.11JD	52JD	0.907JD	1640JD	83.5JD
A75D-40	Dissolved Metals	ug/L	6/21/14 14:12	82.4JD	<0.500U	17900JD	<5.00U	<2.50U	51JD	1.07JD	1570JD	123JD
A75D-41	Dissolved Metals	ug/L	6/20/14 14:12	79.8JD	<0.500U	17500JD	<5.00U	2.50JD	50JD	1.12JD	1490JD	84.7JD
A75D-42	Dissolved Metals	ug/L	6/19/14 14:12	79.8JD	<0.500U	16800JD	<5.00U	2.51JD	48JD	1.15JD	1440JD	80.2JD
A75D-43	Dissolved Metals	ug/L	6/18/14 14:12	84.5JD	<0.500U	17400JD	<5.00U	2.51JD	50JD	1.02JD	1500JD	89.0JD
A75D-44	Dissolved Metals	ug/L	6/17/14 14:12	90.9JD	<0.500U	16800JD	<5.00U	2.83JD	48JD	1.45JD	1400JD	89.2JD
A75D-45	Dissolved Metals	ug/L	6/16/14 14:12	93.6JD	<0.500U	17100JD	<5.00U	3.05JD	49JD	1.52JD	1410JD	85.7JD
A75D-46	Dissolved Metals	ug/L	6/15/14 14:12	98.1JD	<0.500U	17300JD	<5.00U	3.30JD	49JD	1.60JD	1470JD	89.3JD
A75D-47	Dissolved Metals	ug/L	6/14/14 14:12	139JD	<1.00U	16200JD	<10.0U	<5.00U	47JD	2.23JD	1500JD	91.8JD
A75D-48	Dissolved Metals	ug/L	6/13/14 14:12	115JD	<0.500U	14800JD	<5.00U	3.47JD	42JD	1.90JD	1310JD	87.9JD
A75D-49	Dissolved Metals	ug/L	6/12/14 14:12	120JD	<0.500U	14700JD	<5.00U	3.63JD	42JD	1.97JD	1340JD	90.0JD
A75D-50	Dissolved Metals	ug/L	6/11/14 14:12	125JD	<0.500U	14900JD	<5.00U	3.96JD	43JD	2.15JD	1380JD	90.7JD
A75D-51	Dissolved Metals	ug/L	6/10/14 14:12	127JD	<0.500U	16000JD	<5.00U	4.41JD	46JD	2.47JD	1440JD	88.7JD
A75D-52	Dissolved Metals	ug/L	6/9/14 14:12	127JD	<0.500U	15700JD	<5.00U	4.50JD	45JD	2.64JD	1420JD	86.0JD
A75D-53	Dissolved Metals	ug/L	6/8/14 14:12	121JD	<0.500U	14500JD	<5.00U	4.18JD	42JD	2.87JD	1310JD	86.4JD
A75D-54	Dissolved Metals	ug/L	6/7/14 14:12	122JD	<0.500U	14800JD	<5.00U	4.05JD	42JD	2.73JD	1310JD	85.0JD
A75D-55	Dissolved Metals	ug/L	6/6/14 14:12	117JD	<0.500U	14200JD	<5.00U	3.86JD	41JD	2.80JD	1220JD	83.1JD
A75D-56	Dissolved Metals	ug/L	6/5/14 14:12	122JD	<0.500U	13900JD	<5.00U	3.88JD	40JD	2.81JD	1280JD	85.6JD
A75D-57	Dissolved Metals	ug/L	6/4/14 14:12	127JD	<0.500U	14400JD	<5.00U	4.20JD	41JD	3.05JD	1300JD	85.2JD
A75D-58	Dissolved Metals	ug/L	6/3/14 14:12	141JD	<0.500U	13300JD	<5.00U	5.28JD	38JD	3.36JD	1220JD	83.1JD
A75D-59	Dissolved Metals	ug/L	6/2/14 14:12	149JD	<0.500U	13300JD	<5.00U	5.28JD	38JD	3.27JD	1290JD	81.0JD
A75D-60	Dissolved Metals	ug/L	6/1/14 14:12	140JD	<0.500U	12700JD	<5.00U	5.10JD	37JD	3.15JD	1220JD	82.5JD
A75D-61	Dissolved Metals	ug/L	5/31/14 14:12	139JD	<0.500U	12700JD	<5.00U	5.27JD	37JD	3.02JD	1200JD	80.0JD
A75D-62	Dissolved Metals	ug/L	5/30/14 14:12	143JD	<0.500U	13400JD	<5.00U	5.42JD	39JD	2.90JD	1240JD	81.6JD
A75D-63	Dissolved Metals	ug/L	5/29/14 14:12	117JD	<0.500U	13300JD	<5.00U	4.59JD	38JD	2.25JD	1190JD	89.8JD
A75D-64	Dissolved Metals	ug/L	5/28/14 14:12	103JD	<0.500U	14500JD	<5.00U	4.83JD	42JD	1.57JD	1350JD	107JD
A75D-65	Dissolved Metals	ug/L	5/27/14 14:12	101JD	<0.500U	15100JD	<5.00U	4.46JD	43JD	1.45JD	1350JD	103JD
A75D-66	Dissolved Metals	ug/L	5/26/14 14:12	98.9JD	<0.500U	15100JD	<5.00U	4.57JD	43JD	1.32JD	1340JD	101JD
A75D-67	Dissolved Metals	ug/L	5/25/14 14:12	120JD	<1.00U	15700JD	<10.0U	<5.00U	46JD	1.48JD	1550JD	109JD
A75D-68	Dissolved Metals	ug/L	5/24/14 14:12	81.0JD	<0.500U	19200JD	<5.00U	5.12JD	55JD	0.895JD	1770JD	129JD
A75D-69	Dissolved Metals	ug/L	5/23/14 14:12	79.0JD	<0.500U	19200JD	<5.00U	4.10JD	55JD	0.820JD	1730JD	132JD
A75D-70	Dissolved Metals	ug/L	5/22/14 14:12	77.4JD	<0.500U	20000JD	<5.00U	4.24JD	57JD	0.858JD	1810JD	137JD
A75D-71	Dissolved Metals	ug/L	5/21/14 14:12	75.0JD	<0.500U	19700JD	<5.00U	4.10JD	57JD	0.701JD	1820JD	147JD
A75D-72	Dissolved Metals	ug/L	5/20/14 14:12	74.9JD	<0.500U	19700JD	<5.00U	4.02JD	57JD	0.584JD	1790JD	148JD
A75D-73	Dissolved Metals	ug/L	5/19/14 14:12	66.4JD	<0.500U	19400JD	<5.00U	3.67JD	56JD	0.592JD	1740JD	148JD
A75D-74	Dissolved Metals	ug/L	5/18/14 14:12	76.9JD	0.538JD	20500JD	<5.00U	4.04JD	58JD	0.573JD	1760JD	153JD
A75D-75	Dissolved Metals	ug/L	5/17/14 14:12	68.1JD	0.521JD	19300JD	<5.00U	3.98JD	55JD	0.624JD	1700JD	147JD
A75D-76	Dissolved Metals	ug/L	5/16/14 14:12	56.1JD	0.552JD	22000JD	<5.00U	3.31JD	63JD	<0.500U	1890JD	160JD
A75D-77	Dissolved Metals	ug/L	5/15/14 14:12	39.9JD	0.642JD	26300JD	<5.00U	2.86JD	74JD	<0.500U	2150JD	172JD
A75D-78	Dissolved Metals	ug/L	5/14/14 14:12	37.1JD	0.562JD	29100JD	<5.00U	<2.50U	82JD	<0.500U	2340JD	190JD
A75D-79	Dissolved Metals	ug/L	5/13/14 14:12	36.1JD	0.731JD	28000JD	<5.00U	2.73JD	80JD	<0.500U	2530JD	218JD
A75D-80	Dissolved Metals	ug/L	5/12/14 14:12	37.9JD	0.729JD	29300JD	<5.00U	2.92JD	83JD	0.722JD	2490JD	231JD
A75D-81	Dissolved Metals	ug/L	5/11/14 14:12	32.8JD	0.690JD	27700JD	<5.00U	<2.50U	79JD	<0.500U	2320JD	219JD
A75D-82	Dissolved Metals	ug/L	5/10/14 14:12	32.1JD	0.741JD	27500JD	<5.00U	<2.50U	78JD	<0.500U	2200JD	217JD
A75D-83	Dissolved Metals	ug/L	5/9/14 14:12	35.1JD	0.598JD	25700JD	<5.00U	2.68JD	73JD	0.571JD	2120JD	198JD
A75D-84	Dissolved Metals	ug/L	5/8/14 14:12	38.3JD	<0.500U	24000JD	<5.00U	2.64JD	68JD	<0.500U	2070JD	181JD
A75D-85	Dissolved Metals	ug/L	5/7/14 14:12	36.0JD	<0.500U	23000JD	<5.00U	2.64JD	65JD	<0.500U	1930JD	175JD
A75D-86	Dissolved Metals	ug/L	5/6/14 14:12	39.3JD	<0.500U	24100JD	<5.00U	2.60JD	69JD	<0.500U	2030JD	178JD
A75D-87	Dissolved Metals	ug/L	5/5/14 14:12	60.9JD	<1.00U	24200JD	<10.0U	<5.00U	70JD	<1.00U	2180JD	167JD
A75D-88	Dissolved Metals	ug/L	5/4/14 14:12	28.3JD	0.701JD	27300JD	<5.00U	<2.50U	77JD	<0.500U	2250JD	195JD
A75D-89	Dissolved Metals	ug/L	5/3/14 14:12	<25.0U	0.642JD	31800JD	<5.00U	<2.50U	90JD	<0.500U	2560JD	225JD
A75D-90	Dissolved Metals	ug/L	5/2/14 14:12	<25.0U	0.837JD	31500JD	<5.00U	<2.50U	89JD	<0.500U	2590JD	214JD
A75D-91	Dissolved Metals	ug/L	5/1/14 14:12	<25.0U	0.589JD	30800JD	<5.00U	<2.50U	87JD	<0.500U	2490JD	222JD
A75D-92	Dissolved Metals	ug/L	4/30/14 14:12	<25.0U	0.743JD	31700JD	<5.00U	2.54JD	89JD	<0.500U	2450JD	232JD
A75D-93	Dissolved Metals	ug/L	4/29/14 14:12	<25.0U	0.768JD	29400JD	<5.00U	<2.50U	83JD	<0.500U	2340JD	223JD
A75D-94	Dissolved Metals	ug/L	4/28/14 14:12	<25.0U	0.657JD	31000JD	<5.00U	<2.50U	87JD	<0.500U	2420JD	235JD
A75D-95	Dissolved Metals	ug/L	4/27/14 14:12	<25.0U	0.688JD	29000JD	<5.00U	<2.50U	82JD	<0.500U	2230JD	235JD
A75D-96	Dissolved Metals	ug/L	4/26/14 14:12	<25.0U	0.727JD	29300JD	<5.00U	6.22JD	82JD	<0.500U	2280JD	242JD
A75D-97	Dissolved Metals	ug/L	4/25/14 14:12	<25.0U	0.769JD	28200JD	<5.00U	<2.50U	80JD	<0.500U	2180JD	235JD
A75D-98	Dissolved Metals	ug/L	4/24/14 14:12	26.5JD	0.594JD	25700JD	<5.00U	<2.50U	73JD	<0.500U	2070JD	181JD
A75D-99	Dissolved Metals	ug/L	4/23/14 14:12	30.7JD	0.680JD	25500JD	<5.00U	<2.50U	73JD	<0.500U	2260JD	177JD
A75D-100	Dissolved Metals	ug/L	4/22/14 14:12	34.6JD	0.628JD	27000JD	<5.00U	3.02JD	77JD	<0.500U	2220JD	190JD
A75D-101	Dissolved Metals	ug/L	4/21/14 14:12	42.5JD	0.785JD	29600JD	<5.00U	2.98JD	84JD	<0.500U	2350JD	190JD
A75D-102	Dissolved Metals	ug/L	4/20/14 14:12	27.1JD	0.623JD	31000JD	<5.00U	2.65JD	88JD	<0.500U	2480JD	190JD
A75D-103	Dissolved Metals	ug/L	4/19/14 14:12	29.8JD	0.778JD	32000JD	<5.00U	2.52JD	90JD	0.620JD	2430JD	205JD
A75D-104	Dissolved Metals	ug/L	4/18/14 14:12	<50.0U	<1.00U	36900JD	<10.0U	<5.00U	105JD	<1.00U	3130JD	241JD
A75D-105	Dissolved Metals	ug/L	4/17/14 14:12	33.0JD	0.831JD	39400JD	<5.00U	<2.50U	111JD	0.539JD	3030JD	282JD
A75D-106	Dissolved Metals	ug/L	4/16/14 14:12	32.3JD	0.942JD	41200JD	<5.00U	3.70JD	115JD	0.954JD	2990JD	288JD
A75D-107	Dissolved Metals	ug/L	4/15/14 14:12	33.1JD	0.873JD	40400JD	<5.00U	4.6				

Appendix F
MiniSipper Analytical Data

STATION_ID	ANALYSIS	UNITS	Date and Time	Aluminum	Cadmium	Calcium	Chromium	Copper	Hardness (mg/L)	Lead	Magnesium	Zinc
Bbridge-10	Dissolved Metals	ug/L	6/21/14 22:32	78.8JD	<0.500UJ	18800JD	<5.00UJ	<2.50UJ	55JD	1.07JD	1880JD	26.9JD
Bbridge-11	Dissolved Metals	ug/L	6/21/14 4:36	79.4JD	<0.500UJ	18500JD	<5.00UJ	<2.50UJ	54JD	1.11JD	1820JD	27.1JD
Bbridge-12	Dissolved Metals	ug/L	6/20/14 10:40	77.3JD	<0.500UJ	17800JD	<5.00UJ	<2.50UJ	52JD	1.16JD	1780JD	27.9JD
Bbridge-13	Dissolved Metals	ug/L	6/19/14 16:43	84.1JD	<0.500UJ	17800JD	<5.00UJ	<2.50UJ	52JD	1.26JD	1760JD	29.3JD
Bbridge-14	Dissolved Metals	ug/L	6/18/14 22:47	99.5JD	<0.500UJ	17400JD	<5.00UJ	2.63JD	51JD	1.47JD	1700JD	33.2JD
Bbridge-15	Dissolved Metals	ug/L	6/18/14 4:50	86.1JD	<0.500UJ	16600JD	<5.00UJ	3.07JD	48JD	1.57JD	1620JD	33.6JD
Bbridge-16	Dissolved Metals	ug/L	6/17/14 10:54	116JD	<1.00UJ	15700JD	<10.0UJ	<5.00UJ	46JD	2.09JD	1750JD	33.4JD
Bbridge-17	Dissolved Metals	ug/L	6/16/14 16:58	88.4JD	<0.500UJ	15700JD	<5.00UJ	<2.50UJ	46JD	1.40JD	1670JD	30.6JD
Bbridge-18	Dissolved Metals	ug/L	6/15/14 23:01	93.0JD	<0.500UJ	16100JD	<5.00UJ	2.67JD	47JD	1.41JD	1650JD	33.5JD
Bbridge-19	Dissolved Metals	ug/L	6/15/14 5:05	104JD	<0.500UJ	16600JD	<5.00UJ	3.34JD	48JD	1.63JD	1670JD	34.3JD
Bbridge-20	Dissolved Metals	ug/L	6/14/14 11:09	98.3JD	<0.500UJ	16200JD	<5.00UJ	3.29JD	48JD	1.56JD	1730JD	34.9JD
Bbridge-21	Dissolved Metals	ug/L	6/13/14 17:12	86.1JD	<0.500UJ	16800JD	<5.00UJ	2.92JD	49JD	1.42JD	1780JD	36.4JD
Bbridge-22	Dissolved Metals	ug/L	6/12/14 23:16	81.6JD	<0.500UJ	16700JD	<5.00UJ	2.62JD	49JD	1.37JD	1740JD	35.3JD
Bbridge-23	Dissolved Metals	ug/L	6/12/14 5:20	83.2JD	<0.500UJ	16600JD	<5.00UJ	2.72JD	48JD	1.56JD	1690JD	38.1JD
Bbridge-24	Dissolved Metals	ug/L	6/11/14 11:23	91.3JD	<0.500UJ	16800JD	<5.00UJ	3.13JD	49JD	1.78JD	1750JD	38.8JD
Bbridge-25	Dissolved Metals	ug/L	6/10/14 17:27	94.3JD	<0.500UJ	15300JD	<5.00UJ	3.34JD	45JD	2.05JD	1570JD	40.3JD
Bbridge-26	Dissolved Metals	ug/L	6/9/14 23:30	103JD	<0.500UJ	16400JD	<5.00UJ	3.42JD	48JD	2.17JD	1660JD	42.8JD
Bbridge-27	Dissolved Metals	ug/L	6/9/14 5:34	99.3JD	<0.500UJ	15400JD	<5.00UJ	3.66JD	45JD	2.24JD	1610JD	43.3JD
Bbridge-28	Dissolved Metals	ug/L	6/8/14 11:38	103JD	<0.500UJ	14200JD	<5.00UJ	3.65JD	42JD	2.38JD	1540JD	42.4JD
Bbridge-29	Dissolved Metals	ug/L	6/7/14 17:41	106JD	<0.500UJ	14000JD	<5.00UJ	3.94JD	41JD	2.39JD	1560JD	45.8JD
Bbridge-30	Dissolved Metals	ug/L	6/6/14 23:45	103JD	<0.500UJ	14000JD	<5.00UJ	3.97JD	41JD	2.41JD	1550JD	49.0JD
Bbridge-31	Dissolved Metals	ug/L	6/6/14 5:49	97.3JD	<0.500UJ	14300JD	<5.00UJ	4.28JD	42JD	2.68JD	1550JD	53.4JD
Bbridge-32	Dissolved Metals	ug/L	6/5/14 11:52	104JD	<0.500UJ	14400JD	<5.00UJ	4.07JD	43JD	2.45JD	1610JD	50.8JD
Bbridge-33	Dissolved Metals	ug/L	6/4/14 17:56	108JD	<0.500UJ	14200JD	<5.00UJ	3.69JD	42JD	2.27JD	1560JD	51.3JD
Bbridge-34	Dissolved Metals	ug/L	6/4/14 0:00	108JD	<0.500UJ	13800JD	<5.00UJ	4.16JD	41JD	2.26JD	1560JD	52.3JD
Bbridge-35	Dissolved Metals	ug/L	6/3/14 6:03	116JD	<0.500UJ	14300JD	<5.00UJ	4.20JD	42JD	2.42JD	1580JD	56.0JD
Bbridge-36	Dissolved Metals	ug/L	6/2/14 12:07	148JD	<1.00UJ	13300JD	<10.0UJ	<5.00UJ	40JD	2.41JD	1660JD	53.6JD
Bbridge-37	Dissolved Metals	ug/L	6/1/14 18:10	127JD	<0.500UJ	13900JD	<5.00UJ	5.11JD	42JD	2.27JD	1700JD	59.0JD
Bbridge-38	Dissolved Metals	ug/L	6/1/14 0:14	143JD	<0.500UJ	14100JD	<5.00UJ	4.73JD	42JD	1.86JD	1640JD	82.0JD
Bbridge-39	Dissolved Metals	ug/L	5/31/14 6:18	93.0JD	<0.500UJ	13900JD	<5.00UJ	4.42JD	42JD	1.50JD	1710JD	64.3JD
Bbridge-40	Dissolved Metals	ug/L	5/30/14 12:21	94.9JD	<0.500UJ	14200JD	<5.00UJ	4.35JD	43JD	1.49JD	1800JD	69.2JD
Bbridge-41	Dissolved Metals	ug/L	5/29/14 18:25	97.0JD	<0.500UJ	16300JD	<5.00UJ	4.82JD	49JD	1.22JD	1970JD	68.4JD
Bbridge-42	Dissolved Metals	ug/L	5/29/14 0:29	95.6JD	<0.500UJ	17600JD	<5.00UJ	4.46JD	53JD	1.06JD	2110JD	69.9JD
Bbridge-43	Dissolved Metals	ug/L	5/28/14 6:32	91.8JD	<0.500UJ	18600JD	<5.00UJ	4.34JD	56JD	1.07JD	2210JD	67.2JD
Bbridge-44	Dissolved Metals	ug/L	5/27/14 12:36	94.6JD	<0.500UJ	19300JD	<5.00UJ	4.57JD	58JD	1.10JD	2340JD	64.7JD
Bbridge-45	Dissolved Metals	ug/L	5/26/14 18:40	90.9JD	<0.500UJ	18400JD	<5.00UJ	4.58JD	55JD	1.17JD	2180JD	60.8JD
Bbridge-46	Dissolved Metals	ug/L	5/26/14 0:43	88.0JD	<0.500UJ	17800JD	<5.00UJ	3.86JD	53JD	1.10JD	2110JD	59.6JD
Bbridge-47	Dissolved Metals	ug/L	5/25/14 6:47	85.8JD	<0.500UJ	17800JD	<5.00UJ	3.65JD	53JD	1.07JD	2080JD	61.7JD
Bbridge-48	Dissolved Metals	ug/L	5/24/14 12:50	91.3JD	<0.500UJ	19000JD	<5.00UJ	4.43JD	57JD	1.12JD	2280JD	72.4JD
Bbridge-50	Dissolved Metals	ug/L	5/23/14 0:58	90.3JD	<0.500UJ	18600JD	<5.00UJ	4.38JD	56JD	1.08JD	2230JD	71.1JD
Bbridge-51	Dissolved Metals	ug/L	5/22/14 7:01	86.7JD	<0.500UJ	17600JD	<5.00UJ	4.04JD	53JD	1.03JD	2110JD	69.4JD
Bbridge-52	Dissolved Metals	ug/L	5/21/14 13:05	89.0JD	<0.500UJ	19400JD	<5.00UJ	4.28JD	58JD	1.03JD	2240JD	77.7JD
Bbridge-53	Dissolved Metals	ug/L	5/20/14 19:09	87.5JD	<0.500UJ	18600JD	<5.00UJ	4.37JD	56JD	1.00JD	2290JD	77.8JD
Bbridge-54	Dissolved Metals	ug/L	5/20/14 1:12	84.3JD	<0.500UJ	18700JD	<5.00UJ	4.17JD	56JD	0.956JD	2190JD	76.8JD
Bbridge-55	Dissolved Metals	ug/L	5/19/14 7:16	66.8JD	<0.500UJ	22100JD	<5.00UJ	3.33JD	66JD	0.886JD	2480JD	84.8JD
Bbridge-56	Dissolved Metals	ug/L	5/18/14 13:20	63.5JD	<0.500UJ	24700JD	<5.00UJ	3.35JD	73JD	0.962JD	2760JD	93.6JD
Bbridge-57	Dissolved Metals	ug/L	5/17/14 19:23	88.2JD	<1.00UJ	25100JD	<10.0UJ	<5.00UJ	75JD	1.01JD	3100JD	90.1JD
Bbridge-58	Dissolved Metals	ug/L	5/17/14 1:27	65.9JD	<0.500UJ	26600JD	<5.00UJ	3.77JD	79JD	0.774JD	3090JD	93.0JD
Bbridge-59	Dissolved Metals	ug/L	5/16/14 7:30	65.4JD	<0.500UJ	26200JD	<5.00UJ	3.27JD	78JD	0.780JD	3090JD	96.3JD
Bbridge-60	Dissolved Metals	ug/L	5/15/14 13:34	54.5JD	<0.500UJ	27400JD	<5.00UJ	3.41JD	82JD	0.953JD	3320JD	112JD
Bbridge-61	Dissolved Metals	ug/L	5/14/14 19:38	49.9JD	<0.500UJ	28100JD	<5.00UJ	2.97JD	83JD	0.732JD	3080JD	112JD
Bbridge-62	Dissolved Metals	ug/L	5/14/14 1:41	49.7JD	<0.500UJ	27300JD	<5.00UJ	3.05JD	81JD	0.692JD	3180JD	115JD
Bbridge-63	Dissolved Metals	ug/L	5/13/14 7:45	50.2JD	<0.500UJ	27800JD	<5.00UJ	2.79JD	82JD	0.692JD	3150JD	118JD
Bbridge-64	Dissolved Metals	ug/L	5/12/14 13:49	49.8JD	<0.500UJ	28500JD	<5.00UJ	3.85JD	84JD	0.731JD	3070JD	113JD
Bbridge-65	Dissolved Metals	ug/L	5/11/14 19:52	53.1JD	<0.500UJ	26500JD	<5.00UJ	3.43JD	78JD	0.736JD	3010JD	111JD
Bbridge-66	Dissolved Metals	ug/L	5/11/14 1:56	54.9JD	<0.500UJ	24300JD	<5.00UJ	3.11JD	72JD	0.794JD	2720JD	95.6JD
Bbridge-67	Dissolved Metals	ug/L	5/10/14 8:00	56.2JD	<0.500UJ	24400JD	<5.00UJ	3.37JD	72JD	0.839JD	2780JD	98.1JD
Bbridge-68	Dissolved Metals	ug/L	5/9/14 14:03	57.4JD	<0.500UJ	22900JD	<5.00UJ	3.11JD	68JD	0.835JD	2720JD	96.8JD
Bbridge-69	Dissolved Metals	ug/L	5/8/14 20:07	58.4JD	<0.500UJ	23300JD	<5.00UJ	3.56JD	70JD	0.893JD	2810JD	91.1JD
Bbridge-70	Dissolved Metals	ug/L	5/8/14 2:10	62.3JD	<0.500UJ	21500JD	<5.00UJ	3.79JD	64JD	0.851JD	2580JD	82.0JD
Bbridge-71	Dissolved Metals	ug/L	5/7/14 8:14	61.5JD	<0.500UJ	21000JD	<5.00UJ	3.81JD	63JD	0.862JD	2450JD	79.0JD
Bbridge-72	Dissolved Metals	ug/L	5/6/14 14:18	64.0JD	<0.500UJ	19200JD	<5.00UJ	5.75JD	57JD	0.942JD	2320JD	75.7JD
Bbridge-73	Dissolved Metals	ug/L	5/5/14 20:21	63.6JD	<0.500UJ	20700JD	<5.00UJ	4.06JD	62JD	0.871JD	2480JD	80.6JD
Bbridge-74	Dissolved Metals	ug/L	5/5/14 2:25	59.9JD	<0.500UJ	23000JD	<5.00UJ	6.43JD	68JD	0.789JD	2600JD	89.3JD
Bbridge-75	Dissolved Metals	ug/L	5/4/14 8:29	58.5JD	<0.500UJ	26300JD	<5.00UJ	3.35JD	78JD	0.705JD	2950JD	93.1JD
Bbridge-76	Dissolved Metals	ug/L	5/3/14 14:32	49.6JD	<0.500UJ	28100JD	<5.00UJ	2.86JD	83JD	0.584JD	3200JD	99.6JD
Bbridge-77	Dissolved Metals	ug/L	5/2/14 20:36	70.6JD	<1.00UJ	30400JD	<10.0UJ	8.77JD	92JD	<1.00UJ	3800JD	93.8JD
Bbridge-78	Dissolved Metals	ug/L	5/2/14 2:40	36.6JD	<0.500UJ	27900JD	<5.00UJ	<2.50UJ	83JD	<0.500UJ	3250JD	89.3JD
Bbridge-79	Dissolved Metals	ug/L	5/1/14 8:43	40.9JD	<0.500UJ	31900JD	<5.00UJ	2.97JD	95JD	<0.500UJ	3750JD	115JD
Bbridge-80	Dissolved Metals	ug/L	4/30/14 14:47	39.2JD	<0.500UJ	32500JD	<5.00UJ	3.14JD	97JD	0.525JD	3770JD	107JD
Bbridge-81	Dissolved Metals	ug/L	4/29/14 20:50	46.5JD	<0.500UJ	30200JD	<5.00UJ	6.24JD	90JD	0.704JD	3510JD	176JD
Bbridge-82	Dissolved Metals	ug/L	4/29/14 2:54	40.3JD	<0.500UJ	28700JD	<5.00UJ	3.72JD	85JD	0.683JD	3250JD	123JD
Bbridge-83	Dissolved Metals	ug/L	4/28/14 8:58	44.7JD	<0.500UJ	27600JD	<5.00UJ	3.58JD	82JD	0.760JD	3270JD	107JD
Bbridge-84	Dissolved Metals	ug/L	4/27/14 15:01	55.4JD	<0.500UJ	26800JD	<5.00UJ	4.61JD	80JD	0.864JD	3160JD	106JD
Bbridge-85	Dissolved Metals	ug/L	4/26/14 21:05	42.7JD	<0.500UJ	22900JD	<5.00UJ	3.76JD	68JD	0.825JD	2730JD	90.2JD
Bbridge-86	Dissolved Metals	ug/L	4/26/14 3:09	49.1JD	<0.500UJ	24100JD	<5.00UJ	4.65JD	72JD	0.922JD	2770JD	88.5JD
Bbridge-87	Dissolved Metals	ug/L	4/25/14 9:12	48.0JD	<0.500UJ	23300JD	<5.00UJ	4.31JD	69JD	0.903JD	2700JD	82.1JD
Bbridge-88	Dissolved Metals	ug/L	4/24/14 15:16	47.3JD	<0.500UJ	24500JD	<5.00UJ	4.86JD	73JD	0.982JD	2890JD	81.4JD
Bbridge-89	Dissolved Metals	ug/L	4/23/14 21:20	46.8JD	<0.500UJ	24200JD	<5.00UJ	4.40JD	72JD	0.865JD	2860JD	74.9JD
Bbridge-90	Dissolved Metals	ug/L	4/23/14 3:23	74.4JD	<1.00UJ	22900JD	<10.0UJ	5.14JD	70JD	1.23JD	3080JD	61.1JD
Bbridge-91	Dissolved Metals	ug/L	4/22/14 9:27	55.6JD	<0.500UJ	23400JD	<5.00UJ	6.04JD	70JD	1.24JD	2950JD	60.7JD
Bbridge-92	Dissolved Metals	ug/L	4/21/14 15:30	61.1JD	<0.500UJ	23600JD	<5.00UJ	6.18JD	71JD	1.18JD	2930JD	62.2JD
Bbridge-93	Dissolved Metals	ug/L	4/20/14 21:34	60.4JD	<0.500UJ	25900JD	<5.00UJ	7.41JD	78JD	1.16JD	3290JD	71.1JD
Bbridge-94	Dissolved Metals	ug/L	4/20/14 3:38	58.8JD	<0.500UJ	26000JD	<5.00UJ	12.4JD	78JD	1.22JD	3160JD	77.2JD
Bbridge-95	Dissolved Metals	ug/L	4/19/14 9:41	65.2JD	<0.500UJ	29200JD	<5.00UJ	8.80JD	88JD	1.57JD	3590JD	87.6JD
Bbridge-96	Dissolved Metals	ug/L	4/18/14 15									

Appendix F
MiniSipper Analytical Data

STATION_ID	ANALYSIS	UNITS	Date and Time	Aluminum	Cadmium	Calcium	Chromium	Copper	Lead	Magnesium	Zinc
A73-ACID	Total Recoverable Metals	ug/L	9/16/14 15:00	55.0JD	<0.333U	1110JD	<3.33UJ	4.56D	10.5D	<167UJ	17.0D
A73-DI-BLANK	Total Recoverable Metals	ug/L	9/16/14 15:00	<12.5UJ	<0.250U	<125UJ	<2.50UJ	<1.25U	0.540D	<125UJ	<5.00U
A73-GRAB-FA	Total Recoverable Metals	ug/L	4/10/14 14:40	<16.7UJ	1.88JD	63500JD	<3.33UJ	2.66JD	<0.333UJ	4100JD	690JD
A73-GRAB-RA	Total Recoverable Metals	ug/L	4/10/14 14:40	1340JD	2.14JD	57500JD	<2.00UJ	18.0JD	6.67JD	3960JD	798JD
A75D-ACID	Total Recoverable Metals	ug/L	9/16/14 15:00	<16.7UJ	<0.333U	193JD	<3.33UJ	<1.67U	0.861D	<167UJ	<6.67U
A75D-DI-BLANK	Total Recoverable Metals	ug/L	9/16/14 15:00	<12.5UJ	2.15D	<125UJ	<2.50UJ	<1.25U	<0.250U	<125UJ	<5.00U
A75D-GRAB-FA	Total Recoverable Metals	ug/L	4/10/14 14:40	14.3J	0.969J	40500J	<1.00UJ	1.81J	<0.100UJ	3060J	351J
A75D-GRAB-RA	Total Recoverable Metals	ug/L	4/10/14 14:40	747J	1.22J	41100J	<1.00UJ	9.17J	3.90J	3010J	461J
A75D-PREDEPLOY	Total Recoverable Metals	ug/L	4/1/14 12:00	<500UJ	<10.0UJ	<5000UJ	<100UJ	<50.0UJ	<10.0UJ	<5000UJ	<200UJ
BB-ACID	Total Recoverable Metals	ug/L	9/16/14 15:00	<12.5UJ	<0.250U	<125UJ	<2.50UJ	<1.25U	<0.250U	<125UJ	<5.00U
BB-DI-BLANK	Total Recoverable Metals	ug/L	9/16/14 15:00	<25.0UJ	<0.500U	<250UJ	<5.00UJ	<2.50U	<0.500U	<250UJ	<10.0U
BB-GRAB-FA	Total Recoverable Metals	ug/L	4/10/14 14:40	22.7J	0.452J	31300J	<1.00UJ	1.45J	<0.100UJ	3610J	141J
BB-GRAB-RA	Total Recoverable Metals	ug/L	4/10/14 14:40	454J	0.683J	34700J	<1.00UJ	5.03J	2.72J	4080J	256J
A55-ACID-SUSPECT	Total Recoverable Metals	ug/L	9/16/14 15:00	<25.0U	0.688JD	22100D	<5.00U	3.26JD	2.76D	1470D	241D
A55-DI-BLANK	Total Recoverable Metals	ug/L	9/16/14 15:00	<16.7U	<0.333U	868D	<3.33U	<1.67U	<0.333U	<167U	9.58JD
A56-ACID	Total Recoverable Metals	ug/L	9/16/14 15:00	38.8JD	<0.333U	<167U	<3.33U	6.04D	0.832D	<167U	<6.67U
A56-DI-BLANK	Total Recoverable Metals	ug/L	6/16/14 15:00	<12.5UJ	<0.250UJ	<125UJ	<2.50UJ	<1.25UJ	<0.250UJ	<125UJ	<5.00UJ
A72-GRAB-FA	Total Recoverable Metals	ug/L	4/10/14 14:40	63.3JD	2.31JD	58200JD	<2.50UJ	7.07JD	0.410JD	3740JD	758JD
A72-GRAB-RA	Total Recoverable Metals	ug/L	4/10/14 14:40	1360J	2.29J	56300J	<1.00UJ	17.6J	10.7J	3390J	789J

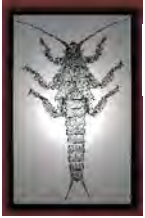
STATION_ID	ANALYSIS	UNITS	Date and Time	Aluminum	Cadmium	Calcium	Chromium	Copper	Hardness (mg/L)	Lead	Magnesium	Zinc
A73-ACID	Dissolved Metals	ug/L	9/16/14 15:00	69.3JD	<1.00U	1250JD	<10.0U	5.29JD	<15U	9.64D	<1000U	<20.0U
A73-Acidified DIW	Dissolved Metals	ug/L	9/16/14 12:00	<25.0U	<0.500U	<500U	<5.00U	<2.50U	<8U	<0.500U	<500U	<10.0U
A73-coil BLK	Dissolved Metals	ug/L	9/16/14 12:00	<25.0U	<0.500U	1150JD	<5.00U	7.90D	<8U	2.04D	<500U	25.3D
A73-DI-BLANK	Dissolved Metals	ug/L	9/16/14 15:00	<25.0U	<0.500U	<500U	<5.00U	<2.50U	<8U	0.572JD	<500U	<10.0U
A73-GRAB-FA	Dissolved Metals	ug/L	4/10/14 14:40	<25.0UJ	1.85JD	58600JD	<5.00UJ	3.19JD	163JD	<0.500UJ	3950JD	611JD
A73-GRAB-RA	Dissolved Metals	ug/L	4/10/14 14:40	1280JD	1.94JD	55700JD	<5.00UJ	19.1JD	155JD	5.59JD	3750JD	694JD
A75D-ACID	Dissolved Metals	ug/L	9/16/14 15:00	<25.0U	<0.500U	<500U	<5.00U	<2.50U	<8U	0.503JD	<500U	<10.0U
A75D-acidified DIW	Dissolved Metals	ug/L	9/16/14 12:00	<25.0U	<0.500U	<500U	<5.00U	<2.50U	<8U	<0.500U	<500U	<10.0U
A75D-coil BLK	Dissolved Metals	ug/L	9/16/14 12:00	<25.0U	<0.500U	1350D	<5.00U	<2.50U	<8U	<0.500U	<500U	15.3JD
A75D-DI-BLANK	Dissolved Metals	ug/L	9/16/14 15:00	<25.0U	1.96D	<500U	<5.00U	<2.50U	<8U	<0.500U	<500U	<10.0U
A75D-GRAB-FA	Dissolved Metals	ug/L	4/10/14 14:40	<25.0UJ	0.936JD	41200JD	<5.00UJ	<2.50UJ	116JD	<0.500UJ	3140JD	331JD
A75D-GRAB-RA	Dissolved Metals	ug/L	4/10/14 14:40	718JD	1.20JD	41700JD	<5.00UJ	10.5JD	117JD	3.20JD	3060JD	433JD
A75D-PREDEPLOY	Dissolved Metals	ug/L	4/1/14 12:00	183JD	<0.500UJ	<500UJ	<5.00UJ	17.3JD	<8UJ	6.16JD	<500UJ	10.2JD
BB-ACID	Dissolved Metals	ug/L	9/16/14 15:00	<25.0U	<0.500U	<500U	<5.00U	<2.50U	<8U	<0.500U	<500U	<10.0U
BB-DI-BLANK	Dissolved Metals	ug/L	9/16/14 15:00	<25.0U	<0.500U	<500U	<5.00U	<2.50U	<8U	<0.500U	<500U	<10.0U
BB-GRAB-FA	Dissolved Metals	ug/L	4/10/14 14:40	<25.0UJ	0.540JD	37800JD	<5.00UJ	<2.50UJ	113JD	<0.500UJ	4590JD	144JD
BB-GRAB-RA	Dissolved Metals	ug/L	4/10/14 14:40	490JD	0.642JD	37600JD	<5.00UJ	6.77JD	113JD	2.52JD	4560JD	245JD
Bbridge-acidified DIW	Dissolved Metals	ug/L	9/16/14 12:00	<25.0U	<0.500U	<500U	<5.00U	<2.50U	<8U	<0.500U	<500U	<10.0U
Bbridge-coil BLK	Dissolved Metals	ug/L	9/16/14 12:00	<25.0U	<0.500U	<500U	<5.00U	5.56D	<8U	<0.500U	<500U	17.2JD
A55-coil BLK	Dissolved Metals	ug/L	4/16/14 8:35	<25.0UJ	<0.500UJ	<500UJ	<5.00UJ	<2.50UJ	<8UJ	<0.500UJ	<500UJ	<10.0UJ
A55-Acidified DIW	Dissolved Metals	ug/L	9/16/14 12:00	276D	0.712JD	1770D	<5.00U	50.9D	<8U	31.1D	<500U	212D
A55-ACID-SUSPECT	Dissolved Metals	ug/L	9/16/14 15:00	<25.0U	<0.500U	21400D	<5.00U	<2.50U	60D	<0.500U	1560D	203D
A55-coil BLK	Dissolved Metals	ug/L	9/16/14 12:00	<25.0U	<0.500U	<500U	<5.00U	<2.50U	<8U	<0.500U	<500U	<10.0U
A55-DI-BLANK	Dissolved Metals	ug/L	9/16/14 15:00	<25.0U	<0.500U	1050JD	<5.00U	<2.50U	<8U	<0.500U	<500U	<10.0U
A56-ACID	Dissolved Metals	ug/L	9/16/2014 15:00	29.4JD	<0.500U	<500U	<5.00U	6.64D	<8U	0.819JD	<500U	<10.0U
A56-Acidified DIW	Dissolved Metals	ug/L	9/16/2014 15:00	<25.0U	<0.500U	<500U	<5.00U	<2.50U	<8U	<0.500U	<500U	<10.0U
A56-DI-BLANK	Dissolved Metals	ug/L	6/16/2014 15:00	<25.0UJ	<0.500UJ	<500UJ	<5.00UJ	<2.50UJ	<8UJ	<0.500UJ	<500UJ	<10.0UJ
A72-GRAB-FA	Dissolved Metals	ug/L	4/10/14 14:40	63.3JD	2.19JD	61700JD	<5.00UJ	7.34JD	170JD	<0.500UJ	3840JD	775JD
A72-GRAB-RA	Dissolved Metals	ug/L	4/10/14 14:40	1420JD	2.24JD	63600JD	<5.00UJ	21.1JD	174JD	9.95JD	3630JD	843JD

Appendix F
MiniSipper Analytical Data

STATION_ID	Date	Time	ANALYSIS	UNITS	Aluminum	Cadmium	Calcium	Chromium	Hardness (mg/L)	Lead	Magnesium	Zinc
A68	5/13/2014	16:45	Dissolved Metals	ug/L	63.6	1.95	37900	<1.00U	103	0.150J	1970J	583
A72	5/13/2014	16:05	Dissolved Metals	ug/L	36.2	1.83	49000	<1.00U	134	0.131J	2850J	590
A68	5/21/2014	12:10	Dissolved Metals	ug/L	57.5	1.20	23000	<1.00U	63	1.04	1280J	373
A72	5/21/2014	11:45	Dissolved Metals	ug/L	41.8	1.24	26400	<1.00U	73	0.345	1640J	387
A72	5/27/2014	11:30	Dissolved Metals	ug/L	42.7	1.11	25400	<1.00U	70	0.427	1630	340
A68	5/28/2014	10:15	Dissolved Metals	ug/L	38.8	0.812	19200	<1.00U	53	0.761	1130J	264
A68	6/6/2014	15:00	Dissolved Metals	ug/L	32.5	0.922	18200	<1.00U	50	1.16	1160J	257
A72	6/6/2014	14:15	Dissolved Metals	ug/L	56.8	0.776	20000	<1.00U	55	1.09	1310	219
A68	6/13/2014	15:15	Dissolved Metals	ug/L	36.6	0.928	19100	<1.00U	53	0.657	1210J	270
A72	6/13/2014	10:30	Dissolved Metals	ug/L	67.2	0.865	21700	<1.00U	60	0.770	1490	261
A68	6/23/2014	13:15	Dissolved Metals	ug/L	38.8	0.997	23400	<1.00U	64	0.525	1410J	302
A72	6/23/2014	13:45	Dissolved Metals	ug/L	27.4	0.880	26900	<1.00U	74	<0.100U	1770	272
A68	7/2/2014	14:15	Dissolved Metals	ug/L	45.9	0.873	23500	<1.00U	65	0.498	1410J	245
A72	7/2/2014	15:15	Dissolved Metals	ug/L	29.9	0.802	29300	<1.00U	81	<0.100U	1960	235
A73	7/9/2014	15:10	Dissolved Metals	ug/L	55.3	0.685	32100	<1.00U	89	<0.100U	2160	211
A72	7/11/2014	10:45	Dissolved Metals	ug/L	25.7	0.871	34800	<1.00U	96	<0.100U	2250	293
A68	7/12/2014	12:00	Dissolved Metals	ug/L	48.0	0.836	27000	<1.00U	74	0.491	1610J	244
A68	7/20/2014	13:30	Dissolved Metals	ug/L	44.5	0.828	33600	<1.00U	92	0.388	1930J	253
A72	7/20/2014	14:00	Dissolved Metals	ug/L	26.6	0.969	43500	<1.00U	120	<0.100U	2700	334
A68	7/25/2014	16:15	Dissolved Metals	ug/L	56.4	0.714	34100	<1.00U	93	0.287	1820J	204
A72	7/26/2014	14:00	Dissolved Metals	ug/L	28.3	1.01	44900	<1.00U	123	<0.100U	2700	328
A73	7/29/2014	9:45	Dissolved Metals	ug/L	28.5	0.786	35600	<1.00U	99	<0.100U	2350	241
A75	7/29/2014	14:55	Dissolved Metals	ug/L	46.8	0.449	27000	<1.00U	76	<0.100U	2100	126
A72	7/30/2014	16:40	Dissolved Metals	ug/L	13.2J	1.00	43300	<1.00U	119	<0.100U	2630	299
Bbridge	7/29/2014	16:30	Dissolved Metals	ug/L	67.2	0.274	25800	<1.00U	75	<0.100U	2590	53.5
FB	7/30/2014	16:45	Dissolved Metals	ug/L	<5.00U	<0.100U	68.0J	<1.00U	<2U	<0.100U	<100U	2.26J

STATION_ID	DATE	Time	ANALYSIS	UNITS	Aluminum	Cadmium	Calcium	Chromium	Lead	Magnesium	Zinc
A68	5/13/2014	16:45	Total Metals	ug/L	219D	2.04D	37600D	<5.00U	3.96D	2180JD	589D
A72	5/13/2014	16:05	Total Metals	ug/L	1030D	1.74D	49000D	<5.00U	7.03D	2970JD	573D
A68	5/21/2014	12:10	Total Metals	ug/L	744D	1.61D	22600D	<5.00U	29.7D	1540JD	477D
A72	5/21/2014	11:45	Total Metals	ug/L	1400D	1.53D	25500D	<5.00U	38.4D	1870JD	445D
A72	5/27/2014	11:30	Total Metals	ug/L	768D	1.10D	25700D	<5.00U	12.1D	1830D	363D
A68	5/28/2014	10:15	Total Metals	ug/L	1350D	2.09D	18600D	<5.00U	84.5D	1470JD	504D
A68	6/6/2014	15:00	Total Metals	ug/L	776D	1.22D	17500D	<5.00U	59.7D	1360JD	354D
A72	6/6/2014	14:15	Total Metals	ug/L	951D	1.02D	20000D	<5.00U	36.9D	1580D	268D
A68	6/13/2014	15:15	Total Metals	ug/L	348D	0.977JD	18800D	<5.00U	23.1D	1350JD	296D
A72	6/13/2014	10:30	Total Metals	ug/L	518D	0.746JD	21200D	<5.00U	13.2D	1520D	262D
A68	6/23/2014	13:15	Total Metals	ug/L	149D	0.985JD	22700D	<5.00U	5.05D	1480JD	293D
A72	6/23/2014	13:45	Total Metals	ug/L	387D	0.826JD	25600D	<5.00U	4.56D	1790D	257D
A68	7/2/2014	14:15	Total Metals	ug/L	135D	0.773JD	23200D	<5.00U	4.06D	1480JD	245D
A72	7/2/2014	15:15	Total Metals	ug/L	442D	0.868JD	28500D	<5.00U	4.65D	1940D	235D
A73	7/9/2014	15:10	Total Metals	ug/L	432D	0.652JD	30900D	<5.00U	3.11D	2130D	221D
A72	7/11/2014	10:45	Total Metals	ug/L	529D	0.814JD	31600D	<5.00U	2.95D	2200D	255D
A68	7/12/2014	12:00	Total Metals	ug/L	138D	0.762JD	26200D	<5.00U	2.82D	1630JD	237D
A68	7/20/2014	13:30	Total Metals	ug/L	89.9JD	0.658JD	32500D	<5.00U	2.92D	1870JD	241D
A72	7/20/2014	14:00	Total Metals	ug/L	756D	0.941JD	42000D	<5.00U	4.57D	2700D	317D
A68	7/25/2014	16:15	Total Metals	ug/L	95.7JD	0.807JD	33600D	<5.00U	1.99D	1940JD	199D
A72	7/26/2014	14:00	Total Metals	ug/L	788D	0.995JD	43200D	<5.00U	3.65D	2810D	318D
A73	7/29/2014	9:45	Total Metals	ug/L	834D	0.787JD	33800D	<5.00U	10.1D	2340D	272D
A75	7/29/2014	14:55	Total Metals	ug/L	568D	<0.500U	25400D	<5.00U	5.90D	2110D	167D
A72	7/30/2014	16:40	Total Metals	ug/L	722D	1.03D	41300D	<5.00U	3.90D	2660D	295D
Bbridge	7/29/2014	16:30	Total Metals	ug/L	835D	<0.500U	25200D	<5.00U	14.5D	2560D	168D
FB	7/30/2014	16:45	Total Metals	ug/L	<25.0U	<0.500U	<250U	<5.00U	<0.500U	<250U	<10.0U

Appendix G
Macroinvertebrate Assemblage Results Report



Timberline Aquatics, Inc.

February 6, 2015

Mr. Steve Auer
TechLaw
16194 W. 45th Drive
Denver, CO 80403

Dear Mr. Auer,

Enclosed are the results from fourteen (14) benthic macroinvertebrate samples collected for the Animas River Biomonitoring Project during the fall of 2014. Data are reported as 300-count subsamples (based on protocols for MMI calculation provided by the Colorado Department of Public Health and Environment). Specific information on subsampling has been provided in the enclosed Excel file entitled "Animas 2014 grid data". MMI scores were calculated from benthic data for each site. The MMI results are provided at the end of this report. Please contact me if you have any questions.

Sincerely,

Timberline Aquatics, Inc.

David E. Rees
President

Enc.

/dr

Animas River Macroinvertebrate Data

A53

11 Oct. 2014

REP 1

INSECTA			
EPHEMEROPTERA			55
Baetidae	<i>Baetis bicaudatus/ tricaudatus</i>		1
Ephemerellidae	<i>Drunella doddsi</i>		11
Heptageniidae	<i>Epeorus</i> sp.		2
Heptageniidae	<i>Rhithrogena</i> sp.		41
PLECOPTERA			164
Capniidae	Capniidae (<i>Capnia</i>)		2
Capniidae	Capniidae (<i>Utacapnia</i>)		8
Nemouridae	<i>Zapada oregonensis</i> group		81
Taeniopterygidae	<i>Taenionema</i> sp.		71
Perlodidae	<i>Megarcys signata</i>		2
TRICHOPTERA			22
Hydropsychidae	<i>Arctopsyche grandis</i>		19
Rhyacophilidae	<i>Rhyacophila brunnea</i>		1
Rhyacophilidae	<i>Rhyacophila hyalinata</i>		2
DIPTERA			
Chironomidae			47
Chironomidae	<i>Cricotopus/Orthocladius</i> sp.		44
Chironomidae	<i>Heterotrissocladius</i> sp.		1
Chironomidae	<i>Pagastia</i> sp.		2
DIPTERA (other)			9
Ceratopogoninae	Ceratopogoninae		7
Empididae	<i>Metachela/Chelifera</i> sp.		2
ARACHNIDA			
HYDRACARINA			4
Lebertiidae	<i>Lebertia</i> sp.		4
TURBELLARIA			2
Planariidae	<i>Polycelis coronata</i>		2

Total Number (#/sample)	303
Number of Taxa	19
Shannon Weaver Diversity (H')	2.97
Hilsenhoff Biotic Index (HBI)	1.75
Total EPT Taxa	12.0
EPT Index (% of total number of taxa)	63.2%
Ephemeroptera Abundance (% of total number)	18.2%

# Ephemeroptera Taxa	4
# Plecoptera Taxa	5
# Trichoptera Taxa	3
% EPT (% of Total Number)	79.5%
# Intolerant Taxa	14
Tolerant Organisms (% of Total Number)	1.3%
Dominant Taxon (% of Total Number)	26.7%
Filterers (% of Total Number)	6.3%
Scrapers (% of Total Number)	41.3%
# Clinger Taxa	9
Clingers (% of Total Number)	53.8%

Animas River Macroinvertebrate Data

A55

24 Sept. 2014

REP 1

INSECTA			
EPHEMEROPTERA			163
Ameletidae	<i>Ameletus</i> sp.		2
Baetidae	<i>Baetis bicaudatus/ tricaudatus</i>		35
Ephemerellidae	<i>Drunella doddsi</i>		50
Heptageniidae	<i>Epeorus</i> sp.		10
Heptageniidae	<i>Rhithrogena</i> sp.		66
PLECOPTERA			93
Capniidae	Capniidae (<i>Utacapnia</i>)		7
Nemouridae	<i>Zapada oregonensis</i> group		50
Taeniopterygidae	<i>Taenionema</i> sp.		29
Chloroperlidae	Chloroperlidae		3
Chloroperlidae	<i>Sweltsa</i> sp.		1
Perlodidae	<i>Isoperla</i> sp.		1
Perlodidae	<i>Megarcys signata</i>		2
TRICHOPTERA			83
Hydropsychidae	<i>Arctopsyche grandis</i>		61
Rhyacophilidae	<i>Rhyacophila brunnea</i>		7
Rhyacophilidae	<i>Rhyacophila hyalinata</i>		9
Rhyacophilidae	<i>Rhyacophila sibirica</i> group		5
Rhyacophilidae	<i>Rhyacophila vofixa</i> group		1
DIPTERA			
Chironomidae			8
Chironomidae	<i>Cricotopus/Orthocladius</i> sp.		6
Chironomidae	<i>Pagastia</i> sp.		2
DIPTERA (other)			28
Muscidae	<i>Lispoides</i> sp.		1
Simuliidae	<i>Simulium</i> sp.		27
COLEOPTERA			1
Elmidae	<i>Heterolimnius corpulentus</i>		1
ARACHNIDA			
HYDRACARINA			5
Lebertiidae	<i>Lebertia</i> sp.		4
Sperchontidae	<i>Sperchon</i> sp.		1
TURBELLARIA			11
Planariidae	<i>Polycelis coronata</i>		11

NEMATODA			2
	Nematoda	Nematoda	2

Total Number (#/sample)	394
Number of Taxa	26
Shannon Weaver Diversity (H')	3.48
Hilsenhoff Biotic Index (HBI)	1.68
Total EPT Taxa	17.0
EPT Index (% of total number of taxa)	65.4%
Ephemeroptera Abundance (% of total number)	41.4%
# Ephemeroptera Taxa	5
# Plecoptera Taxa	7
# Trichoptera Taxa	5
% EPT (% of Total Number)	86.0%
# Intolerant Taxa	18
Tolerant Organisms (% of Total Number)	1.3%
Dominant Taxon (% of Total Number)	16.8%
Filterers (% of Total Number)	22.3%
Scrapers (% of Total Number)	39.3%
# Clinger Taxa	17
Clingers (% of Total Number)	75.9%

Animas River Macroinvertebrate Data

A56

24 Sept. 2014

REP 1

INSECTA

EPHEMEROPTERA

34

Ameletidae	<i>Ameletus</i> sp.	1
Baetidae	<i>Baetis bicaudatus/ tricaudatus</i>	13
Ephemerellidae	<i>Drunella doddsi</i>	9
Heptageniidae	<i>Epeorus</i> sp.	3
Heptageniidae	<i>Rhithrogena</i> sp.	8

PLECOPTERA

39

Capniidae	Capniidae (<i>Capnia</i>)	1
Nemouridae	<i>Zapada oregonensis</i> group	26
Taeniopterygidae	<i>Taenionema</i> sp.	6
Chloroperlidae	<i>Sweltsa</i> sp.	1
Perlodidae	<i>Isoperla</i> sp.	3
Perlodidae	<i>Megarcys signata</i>	2

TRICHOPTERA

46

Hydropsychidae	<i>Arctopsyche grandis</i>	44
Rhyacophilidae	<i>Rhyacophila brunnea</i>	2

DIPTERA

Chironomidae

8

Chironomidae	<i>Cricotopus/Orthocladius</i> sp.	5
Chironomidae	<i>Diamesa</i> sp.	1
Chironomidae	<i>Eukiefferiella</i> sp.	2

DIPTERA (other)

186

Simuliidae	<i>Simulium</i> sp.	186
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ARACHNIDA

HYDRACARINA

2

Lebertiidae	<i>Lebertia</i> sp.	2
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Total Number (#/sample)	315
Number of Taxa	18
Shannon Weaver Diversity (H')	2.24
Hilsenhoff Biotic Index (HBI)	4.28
Total EPT Taxa	13.0
EPT Index (% of total number of taxa)	72.2%
Ephemeroptera Abundance (% of total number)	10.8%
# Ephemeroptera Taxa	5
# Plecoptera Taxa	6
# Trichoptera Taxa	2
% EPT (% of Total Number)	37.8%

# Intolerant Taxa	12
Tolerant Organisms (% of Total Number)	1.3%
Dominant Taxon (% of Total Number)	59.0%
Filterers (% of Total Number)	73.0%
Scrapers (% of Total Number)	8.3%
# Clinger Taxa	11
Clingers (% of Total Number)	90.8%

Animas River Macroinvertebrate Data

A60

25 Sept. 2014

REP 1

INSECTA

EPHEMEROPTERA

43

Baetidae	<i>Baetis bicaudatus/ tricaudatus</i>	19
Ephemerellidae	<i>Drunella doddsi</i>	6
Heptageniidae	<i>Epeorus</i> sp.	7
Heptageniidae	<i>Rhithrogena</i> sp.	11

PLECOPTERA

56

Nemouridae	<i>Zapada cinctipes</i>	1
Nemouridae	<i>Zapada oregonensis</i> group	27
Taeniopterygidae	<i>Taenionema</i> sp.	23
Chloroperlidae	<i>Sweltsa</i> sp.	1
Perlodidae	<i>Isoperla</i> sp.	1
Perlodidae	<i>Megarcys signata</i>	3

TRICHOPTERA

50

Hydropsychidae	<i>Arctopsyche grandis</i>	40
Rhyacophilidae	<i>Rhyacophila brunnea</i>	1
Rhyacophilidae	<i>Rhyacophila coloradensis</i> group	8
Rhyacophilidae	<i>Rhyacophila hyalinata</i>	1

DIPTERA

Chironomidae

71

Chironomidae	<i>Cricotopus/ Orthocladius</i> sp.	63
Chironomidae	<i>Eukiefferiella</i> sp.	3
Chironomidae	<i>Micropsectra</i> sp.	1
Chironomidae	<i>Pagastia</i> sp.	2
Chironomidae	<i>Tvetenia</i> sp.	2

DIPTERA (other)

137

Ceratopogoninae	Ceratopogoninae	3
Simuliidae	<i>Simulium</i> sp.	131
Tipulidae	<i>Dicranota</i> sp.	3

ARACHNIDA

HYDRACARINA

9

Lebertiidae	<i>Lebertia</i> sp.	9
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TURBELLARIA

5

Planariidae	<i>Polycelis coronata</i>	5
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NEMATODA

10

Nematoda	Nematoda	10
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Total Number (#/sample)	381
Number of Taxa	25
Shannon Weaver Diversity (H')	3.21
Hilsenhoff Biotic Index (HBI)	3.67
Total EPT Taxa	14.0
EPT Index (% of total number of taxa)	56.0%
Ephemeroptera Abundance (% of total number)	11.3%
# Ephemeroptera Taxa	4
# Plecoptera Taxa	6
# Trichoptera Taxa	4
% EPT (% of Total Number)	39.1%
# Intolerant Taxa	16
Tolerant Organisms (% of Total Number)	3.4%
Dominant Taxon (% of Total Number)	34.4%
Filterers (% of Total Number)	44.9%
Scrapers (% of Total Number)	12.3%
# Clinger Taxa	14
Clingers (% of Total Number)	64.8%

Animas River Macroinvertebrate Data

A68

25 Sept. 2014

REP 1

INSECTA		
EPHEMEROPTERA		51
Ameletidae	<i>Ameletus</i> sp.	1
Baetidae	<i>Baetis tricaudatus</i>	31
Heptageniidae	<i>Epeorus</i> sp.	7
Heptageniidae	<i>Rhithrogena</i> sp.	12
PLECOPTERA		31
Capniidae	Capniidae (<i>Capnia</i>)	1
Nemouridae	<i>Zapada oregonensis</i> group	9
Taeniopterygidae	<i>Taenionema</i> sp.	20
Chloroperlidae	Chloroperlidae	1
TRICHOPTERA		25
Hydropsychidae	<i>Arctopsyche grandis</i>	24
Rhyacophilidae	<i>Rhyacophila sibirica</i> group	1
DIPTERA		
Chironomidae		103
Chironomidae	<i>Cricotopus/Orthocladius</i> sp.	95
Chironomidae	<i>Eukiefferiella</i> sp.	6
Chironomidae	<i>Tvetenia</i> sp.	2
DIPTERA (other)		113
Ceratopogoninae	Ceratopogoninae	10
Simuliidae	<i>Simulium</i> sp.	103
ARACHNIDA		
HYDRACARINA		3
Lebertiidae	<i>Lebertia</i> sp.	3
NEMATODA		2
Nematoda	Nematoda	2

Total Number (#/sample)	328
Number of Taxa	17
Shannon Weaver Diversity (H')	2.83
Hilsenhoff Biotic Index (HBI)	4.19
Total EPT Taxa	10.0
EPT Index (% of total number of taxa)	58.8%
Ephemeroptera Abundance (% of total number)	15.5%
# Ephemeroptera Taxa	4
# Plecoptera Taxa	4

# Trichoptera Taxa	2
% EPT (% of Total Number)	32.6%
# Intolerant Taxa	9
Tolerant Organisms (% of Total Number)	2.7%
Dominant Taxon (% of Total Number)	31.4%
Filterers (% of Total Number)	38.7%
Scrapers (% of Total Number)	11.9%
# Clinger Taxa	8
Clingers (% of Total Number)	48.8%

Animas River Macroinvertebrate Data

CC49

25 Sept. 2014

REP 1

INSECTA

DIPTERA

Chironomidae

5

Chironomidae

Cricotopus/Orthocladus sp.

4

Chironomidae

Eukiefferiella sp.

1

Total Number (#/sample)	5
Number of Taxa	2
Shannon Weaver Diversity (H')	0.72
Hilsenhoff Biotic Index (HBI)	8.00
Total EPT Taxa	0.0
EPT Index (% of total number of taxa)	0.0%
Ephemeroptera Abundance (% of total number)	0.0%
# Ephemeroptera Taxa	0
# Plecoptera Taxa	0
# Trichoptera Taxa	0
% EPT (% of Total Number)	0.0%
# Intolerant Taxa	0
Tolerant Organisms (% of Total Number)	20.0%
Dominant Taxon (% of Total Number)	80.0%
Filterers (% of Total Number)	0.0%
Scrapers (% of Total Number)	0.0%
# Clinger Taxa	0
Clingers (% of Total Number)	0.0%

Animas River Macroinvertebrate Data

M34

25 Sept. 2014

REP 1

INSECTA			
EPHEMEROPTERA			2
Baetidae	<i>Baetis bicaudatus/ tricaudatus</i>		1
Heptageniidae	<i>Epeorus sp.</i>		1
PLECOPTERA			11
Nemouridae	<i>Zapada oregonensis</i> group		8
Taeniopterygidae	<i>Taenionema sp.</i>		1
Chloroperlidae	<i>Sweltsa sp.</i>		1
Perlodidae	<i>Megarcys signata</i>		1
TRICHOPTERA			31
Hydropsychidae	<i>Arctopsyche grandis</i>		31
DIPTERA			
Chironomidae			5
Chironomidae	<i>Cricotopus/Orthocladius sp.</i>		1
Chironomidae	<i>Eukiefferiella sp.</i>		1
Chironomidae	<i>Limnophyes sp.</i>		3
DIPTERA (other)			1
Simuliidae	<i>Simulium sp.</i>		1
ARACHNIDA			
HYDRACARINA			1
Lebertiidae	<i>Lebertia sp.</i>		1
Total Number (#/sample)			51
Number of Taxa			12
Shannon Weaver Diversity (H')			2.10
Hilsenhoff Biotic Index (HBI)			1.66
Total EPT Taxa			7.0
EPT Index (% of total number of taxa)			58.3%
Ephemeroptera Abundance (% of total number)			3.9%
# Ephemeroptera Taxa			2
# Plecoptera Taxa			4
# Trichoptera Taxa			1
% EPT (% of Total Number)			86.3%
# Intolerant Taxa			6
Tolerant Organisms (% of Total Number)			3.9%
Dominant Taxon (% of Total Number)			60.8%
Filters (% of Total Number)			62.7%
Scrapers (% of Total Number)			3.9%
# Clinger Taxa			7
Clingers (% of Total Number)			86.3%

Animas River Macroinvertebrate Data

A72

25 Sept. 2014

REP 1

INSECTA			
EPHEMEROPTERA			4
Baetidae	<i>Baetis bicaudatus/ tricaudatus</i>		4
PLECOPTERA			15
Nemouridae	<i>Zapada oregonensis</i> group		14
Taeniopterygidae	<i>Taenionema</i> sp.		1
TRICHOPTERA			44
Hydropsychidae	<i>Arctopsyche grandis</i>		44
DIPTERA			
Chironomidae			48
Chironomidae	<i>Cricotopus/Orthocladius</i> sp.		39
Chironomidae	<i>Limnophyes</i> sp.		9
DIPTERA (other)			2
Simuliidae	<i>Simulium</i> sp.		1
Tipulidae	<i>Tipula</i> sp.		1
ARACHNIDA			
HYDRACARINA			3
Lebertiidae	<i>Lebertia</i> sp.		3

Total Number (#/sample)	116
Number of Taxa	9
Shannon Weaver Diversity (H')	2.19
Hilsenhoff Biotic Index (HBI)	1.87
Total EPT Taxa	4.0
EPT Index (% of total number of taxa)	44.4%
Ephemeroptera Abundance (% of total number)	3.4%
# Ephemeroptera Taxa	1
# Plecoptera Taxa	2
# Trichoptera Taxa	1
% EPT (% of Total Number)	54.3%
# Intolerant Taxa	3
Tolerant Organisms (% of Total Number)	2.6%
Dominant Taxon (% of Total Number)	37.9%
Filters (% of Total Number)	38.8%
Scrapers (% of Total Number)	0.9%
# Clinger Taxa	4
Clingers (% of Total Number)	53.4%

Animas River Macroinvertebrate Data

A73

16 Oct. 2014

REP 1

INSECTA			
EPHEMEROPTERA			5
Heptageniidae	<i>Rhithrogena</i> sp.		5
PLECOPTERA			25
Nemouridae	<i>Zapada oregonensis</i> group		16
Taeniopterygidae	<i>Taenionema</i> sp.		5
Perlodidae	<i>Isoperla</i> sp.		1
Perlodidae	<i>Megarcys signata</i>		3
TRICHOPTERA			94
Hydropsychidae	<i>Arctopsyche grandis</i>		92
Rhyacophilidae	<i>Rhyacophila sibirica</i> group		2
DIPTERA (other)			4
Ceratopogoninae	Ceratopogoninae		2
Empididae	<i>Neoplasta</i> sp.		1
Tipulidae	<i>Prionocera</i> sp.		1
TURBELLARIA			1
Planariidae	<i>Polycelis coronata</i>		1

Total Number (#/sample)	129
Number of Taxa	11
Shannon Weaver Diversity (H')	1.61
Hilsenhoff Biotic Index (HBI)	1.28
Total EPT Taxa	7.0
EPT Index (% of total number of taxa)	63.6%
Ephemeroptera Abundance (% of total number)	3.9%
# Ephemeroptera Taxa	1
# Plecoptera Taxa	4
# Trichoptera Taxa	2
% EPT (% of Total Number)	96.1%
# Intolerant Taxa	8
Tolerant Organisms (% of Total Number)	0.0%
Dominant Taxon (% of Total Number)	71.3%
Filterers (% of Total Number)	71.3%
Scrapers (% of Total Number)	7.8%
# Clinger Taxa	6
Clingers (% of Total Number)	92.2%

Animas River Macroinvertebrate Data

A75EC

16 Oct. 2014

REP 1

INSECTA

EPHEMEROPTERA

61

Ameletidae	<i>Ameletus</i> sp.	1
Baetidae	<i>Baetis bicaudatus/ tricaudatus</i>	1
Ephemerellidae	<i>Drunella doddsi</i>	30
Heptageniidae	<i>Rhithrogena</i> sp.	29

PLECOPTERA

249

Capniidae	Capniidae (<i>Utacapnia</i>)	3
Capniidae	<i>Eucapnopsis brevicauda</i>	2
Leuctridae	<i>Paraleuctrasp.</i>	1
Nemouridae	<i>Zapada cinctipes</i>	1
Nemouridae	<i>Zapada oregonensis</i> group	14
Taeniopterygidae	<i>Taenionema</i> sp.	211
Chloroperlidae	Chloroperlidae	5
Chloroperlidae	<i>Sweltsa</i> sp.	3
Perlodidae	<i>Isoperla</i> sp.	7
Perlodidae	<i>Megarcys signata</i>	2

TRICHOPTERA

20

Glossosomatidae	<i>Glossosoma</i> sp.	1
Hydropsychidae	<i>Arctopsyche grandis</i>	2
Hydropsychidae	<i>Parapsyche elsis</i>	2
Lepidostomatidae	<i>Lepidostoma</i> sp.	1
Limnephilidae	Limnephilidae (<i>Hesperophylax</i>)	1
Rhyacophilidae	<i>Rhyacophila brunnea</i>	1
Rhyacophilidae	<i>Rhyacophila coloradensis</i> group	1
Rhyacophilidae	<i>Rhyacophila hyalinata</i>	1
Rhyacophilidae	<i>Rhyacophila sibirica</i> group	1
Rhyacophilidae	<i>Rhyacophila vofixa</i> group	1
Uenoidae	<i>Oligophlebodes</i> sp.	8

DIPTERA

Chironomidae

3

Chironomidae	<i>Diamesa</i> sp.	1
Chironomidae	<i>Eukiefferiella</i> sp.	1
Chironomidae	<i>Limnophyes</i> sp.	1

DIPTERA (other)

2

Tipulidae	<i>Dicranota</i> sp.	1
Tipulidae	<i>Tipula</i> sp.	1

TURBELLARIA

2

Planariidae	<i>Polycelis coronata</i>	2
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Total Number (#/sample)	337
Number of Taxa	31
Shannon Weaver Diversity (H')	2.28
Hilsenhoff Biotic Index (HBI)	1.58
Total EPT Taxa	25.0
EPT Index (% of total number of taxa)	80.6%
Ephemeroptera Abundance (% of total number)	18.1%
# Ephemeroptera Taxa	4
# Plecoptera Taxa	10
# Trichoptera Taxa	11
% EPT (% of Total Number)	97.9%
# Intolerant Taxa	25
Tolerant Organisms (% of Total Number)	0.3%
Dominant Taxon (% of Total Number)	62.6%
Filterers (% of Total Number)	1.2%
Scrapers (% of Total Number)	82.8%
# Clinger Taxa	17
Clingers (% of Total Number)	32.3%

Animas River Macroinvertebrate Data

A75CC

16 Oct. 2014

REP 1

INSECTA

EPHEMEROPTERA

167

Baetidae	<i>Baetis bicaudatus/ tricaudatus</i>	73
Ephemerellidae	<i>Drunella doddsi</i>	13
Ephemerellidae	<i>Drunella grandis</i>	3
Ephemerellidae	<i>Ephemerella dorothea infrequens</i>	5
Heptageniidae	<i>Cinygmulasp.</i>	22
Heptageniidae	<i>Epeorus sp.</i>	30
Heptageniidae	<i>Rhithrogena sp.</i>	21

PLECOPTERA

33

Capniidae	Capniidae (<i>Capnia</i>)	10
Capniidae	Capniidae (<i>Utacapnia</i>)	2
Taeniopterygidae	<i>Taenionema sp.</i>	1
Chloroperlidae	<i>Sweltsa sp.</i>	3
Perlidae	<i>Hesperoperla pacifica</i>	15
Perlodidae	<i>Diura knowltoni</i>	1
Perlodidae	<i>Isoperla fulva</i>	1

TRICHOPTERA

56

Hydropsychidae	<i>Arctopsyche grandis</i>	3
Hydropsychidae	<i>Hydropsyche (oslari)</i>	44
Rhyacophilidae	<i>Rhyacophila coloradensis</i> group	9

DIPTERA

Chironomidae

41

Chironomidae	<i>Cricotopus/Orthocladius sp.</i>	39
Chironomidae	<i>Diamesa sp.</i>	1
Chironomidae	<i>Limnophyes sp.</i>	1

DIPTERA (other)

4

Simuliidae	<i>Simulium sp.</i>	3
Tipulidae	<i>Hexatoma sp.</i>	1

ARACHNIDA

HYDRACARINA

1

Lebertiidae	<i>Lebertia sp.</i>	1
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ANNELIDA

OLIGOCHAETA

1

Lumbricidae	Lumbricidae	1
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NEMATODA

1

Nematoda	Nematoda	1
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Total Number (#/sample)	304
Number of Taxa	25
Shannon Weaver Diversity (H')	3.48
Hilsenhoff Biotic Index (HBI)	2.57
Total EPT Taxa	17.0
EPT Index (% of total number of taxa)	68.0%
Ephemeroptera Abundance (% of total number)	54.9%
# Ephemeroptera Taxa	7
# Plecoptera Taxa	7
# Trichoptera Taxa	3
% EPT (% of Total Number)	84.2%
# Intolerant Taxa	15
Tolerant Organisms (% of Total Number)	0.7%
Dominant Taxon (% of Total Number)	24.0%
Filterers (% of Total Number)	16.4%
Scrapers (% of Total Number)	29.9%
# Clinger Taxa	15
Clingers (% of Total Number)	57.2%

Animas River Macroinvertebrate Data

A75D

16 Oct. 2014

REP 1

INSECTA

EPHEMEROPTERA

50

Baetidae	<i>Baetis bicaudatus/ tricaudatus</i>	24
Ephemerellidae	<i>Drunella doddsi</i>	2
Heptageniidae	<i>Rhithrogena</i> sp.	24

PLECOPTERA

12

Capniidae	Capniidae (<i>Utacapnia</i>)	4
Nemouridae	<i>Zapada cinctipes</i>	2
Taeniopterygidae	<i>Taenionema</i> sp.	4
Perlidae	<i>Hesperoperla pacifica</i>	2

TRICHOPTERA

68

Hydropsychidae	<i>Arctopsyche grandis</i>	66
Rhyacophilidae	<i>Rhyacophila coloradensis</i> group	2

DIPTERA

Chironomidae

33

Chironomidae	<i>Cricotopus/ Orthocladus</i> sp.	1
Chironomidae	<i>Eukiefferiella</i> sp.	8
Chironomidae	<i>Limnophyes</i> sp.	23
Chironomidae	<i>Pagastia</i> sp.	1

DIPTERA (other)

15

Athericidae	<i>Atherix pachypus</i>	1
Blephariceridae	<i>Bibliocephala</i> sp.	2
Ceratopogoninae	Ceratopogoninae	1
Empididae	<i>Hemerodromia</i> sp.	2
Empididae	<i>Neoplasta</i> sp.	8
Tipulidae	<i>Dicranota</i> sp.	1

ARACHNIDA

HYDRACARINA

24

Lebertiidae	<i>Lebertia</i> sp.	15
Sperchontidae	<i>Sperchon</i> sp.	9

Total Number (#/sample)	202
Number of Taxa	21
Shannon Weaver Diversity (H')	3.27
Hilsenhoff Biotic Index (HBI)	2.46
Total EPT Taxa	9.0
EPT Index (% of total number of taxa)	42.9%
Ephemeroptera Abundance (% of total number)	24.8%
# Ephemeroptera Taxa	3

# Plecoptera Taxa	4
# Trichoptera Taxa	2
% EPT (% of Total Number)	64.4%
# Intolerant Taxa	12
Tolerant Organisms (% of Total Number)	15.8%
Dominant Taxon (% of Total Number)	32.7%
Filterers (% of Total Number)	32.7%
Scrapers (% of Total Number)	15.8%
# Clinger Taxa	9
Clingers (% of Total Number)	61.4%

Animas River Macroinvertebrate Data

Bbridge

26 Sept. 2014

REP 1

INSECTA

EPHEMEROPTERA

118

Baetidae *Baetis bicaudatus/ tricaudatus* 116
 Heptageniidae *Rhithrogena* sp. 2

PLECOPTERA

3

Capniidae Capniidae (*Capnia*) 1
 Perlodidae *Diura knowltoni* 1
 Perlodidae *Isoperla* sp. 1

TRICHOPTERA

51

Brachycentridae *Brachycentrus occidentalis* 2
 Hydropsychidae *Arctopsyche grandis* 25
 Hydropsychidae *Hydropsyche (oslari)* 24

DIPTERA

Chironomidae

9

Chironomidae *Cricotopus/ Orthocladius* sp. 3
 Chironomidae *Eukiefferiella* sp. 5
 Chironomidae *Limnophyes* sp. 1

DIPTERA (other)

40

Athericidae *Atherix pachypus* 5
 Empididae *Neoplasta* sp. 1
 Simuliidae *Simulium* sp. 33
 Tipulidae *Hexatoma* sp. 1

ARACHNIDA

HYDRACARINA

1

Lebertiidae *Lebertia* sp. 1

NEMATODA

1

Nematoda Nematoda 1

Total Number (#/sample)	223
Number of Taxa	17
Shannon Weaver Diversity (H')	2.33
Hilsenhoff Biotic Index (HBI)	3.94
Total EPT Taxa	8.0
EPT Index (% of total number of taxa)	47.1%
Ephemeroptera Abundance (% of total number)	52.9%
# Ephemeroptera Taxa	2
# Plecoptera Taxa	3

# Trichoptera Taxa	3
% EPT (% of Total Number)	77.1%
# Intolerant Taxa	8
Tolerant Organisms (% of Total Number)	2.7%
Dominant Taxon (% of Total Number)	52.0%
Filterers (% of Total Number)	37.7%
Scrapers (% of Total Number)	1.3%
# Clinger Taxa	8
Clingers (% of Total Number)	39.9%

Animas River Macroinvertebrate Data

James Ranch

26 Sept. 2014

REP 1

INSECTA

EPHEMEROPTERA 166

Baetidae	<i>Baetis bicaudatus/ tricaudatus</i>	163
Ephemerellidae	<i>Drunella doddsi</i>	1
Heptageniidae	<i>Rhithrogena</i> sp.	2

PLECOPTERA 6

Capniidae	Capniidae (<i>Utacapnia</i>)	1
Chloroperlidae	<i>Sweltsa</i> sp.	2
Perlidae	<i>Hesperoperla pacifica</i>	2
Perlodidae	<i>Megarcys signata</i>	1

TRICHOPTERA 73

Brachycentridae	<i>Brachycentrus occidentalis</i>	18
Hydropsychidae	<i>Arctopsyche grandis</i>	14
Hydropsychidae	<i>Hydropsyche (oslari)</i>	41

DIPTERA

Chironomidae 34

Chironomidae	<i>Brillia</i> sp.	1
Chironomidae	<i>Eukiefferiella</i> sp.	4
Chironomidae	<i>Limnophyes</i> sp.	27
Chironomidae	<i>Micropsectra</i> sp.	2

DIPTERA (other) 79

Athericidae	<i>Atherix pachypus</i>	2
Empididae	<i>Wiedemannia</i> sp.	1
Simuliidae	<i>Simulium</i> sp.	76

ARACHNIDA

HYDRACARINA 5

Hygrobatidae	<i>Hygrobates</i> sp.	1
Lebertiidae	<i>Lebertia</i> sp.	1
Sperchontidae	<i>Sperchon</i> sp.	3

Total Number (#/sample)	363
Number of Taxa	20
Shannon Weaver Diversity (H')	2.51
Hilsenhoff Biotic Index (HBI)	4.26
Total EPT Taxa	10.0
EPT Index (% of total number of taxa)	50.0%
Ephemeroptera Abundance (% of total number)	45.7%
# Ephemeroptera Taxa	3
# Plecoptera Taxa	4

# Trichoptera Taxa	3
% EPT (% of Total Number)	67.5%
# Intolerant Taxa	9
Tolerant Organisms (% of Total Number)	3.0%
Dominant Taxon (% of Total Number)	44.9%
Filterers (% of Total Number)	41.0%
Scrapers (% of Total Number)	0.8%
# Clinger Taxa	12
Clingers (% of Total Number)	44.6%

Animas River MMI Results - 2014

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	A53	Sample Date:	10/11/2014
Waterbody Name:	Upper Animas River		
Location:	Abv. Cunningham		
Latitude:	37.83641982	Reference Status:	Not Reference or Degraded
Longitude:	-107.59762286	BenSampID: 1	RepNum: 1
Biotype:	2		

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 44.2

Metric Name	Metric Value	Metric Score
Total Taxa:	18	50.0
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	9	N/A
Chironomidae Pct:	15.5	N/A
Sensitive Plains Families Pct:	33.0	N/A
Predator+ Shredder Taxa:	7	50.0
Clinger Taxa:	7	41.2
Clinger Taxa adjusted with Elevation:	7	N/A
Insect Taxa:	16	N/A
Non-Insct % of taxa:	11.1	N/A
Ephemeroptera Pct:	18.2	25.2
BeckBI:	18.0	54.5
Dominant01 Taxon Pct:	26.7	N/A
Sprawler Pct:	23.8	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	A55	Sample Date:	9/24/2014
Waterbody Name:	Upper Animas River		
Location:	Howardsville Gauge		
Latitude:	37.832874	Reference Status:	Not Reference or Degraded
Longitude:	-107.59958648	BenSampID: 2	RepNum: 1
Biotype:	2		

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 52.5

Metric Name	Metric Value	Metric Score
Total Taxa:	19	52.8
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	10	N/A
Chironomidae Pct:	2.0	N/A
Sensitive Plains Families Pct:	29.9	N/A
Predator+ Shredder Taxa:	6	42.9
Clinger Taxa:	8	47.1
Clinger Taxa adjusted with Elevation:	8	N/A
Insect Taxa:	16	N/A
Non-Insct % of taxa:	15.8	N/A
Ephemeroptera Pct:	40.6	56.3
BeckBI:	21.0	63.6
Dominant01 Taxon Pct:	18.8	N/A
Sprawler Pct:	7.7	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	A56	Sample Date:	9/24/2014		
Waterbody Name:	Upper Animas River				
Location:	Abv. Arastra				
Latitude:	37.82779502	Reference Status:	Not Reference or Degraded		
Longitude:	-107.62379115	BenSampID:	3	RepNum:	1
Biotype:	2				

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 49.2

Metric Name	Metric Value	Metric Score
Total Taxa:	18	50.0
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	11	N/A
Chironomidae Pct:	2.5	N/A
Sensitive Plains Families Pct:	22.2	N/A
Predator+ Shredder Taxa:	9	64.3
Clinger Taxa:	9	52.9
Clinger Taxa adjusted with Elevation:	9	N/A
Insect Taxa:	17	N/A
Non-Insct % of taxa:	5.6	N/A
Ephemeroptera Pct:	10.8	15.0
BeckBI:	21.0	63.6
Dominant01 Taxon Pct:	59.0	N/A
Sprawler Pct:	2.9	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	A60	Sample Date:	9/25/2014
Waterbody Name:	Upper Animas River		
Location:	Blw. Arastra		
Latitude:	37.82719229	Reference Status:	Not Reference or Degraded
Longitude:	-107.6266552	BenSampID: 4	RepNum: 1
Biotype:	2		

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 52.8

Metric Name	Metric Value	Metric Score
Total Taxa:	22	61.1
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	9	N/A
Chironomidae Pct:	21.2	N/A
Sensitive Plains Families Pct:	20.1	N/A
Predator+ Shredder Taxa:	9	64.3
Clinger Taxa:	10	58.8
Clinger Taxa adjusted with Elevation:	10	N/A
Insect Taxa:	19	N/A
Non-Insct % of taxa:	13.6	N/A
Ephemeroptera Pct:	11.5	15.9
BeckBI:	21.0	63.6
Dominant01 Taxon Pct:	32.3	N/A
Sprawler Pct:	7.6	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	A68	Sample Date:	9/25/2014		
Waterbody Name:	Upper Animas River				
Location:	14th St. Gauge				
Latitude:	37.81120197	Reference Status:	Not Reference or Degraded		
Longitude:	-107.659167	BenSampID:	5	RepNum:	1
Biotype:	2				

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 39.4

Metric Name	Metric Value	Metric Score
Total Taxa:	17	47.2
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	8	N/A
Chironomidae Pct:	31.4	N/A
Sensitive Plains Families Pct:	10.1	N/A
Predator+ Shredder Taxa:	5	35.7
Clinger Taxa:	7	41.2
Clinger Taxa adjusted with Elevation:	7	N/A
Insect Taxa:	15	N/A
Non-Insct % of taxa:	11.8	N/A
Ephemeroptera Pct:	15.5	21.6
BeckBI:	17.0	51.5
Dominant01 Taxon Pct:	31.4	N/A
Sprawler Pct:	8.5	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	CC49	Sample Date:	9/25/2014		
Waterbody Name:	Cement Creek				
Location:	Abv. Animas Confluence				
Latitude:	37.80963817	Reference Status:	Not Reference or Degraded		
Longitude:	-107.66067559	BenSampID:	12	RepNum:	1
Biotype:	2				

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 1.1

Metric Name	Metric Value	Metric Score
Total Taxa:	2	5.6
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	0	N/A
Chironomidae Pct:	100.0	N/A
Sensitive Plains Families Pct:	0.0	N/A
Predator+ Shredder Taxa:	0	0.0
Clinger Taxa:	0	0.0
Clinger Taxa adjusted with Elevation:	0	N/A
Insect Taxa:	2	N/A
Non-Insct % of taxa:	0.0	N/A
Ephemeroptera Pct:	0.0	0.0
BeckBI:	0.0	0.0
Dominant01 Taxon Pct:	80.0	N/A
Sprawler Pct:	20.0	N/A

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Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	M34	Sample Date:	9/25/2014		
Waterbody Name:	Mineral Creek				
Location:	at Gauge				
Latitude:	37.8028	Reference Status:	Not Reference or Degraded		
Longitude:	-107.6722	BenSampID:	14	RepNum:	1
Biotype:	2				

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 25.4

Metric Name	Metric Value	Metric Score
Total Taxa:	12	33.3
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	6	N/A
Chironomidae Pct:	9.8	N/A
Sensitive Plains Families Pct:	76.5	N/A
Predator+ Shredder Taxa:	4	28.6
Clinger Taxa:	5	29.4
Clinger Taxa adjusted with Elevation:	5	N/A
Insect Taxa:	11	N/A
Non-Insct % of taxa:	8.3	N/A
Ephemeroptera Pct:	3.9	5.4
BeckBI:	10.0	30.3
Dominant01 Taxon Pct:	60.8	N/A
Sprawler Pct:	3.9	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	A72	Sample Date:	9/25/2014		
Waterbody Name:	Animas River				
Location:	Blw. Silverton				
Latitude:	37.79027049	Reference Status:	Not Reference or Degraded		
Longitude:	-107.66757775	BenSampID:	6	RepNum:	1
Biotype:	2				

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 16.8

Metric Name	Metric Value	Metric Score
Total Taxa:	9	25.0
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	3	N/A
Chironomidae Pct:	41.4	N/A
Sensitive Plains Families Pct:	50.9	N/A
Predator+ Shredder Taxa:	3	21.4
Clinger Taxa:	3	17.6
Clinger Taxa adjusted with Elevation:	3	N/A
Insect Taxa:	8	N/A
Non-Insct % of taxa:	11.1	N/A
Ephemeroptera Pct:	3.4	4.8
BeckBI:	5.0	15.2
Dominant01 Taxon Pct:	37.9	N/A
Sprawler Pct:	0.9	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	A73	Sample Date:	10/16/2014		
Waterbody Name:	Upper Animas River				
Location:	Abv. Elk Creek				
Latitude:	37.72215833	Reference Status:	Not Reference or Degraded		
Longitude:	-107.65482777	BenSampID:	7	RepNum:	1
Biotype:	2				

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 30.7

Metric Name	Metric Value	Metric Score
Total Taxa:	11	30.6
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	5	N/A
Chironomidae Pct:	0.0	N/A
Sensitive Plains Families Pct:	84.5	N/A
Predator+ Shredder Taxa:	6	42.9
Clinger Taxa:	7	41.2
Clinger Taxa adjusted with Elevation:	7	N/A
Insect Taxa:	10	N/A
Non-Insct % of taxa:	9.1	N/A
Ephemeroptera Pct:	3.9	5.4
BeckBI:	11.0	33.3
Dominant01 Taxon Pct:	71.3	N/A
Sprawler Pct:	3.9	N/A

Colorado Department of Public Health and Environment

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Benthic Macroinvertebrate Bioassessment Report

StationID:	A75EC	Sample Date:	10/16/2014		
Waterbody Name:	Elk Creek				
Location:	Abv. Animas River				
Latitude:	37.72175555	Reference Status:	Not Reference or Degraded		
Longitude:	-107.65443055	BenSampID:	10	RepNum:	1
Biotype:	2				

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 66.0

Metric Name	Metric Value	Metric Score
Total Taxa:	25	69.4
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	12	N/A
Chironomidae Pct:	0.9	N/A
Sensitive Plains Families Pct:	6.5	N/A
Predator+ Shredder Taxa:	12	85.7
Clinger Taxa:	9	52.9
Clinger Taxa adjusted with Elevation:	9	N/A
Insect Taxa:	24	N/A
Non-Insct % of taxa:	4.0	N/A
Ephemeroptera Pct:	18.1	25.1
BeckBI:	32.0	97.0
Dominant01 Taxon Pct:	62.6	N/A
Sprawler Pct:	64.4	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	A75CC	Sample Date:	10/16/2014
Waterbody Name:	Cascade Creek		
Location:	Abv. Animas		
Latitude:	37.59824909	Reference Status:	Not Reference or Degraded
Longitude:	-107.77610081	BenSampID: 8	RepNum: 1
Biotype:	1		

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 63.0

Metric Name	Metric Value	Metric Score
Total Taxa:	24	N/A
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	13	100.0
Chironomidae Pct:	13.5	81.4
Sensitive Plains Families Pct:	15.8	25.5
Predator+ Shredder Taxa:	10	71.4
Clinger Taxa:	11	N/A
Clinger Taxa adjusted with Elevation:	11	44.0
Insect Taxa:	21	N/A
Non-Insct % of taxa:	12.5	55.5
Ephemeroptera Pct:	54.9	N/A
BeckBI:	22.0	N/A
Dominant01 Taxon Pct:	24.0	N/A
Sprawler Pct:	0.7	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	A75D	Sample Date:	10/16/2014		
Waterbody Name:	Animas River				
Location:	Abv. Cascade Creek				
Latitude:	37.59793423	Reference Status:	Not Reference or Degraded		
Longitude:	-107.77532681	BenSampID:	9	RepNum:	1
Biotype:	1				

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 52.8

Metric Name	Metric Value	Metric Score
Total Taxa:	21	N/A
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	7	36.7
Chironomidae Pct:	16.3	77.1
Sensitive Plains Families Pct:	34.2	55.3
Predator+ Shredder Taxa:	10	71.4
Clinger Taxa:	7	N/A
Clinger Taxa adjusted with Elevation:	7	10.4
Insect Taxa:	19	N/A
Non-Insct % of taxa:	9.5	66.1
Ephemeroptera Pct:	24.8	N/A
BeckBI:	18.0	N/A
Dominant01 Taxon Pct:	32.7	N/A
Sprawler Pct:	7.9	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	Bbridge	Sample Date:	9/26/2014		
Waterbody Name:	Animas River				
Location:	Bbridge-Durango Resort				
Latitude:	37.4589	Reference Status:	Not Reference or Degraded		
Longitude:	-107.79955	BenSampID:	11	RepNum:	1
Biotype:	1				

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 51.5

Metric Name	Metric Value	Metric Score
Total Taxa:	17	N/A
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	5	45.6
Chironomidae Pct:	4.0	95.8
Sensitive Plains Families Pct:	22.4	36.3
Predator+ Shredder Taxa:	6	42.9
Clinger Taxa:	6	N/A
Clinger Taxa adjusted with Elevation:	6	30.5
Insect Taxa:	15	N/A
Non-Insct % of taxa:	11.8	58.1
Ephemeroptera Pct:	52.9	N/A
BeckBI:	13.0	N/A
Dominant01 Taxon Pct:	52.0	N/A
Sprawler Pct:	4.5	N/A

Colorado Department of Public Health and Environment

Water Quality Control Division

Benthic Macroinvertebrate Bioassessment Report

StationID:	James R	Sample Date:	9/26/2014		
Waterbody Name:	Animas River				
Location:	James Ranch				
Latitude:	37.422021	Reference Status:	Not Reference or Degraded		
Longitude:	-107.810336	BenSampID:	13	RepNum:	1
Biotype:	1				

Predictive Model Results

O/E (p>half):

Model Test:

Multimetric Index Model Results

MMI: 57.5

Metric Name	Metric Value	Metric Score
Total Taxa:	19	N/A
Ephemeroptera + Plecoptera Taxa (adjusted with Elevation):	6	56.9
Chironomidae Pct:	7.9	90.0
Sensitive Plains Families Pct:	16.1	26.0
Predator+ Shredder Taxa:	10	71.4
Clinger Taxa:	9	N/A
Clinger Taxa adjusted with Elevation:	9	56.6
Insect Taxa:	16	N/A
Non-Insct % of taxa:	15.8	43.8
Ephemeroptera Pct:	44.9	N/A
BeckBI:	13.0	N/A
Dominant01 Taxon Pct:	43.8	N/A
Sprawler Pct:	1.7	N/A