FLOODPLAIN HABITAT RESTORATION
2005 MONITORING FINAL REPORT
GREEN RIVER, UTAH

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Executive Summary

This document presents the results of sedimentation/erosion and discharge monitoring conducted in 2005 at five restored floodplain sites (Thunder Ranch (TR), Bonanza Bridge (BB), Stirrup (ST), Baeser (BA) and Above Brennan (AB)), along the Green River near Vernal, Utah. Levees were breached at these sites to allow for both flow-through and backwater flooding during spring runoff.

The goal of this monitoring effort was to quantify discharges through levee breaches and document observable erosion/sedimentation at the restored bottomland sites during the 2005 runoff event. In addition, post runoff surveys were conducted at Thunder Ranch to quantify erosion/sedimentation in the inlets and outlets. Results of the monitoring studies will give the Recovery Program a better idea of how different floodplain restoration site configurations respond during spring runoff, and how site configurations may be improved to better entrain drifting razorback sucker larvae.

This report presents the field results for flows measured at all five sites, cross sectional surveys and trends in the inlets and outlets for degradation and aggradation, documentation of visual observations, plots of inflow to the bottomland sites versus flows in the Green River and recommendations for future efforts.

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1.0 INTRODUCTION

The Upper Colorado River Endangered Fish Recovery Program (Recovery Program) seeks to re-establish self-sustaining populations of four endangered fishes endemic to the system. One method of meeting this objective is to restore or enhance natural floodplain functions that support recovery of endangered fishes in the basin. During 1997, 1998, 2000, and 2004 the physical inundation parameters of nine bottomlands located along the Green River near Vernal, Utah were modified. Levee breaching and/or bank lowering reduced the flood elevations and discharges required to inundate these sites. These reduced flood elevations allow floodplain inundation to occur at frequencies that mimic historic patterns under the current flow regime influenced by the Flaming Gorge dam and other water resources projects in the basin.

This document presents the results of sedimentation/erosion and discharge monitoring conducted in 2005 at five restored floodplain sites (Thunder Ranch (TR), Bonanza Bridge (BB), Stirrup (ST), Baeser (BA) and Above Brennan (AB)), along the Green River near Vernal, Utah. Levees were breached at these sites to allow for both flow-through and backwater flooding during spring runoff.

The goal of this monitoring effort is to quantify discharges through levee breaches and document observable erosion/sedimentation at the restored bottomland sites during the 2005 runoff event. In addition, post runoff surveys were conducted at Thunder Ranch to quantify erosion/sedimentation in the inlets and outlets. Results of the monitoring studies will give the Recovery Program a better idea of how different floodplain restoration site configurations respond during spring runoff. Ideally, these sites will provide adequate fish utilization through entrainment of larval fish to the floodplain habitats at frequencies and durations that mimic historic patterns utilizing current spring flows. A second goal of this monitoring effort is to assess the needs for site improvements for better connectivity with the Green River.

Specific objectives of this report are to:

- Present levee breach discharge results for all five sites.
- Present pre-runoff and post-runoff cross section surveys for Thunder Ranch.
- Present pre-runoff cross section surveys for Bonanza Bridge, Stirrup, Baeser and Above Brennan.
- Present qualitative, observed erosion and sedimentation trends at all sites from the 2005 spring runoff event.
- Provide recommendations, where applicable, to improve connectivity of the bottomland sites to the Green River.
- Develop a photo documentation record to monitor changes at the restoration sites.
- Provide surveys as baseline data for future erosion and sedimentation monitoring.

A more detailed discussion of the initial design objectives, river hydraulics and hydrology, specific site configurations, and locations of these sites are presented in the “Green River Floodplain Habitat Restoration Investigation, Bureau of Land Management Sites, and Ouray National Wildlife Refuge Sites near Vernal, Utah, Final Report (FLO, 1997).”

2.0 OVERVIEW OF 2005 FIELD DATA COLLECTION EFFORT

During 2005, data were collected during the spring runoff event in May, 2005. The spring runoff consisted of timed releases from Flaming Gorge Reservoir coinciding with the runoff from the Yampa River, which confluences with the Green River upstream of the study sites (approximately 42.25 miles upstream of Jensen Bridge). The spring runoff event for the Green River in 2005 was consistent with average spring runoff events for the Green River. Spring runoff events for several years prior to 2005 have been relatively low due to drought conditions. Terms used in this report related to "flood" and "flooding" refer to inundation that occurred during the 2005 spring runoff flows.

Discharge measurements through the levee notches were to be conducted during three flow stages in the Green River as reported at the Jensen Gage. One round of measurements was to coincide with 14,000 cfs in the Green River on the ascending limb of the hydrograph, one round was to coincide with the peak of 18,000 cfs, and one round was to coincide with 16,000 cfs in the Green River on the descending limb of the hydrograph. Actual discharge measurements were conducted three times during the runoff event at each inlet/outlet but at slightly different flows noted as follows; once on the ascending limb of the hydrograph at approximately 14,000 cfs between May 19th and May 20th, once at the peak at approximately 20,000 cfs between May 24th and May 25th, and once on the descending limb at approximately 17,000 cfs between May 30th and May 31st.

Post-runoff cross section monitoring and observations were also performed at the Thunder Ranch site between August 11 and August 12, 2005. In contrast to previous years, river cross section surveys adjacent to the bottomlands and cross section surveys of the bottomlands themselves were not conducted. The elimination of these tasks allowed for more field data collection efforts at new bottomland sites where floodability studies involving quantification of inflows and outflows was the priority for this year's data collection. In addition, data from previous years indicated that most areas with notable changes tended to be at the inlets and outlets of the bottomland sites and that the interior portions of the bottomland sites did not exhibit significant changes. Initial measurements have indicated that the rate of sedimentation in the interior portions of the bottomlands is slow and surveys at intervals of several years or more are appropriate for tracking potential filling of the bottomlands from sedimentation. Re-surveying of the river cross sections was not performed this year but should be considered as part of upcoming data collection efforts. See Section 6.0 for recommendations of future monitoring efforts.

The 2005 data and cross section plots at the inlets and outlets of the monitored bottomland sites are appended to this report. Cross section data for the inlets and outlets are plotted against previous year's data for comparing erosion and sedimentation at the levee openings. Corresponding mapping showing the cross section locations can be found on Figures 1 through 6 in **Appendix B**. The 1999 monitoring report (FLO, 1999) provides a summary of the methodology of erosion/sedimentation monitoring at each site.

Endpoint and cross section length information for all cross sections at all monitored sites is provided in **Appendix A.** The field notes for establishing vertical control at the Thunder Ranch cross sections, the reset LEP on BB-IN-2, and the reset LEP on AB-OUT are also provided in Appendix A. Figures 2 through 6 in **Appendix B** show the site plans with locations of the various monitoring sections for all five bottomland sites.

3.0 METHODS FOR DISCHARGE MONITORING AND EROSION AND SEDIMENTATION DOCUMENTATION

Discharge measurements in all inlets/outlets at each site were conducted three times, as previously discussed in Section 2.0 of this report. The time at which measurements were to be taken at the bottomland sites were to correspond to the time when flows at Jensen Gage reached 14,000 cfs on the ascending limb of the hydrograph, 18,000 cfs at the peak, and 16,000 cfs on the descending limb. Flows at the bottomland sites, however, were not directly equivalent to the flows reported at the Jensen Gage due to the travel time needed for flows at the gage to reach the bottomland sites, and due to flows from Ashley Creek. Ashley Creek confluences with the Green River approximately 17.5 miles downstream of the Jensen Gage. The creek was observed to have significant flows at the time of data collection. Discharges from Ashley Creek are added to the Jensen Gage discharges at the appropriate time intervals and a composite discharge obtained. The added discharge from Ashley Creek affects the bottomland sites downstream of the confluence, namely Bonanza Bridge, Stirrup, Baeser, and Above Brennan. Detailed information regarding the stream gages, river miles, composite discharges and lag times is located in **Appendix D**.

A Marsh-McBirney, Inc. Flow-Mate Model 2000 Portable Flowmeter and a wading rod were used to collect velocity measurements for determination of discharge.

Two staff gages were installed along the flow line of each inlet and outlet at all five sites. One gage was installed at or near the inlet/outlet cross section and one gage was installed inland, further toward the bottomland. The original intent of these staff gages was to help determine the hydraulic gradient in each inlet and outlet while flow was moving in and out of the bottomlands. Some readings were made during the survey efforts, however many of the gages were inaccessible, covered with debris, underwater, or washed away, making it difficult to take systematic and meaningful readings. The staff gages were useful, however, in making visual observations of erosion and sedimentation in the inlets and outlets during the post-runoff monitoring which is presented in later in this report.

At the inlets and outlets with previously monumented cross sections, pre-runoff cross section surveys were used to compare the erosion and sedimentation magnitudes from previous years. At the Thunder Ranch site, monitoring cross sections were established and surveyed across the mouth of each inlet and outlet before the spring runoff and surveyed again after the spring runoff in order to compare as-built conditions with post runoff conditions. Monitoring cross sections are designated by a two letter site identification followed by a short (usually two or three letter) feature description and feature number if there is more than one of its type. For example TR-IN-1 denotes Thunder Ranch inlet number 1. Multiple features are numbered sequentially from upstream to downstream.

Qualitative observations of the site characteristics are also reported and photo documentation serves as references for erosion/sedimentation monitoring. During 2005, all of the sites were connected for approximately 25 days, from May 19 to June 12.

4.0 DISCHARGE RESULTS AND CROSS SECTION SURVEYS

A site by site summary of discharge monitoring results and erosion and sedimentation measurements is presented in this section. Each site analysis includes comparisons of discharge between the inlets and outlet and the Jensen Gage, comparisons of erosion and sedimentation from previous years or as-built surveys, and general observations.

4.1 Thunder Ranch

All elevations used at the Thunder Ranch site including those use in construction drawings, HEC-RAS analysis, cross-section surveys, and discharge measurements are based on a datum that is 99.30 feet higher than the USGS mapping. See the memo in **Appendix D** for further information.

Information regarding the Thunder Ranch site contained within this report represents the first monitoring effort for the site. The Thunder Ranch site (RM 305 to 306.2) is located approximately 3 river miles upstream of the U.S. Highway 40 crossing of the Green River near the town of Jensen, Utah (a.k.a. Jensen Bridge). The site consists of seven constructed inlets along the length of the bottomland and one constructed outlet at the southern end of the bottomland to provide flow through conditions. These inlets and outlet are designed to connect with the Green River when flows in the river range between approximately 12,000 and 16,000 cfs. Reclamation crews from Provo performed the construction of features at Thunder Ranch in May/June 2004. Thus 2005 is the first time the inlets and outlet have received connection flows.

At the Thunder Ranch site all the inlets and outlet had fairly flat and uniform inverts. No aggradation or degradation appeared to have occurred prior to the spring 2005. Most inlets/outlets exhibited moderate (around 40%) regrowth of vegetation. Fences have been erected across the mouths of TR-IN-1, TR-IN-2 and TR-IN-3 reportedly to prevent cattle from accessing the river. TR-IN-4, TR-IN-5, TR-IN-6, TR-IN-7 and TR-OUT had no fences; however TR-IN-5 had signs of cattle accessing the river at its location. There is an existing ditch which drains the fields that lie in the vicinity of TR-IN-1 and TR-IN-2. The ditch may have an effect on the function of these two inlets.

4.1.1 Discharge Monitoring

Three sets of discharge measurements were taken at each of the inlets and outlet. The results of the measurements are presented in Table 1 and discussed below. Estimates of flow in the Green River, noted in Table 1 are determined from the Jensen Gage, adjusted for travel time. Computations are presented in Appendix D

On May 19, 2005 the Thunder Ranch site started to fill when the Green River reached flows of approximately 14,000 cfs on the ascending limb of the hydrograph. Prior to hydraulic connectivity the bottomland had some ponded water at the south end which is most likely due to ground water connection and a perched aquifer that seeps out of a bluff on the east side of the bottomland. The north end of the bottomland was dry. On May 19th through four inlets (TR-IN-3, TR-IN-5, TR-IN-6 and TR-IN-7) and the outlet, TR-OUT water was flowing into the bottomland. The highest inflows were recorded at TR-IN-3, TR-IN-6, and TR-IN-7. TR-IN-2 remained dry while TR-IN-1 and TR-IN-4 were inundated but there was no detectable velocity. A sum total of approximately 125 cfs was flowing into the bottomland at this stage. At the location of the seep conveyance pipe water was overtopping the road constructed parallel to the pipe in two places and erosion was beginning to occur. The road had been constructed with excess material generated onsite and as a result is elevated above the existing ground. This elevated area is what was observed to be eroding.

Table 1. Discharges at Thunder Ranch Site (RM 305.0 to 306.2)

5/19/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
TR-IN-1	13:30	-	-	-	-	0	14100	14100
TR-IN-2	13:45	-	-	-	-	0	14100	14100
TR-IN-3	14:15	0.7	0.7	54	0.39	14	14200	14200
TR-IN-4	14:45	-	-	-	-	0	14200	14200
TR-IN-5	15:00	0.3-0.4	0.35	29	0.17	3	14200	14200
TR-IN-6	15:45	1.0-1.7	1.35	56	0.19	14	14100	14100
TR-IN-7	16:15	1.5-2.3	1.9	66	0.12	23	14100	14100
TR-OUT	11:45	1.3-3.0	2.15	46	0.66	71	13700	13700
					NET Q IN=	125		

5/24/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
TR-IN-1	10:30	1.2-2.6	1.9	68	0.15	22	19200	19200
TR-IN-2	11:45	0.6-1.1	0.85	57	0.11	6	19400	19400
TR-IN-3	12:30	0.9-1.4	1.15	67	1.16	88	19500	19500
TR-IN-4	13:00	1.6-3.2	2.4	74	0.20	-10	19500	19500
TR-IN-5	14:30	0.8-2.3	1.55	60	1.43	166	19600	19600
TR-IN-6	15:15	1.4-2.8	2.1	68	1.21	188	19600	19600
TR-IN-7	16:00	2.4-3.4	2.9	74	-0.26	-58	19600	19600
TR-OUT	17:15	1.1-4.6	2.85	63	-1.64	-319	19600	19600
					NET Q IN=	83		

5/30/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
TR-IN-1	9:15	0.3-1.8	1.05	60	-0.02	-1	16800	16800
TR-IN-2	9:45	-	-	-	-	0	16700	16700
TR-IN-3	10:15	0.4-1.4	0.9	37	1.24	40	16700	16700
TR-IN-4	10:45	0.4-2.1	1.25	50	0.21	4	16700	16700
TR-IN-5	11:15	0.6-1.7	1.15	51	0.57	32	16700	16700
TR-IN-6	11:45	0.2-1.1	0.65	46	0.70	28	16800	16800
TR-IN-7	12:15	0.8-2.3	1.55	69	0.96	82	16800	16800
TR-OUT	13:15	1.4-3.5	2.45	49	-0.76	-100	16800	16800
					NET Q IN=	85		

* NOTES:

1. FEATURE Q with positive values indicate flow into the bottomland, negative values indicate flow out of the bottomland.
2. Estimated flows at Jensen Gage account for time lag between the bottomland site and the gage

On May 24th discharge measurements were taken to represent the runoff peak of approximately 19,600 cfs in the Green River. All inlets/outlets were hydraulically connected at this stage and flow-through was achieved. Flows were being returned to the river from the bottomland through the outlet (TR-OUT). Through two inlets (TR-IN-7 and TR-IN-4) water was also flowing out from the bottomland to the river. The highest inflows were recorded at TR-IN-3, TR-IN-5 and TR-IN-6. A total of approximately 470 cfs was flowing into the bottomland while approximately 390 cfs was flowing out. The 80cfs reduction is most likely the result of natural flow attenuation within the bottomland. It is also possible that there may be minor errors in flow measurements, changes in flows over the time period of measurements, and minor losses within the bottomland such as evaporation, infiltration into the banks, etc.

On May 30th discharge measurements were taken to capture the descending limb of the hydrograph. Flows in the Green River were approximately 16,700 cfs at the time of measurement. Through five inlets water was still flowing into the bottomland (TR-IN-3, TR-IN-4, TR-IN-5, TR-IN-6 and TR-IN-7) with the highest inflows recorded at TR-IN-3, TR-IN-5 and TR-IN-7. TR-IN-2 had some ponding but no moving water. Water was flowing out of the bottomland through TR-OUT as well as slightly through TR-IN-1.

A sum total of approximately 190 cfs was measured flowing into the bottomland while approximately 100 cfs was measured flowing out of the bottomland. It is important to note that prior to these final flow measurements water overtopped the south levee and downcutting eroded notches in the levee. This may account for some of the difference in inflow and outflow measurements. In addition the difference in flows may be due to natural flow attenuation within the bottomland, minor errors in flow measurements, changes in flows over the time period of measurements, and minor losses within the bottomland such as evaporation, infiltration into the banks, etc

All inlets and the outlet connected as predicted by preconstruction analyses. Table 2 summarizes constructed versus post runoff invert elevations as well as target flows for connection and observed flow-connection conditions.

Table 2. As Constructed vs. 2005 Surveyed Conditions at Thunder Ranch Inlets/Outlets

Feature	As Constructed Invert Elevation	Post Runoff Invert Elevation 2005	Target Q For Connection (cfs)	Observations of flow at Features			
				Flow @ Site < 10,000 cfs	Flow @ Site Approx. 14,000 cfs	Flow @ Site Approx. 19,600 cfs	Flow @ Site Approx. 16,700 cfs
TR-IN-1	4833.65	4833.71	11500	Not Connected	Flow In	Flow In	Flow Out
TR-IN-2	4835.00	4834.81	16800	Not Connected	Not Connected	Flow In	Ponded
TR-IN-3	4833.40	4833.67	11900	Not Connected	Flow In	Flow In	Flow In
TR-IN-4	4833.45	4833.36	12933	Not Connected	Flow In	Flow In	Flow In
TR-IN-5	4832.75	4833.05	12000	Not Connected	Flow In	Flow In	Flow In
TR-IN-6	4832.25	4831.91	11166	Not Connected	Flow In	Flow In	Flow In
TR-IN-7	4832.25	4832.00	12000	Not Connected	Flow In	Flow In	Flow In
TR-OUT	4831.30	4829.06	12433	Not Connected	Flow In	Flow Out	Flow Out

4.1.2 Erosion and Sedimentation Monitoring

Post runoff surveys at Thunder Ranch were conducted on August 11, 2005 to assess sedimentation and erosion at each of the inlets and the outlet. When the post-runoff cross section data from the Thunder Ranch site is compared with the pre-runoff/as built data, a trend of deposition can be seen in most of the inlet/outlet bottoms. Overall, the trend of deposition in the Thunder Ranch inlet/outlet bottoms followed a pattern of mounding in the center with drain channels developing along the right and left sides. The inlets/outlets that experienced the most deposition appear to be those that had the highest inflows during runoff. The exception to this appears to be TR-IN-3 which experienced some fairly significant scour along the right and left sides of the inlet bottom. However, TR-IN-3 did have some mounded deposition in the middle of the inlet bottom. TR-IN-2 experienced almost no change overall which was probably due to the near lack of inflows throughout the runoff event. Minor scour occurred along the right side of TR-IN-2 which may be attributed to a slow eddy that was observed to form in the inlet. The outlet (TR-OUT) exhibited some slight mounded deposition around the center of the outlet bottom and almost no scour. The absence of scour in TR-OUT may indicate that the grade control structures are functioning per plan. Table 3 presents a summary of the survey results. Cross section plots are also presented in **Appendix C**.

Table 3. Comparison of Scour (-) and Deposition (+) for the Thunder Ranch Inlet Cross Sections May 2005 to August 2005 (See Appendix C).

Cross Section	Range of Scour (-) & Deposition (+) in feet						Comments
	Left side slope	Left 1/3rd of bottom	Center 1/3rd of bottom	Right 1/3rd of bottom	Right side slope	Average Change in Bottom	
TR-IN-1	0 to +0.5	+0.5	+0.5 to +0.75	+0.75 to +1.5	0 to +1.5	+0.75	Most deposition along middle to right side
TR-IN-2	0	0	0	0	0 to -0.25	0	Some minor bank erosion along right side
TR-IN-3	-3.5 to +1.25	+1.25	+0.75 to +1.25	+0.25 to +0.75	-1.5 to +0.25	+1.0	Significant bank erosion along left and right sides with mounding deposition in center
TR-IN-4	0 to +0.5	+0.5 to +1.75	+1.75 to +2.0	+2.0 to +2.25	0 to +2.0	+1.75	Significant deposition along middle and right side
TR-IN-5	0	0 to +0.25	+0.25 to +0.5	0 to +0.5	0 to -0.75	+0.25	Minor deposition in middle, bank erosion along right side
TR-IN-6	0 to +1.25	+1.25 to +1.75	+1.75 to +2.0	+1.75 to +1.0	-0.75 to +1.0	+1.75	Mounded deposition in bottom of inlet with small drain channel developing along right side
TR-IN-7	0 to +2.0	+1.5 to +2.0	+1.5 to +1.75	+1.5 to 0	0 to -1.0	+1.5	Deposition in bottom of inlet with small drain channel developing along right side
TR-OUT	0	0 to +0.25	+0.25 to +0.75	+0.5 to +0.75	-0.5 to +0.5	+0.5	Small amount of mounded deposition in middle of outlet bottom

4.1.3 Post Runoff Visual Observations

In addition to the cross sectional surveys, visual observations were made on August 11, 2005. The following summarizes these observations. Some of these observations refer to staff gages that were installed in the notches in an attempt to read the water surface slope during flood events. These staff gages were installed at all notches in all five sites. However, many of the gages were inaccessible, covered with debris, underwater, or washed away, making it difficult to take systematic and meaningful readings. The staff gages were useful, however, in making visual observations of erosion and sedimentation in the inlets and outlets during the post-runoff monitoring which is presented in the visual observations section for each site.

TR-IN 1

- Deposition berm has formed across inlet bottom at bank with a small channel scoured along left (upstream) toe of inlet
- Staff gage toward bottomland not showing deposition or aggradation
- Staff gage at cross section has some deposition
- Inlet has some new vegetation growth/also lots of cattle tracks
- Fence is in place, located at the bank of the river across the excavated opening
- Vegetative cover in overbanks and areas outside of inlet unchanged from pre-runoff conditions

TR-IN 2

- Approximately 50% new vegetation cover consisting of short vegetation
- Staff gages not showing deposition or aggradation
- No obvious signs of aggradation or degradation in any area of the inlet
- Fence is in place, located at the bank of the river across the excavated opening
- Vegetative cover in overbanks and areas outside of inlet has not changed from pre-runoff conditions

TR-IN 3

- No vegetation across bottom of inlet
- Sediment is relatively uniform along the length of the inlet bottom with a mound in the middle
- Staff gage toward bottomland ground at 0.6 ft on gage (some deposition)
- Staff gage at cross-section ground at 0.08 ft on gage (little deposition)
- Fence is down (probably during floods)
- Debris snag at inlet along river bank

TR-IN 4

- Sandy notch bottom, less than 50% vegetation cover consisting of short vegetation
- Deposition is visible in notch at the surveyed cross section
- Ground further inland appears to be unaltered
- Banks along the Green between TR-IN 3 and TR-IN 4 has eroded whereby the bank has lost at least 10 feet of bank and accompanying vegetation. Notch appears to be relatively unaffected.

TR-IN 5

- No vegetation across bottom of inlet
- Cross-section staff gage missing
- Staff gage toward bottomland ground at 0.5 ft on gage (some deposition)

TR-IN 6

- Cross-section staff gage reading 1.16 ft at ground (deposition)
- Staff gage toward bottomland ground level at 2.06 feet deep

TR-IN 7

- Cross-section staff gage reading 0.58 ft at ground (deposition)
- Staff gage toward bottomland ground level at 0.09 ft.(little deposition)
- Vegetation growth at least 50% coverage consisting of short vegetation
- Large sand bar has developed in Green River adjacent to inlet. Sand bar was not visible prior to spring runoff.

TR-OUT

- Channel has new cottonwood growth (0.1-0.4 ft tall) throughout notch from the upper grade control at the road crossing, to river
- 2 scour holes developed just upstream (toward the bottomland) of the upper grade control structure
- Lower grade control structure is mostly buried (deposition)
- Staff gage S16A (upper staff gage toward bottomland) has almost fallen over
- Staff gage S16 (lower staff gage toward bottomland) reading 0.70 ft at ground (some deposition)
- Staff gage S15A (upper staff gage at cross-section) reading 0.48 ft at ground (some deposition)
- Staff gage S15 (lower staff gage at cross-section) reading 0.70 ft at ground (some deposition)

Visual observations at TR also include inspection of the siphon, cleanout stand pipes and access road over the top of the seepage pipe located in the center of the property. Based on visual observation, including observations of the siphon vault and downstream manhole, the siphon and seepage pipe appear to be functioning as designed and show no signs of changes due to the flooding. There was some minor erosion at the top of the cleanout stand pipes along the portion of access road. The access road had two locations that eroded from inland flows moving from the upstream inlets to the downstream bottomland and outlet. The sections that eroded appeared to be elevated above the ground on each side of the road. The erosion did not appear to have affected or lowered the ground adjacent to the access road.

4.2 Bonanza Bridge

The Bonanza Bridge site (RM 288.9 to 289.6) is located immediately downstream of the Utah State Highway 45 crossing of the Green River (a.k.a. Bonanza Bridge) and approximately 26.5 miles downstream of the Jensen Gage (RM 316.5). The outlet at Bonanza Bridge was constructed in 1997 with inlets being added in April 2000. Previous monitoring efforts at the Bonanza Bridge site are as follows:

- Erosion and sedimentation monitoring of the river cross sections during the spring of 1996, 1997, and 1998
- Erosion and sedimentation monitoring of the bottomland cross sections during the spring and fall of 1997, spring of 1998 and summer of 2003.
- Erosion and sedimentation monitoring of the outlet cross sections during the spring and summer of 1997, the spring of 1998, the summer of 1999, and the summer of 2003.
- Erosion and sedimentation monitoring of the inlet cross sections during the summer of 2003.

The site has three narrow constructed inlets at its upper end and one constructed outlet to provide flow through conditions. In 2005 connection occurred when the Green River at Jensen reached approximately 14,000 cfs.

Site observations were made prior to runoff in 2005. Each inlet/outlet had very different characteristics. BB-5B, the outlet, is heavily vegetated with young cottonwoods and grasses. BB-IN-1 has less vegetative cover with about 30% to 35% coverage. BB-IN-2 is a deep v-notch constructed through a dune of wind-deposited sand. The sand is quite loose and highly mobile, particularly along the left bank of the inlet. There is very little vegetation along the left bank of this inlet. During the discharge measurements the left bank was observed to be eroding very quickly with large chunks falling into the inlet bottom. BB-IN-3 is also a deep v-notch with denser vegetative cover. In the bottom of the inlet, large Russian Olives have grown near the mouth of the inlet and a stand of dense Salt Cedars have grown further in towards the bottomland. There is evidence of some scour in the bottom of this inlet.

4.2.1 Discharge Monitoring

Three sets of discharge measurements were taken at each of the inlets and outlet. The results of the measurements are presented in Table 4 and discussed below. The flows in the Green River have been estimated by adding flows from Ashley Creek, a tributary to the Green River below Jensen, and lagging the hydrograph for the appropriate time between Jensen and this bottomland site. Details of this analysis are presented in **Appendix D**.

Table 4. Discharges at Bonanza Bridge Site (RM 288.9 to 289.6)

5/19/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
BB-IN-1	18:45	-	-	-	-	0	13900	13900
BB-IN-2	18:30	-	-	-	-	0	13900	13900
BB-IN-3	18:00	0.6-1.0	0.8	4	1.26	5	13800	13800
BB-5B	19:00	-	-	-	-	0	14000	14000
					NET Q IN=	5		

5/25/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
BB-IN-1	9:30	0.3-1.5	0.9	8	0.64	8	19300	21998
BB-IN-2	10:15	0.8-3.4	2.1	27	1.41	82	19300	21849
BB-IN-3	10:45	1.0-2.9	1.95	12	1.45	32	19300	21750
BB-5B	8:30	0.5-2.6	1.55	148	-0.32	-112	19300	22196
					NET Q IN=	10		

5/30/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
BB-IN-1	17:30	-	-	-	-	0	16800	18538
BB-IN-2	17:45	0.7-2.3	1.5	12	0.85	22	16700	18432
BB-IN-3	18:15	0.5-2.1	1.3	11	1.21	19	16800	18521
BB-5B	17:00	0.7-1.8	1.25	128	-0.09	-19	16800	18549
					NET Q IN=	22		

*NOTES:

1. FEATURE Q with positive values indicate flow into the bottomland, negative values indicate flow out of the bottomland.
2. Estimated flows at Jensen Gage account for time lag between the bottomland site and the gage
3. Flows at the bottomland site include additional flows from Ashley Creek. See Appendix D.

Prior to surface water connection, the Bonanza Bridge site had some shallow ponded water which could have been the result of heavier than usual spring rains and/or ground water connectivity. The Bonanza Bridge site began to fill on May 19th with approximately 13,900 cfs in the Green River at the site. BB-IN-3 was the only inlet with measurable inflow at a rate of 5 cfs. BB-IN-2 was starting to flow but not enough to facilitate data collection. BB-IN-1 was dry (water surface measurements indicated the invert of the inlet remained approximately 0.5 feet above the water level adjacent to the inlet). BB-5B (the outlet cross section) was also dry.

On May 25th with approximately 21,900 cfs in the Green River at the site, all the inlets/outlets were hydraulically connected and flow through was achieved. Water was flowing into the bottomland through all three of the inlets and out of the bottomland through the outlet. The highest flows recorded were at BB-IN-2 and BB-IN-3. An approximate total of 120 cfs was flowing into the bottomland and approximately 110 cfs was flowing out. The 10 cfs reduction is most likely the result of natural flow attenuation within the bottomland. It is also possible that there may be minor errors in flow measurements, changes in flows over the time period measurements were taken as well as minor losses within the bottomland such as evaporation, infiltration into the banks, etc.

On May 30th with approximately 18,500 cfs in the Green River at the site, BB-IN-1 became disconnected. Inflow was occurring at BB-IN-2 and BB-IN-3. Flows were being returned to the river from the bottomland through the outlet (BB-5B). An approximate total of 40 cfs was flowing into the bottomland and approximately 20 cfs of outflow was measured at the outlet.

The outlet, BB-5B, connected at a higher discharge than predicted by preconstruction analyses. Table 5 summarizes constructed versus post runoff invert elevations as well as target flows for connection and observed overtopping conditions. Inlets BB-IN-2 and BB-IN-3 connected under slightly higher flows than anticipated, while BB-IN-1 is not connecting until flows are in excess of 18,500 cfs. Based on review of past notes and data collection, BB-IN-1 may have been set too high. Further discussion is presented in the following section.

Table 5. As Constructed vs. 2005 Surveyed Conditions at Bonanza Bridge Site

Feature	As Constructed Invert Elevation	Pre-Runoff Invert Elevation 2005	Target Q For Connection (cfs)	Observations of flow at Features			
				Flow @ Site < 10,000 cfs	Flow @ Site Approx. 13,900 cfs	Flow @ Site Approx. 19,700 cfs	Flow @ Site Approx. 18,500 cfs
BB-IN-1	4705.62	4705.26	13000	Not Connected	Not Connected	Flow In	Not Connected
BB-IN-2	4705.05	4704.22	13000	Not Connected	Not Connected	Flow In	Flow In
BB-IN-3	4704.63	4703.94	13000	Not Connected	Flow In	Flow In	Flow In
BB-5B	4704.83	4704.84	13000	Not Connected	Not Connected	Flow Out	Flow Out

4.2.2 Erosion and Sedimentation Monitoring

Only pre-runoff surveys at Bonanza Bridge were conducted in 2005 and compared with as-constructed surveys and observations made since 1998. Cross sections plots are presented in Appendix C and discussed below.

Based on cross section surveys, it appears that the outlet, BB-5B, overall is lower in elevation since it was constructed in 1997. However, comparisons of current conditions with July 2003 show relatively little change. A small drain channel toward the left side of the cross section experienced some deposition, and minor scour along the right side of the cross section created a new invert around station 1+50. Since 1997, the outlet area has established dense young cottonwoods throughout its entire width.

Comparison of surveys since construction for inlets BB-IN-2, and BB-IN-3 show an overall trend of degradation, although inverts in 2005 where slightly higher than 2003. Since it is unlikely that connectivity (flooding of the bottomland site) has occurred between July 2003 and May 2005, it is probable the aggradation is due to aeolian deposits. Aeolian deposition may also be causing a slight upstream migration (horizontal shift) of inlet BB-IN-2. Human activities may also have contributed to changes in the inlet configurations as there were signs of ATV use in the area. BB-IN-2 and BB-IN-3 are developing dense vegetation in their channels. Large sand deposits projecting from BB-IN-2, and BB-IN-3 toward the bottomland, first noted during the July 2003 monitoring effort (Tetra Tech, Inc. 2003) still project from the inlets 2 and 3 into the bottomland. It appears that the narrow inlet channels maintain sand transport in the flows, depositing sediment as flows slow down upon entering the bottomland. The missing LEP of BB-IN-2 was reset.

BB-IN-1 shows little sign of change since construction and since 2003 and appears to be too high for proper connection at the desired flows of 13,000 cfs (at Jensen). The original design for BB included only an outlet. To establish an invert elevation at the outlet a rating curve was developed using surveyed information for a range of flows. Unfortunately this information was only collected at the outlet. Thus it appears the inlets were designed using a HECRAS model and surveyed cross sections but without calibration measurements. The estimated rating curve for flow versus elevation for the inlets appears to be too high. However, current surveys indicate that inlets BB-IN-2 and BB-IN-3 have scoured to lower elevations, and are currently connecting at 14,000 cfs. BB-IN-1 however, has not had sufficient flow to create a scoured invert.

4.2.3 Post Runoff Observations

No cross-sectional surveys were performed following this years' runoff, however, visual observations were made on August 11, 2005. The following summarizes these observations:

<u>BB-IN-1</u>

BB-IN-1 showed little change from this years' runoff. Some very minor scour and localized aggradation occurred but not enough to disturb the existing vegetation.

<u>BB-IN-2</u>

BB-IN-2 also appeared to have experienced little change from this years flooding. Observations made during the runoff indicate that this area may scour during inflows (while the bottomland is filling) and aggrade following the peak flows. Based on visual observations it appears that there may be some aggradation overall with localized scour along the right side of the inlet bottom. It is also possible that some brush and grass vegetation may have been removed near the river bank during the flooding.

<u>BB-IN-3</u>

BB-IN-3 showed little change from this years' runoff. The ground elevation at the staff gage is relatively unchanged, although observations made during runoff indicate that this area may scour during inflows (while the bottomland is filling) and aggrade following the peak flows. Along the inlet area closer to the bottomlands there is a thick Russian Olive stand which should be removed to maintain good channel conveyance into the bottomlands.

BB-5B
The condition of this outlet area following runoff appeared to be very similar to conditions before runoff. There were no notable areas of degradation or aggradation and the ground cover and vegetation appeared to be in similar conditions as pre-flooding.

4.3 Stirrup

The Stirrup site (RM 275.7) is located at the upstream end of a geologic formation known as The Stirrup, approximately 14 river miles downstream of Bonanza Bridge. The site has one constructed inlet/outlet to provide backwater conditions for discharges above approximately 13,000 cfs. Previous monitoring efforts at the Stirrup site are as follows:

- Erosion and sedimentation monitoring of the river cross sections during the spring of 1996, 1997, and 1998
- Erosion and sedimentation monitoring of the bottomland cross sections during the spring of 1997, spring of 1998 and summer of 1999.
- Erosion and sedimentation monitoring of the inlet/outlet cross section during the spring of 1997, spring of 1998, and summer of 1999.

At the Stirrup site the single inlet/outlet is a deep v-notch. There is moderate to sparse vegetation in the inlet/outlet. The Stirrup bottomland was nearly full with water when the site was visited prior to runoff.

During the runoff measurements it was observed that water moves very slowly into the bottomland area. Since the bottomland was nearly full prior to connection through the inlet/outlet, the reduced hydraulic head between the river and the bottomland at the time of connection explains the slow movement of water into the bottomland.

4.3.1 Discharge Monitoring

Three sets of discharge measurements were taken at the single inlet/outlet. The results of the measurements are presented in Table 6 and discussed below. The flows in the Green River have been estimated by adding flows from Ashley Creek, a tributary to the Green River below Jensen, and lagging the hydrograph for the appropriate time between Jensen and this bottomland site. Details of this analysis are presented in **Appendix D**.

Table 6. Discharges at Stirrup Site (RM 275.7)

5/20/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
ST-OUT	11:45	3.0-3.5	3.25	13	0.32	6	13900	13900
					NET Q IN=	6		

5/25/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
ST-OUT	18:30	1.5-3.4	2.45	22	0.11	7	19500	21596
					NET Q IN=	7		

5/30/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
ST-OUT	15:45	1.0-2.4	1.7	17	0.09	3	16700	18500
					NET Q IN=	3		

*NOTES:

1 FEATURE Q with positive values indicate flow into the bottomland, negative values indicate flow out of the bottomland.
2 Estimated flows at Jensen Gage account for time lag between the bottomland site and the gage
3 Flows at the bottomland site include additional flows from Ashley Creek. See Appendix D.

The site became hydraulically connected somewhere between 11,000 and 13,400 cfs. On May 20th the site was filling at a rate of 6 cfs through its only inlet/outlet (ST-OUT). This corresponded to a discharge in the Green River of 13,900 cfs. On May 25th the bottomland was still filling slowly at a rate of 7 cfs. Discharge at the Jensen Gage at this time was 19,500 cfs with an estimated 21,600 cfs at the site.

On May 30th, inflows were observed at the Stirrup site at a rate of 3 cfs. Inflows were not expected but were probably caused by diurnal fluctuations in the river discharge. A small upturn in the hydrograph could cause flows to move into the bottomland site versus out.

The inlet/outlet connected as predicted by preconstruction analyses, although there appears to be some erosion in the inlet/outlet resulting in slightly lower flows required to overtop. Table 7 summarizes constructed versus post runoff invert elevations as well as target flows for connection and observed overtopping conditions.

Table 7. As Constructed vs. 2005 Surveyed Conditions at Stirrup Site

Feature	As Constructed Invert Elevation	Pre-Runoff Invert Elevation 2005	Target Q For Connection (cfs)	Observations of flow at Features			
				Flow @ Site < 10,000 cfs	Flow @ Site Approx. 13,900 cfs	Flow @ Site Approx. 21,600 cfs	Flow @ Site Approx. 18,500 cfs
ST-OUT	4686.80	4685.46	13000	Not Connected	Flow In	Flow In	Flow In

4.3.2 Erosion and Sedimentation Monitoring:

Only pre-runoff surveys at Stirrup were conducted in 2005 and compared with as-constructed surveys and observations made since 1998. Cross sections plots are presented in Appendix C and discussed below.

Comparison of this years pre runoff surveys with as constructed elevation shows the invert to have degraded by approximately 1 ½ feet with a slight narrowing of the inlet/outlet. Note that true cross section endpoints were established for the first time this year. Thus comparison of future surveys should be a more accurate and reliable representation of the cross section.

4.3.3 Post Runoff Observations

No cross sectional surveys were performed following this year's flooding, however, visual observations were made on August 12, 2005. The following summarizes these observations.

ST-OUT

It is possible that there may be a trend toward degradation in this inlet/outlet. However, the condition of the outlet area following flooding appeared to be very similar to conditions before flooding. There were no notable areas of scour and the ground cover and vegetation appeared to be in similar conditions as pre-flooding. The bottomland was filling during all site visits and could be the result of the immediate response (and relatively small size) of the bottomland to the diurnal fluctuations of the river and upturn of the hydrograph.

4.4 Baeser

The Baeser site (RM 272.7) is located at the downstream end of the geologic formation known as The Stirrup, approximately 17 river miles downstream of Bonanza Bridge. Like the Stirrup site, the Baeser site has one constructed inlet/outlet to provide backwater conditions for discharges above approximately 13,000 cfs. The Baeser inlet/outlet was constructed in the fall of 1997. Previous monitoring efforts at the Baeser site are as follows:

- Erosion and sedimentation monitoring of the river cross sections during the spring of 1996, 1997, and 1998
- Erosion and sedimentation monitoring of the bottomland cross section during the spring of 1998.
- Erosion and sedimentation monitoring of the inlet/outlet cross section during the spring of 1998 and the summer of 1999.

The Baeser inlet/outlet consists of a deep v-notch with erosion in the inlet near the river and along the river bank. There are some grasses growing in the inlet near the river and heavy grass and Russian Olive growth farther in toward the bottomland. There was water standing in the bottomland prior to the runoff and rows of nets have been installed in the bottomland for larval survival studies. A broad crested weir about 1.8 feet wide made of sandbags had been placed across the inlet for unknown reasons.

4.4.1 Discharge Monitoring

Three sets of discharge measurements were taken at each of the inlets and outlet. The results of the measurements are presented in Table 8 and discussed below. The flows in the Green River have been estimated by adding flows from Ashley Creek, a tributary to the Green River below Jensen, and lagging the hydrograph for the appropriate time between Jensen and this bottomland site. Details of this analysis are presented in **Appendix D**.

Table 8. Discharges at Baeser Site (RM 272.7)

5/20/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
BA-MON-INLET	12:45	1.7-3.2	2.45	19	0.2	10	13600	13700
					NET Q IN=	10		
5/25/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
BA-MON-INLET	17:30	1.3-3.4	2.35	33	0.22	26	19400	21578
					NET Q IN=	26		
5/31/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
BA-MON-INLET	11:15	0.3-1.2	0.75	30	0.16	5	17000	18434
					NET Q IN=	5		

*NOTES:

1 FEATURE Q with positive values indicate flow into the bottomland, negative values indicate flow out of the bottomland.
2 Estimated flows at Jensen Gage account for time lag between the bottomland site and the gage
3 Flows at the bottomland site include additional flows from Ashley Creek. See Appendix D.

On May 18th during the pre-runoff survey the inlet/outlet at the Baeser site was already flowing into the bottomland. This corresponded to a river discharge of approximately 11,500 cfs. On May 20th the first discharge measurement was taken in the inlet/outlet. Water was flowing into the bottomland at a rate of 10 cfs. Discharges in the river, at the site were approximately 13,700 cfs. Scour holes had formed in the inlet/outlet indicating high velocities while the bottomland is filling.

On May 25th, at a river discharge at the site of approximately 21,600 cfs water was flowing slow and deep into the bottomland at a rate of 26 cfs.

The final discharge measurement at the Baeser site was conducted on May 30th. Discharges in the river at the site were approximately 18,400 cfs. Like the Stirrup site, water was still flowing slowly into the bottomland at a rate of 5 cfs despite being on the descending limb of the hydrograph. This could be the result of the immediate response (and relatively small size) of the bottomland to the diurnal fluctuations of the river and upturn of the hydrograph.

The inlet/outlet connected as predicted by preconstruction analyses. Table 9 summarizes constructed versus pre-runoff invert elevations as well as target flows for connection and observed overtopping conditions.

Table 9. As Constructed vs. 2005 Surveyed Conditions at Baeser Site

Feature	As Constructed Invert Elevation	Pre-Runoff Invert Elevation 2005	Target Q For Connection (cfs)	Observations of flow at Features			
				Flow @ Site < 10,000 cfs	Flow @ Site Approx. 13,700 cfs	Flow @ Site Approx. 21,600 cfs	Flow @ Site Approx. 18,400 cfs
BA-MON-INLET	4682.60	4680.68	14000	Not Connected	Flow In	Flow In	Flow In

4.4.2 Erosion and Sedimentation Monitoring

Only pre-runoff surveys at Baeser were conducted in 2005 and compared with as-constructed surveys and observations made since 1998. Cross sections plots are presented in Appendix C and discussed below.

The bottom of the Baeser inlet has scoured several feet since the last monitoring data were collected. This was visually evident by the fact that water was already flowing into the bottomland at the time of pre-runoff data collection. A fairly deep drain channel has developed near the center of the inlet/outlet bottom. Review of several years' data indicate the inlet/outlet may experience fluctuations in aggradation and degradation, however, overall there appears to be a long term trend for degradation.

4.4.3 Post Runoff Observations

No cross-sectional surveys were performed following this years flooding, however, visual observations were made on August 12, 2005. The following summarizes these observations:

<u>BA-MON-INLET</u>

During visual post runoff observations it was noted that the scoured drain channel evident in the cross section surveys had filled with sediment. Fine sediment appeared to have been deposited throughout the entire inlet/outlet. The condition of the outlet area following this years flooding indicates some loss of vegetation; primarily shrubs and grasses, however, there were no notable areas of scour left behind. The inlet/outlet was filling during each site visit and could be the result of the immediate response (and relatively small size) of the bottomland to the diurnal fluctuations of the river and upturn of the Green River hydrograph.

This inlet/outlet also had been reconfigured in a previous year with the construction of a sand bag weir. This weir may have caused localized scour during the flood event but appeared to be demolished by the completion of this years flood.

4.5 Above Brennan

The Above Brennan site (RM 267.9 to 269.0) is located approximately 21 river miles downstream of Bonanza Bridge. Similar to the Bonanza Bridge site, the Above Brennan site has three narrow constructed inlets at its upper end and one constructed outlet to provide flow through conditions. Flow-through conditions occur above approximately 13,000 cfs. The outlet at Above Brennan was constructed in 1997. Inlets at this site were constructed in April 2000. Previous monitoring efforts at the Above Brennan site are as follows:

- Erosion and sedimentation monitoring of the river cross sections during the spring of 1996, 1997, and 1998
- Erosion and sedimentation monitoring of the bottomland cross sections during the summer of 2003.
- Erosion and sedimentation monitoring of the outlet cross section during spring and fall of 1998 and the summer of 2003.
- Erosion and sedimentation monitoring of the inlet cross sections during the summer of 2003.

The Above Brennan bottomland was dry and covered with young vegetation prior to runoff. Each inlet and outlet at the Above Brennan site had very distinct characteristics. At AB-IN-1 a considerable amount of erosion was observed. Two large scour holes have developed in the bottom of the inlet. The banks along the inlet have been eroding and there is very little vegetation in the inlet. A sand bag weir had been

placed across the mouth of the inlet similar to that of the Baeser site. There is a thick stand of young willows at the mouth of AB-IN-2. Farther in towards the bottomland there is less growth with about 50% coverage with no notable aggradation or degradation visible by observation. At AB-IN-3 there were thick stands of young willows near the river. From the endpoints and farther back toward the bottomland the AB-IN-3 inlet is sandy with little vegetation. The outlet, AB-OUT, is located in a wooded area at the south end of the bottomland site. There are large cottonwoods and some scattered debris around the outlet. There are no signs of significant aggradation or degradation. Under growth is relatively thin or non-existent in the outlet and the adjacent area, which may be due to the heavy canopy from the cottonwood trees. Note that the drawing of AB (Appendix A) shows four inlets. However, only three have been constructed and are being monitored.

4.5.1 Discharge Monitoring

Three sets of discharge measurements were taken at each of the inlets and outlet. The results of the measurements are presented in Table 10 and discussed below. The flows in the Green River have been estimated by adding flows from Ashley Creek, a tributary to the Green River below Jensen, and lagging the hydrograph for the appropriate time between Jensen and this bottomland site. Details of this analysis are presented in **Appendix D**.

Table 10. Discharges at Above Brennan Site (RM 267.9 to 269.0)

5/20/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
AB-IN-1	10:30	1.3-3.2	2.25	18	1.45	53	14100	15131
AB-IN-2	10:15	0.3-0.4	0.7	4	0.45	1	14000	15012
AB-IN-3	9:45	0.2-0.6	0.4	12	0.69	4	14100	15073
AB-OUT	7:45	0.9-2.9	1.9	33	0.7	48	14200	15017
					NET Q IN=	105		

5/25/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
AB-IN-1	13:30	0.6-4.9	2.75	25	1.68	151	19600	21948
AB-IN-2	14:30	0.7-2.8	1.75	82	0.36	32	19500	21824
AB-IN-3	15:30	1.4-3.2	2.3	21	1.42	84	19600	21900
AB-OUT	16:30	0.9-5.5	3.2	49	1.46	-223	19400	21671
					NET Q IN=	43		

5/31/2005								
LOCATION	TIME	DEPTH RANGE (ft)	AVG. DEPTH (ft)	WIDTH @ WATER SURFACE (ft)	AVG. VEL. (ft/sec)	FEATURE Q (cfs)	JENSEN Q (cfs)*	APPROX. SITE Q (cfs)
AB-IN-1	8:45	1.9-3.9	2.9	19	1.37	74	16900	18462
AB-IN-2	9:30	0.6-1.1	0.85	12	0.97	11	16800	18341
AB-IN-3	9:45	1.1-2.0	1.55	19	0.75	26	16700	18233
AB-OUT	10:30	1.1-4.4	2.75	39	0.72	-104	16800	18312
					NET Q IN=	7		

*NOTES:

1 FEATURE Q with positive values indicate flow into the bottomland, negative values indicate flow out of the bottomland.
2 Estimated flows at Jensen Gage account for time lag between the bottomland site and the gage
3 Flows at the bottomland site include additional flows from Ashley Creek. See Appendix D.

At the time of the pre-runoff survey on May 18th water was observed to be flowing into the bottomland through the outlet (AB-OUT). Discharges in the river at this time were 11,100 cfs. There was no standing water in the inlets and the bottomland area was dry. The bottomland area was covered by vegetation and appeared to have been dry for an extended period of time. The Above Brennan site became hydraulically connected somewhere between river discharges at the site of 11,000 cfs and 13,400 cfs. On May 20th the first round of discharge measurements were taken. All inlets and outlets were flowing into the

bottomland. The highest flows were recorded at AB-IN-1 and AB-OUT. A total of approximately 105 cfs was flowing into the bottomland. River discharges at this time were approximately 15,000 cfs.

On May 25th discharge measurements were taken to capture conditions at the peak discharge. Flow through conditions had been achieved with all three inlets flowing into the bottomland and flows returning to the river through the outlet. The highest inflow was coming through AB-IN-1 which was flowing fast and deep. AB-IN-3 was also flowing fairly fast and deep. The monitoring cross section for AB-IN-2 was completely inundated as was the case for most of the overbank areas around the bottomland. An approximate total of 270 cfs was flowing into the bottomland while approximately 225 cfs was flowing out. The 45 cfs reduction is most likely the result of natural flow attenuation within the bottomland. It is also possible that there may be minor errors in flow measurements, changes in flows over the time period measurements were taken as well as minor losses within the bottomland such as evaporation, infiltration into the banks, etc. Flows in the Green River at this time were estimated at the site to be approximately 21,800 cfs.

The descending limb discharge measurements were taken on May 31st with flows in the river at the site of approximately 18,300 cfs. Flow through conditions still existed in the bottomland. The highest inflow was through AB-IN-1 which was flowing fast and deep. AB-IN-3 was also still flowing fairly fast and deep. A total of approximately 110 cfs was flowing into the bottomland while approximately 105 cfs was flowing out. Much of the wooded areas surrounding the bottomland were still inundated.

All inlets connected as predicted by preconstruction analyses. Table 11 summarizes constructed versus post runoff invert elevations as well as target flows for connection and observed overtopping conditions.

Table 11. As Constructed vs. 2005 Surveyed Conditions at Above Brennan Site

Feature	As Constructed Invert Elevation	Pre-Runoff Invert Elevation 2005	Target Q For Connection (cfs)	Observations of flow at Features			
				Flow @ Site < 10,000 cfs	Flow @ Site Approx. 15,000 cfs	Flow @ Site Approx. 21,800 cfs	Flow @ Site Approx. 18,300 cfs
AB-IN-1	4675.93	4674.94	13000	Not Connected	Flow In	Flow In	Flow In
AB-IN-2	4675.90	4675.48	13000	Not Connected	Flow In	Flow In	Flow In
AB-IN-3	4676.00	4675.10	13000	Not Connected	Flow In	Flow In	Flow In
AB-OUT	4674.32	4672.48	13000	Not Connected	Flow In	Flow Out	Flow Out

4.5.2 Erosion and Sedimentation Monitoring

Only pre-runoff surveys at Above Brennan were conducted in 2005 and compared with as-constructed surveys and observations made since 2000. Cross sections plots are presented in Appendix C and discussed below.

The invert of AB-IN-1 showed some signs of erosion. As seen in the cross section survey (Appendix C) there appears to be one foot of erosion which has occurred since 2003. However, flows in the Green River only reached 11,400 cfs in 2004, which should not have been high enough to overtop the invert. The inlet erosion could be accounted for in two ways. First, there has been some modification done to the inlet as made evident by the placement of sandbags across the mouth of the inlet. Installation of these sandbags may have involved some minor excavation. Second, some error may have been incurred during data collection as the banks of AB-IN-1 are steep and difficult to survey. AB-IN-2 showed no significant change. AB-IN-3 showed minor deposition through the bottom of the inlet. This deposition may be due to wind deposited sand as this inlet is cut through a sandy portion of the levee. The outlet at the Above Brennan site had not been fully surveyed since the summer of 1999. Since that time the Green River has exceeded 13,000 cfs, and potentially achieved flow-through conditions, three times; once in 2000, once in 2001, and once in 2003. When compared with the 1999 survey, this years survey shows approximately 1 ½ feet of scour around the invert of the channel. Minor deposition occurred along the right bank.

4.5.3 Post Runoff Observations

No cross sectional surveys were performed following this years' flooding, however, visual observations were made on August 12, 2005. The following summarizes these observations.

AB-IN-1

This inlet showed little change from this years flooding between pre and post flood events. However, observations made during the flood event indicate that this area may scour from inflows while the bottomland is filling, and aggrade following the peak flows. It is also possible that some brush and grass vegetation may have been removed near the river bank during the flooding. This inlet also had been reconfigured in a previous year with the installation of sandbags. These sandbags may have caused localized scour during the flood event but appeared to be demolished by the completion of this years flood.

AB-IN-2

This inlet showed little change from this years flooding.

AB-IN-3

This inlet showed little change from this years flooding. The ground elevation at the staff gage is relatively unchanged.

AB-OUTLET

The condition of the outlet area following flooding appeared to be very similar to conditions before flooding. There were no notable areas of degradation or aggradation and the ground cover and vegetation appeared to be in similar conditions as pre-flooding.

5.0 RELATIONSHIP OF GREEN RIVER FLOWS AND FLOWS AT BOTTOMLAND SITES

The purpose of comparing inflows to the bottomlands versus flows in the Green River is to evaluate the effectiveness of the inlets and outlets in diverting flows from the main stem, and in particular, the relative importance of having both inlets and outlets in a bottomlands area versus a single opening. The relationship between flows in the Green River and inflows/outflows to a bottomland site is a complex system dependent on many factors, some of which include Green River flows and temporal location on the hydrograph (ascending, descending or peak), depth of water in the river and at the inlets and outlets, depth of water in the bottomlands, hydraulic gradient across the bottomland site, volume of water in the bottomlands or volume of storage available, and rate of change in discharges in the river. These factors are discussed briefly, below. Because sites with multiple openings appear to be behaving differently than those with single openings, they are addressed separately.

5.1 Bottomlands with Inlets and Outlets

The expected performance of these sites is that all openings (inlets and outlets) initially capture flows. Flows, or volumetric rate, are a function of the elevation of the river at the inlets and outlets, geometry of the opening, and level and volume of water already contained in the wetlands, either from earlier flooding or from groundwater connectivity. Once the site is full the outlets begin to discharge into the river and a flow-through is achieved between the inlets and outlets with volumetric rates being controlled by hydraulic gradient of the river, and attenuating factors of the bottomland.

Of the five sites that were monitored for flow rates in 2005, three have inlets and outlets (TR, BB and AB). All three responded relatively closely to expectations. Initially, inflows were measured at the outlets of both TR and AB, which each appeared to fill rapidly. It is possible that BB also experienced inflow through the outlet, but if this occurred, it happened between the first and second monitoring efforts and therefore was not observed or measured. Based on the three sets of measurements taken this year, the maximum net inflow at TR and AB was achieved prior to the river peak. Once the site was at or above the elevation of the outlet, the net flow-through at these two sites was controlled by the hydraulic gradient in the river. TR measured relatively high flow-through rates on the descending limb of the hydrograph, however, the south levee had overtopped prior to the May 30 measurements. Thus it is possible that the high flow-through was due, in part, to the levee overtopping.

5.2 Bottomlands with Single Notches

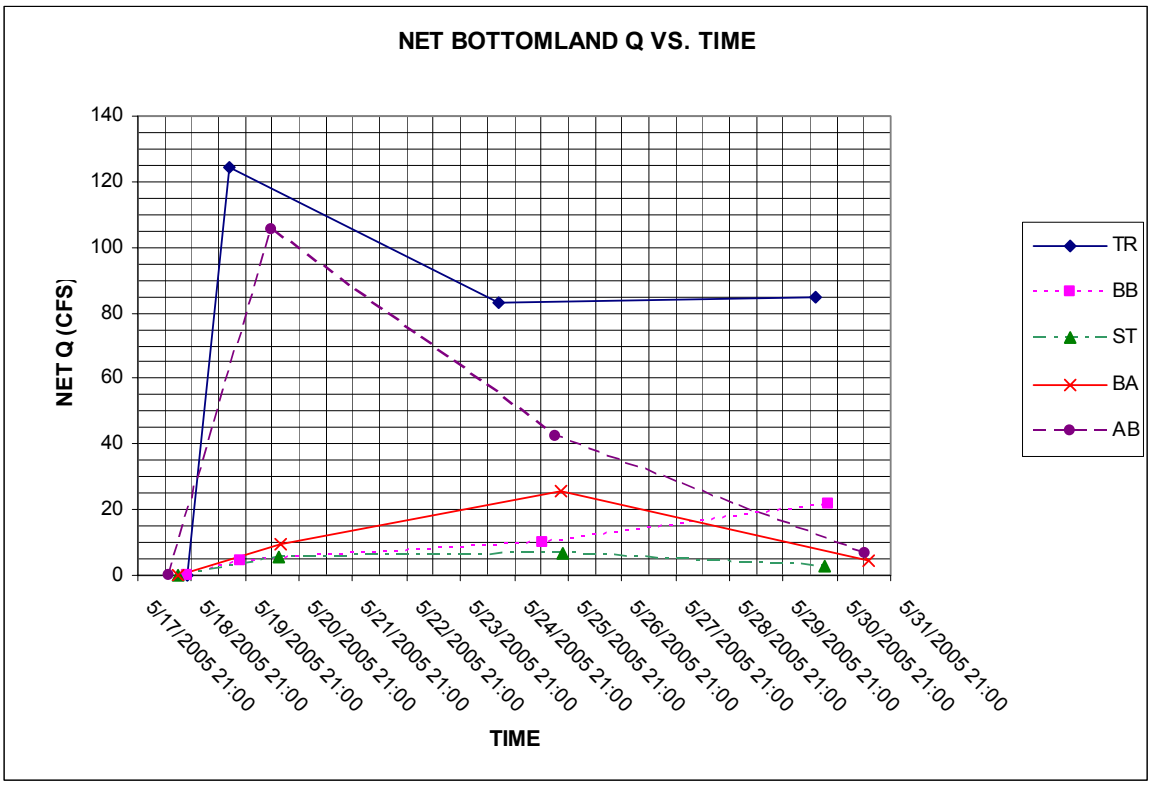
At the bottomland sites with single openings (ST and BA) the sites appeared to fill rapidly, and achieved a slow or low inflow rate once filled. During 2005 ST and BA sites both had flows moving into the bottomlands for all recorded flow conditions, even on the descending limb of the hydrograph. This was not expected. However, a review of the Green River flows on May 30 to 31, during the time period flows where measured at ST and BA, indicate that flows rose slightly accounting for the increase in river elevations and inflow to these two sites.

5.3 Functional Trends/Conclusions

Figures 1 and 2 are plots of inflow versus time for all five sites. These plots are placed below the Green River hydrograph to show the relative timing of peak flows on the Green River versus the five monitored sites. Figure 1 depicts net inflow (inflow minus outflow) to each site; Figure 2 depicts total inflow. Based on this plot and other data presented herein it appears that the multiple openings (inlets and outlets) have several advantages over single notch opening in diverting flows from the main stem. First, the relatively high inflows achieved early in test period, at Thunder Ranch and Above Brennan is due to rapid filling through all the inlets plus filling through the outlet. With these high inflows occurring early in the runoff hydrograph, it is possible that a higher percentage of river flow is captured, which in turn, increases the likelihood for entraining drifting larvae if they are present. Second, these sites will achieve a steady flow-through condition as river flows equalize which, in turn increases the potential for capturing drifting larvae by increasing the time and amount of flows being diverted into the bottomland site. Perhaps the most dominant factor observed this year is depth and volume of water in the bottomlands. This impacts the

hydraulic gradient within the site and ability of the site to capture flows. Figure 2 clearly shows the relative differences in volumes of flow-through for the multiple opening sites versus the single opening sites with ST and BA showing relatively low volumes of inflow in comparison.

Figure 1. Net Inflow to Bottomland Sites versus Time



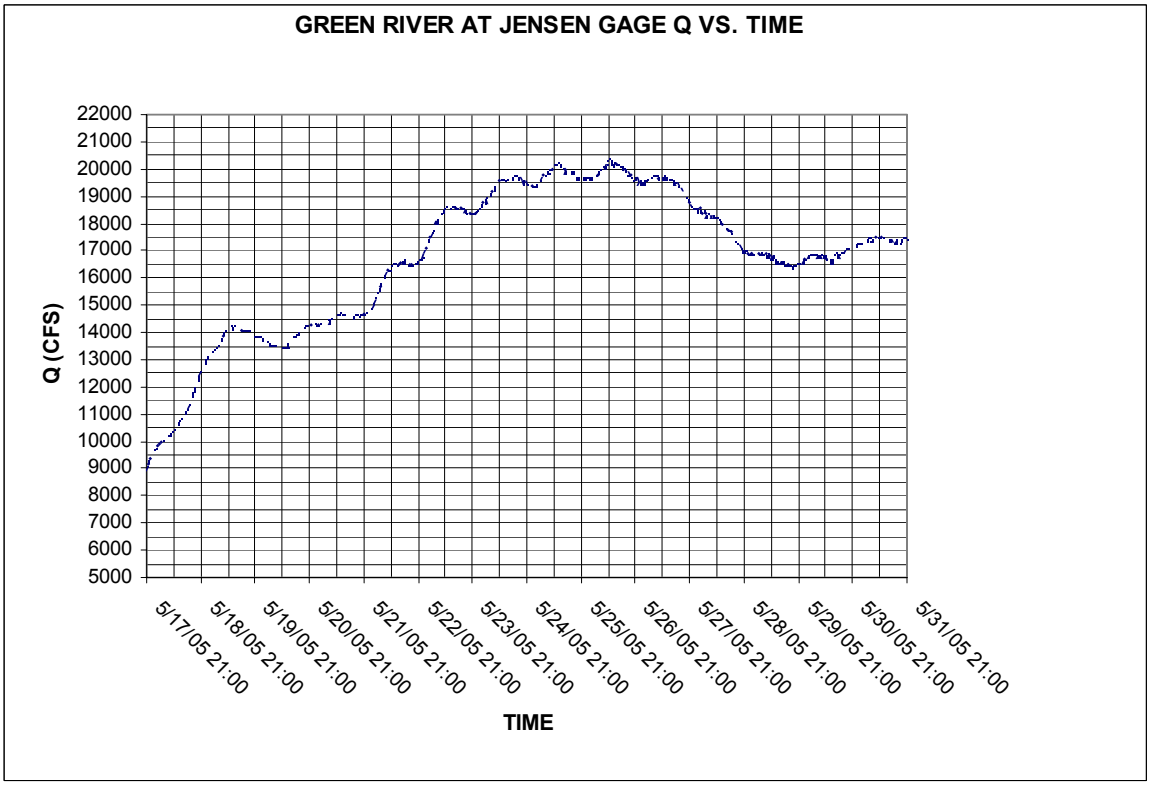
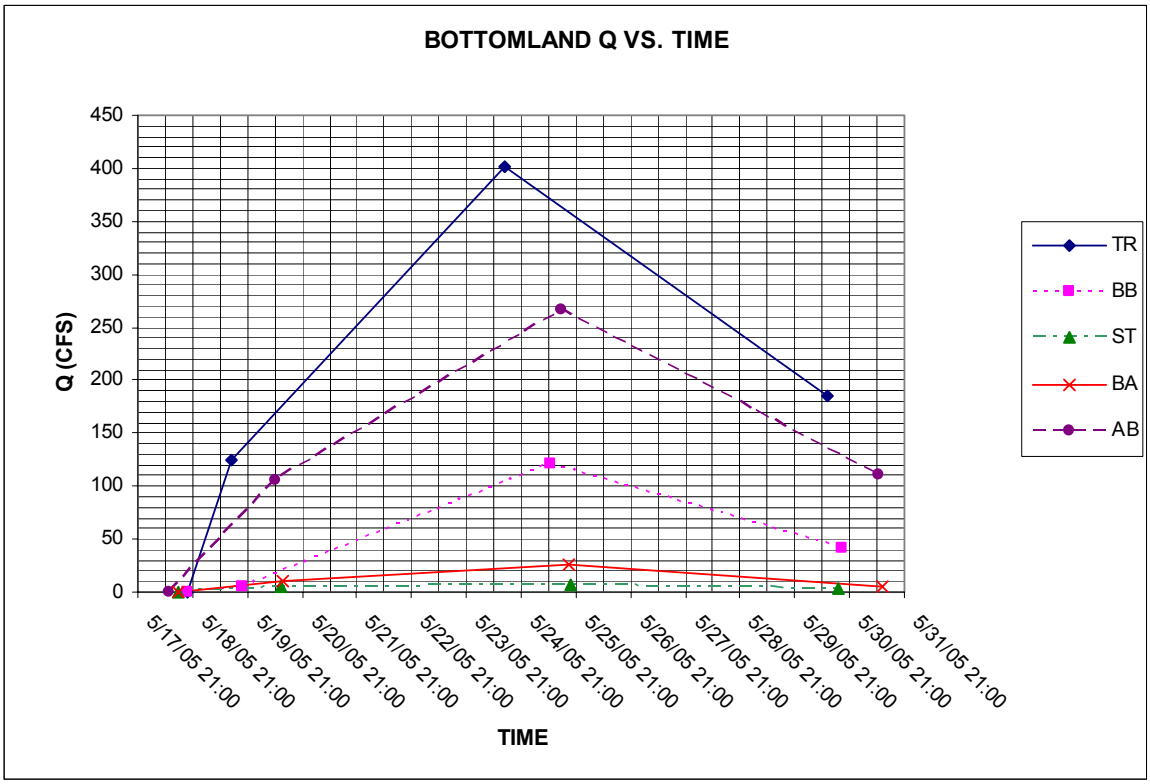
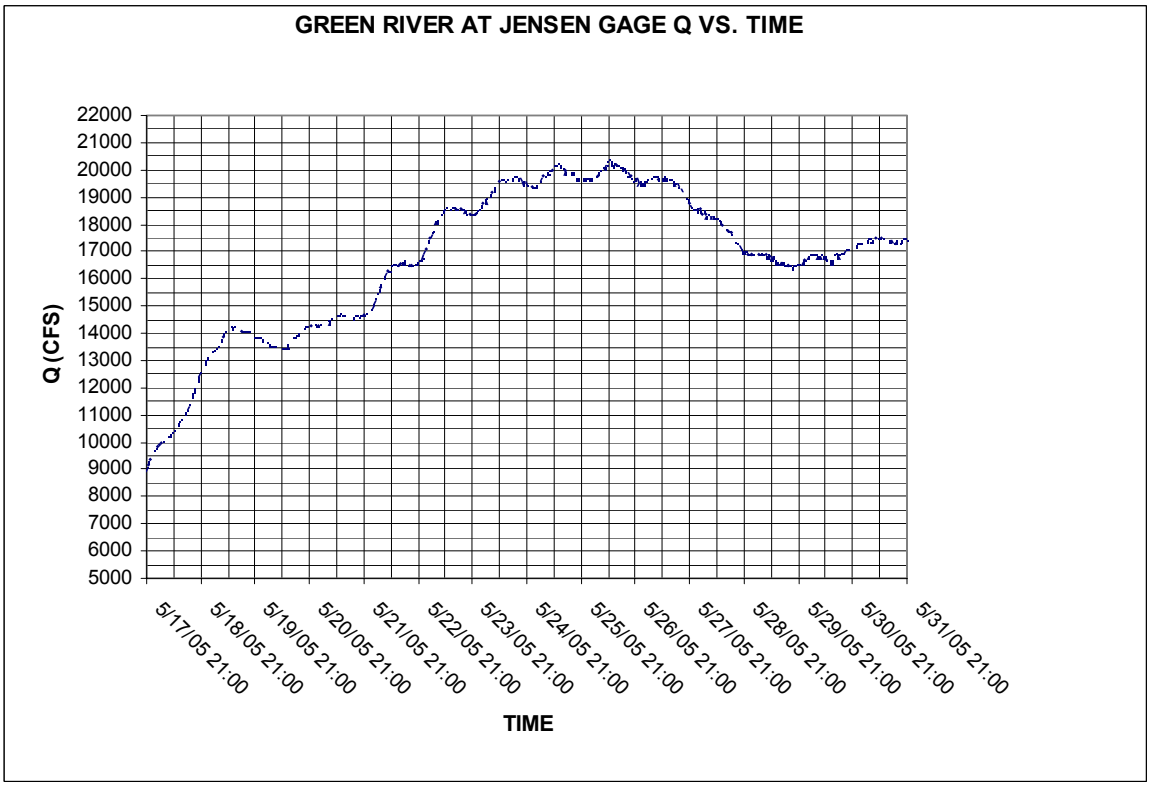


Figure 2. Total Inflow to Bottomland Sites versus Time





6.0 RECOMMENDATIONS

6.1 Thunder Ranch

The Thunder Ranch inlets/outlet all connected in 2005, within close proximity of expected flows in the Green River. TR-IN Inlets 1 and 2 had relatively low flow measurements during all three monitoring efforts. The poor connectivity may be due to the long travel distance between the inlets and bottomlands and the relatively flat gradient available for transporting flows. In addition, there is an existing ditch with a fairly flat slope that drains the adjacent hay fields. This ditch directs flows, collected from the fields, towards the river, discharging at a point between TR-IN 1 and 2 and approximately 200 feet inland. The ditch is relatively low and prone to flooding. Field surveys indicate that the invert elevation of the ditch, which controls backwater into the ditch is approximately 1 foot lower than the invert elevation of TR-IN-1, approximately 2.25 feet lower than the invert elevation of TR-IN-2 and approximately 1 foot lower than the invert of TR-IN-3. It is possible that inlet 3 is isolated from the ditch by higher ground located between TR-IN-3 and the ditch; however, there still remains the potential for backwater. Several options exist to prevent future flood flows from entering the ditch. The first is to close all three inlets. This would be achieved by backfilling and reconstructing the excavated openings. Based on this years discharge measurements closing inlets TR-IN-1 and TR-IN-2 will have little effect on the total and net inflows to the bottomland. TR-IN-3 however, diverted between 10 and 20% of the total inflows to Thunder Ranch. Thus, a second option is to close TR-IN-1 and TR-IN-2 and install a slide gate in the ditch to restrict backwater entering the ditch from TR-3. Note that the slide gate will also restrict backwater from TR-IN-1 and TR-IN-2 however, because inlets TR-IN-1 and TR-IN-2 had little connectivity, and given their close proximity to the fields (cattle access and backwater on the access road) we recommend closing inlets TR-IN-1 and TR-IN-2 in addition to installing the slide gate.

Aside from inlets 1 and 2, low inflow rates were also recorded at Inlet 4. This may be partially due to the mounded or elevated road constructed from the river to the siphon over the drainage pipe. This mound on the road causes the flows to backwater, reducing the available gradient for transporting flows into the bottomland areas immediately downstream (south). Thus it is recommended to remove the excess fill on top of the road. The road should be graded flush with the adjacent ground and wetlands. In addition, the cleanout stand pipes that experienced minor erosion around the concrete caps should be backfilled and stabilized.

As a final note for TR, the south levee breached in two sections after overtopping during this years flood event, each approximately 25 to 35 feet wide along the eastern portion of the levee. Reclamation has a proposal to reconstruct this levee later this year.

6.2 Bonanza Bridge

Based on visual observations the inlets appear to be connecting at higher flows than originally designed. BB-IN-1 in particular, since it has not degraded, connected only at 20,100 cfs. BB-IN-2 and BB-IN-3 have both degraded by approximately one (1) foot and are therefore connecting closer to the intended target flows. The outlet BB-5B has also degraded by approximately one foot since constructed and is connecting close to intended target flows. At BB-IN-1 however, it is projected that approximately 16,000 cfs (2-year event) is currently required for BB-IN-1 to connect flows to the bottomlands. To improve connectivity BB-IN-1 should be lowered. To determine a new invert elevation for BB-IN-1 the existing rating curve should be extended upstream to include the inlets. Rating curve data could utilize the surface water elevations surveyed this year. Several river cross sections would also be valuable for calibrating the hydraulic analysis. Monitoring these inlets/outlets should continue, especially for indications of long term trends. We also recommend the Russian Olives in BB-IN-3 be removed.

6.3 Stirrup

Based on visual observations, the Stirrup site appeared to be nearly full prior to inflow through the inlet/outlet. This may be indicative of a strong groundwater connection. This bottomland appeared to respond quickly to changes in the river flows which may also be due to the strong groundwater

connection and/or the relatively small size of the bottomland, but the volume of inflow is small compared to the other sites monitored this year. Thus ST should be considered for reconfiguring to multiple openings. ST currently has a single opening located on the downstream end of the site and is angled in the downstream direction. Larval capture is anticipated to be greatly improved if several notches are installed upstream and the existing notch utilized for outflow. Note that this site was originally configured with one opening because there was some concern about erosion around the power line towers as a result of the opening. Since it appears that the inlet/outlet here and at all the other sites have not created or experienced adverse erosion and scour impacts, it may be feasible to install additional openings to serve as inlet(s). The biological results (drift capture) should be reviewed for this site to ascertain if inlet channels might be desirable to improve larval entrainment. Long term monitoring should continue for aggradation or degradation trends in the inlet/outlet.

6.4 Baeser

BA should be considered for reconfiguring to multiple openings. BA currently has a single notch which is located in the middle of the bottomlands and placed at approximately 90 degrees to the river flow. Again, larval capture is anticipated to be improved if several notches are installed upstream. In the case of BA an outlet may also improve flow-through if placed downstream of the existing notch. Long term monitoring should continue for aggradation or degradation trends in the inlet/outlet.

6.5 Above Brennan

Overall this site appeared to have good connectivity with the river. The bottomland, prior to the flood, was dry and had non-wetlands vegetation growing in the old channel bottom. It is possible that this bottomland is too shallow to be connected to the river through groundwater and that it could dry up between seasons. Yearly monitoring in late summer or early fall (visual observations) would help determine if this site can provide adequate over-winter habitat, and may also provide insight for corrective measures, if applicable.

6.6 Monitoring and Field Work

2005 measurements of inflow to the bottomland sites have proven invaluable for review of design considerations, not only for reconfiguration of sites but for future designs. Inflow monitoring should continue at all sites being considered for alteration including ST, BA and TR. Other sites that have been reconfigured but not monitored for inflow should be considered for future inflow monitoring. In addition the following site-specific recommendations are presented for additional field work.

- Extend section AB-5 to the east so that it crosses the side channel where inlet AB-IN-1 is located.
- Horizontal coordinates should be established for the remaining endpoints including AB-IN-1 REP and LEP, AB-IN-2 REP and LEP and AB-IN-3 REP, AB-OUT REP and LEP, BB-IN-2 LEP, and all of the inlet and outlet endpoints at Thunder Ranch.
- Continue to monitor the dimensions of the sand deposits noted at the Bonanza Bridge site for future comparisons and watch for the development of similar deposits at the Above Brennan bottomland site.
- Consider installing water level loggers for continuous elevations of the bottomlands during the next flood event, or alternatively measure water elevations in the bottomlands to develop and calibrate a rating curve through the bottomland sites.
- Extend rating curve at BB with river elevation surveys.
- River cross sections at all sites to review changes in the main stem as part of the post runoff monitoring efforts.

6.7 Additional Recommendations

- Several inlets/outlets had sand bags placed at the river banks for unknown reasons. These sand bags appeared to cause localized scour and channel reconfiguration. It is recommended that they be removed and that use of sandbags in the future is limited.

- Ultimately an analysis of impacts to the bottomland sites should be made, including trends for deposition, and scour. For the smaller older sites including Baeser, Above Brennen, Stirrup and Bonanza, existing topography was developed at the time of the initial site work including the establishment of monitoring cross sections. Thunder Ranch, however, is a very large site with only limited field survey information, performed primarily along the river edge. Thus analysis of the internal bottomlands area at Thunder Ranch would be best performed using topographic data from aerial photography. Topography of existing conditions should be established before the next runoff event exceeding 12,000 cfs in the Green River.

- It may be possible to develop a mathematical relationship to route flows from the river through the bottomlands. This model could be utilized for predicting inflow and flow-through conditions and may be of value for evaluating flow recommendations, on the Green River, for optimizing inflow and entrainment of drifting larvae. Input required for the model includes stage-volume relationships for the bottomlands, Green River hydrograph for the duration of the spring runoff, river elevations at the inlets and outlets, and geometry of the inlets and outlets. Based on current available information, most of the data are available or could be easily obtained and utilized to develop a model. Additional data collection may be required to calibrate the model, above and beyond the data collected this year.

- The analysis presented herein is restricted to the effectiveness of the inlets and outlets as they pertain to capturing flows. Ideally this information would be interfaced with the biologist's data collection efforts to develop a better understanding of the effectiveness of capturing larval drift. In particular, an attempt should be made to correlate the inflows to the bottomland sites with timing of larval drift.

7.0 REFERENCES

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Tetra Tech, Inc., 1999. HEC-RAS Analysis for Green River Above Brennan Lines Adjacent to Above Brennan Bottomland.

APPENDIX A
END POINT INFORMATION AND CROSS SECTION AND DISCHARGE NOTES

List of Endpoint Elevations and Cross-Section Lengths

All of the inlets are tied to existing vertical datum and some have horizontal coordinates at the endpoints. The field notes for establishing vertical control at the Thunder Ranch cross sections, the reset LEP on BB-IN-2, and the reset LEP on AB-OUT are provided in this appendix.

Cross Section	LEP B&C Elevation	REP B&C Elevation	Distance (ft)
TR-IN-1	4837.23	4838.81	122
TR-IN-2	4837.35	4838.46	130
TR-IN-3	4840.87	4838.90	140
TR-IN-4	4841.64	4836.47	121
TR-IN-5	4837.17	4838.46	137
TR-IN-6	4836.74	4836.88	120
TR-IN-7	4836.08	4837.15	148
TR-OUT	4834.39	4833.97	92
BB-IN-1	4708.03	4708.51	62
BB-IN-2	4709.51	4708.08	87
BB-IN-3	4707.65	4708.43	60
BB-5B	4712.58	4707.92	247
ST-OUT	4690.81	4689.31	57
BA-MON-INLET	4690.28	4688.18	60
AB-IN-1	4678.57	4678.33	55
AB-IN-2	4677.75	4676.96	82
AB-IN-3	4679.31	4678.79	40
AB-OUT	4678.35	4676.96	254

A.1
PRE-RUNOFF CROSS SECTION NOTES

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-1				
LEP B&C	4837.23			LEP TLP	4840.12			
REP B&C	4838.81			REP TLP	4841.91			
	HI #1 =	4844.41		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/11/2005	1	0	4837.23	7.18				
5/11/2005	1	0	4840.12	4.29				
5/11/2005	1	0	4837.12	7.29				
5/11/2005	1	8	4836.94	7.47				
5/11/2005	1	14	4836.02	8.39				FS
5/11/2005	1	24	4832.87	11.54				FS
5/11/2005	1	30	4833.01	11.40				FS
5/11/2005	1	50	4833.43	10.98				FS
5/11/2005	1	68	4833.15	11.26				FS
5/11/2005	1	74	4834.23	10.18				FS
5/11/2005	1	86	4837.65	6.76				FS
5/11/2005	1	94	4839.14	5.27				FS
5/11/2005	1	100	4839.29	5.12				FS
5/11/2005	1	122	4838.77	5.64				FS
5/11/2005	1	122	4841.91	2.50				
5/11/2005	1	122	4838.81	5.60				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-2				
LEP B&C	4837.35			LEP TLP	4839.95			
REP B&C	4838.46			REP TLP	4841.69			
	HI #1 =	4843.56		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/10/2005	2	0	4837.35	6.21				
5/10/2005	2	0	4839.95	3.61				
5/10/2005	2	0	4837.41	6.15				
5/10/2005	2	10	4837.42	6.14				
5/10/2005	2	20	4836.73	6.83				
5/10/2005	2	30	4835.93	7.63				
5/10/2005	2	40	4834.92	8.64				FS
5/10/2005	2	50	4834.76	8.80				FS
5/10/2005	2	70	4834.66	8.90				FS
5/10/2005	2	80	4834.54	9.02				FS
5/10/2005	2	84	4834.59	8.97				FS
5/10/2005	2	94	4836.44	7.12				FS
5/10/2005	2	100	4837.39	6.17				FS
5/10/2005	2	110	4838.56	5.00				FS
5/10/2005	2	120	4838.72	4.84				FS
5/10/2005	2	130	4838.46	5.10				FS
5/10/2005	2	130	4841.69	1.87				
5/10/2005	2	130	4838.46	5.10				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-3				
LEP B&C	4840.87			LEP TLP	4843.73			
REP B&C	4838.90			REP TLP	4841.79			
	HI #1 =	4846.91		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/10/2005	3	0	4840.87	6.04				
5/10/2005	3	0	4843.73	3.18				
5/10/2005	3	0	4840.96	5.95				FS
5/10/2005	3	10	4840.66	6.25				FS
5/10/2005	3	20	4840.21	6.70				FS
5/10/2005	3	24	4839.69	7.22				FS
5/10/2005	3	30	4838.71	8.20				FS
5/10/2005	3	40	4835.48	11.43				FS
5/10/2005	3	50	4833.54	13.37				FS
5/10/2005	3	60	4833.52	13.39				FS
5/10/2005	3	80	4833.40	13.51				FS
5/10/2005	3	92	4833.29	13.62				FS
5/10/2005	3	100	4834.25	12.66				FS
5/10/2005	3	110	4836.54	10.37				FS
5/10/2005	3	126	4839.73	7.18				FS
5/10/2005	3	130	4839.76	7.15				FS
5/10/2005	3	140	4838.95	7.96				
5/10/2005	3	140	4841.79	5.12				
5/10/2005	3	140	4838.90	8.01				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-4				
LEP B&C	4841.64			LEP TLP	4843.94			
REP B&C	4836.47			REP TLP	4839.47			
	HI #1 =	4846.63		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/10/2005	4	0	4841.64	4.99				
5/10/2005	4	0	4843.94	2.69				
5/10/2005	4	0	4840.77	5.86				
5/10/2005	4	10	4841.24	5.39				
5/10/2005	4	20	4840.42	6.21				
5/10/2005	4	26	4839.89	6.74				
5/10/2005	4	36	4835.22	11.41				
5/10/2005	4	46	4832.56	14.07				FS
5/10/2005	4	50	4832.51	14.12				FS
5/10/2005	4	60	4832.02	14.61				FS
5/10/2005	4	80	4832.19	14.44				FS-MOIST
5/10/2005	4	90	4831.96	14.67				FS-MOIST
5/10/2005	4	96	4831.91	14.72				FS-MOIST
5/10/2005	4	100	4832.28	14.35				FS
5/10/2005	4	107	4834.47	12.16				FS
5/10/2005	4	113	4836.11	10.52				FS
5/10/2005	4	121	4836.44	10.19				
5/10/2005	4	121	4839.47	7.16				
5/10/2005	4	121	4836.47	10.16				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-5				
LEP B&C	4837.17			LEP TLP	4839.84			
REP B&C	4838.46			REP TLP	4840.74			
	HI #1 =	4842.46		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/10/2005	5	0	4837.17	5.29				
5/10/2005	5	0	4839.84	2.62				
5/10/2005	5	0	4837.16	5.30				
5/10/2005	5	10	4836.96	5.50				
5/10/2005	5	20	4836.72	5.74				
5/10/2005	5	35	4834.66	7.80				FS
5/10/2005	5	48	4833.10	9.36				FS
5/10/2005	5	50	4833.00	9.46				FS
5/10/2005	5	60	4832.95	9.51				FS
5/10/2005	5	80	4832.99	9.47				FS
5/10/2005	5	87	4833.15	9.31				FS
5/10/2005	5	95	4834.63	7.83				FS
5/10/2005	5	100	4835.35	7.11				FS
5/10/2005	5	120	4837.86	4.60				
5/10/2005	5	124	4838.80	3.66				
5/10/2005	5	130	4838.50	3.96				
5/10/2005	5	137	4838.83	3.63				
5/10/2005	5	137	4840.74	1.72				
5/10/2005	5	137	4838.46	4.00				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-6				
LEP B&C	4836.74			LEP TLP	4839.30			
REP B&C	4836.88			REP TLP	4839.84			
	HI #1 =	4842.17		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/10/2005	6	0	4836.74	5.43				
5/10/2005	6	0	4839.30	2.87				
5/10/2005	6	0	4836.70	5.47				
5/10/2005	6	10	4836.74	5.43				
5/10/2005	6	16	4836.96	5.21				
5/10/2005	6	24	4834.76	7.41				S
5/10/2005	6	37	4831.70	10.47				FS
5/10/2005	6	50	4831.77	10.40				FS
5/10/2005	6	70	4831.36	10.81				FS
5/10/2005	6	81	4831.42	10.75				FS
5/10/2005	6	90	4833.24	8.93				
5/10/2005	6	100	4836.42	5.75				
5/10/2005	6	110	4836.56	5.61				
5/10/2005	6	120	4836.93	5.24				
5/10/2005	6	120	4839.84	2.33				
5/10/2005	6	120	4836.88	5.29				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-7				
LEP B&C	4836.08			LEP TLP	4838.72			
REP B&C	4837.15			REP TLP	4838.95			
	HI #1 =	4842.84		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/10/2005	7	0	4836.08	6.76				
5/10/2005	7	0	4838.72	4.12				
5/10/2005	7	0	4836.09	6.75				
5/10/2005	7	6	4836.43	6.41				
5/10/2005	7	16	4836.18	6.66				
5/10/2005	7	18	4839.06	3.78				
5/10/2005	7	22	4839.36	3.48				
5/10/2005	7	26	4838.66	4.18				S
5/10/2005	7	30	4836.76	6.08				FS
5/10/2005	7	40	4833.44	9.40				FS
5/10/2005	7	46	4831.79	11.05				FS
5/10/2005	7	50	4831.94	10.90				FS
5/10/2005	7	60	4831.68	11.16				FS
5/10/2005	7	70	4831.71	11.13				FS
5/10/2005	7	80	4831.60	11.24				FS-MOIST
5/10/2005	7	90	4831.39	11.45				FS-MOIST
5/10/2005	7	89	4831.48	11.36				FS
5/10/2005	7	100	4832.39	10.45				FS
5/10/2005	7	110	4836.24	6.60				FS
5/10/2005	7	114	4838.03	4.81				
5/10/2005	7	120	4837.23	5.61				
5/10/2005	7	130	4837.20	5.64				
5/10/2005	7	140	4837.30	5.54				
5/10/2005	7	148	4837.25	5.59				
5/10/2005	7	148	4838.95	3.89				
5/10/2005	7	148	4837.15	5.69				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-OUT				
LEP B&C	4834.39			LEP TLP	4837.01			
REP B&C	4833.97			REP TLP	4836.60			
	HI #1 =	4838.09		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/10/2005	OUT	0	4834.39	3.70				
5/10/2005	OUT	0	4837.01	1.08				
5/10/2005	OUT	0	4834.43	3.66				
5/10/2005	OUT	10	4834.68	3.41				
5/10/2005	OUT	17	4834.57	3.52				
5/10/2005	OUT	20	4833.09	5.00				SFD
5/10/2005	OUT	25	4831.68	6.41				SFD
5/10/2005	OUT	30	4830.50	7.59				FS
5/10/2005	OUT	32	4829.65	8.44	0.0			FS
5/10/2005	OUT	35	4829.15		0.5			0.2F
5/10/2005	OUT	40	4828.85		0.8			FS
5/10/2005	OUT	45	4828.95		0.7			FS
5/10/2005	OUT	50	4829.03		0.6			FS
5/10/2005	OUT	55	4829.23		0.4			FS
5/10/2005	OUT	60	4829.33		0.3			FS
5/10/2005	OUT	61	4829.63	8.46	0.0			FS
5/10/2005	OUT	65	4830.84	7.25				FSD
5/10/2005	OUT	71	4832.71	5.38				FDS
5/10/2005	OUT	80	4833.09	5.00				
5/10/2005	OUT	90	4833.94	4.15				
5/10/2005	OUT	92	4834.17	3.92				
5/10/2005	OUT	92	4836.60	1.49				
5/10/2005	OUT	92	4833.97	4.12				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		BB-IN-1				
LEP B&C	4708.03			LEP TLP				
REP B&C	4708.51			REP TLP				
	HI #1 =	4714.09		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/11/2005	1	0	4708.03	6.06				
5/11/2005	1	0	4711.10	2.99				
5/11/2005	1	0	4708.08	6.01				
5/11/2005	1	10	4708.74	5.35				
5/11/2005	1	18	4708.56	5.53				
5/11/2005	1	24	4707.39	6.70				
5/11/2005	1	30	4705.85	8.24				
5/11/2005	1	32	4705.26	8.83				
5/11/2005	1	34	4705.87	8.22				
5/11/2005	1	40	4707.68	6.41				
5/11/2005	1	48	4709.31	4.78				
5/11/2005	1	50	4709.53	4.56				
5/11/2005	1	60	4709.13	4.96				
5/11/2005	1	62	4708.85	5.24				
5/11/2005	1	62	4711.37	2.72				
5/11/2005	1	62	4708.51	5.58				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		BB-IN-2				
LEP B&C	4709.51			LEP TLP				
REP B&C	4708.08			REP TLP				
	HI #1 =	4716.73		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/11/2005	2	0	4709.51	7.22				
5/11/2005	2	0	4712.21	4.52				
5/11/2005	2	0	4709.64	7.09				
5/11/2005	2	10	4711.62	5.11				S
5/11/2005	2	15	4712.29	4.44				S
5/11/2005	2	20	4710.48	6.25				S
5/11/2005	2	30	4710.04	6.69				S
5/11/2005	2	35	4707.40	9.33				S
5/11/2005	2	40	4705.90	10.83				S
5/11/2005	2	46	4704.22	12.51				S
5/11/2005	2	50	4704.27	12.46				S
5/11/2005	2	58	4706.86	9.87				S
5/11/2005	2	64	4709.02	7.71				
5/11/2005	2	70	4710.63	6.10				
5/11/2005	2	76	4711.21	5.52				
5/11/2005	2	80	4710.95	5.78				
5/11/2005	2	86	4709.54	7.19				
5/11/2005	2	91	4708.24	8.49				
5/11/2005	2	91	4711.33	5.40				
5/11/2005	2	91	4708.08	8.65				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		BB-IN-3				
LEP B&C	4707.65			LEP TLP				
REP B&C	4708.43			REP TLP				
	HI #1 =	4714.18		delta =	-0.01			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/11/2005	3	0	4707.65	6.53				
5/11/2005	3	0	4710.77	3.41				
5/11/2005	3	0	4707.90	6.28				
5/11/2005	3	10	4709.26	4.92				
5/11/2005	3	18	4709.00	5.18				
5/11/2005	3	24	4707.84	6.34				
5/11/2005	3	30	4705.36	8.82				
5/11/2005	3	33	4703.94	10.24				
5/11/2005	3	36	4703.96	10.22				
5/11/2005	3	40	4706.98	7.20				
5/11/2005	3	48	4709.28	4.90				
5/11/2005	3	50	4709.53	4.65				
5/11/2005	3	60	4708.52	5.66				
5/11/2005	3	60	4711.78	2.40				
5/11/2005	3	60	4708.42	5.76				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		BB-5B				
LEP B&C	4712.58			LEP TLP				
REP B&C	4708.05			REP TLP				
	HI #1 =	4716.12		delta =	LOOP CLOSED			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/11/2005	5B	0	4712.58	3.54				
5/11/2005	5B	0	4715.59	0.53				
5/11/2005	5B	0	4712.42	3.70				
5/11/2005	5B	10	4711.91	4.21				
5/11/2005	5B	28	4710.92	5.20				
5/11/2005	5B	44	4710.47	5.65				
5/11/2005	5B	50	4710.55	5.57				
5/11/2005	5B	58	4710.22	5.90				
5/11/2005	5B	60	4709.91	6.21				
5/11/2005	5B	70	4708.35	7.77				
5/11/2005	5B	90	4705.54	10.58				
5/11/2005	5B	100	4704.84	11.28				
5/11/2005	5B	120	4705.59	10.53				
5/11/2005	5B	150	4704.98	11.14				
5/11/2005	5B	190	4705.06	11.06				
5/11/2005	5B	200	4705.70	10.42				
5/11/2005	5B	210	4706.68	9.44				
5/11/2005	5B	224	4707.33	8.79				
5/11/2005	5B	240	4707.73	8.39				
5/11/2005	5B	246	4708.04	8.08				
5/11/2005	5B	246	4710.23	5.89				
5/11/2005	5B	246	4707.92	8.20				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		ST-OUT				
LEP B&C	4690.81			LEP TLP				
REP B&C	4689.31			REP TLP				
	HI #1 =	4694.97		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/18/2005	OUT	0	4690.81	4.16				
5/18/2005	OUT	-4	4694.02	0.95				
5/18/2005	OUT	0	4690.63	4.34				
5/18/2005	OUT	10	4689.60	5.37				
5/18/2005	OUT	20	4689.54	5.43				
5/18/2005	OUT	30	4689.04	5.93				
5/18/2005	OUT	40	4685.46	9.51				FS
5/18/2005	OUT	48	4686.74	8.23				
5/18/2005	OUT	52	4688.92	6.05				
5/18/2005	OUT	57	4689.25	5.72				
5/18/2005	OUT	57	4693.47	1.50				
5/18/2005	OUT	57	4689.31	5.66				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		BA-MON-INLET				
LEP B&C	4690.28			LEP TLP				
REP B&C	4688.18			REP TLP				
	HI #1 =	4694.51		delta =	0.01			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/18/2005	MON INLET	0	4690.28	4.23				
5/18/2005	MON INLET	0	4692.49	2.02				
5/18/2005	MON INLET	0	4690.19	4.32				S
5/18/2005	MON INLET	10	4688.45	6.06				S
5/18/2005	MON INLET	18	4682.03	12.48				S
5/18/2005	MON INLET	23	4681.59	12.92				SF
5/18/2005	MON INLET	24	4680.68	13.83				SF
5/18/2005	MON INLET	34	4681.52	12.99				SF
5/18/2005	MON INLET	40	4683.14	11.37				S
5/18/2005	MON INLET	46	4683.57	10.94				S
5/18/2005	MON INLET	50	4686.28	8.23				
5/18/2005	MON INLET	56	4688.12	6.39				
5/18/2005	MON INLET	60	4688.18	6.33				
5/18/2005	MON INLET	60	4690.43	4.08				
5/18/2005	MON INLET	60	4688.19	6.32				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		AB-IN-1				
LEP B&C	4678.57			LEP TLP				
REP B&C	4678.34			REP TLP				
	HI #1 =	4682.94		delta =	-0.03			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/17/2005	1	0	4678.57	4.37				
5/17/2005	1	0	4681.30	1.64				
5/17/2005	1	0	4678.46	4.48				
5/17/2005	1	10	4678.58	4.36				
5/17/2005	1	17	4677.84	5.10				
5/17/2005	1	18	4675.70	7.24				FS
5/17/2005	1	26	4674.94	8.00				FS
5/17/2005	1	32	4675.61	7.33				FS
5/17/2005	1	36	4676.53	6.41				FS
5/17/2005	1	39	4679.06	3.88				
5/17/2005	1	50	4678.93	4.01				
5/17/2005	1	55	4678.29	4.65				
5/17/2005	1	55	4681.40	1.54				
5/17/2005	1	55	4678.31	4.63				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		AB-IN-2				
LEP B&C	4677.75			LEP TLP				
REP B&C	4676.95			REP TLP				
	HI #1 =	4681.74		delta =	-0.02			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/17/2005	2	0	4677.75	3.99				
5/17/2005	2	0	4680.53	1.21				
5/17/2005	2	0	4677.75	3.99				
5/17/2005	2	10	4677.04	4.70				
5/17/2005	2	20	4675.48	6.26				
5/17/2005	2	30	4676.26	5.48				
5/17/2005	2	40	4676.33	5.41				
5/17/2005	2	50	4677.19	4.55				
5/17/2005	2	52	4677.00	4.74				
5/17/2005	2	56	4676.29	5.45				
5/17/2005	2	60	4676.63	5.11				
5/17/2005	2	70	4677.25	4.49				
5/17/2005	2	80	4677.17	4.57				
5/17/2005	2	82	4676.98	4.76				
5/17/2005	2	82	4679.76	1.98				
5/17/2005	2	82	4676.93	4.81				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		AB-IN-3				
LEP B&C	4679.31			LEP TLP				
REP B&C	4678.78			REP TLP				
	HI #1 =	4684.08		delta =	0.01			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/18/2005	3	0	4679.31	4.77				
5/18/2005	3	0	4682.35	1.73				
5/18/2005	3	0	4679.28	4.80				
5/18/2005	3	8	4679.06	5.02				
5/18/2005	3	10	4678.87	5.21				S
5/18/2005	3	18	4675.40	8.68				S
5/18/2005	3	22	4675.27	8.81				S
5/18/2005	3	29	4675.10	8.98				S
5/18/2005	3	33	4676.68	7.40				S
5/18/2005	3	36	4678.70	5.38				
5/18/2005	3	41	4678.80	5.28				
5/18/2005	3	41	4682.00	2.08				
5/18/2005	3	41	4678.79	5.29				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		AB-OUT				
LEP B&C	4678.35			LEP TLP				
REP B&C	4676.96			REP TLP				
	HI #1 =	4679.68		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
5/18/2005	OUT	0	4678.35	1.33				
5/18/2005	OUT	0	4682.97	-3.29				
5/18/2005	OUT	0	4678.30	1.38				
5/18/2005	OUT	10	4675.94	3.74				
5/18/2005	OUT	20	4674.60	5.08				
5/18/2005	OUT	50	4674.61	5.07				
5/18/2005	OUT	100	4674.43	5.25				
5/18/2005	OUT	130	4674.67	5.01				
5/18/2005	OUT	160	4675.07	4.61				
5/18/2005	OUT	200	4676.10	3.58				
5/18/2005	OUT	205	4677.45	2.23				
5/18/2005	OUT	*205*	4677.77	1.91				
5/18/2005	OUT	210	4676.36	3.32				
5/18/2005	OUT	220	4673.49	6.19				
5/18/2005	OUT	222	4672.48	7.20				
5/18/2005	OUT	230	4672.65	7.03				
5/18/2005	OUT	234	4673.50	6.18				
5/18/2005	OUT	240	4674.78	4.90				
5/18/2005	OUT	250	4676.89	2.79				
5/18/2005	OUT	254	4676.80	2.88				
5/18/2005	OUT	254	4679.56	0.12				
5/18/2005	OUT	254	4676.96	2.72				

A.2
14,000 CFS DISCHARGE NOTES

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	TR-IN-1										
Date:	5/19/2005										
Time:	13:35										
Water Surface Elevation in Notch = 4834.52											
Water Surface Elevation in River = 4834.52											
Notes: Water in notch but no detectable velocity											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
										TOTAL DISCHARGE=	0.00

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	TR-IN-2										
Date:	5/19/2005										
Time:	13:50										
Water Surface Elevation in Notch =											
Water Surface Elevation in River = 4834.08											
Notes: No water in notch											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
										TOTAL DISCHARGE=	0.00

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	TR-IN-3										
Date:	5/19/2005										
Time:	14:15										
Water Surface Elevation in Notch = 4834.05											
Water Surface Elevation in River = 4834.06											
Notes: Water flowing into bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
46	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
55	46	60	14	0.7	0.6	0.4		0.20	0.20		1.96
65	60	70	10	0.7	0.6	0.4		0.36	0.36		2.52
75	70	80	10	0.7	0.6	0.4		0.42	0.42		2.94
85	80	90	10	0.7	0.6	0.4		0.58	0.58		4.06
95	90	100	10	0.7	0.6	0.4		0.37	0.37		2.59
100	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		14.07
									AVERAGE VELOCITY=		0.39

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	TR-IN-4										
Date:	5/19/2005										
Time:	14:45										
Water Surface Elevation in Notch = 4831.88											
Water Surface Elevation in River = 4831.88											
Notes: Water backing up from high ground on inland side of notch											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
										TOTAL DISCHARGE=	0.00

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-5

Date: 5/19/2005

Time: 15:00

Water Surface Elevation in Notch = 4833.27

Water Surface Elevation in River = 4833.29

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
46	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
50	46	55	9	0.3	0.6	0.2		0.11	0.11		0.30
60	55	65	10	0.4	0.6	0.2		0.21	0.21		0.84
70	65	75	10	0.3	0.6	0.2		0.13	0.13		0.39
80	75	88	13	0.4	0.6	0.2		0.23	0.23		1.20
88	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	2.72
										AVERAGE VELOCITY=	0.17

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-6

Date: 5/19/2005

Time: 15:40

Water Surface Elevation in Notch = 4832.89

Water Surface Elevation in River = 4832.90

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
32	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
36	32	40	8	1.0	0.6	0.6		-0.04	-0.04		-0.32
45	40	50	10	1.3	0.6	0.8		-0.03	-0.03		-0.39
55	50	60	10	1.2	0.6	0.7		0.00	0.00		0.00
65	60	70	10	1.6	0.6	1.0		0.01	0.01		0.16
75	70	80	10	1.7	0.6	1.0		0.44	0.44		7.48
84	80	88	8	1.1	0.6	0.7		0.77	0.77		6.78
88	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	13.71
										AVERAGE VELOCITY=	0.19

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-7

Date: 5/19/2005

Time: 16:15

Water Surface Elevation in Notch = 4833.75

Water Surface Elevation in River = 4833.75

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
38	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
44	38	50	12	1.5	0.6	0.9		-0.07	-0.07		-1.26
55	50	60	10	2.1	0.2	0.4		0.17			
55	50	60	10	2.1	0.8	1.7		-0.01	0.08		1.68
65	60	70	10	2.0	0.2	0.4		-0.11			
65	60	70	10	2.0	0.8	1.6		-0.04	-0.08		-1.50
75	70	80	10	2.0	0.2	0.4		0.04			
75	70	80	10	2.0	0.8	1.6		0.02	0.03		0.60
85	80	90	10	2.3	0.2	0.5		0.03			
85	80	90	10	2.3	0.8	1.8		0.10	0.07		1.50
97	90	104	14	2.3	0.2	0.5		0.64			
97	90	104	14	2.3	0.8	1.8		0.71	0.68		21.74
104	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	22.75
										AVERAGE VELOCITY=	0.12

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	TR-OUT										
Date:	5/19/2005										
Time:	11:40										
Water Surface Elevation in Notch = 4832.01											
Water Surface Elevation in River = 4832.01											
Notes: Water flowing into bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
24	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
30	24	36	12	1.4	0.6	0.8		1.02	1.02		17.14
42	36	48	12	3.1	0.2	0.6		1.37			
42	36	48	12	3.1	0.8	2.5		0.50	0.94		34.78
54	48	60	12	3.0	0.2	0.6		0.31			
54	48	60	12	3.0	0.8	2.4		0.59	0.45		16.20
66	60	70	10	1.3	0.6	0.8		0.25	0.25		3.25
70	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	71.37
										AVERAGE VELOCITY=	0.66

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	BB-IN-1										
Date:	5/19/2005										
Time:	18:40										
Water Surface Elevation in Notch =											
Water Surface Elevation in River = 4705.07											
Notes: No water in notch											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
										TOTAL DISCHARGE=	0.00

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	BB-IN-2										
Date:	5/19/2005										
Time:	18:30										
Water Surface Elevation in Notch =											
Water Surface Elevation in River = 4704.96											
Notes: Water just starting to tickle into notch											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
										TOTAL DISCHARGE=	0.00

Calculating Discharge from Marsh McBirney Meter

x sect. #: BB-IN-3

Date: 5/19/2005

Time: 18:05

Water Surface Elevation in Notch = 4704.74

Water Surface Elevation in River = 4704.89

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
32	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
32.5	32	33	1	0.9	0.6	0.5		1.27	1.27		1.14
33.5	33	34	1	0.9	0.6	0.5		1.92	1.92		1.73
34.5	34	35	1	1.0	0.6	0.6		1.90	1.90		1.90
35.5	35	36	1	0.6	0.6	0.4		-0.05	-0.05		-0.03
36	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	4.74
										AVERAGE VELOCITY=	1.26

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	BB-5B										
Date:	5/19/2005										
Time:	18:50										
Water Surface Elevation in Notch =											
Water Surface Elevation in River = 4705.52											
Notes: No water in notch											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
										TOTAL DISCHARGE=	0.00

Calculating Discharge from Marsh McBirney Meter

x sect. #: ST-OUT

Date: 5/20/2005

Time: 11:40

Water Surface Elevation in Notch = 4687.10

Water Surface Elevation in River = 4687.10

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
34	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
36	34	37.5	3.5	1.4	0.6	0.8		0.46	0.46		2.25
39	37.5	40.5	3	1.7	0.6	1.0		0.49	0.49		2.50
42	40.5	43.5	3	0.9	0.6	0.5		0.16	0.16		0.43
45	43.5	47	3.5	0.7	0.6	0.4		0.18	0.18		0.44
47	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	5.63
										AVERAGE VELOCITY=	0.32

Calculating Discharge from Marsh McBirney Meter

x sect. #: BA-MON-INLET

Date: 5/20/2005

Time: 12:40

Water Surface Elevation in Notch = 4683.32

Water Surface Elevation in River = 4683.32

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
18	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
21	18	24	6	1.7	0.6	1.0		0.13	0.13		1.33
27	24	30	6	3.2	0.2	0.6		0.29			
27	24	30	6	3.2	0.6	1.9		0.34			
27	24	30	6	3.2	0.8	2.6		0.28	0.30		5.82
33	30	37	7	2.1	0.2	0.4		0.18			
33	30	37	7	2.1	0.6	1.3		0.16			
33	30	37	7	2.1	0.8	1.7		0.18	0.17		2.55
37	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	9.70
										AVERAGE VELOCITY=	0.20

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-IN-1

Date: 5/20/2005

Time: 10:35

Water Surface Elevation in Notch = 4676.90

Water Surface Elevation in River = 4677.02

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
17	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
20	17	22	5	1.3	0.6	0.8		1.09	1.09		7.09
24	22	26	4	2.2	0.2	0.4		2.02			
24	22	26	4	2.2	0.6	1.3		1.79			
24	22	26	4	2.2	0.8	1.8		0.69	1.50		13.20
28	26	30	4	3.2	0.2	0.6		1.94			
28	26	30	4	3.2	0.6	1.9		1.84			
28	26	30	4	3.2	0.8	2.6		1.86	1.88		24.06
32	30	35	5	1.3	0.6	0.8		1.33	1.33		8.65
35	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		52.99
									AVERAGE VELOCITY=		1.45

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-IN-2

Date: 5/20/2005

Time: 10:10

Water Surface Elevation in Notch = 4676.66

Water Surface Elevation in River = 4676.73

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
54	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
55	54	55.5	1.5	0.4	0.6	0.2		0.71	0.71		0.43
56	55.5	56.5	1	0.4	0.6	0.2		0.38	0.38		0.15
57	56.5	58	1.5	0.3	0.6	0.2		0.27	0.27		0.12
58	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	0.70
										AVERAGE VELOCITY=	0.45

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-IN-3

Date: 5/20/2005

Time: 9:45

Water Surface Elevation in Notch = 4674.09

Water Surface Elevation in River =

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
17	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
19	17	21	4	0.2	0.6	0.1		0.14	0.14		0.11
23	21	25	4	0.3	0.6	0.2	0.524	0.83	0.83	0.72	0.86
27	25	29	4	0.6	0.6	0.4		1.20	1.20		2.88
29	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	3.85
										AVERAGE VELOCITY=	0.69

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-OUT

Date: 5/20/2005

Time: 7:50

Water Surface Elevation in Notch = 4676.30

Water Surface Elevation in River = 4677.36

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
212	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
215	212	218	6	0.9	0.6	0.5		0.74	0.74		4.00
221	218	224	6	2.9	0.2	0.6		1.44			
221	218	224	6	2.9	0.6	1.7		1.50			
221	218	224	6	2.9	0.8	2.3		1.06	1.33		23.20
227	224	230	6	2.3	0.2	0.5		0.58			
227	224	230	6	2.3	0.6	1.4		0.67			
227	224	230	6	2.3	0.8	1.8		0.60	0.62		8.51
233	230	236	6	2.6	0.2	0.5		0.23			
233	230	236	6	2.6	0.6	1.6		0.24			
233	230	236	6	2.6	0.8	2.1		0.24	0.24		3.69
239	236	245	9	1.6	0.6	1.0		0.58	0.58		8.35
245	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	47.75
										AVERAGE VELOCITY=	0.70

A.3
20,000 CFS DISCHARGE NOTES

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-1

Date: 5/24/2005

Time: 10:25

Water Surface Elevation in Notch = 4835.97

Water Surface Elevation in River = 4835.97

Notes: Water in notch is moving slowly into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
12	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
18	12	25	13	1.2	0.6	0.7		-0.02	-0.02		-0.31
32	25	38	13	2.6	0.2	0.5		-0.02			
32	25	38	13	2.6	0.6	1.6		0.00			
32	25	38	13	2.6	0.8	2.1		-0.04	-0.02		-0.68
46	38	51	13	2.3	0.2	0.5		-0.01			
46	38	51	13	2.3	0.6	1.4		0.08			
46	38	51	13	2.3	0.8	1.8		0.05	0.04		1.20
60	51	64	13	2.2	0.2	0.4		0.58			
60	51	64	13	2.2	0.6	1.3		0.34			
60	51	64	13	2.2	0.8	1.8		0.34	0.42		12.01
74	64	80	16	1.7	0.6	1.0		0.35	0.35		9.52
80	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	21.74
										AVERAGE VELOCITY=	0.15

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	TR-IN-2										
Date:	5/24/2005										
Time:	11:50										
Water Surface Elevation in Notch = 4835.57											
Water Surface Elevation in River = 4835.57											
Notes: Water flowing into bottomland slowly											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
33	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
39	33	44	11	0.6	0.6	0.4		0.07	0.07		0.46
50	44	55	11	0.9	0.6	0.5		0.11	0.11		1.09
61	55	66	11	1.0	0.6	0.6		0.18	0.18		1.98
72	66	77	11	1.0	0.6	0.6		0.06	0.06		0.66
83	77	90	13	1.1	0.6	0.7		0.12	0.12		1.72
90	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		5.91
									AVERAGE VELOCITY=		0.11

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	TR-IN-3										
Date:	5/24/2005										
Time:	12:25										
Water Surface Elevation in Notch = 4835.53											
Water Surface Elevation in River = 4835.56											
Notes: Water flowing into bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
39	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
46	39	52	13	1.4	0.6	0.8		0.42	0.42		7.64
59	52	65	13	1.0	0.6	0.6		1.04	1.04		13.52
72	65	78	13	0.9	0.6	0.5		1.41	1.41		16.50
85	78	91	13	1.0	0.6	0.6		1.34	1.34		17.42
98	91	106	15	1.4	0.6	0.8		1.58	1.58		33.18
106	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		88.26
									AVERAGE VELOCITY=		1.16

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-4

Date: 5/24/2005

Time: 12:55

Water Surface Elevation in Notch = 4835.35

Water Surface Elevation in River = 4835.35

Notes: Water moving slowly out of bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
36	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
43	36	51	15	2.4	0.2	0.5		-0.23			
43	36	51	15	2.4	0.6	1.4		-0.20			
43	36	51	15	2.4	0.8	1.9		-0.19	-0.21		-7.44
58	51	66	15	3.2	0.2	0.6		-0.06			
58	51	66	15	3.2	0.6	1.9		-0.05			
58	51	66	15	3.2	0.8	2.6		-0.07	-0.06		-2.88
73	66	81	15	2.1	0.2	0.4		0.08			
73	66	81	15	2.1	0.6	1.3		0.08			
73	66	81	15	2.1	0.8	1.7		0.04	0.07		2.10
88	81	96	15	1.6	0.6	1.0		0.58	0.58		13.92
103	96	110	14	1.9	0.6	1.1		0.62	0.62		16.49
110	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		-10.32
									AVERAGE VELOCITY=		0.20

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	TR-IN-5										
Date:	5/24/2005										
Time:	14:30										
Water Surface Elevation in Notch = 4834.68											
Water Surface Elevation in River = 4834.77											
Notes: Water flowing into bottomland, much faster along right bank											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
34	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
40	34	46	12	0.8	0.6	0.5		0.41	0.41		3.94
52	46	58	12	1.7	0.6	1.0		0.78	0.78		15.91
64	58	70	12	1.9	0.6	1.1		1.82	1.82		41.50
76	70	82	12	1.9	0.6	1.1		2.09	2.09		47.65
88	82	94	12	2.3	0.2	0.5		1.69			
88	82	94	12	2.3	0.6	1.4		2.26			
88	82	94	12	2.3	0.8	1.8		2.25	2.07		57.04
94	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		166.04
									AVERAGE VELOCITY=		1.43

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-6

Date: 5/24/2005

Time: 15:15

Water Surface Elevation in Notch = 4834.34

Water Surface Elevation in River = 4834.53

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
25	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
31	25	39	14	1.4	0.6	0.8		-0.13	-0.13		-2.55
45	39	53	14	2.1	0.2	0.4		0.51			
45	39	53	14	2.1	0.6	1.3		0.61			
45	39	53	14	2.1	0.8	1.7		0.41	0.51		14.99
59	53	67	14	1.4	0.6	0.8		1.11	1.11		21.76
73	67	81	14	2.8	0.2	0.6		1.85			
73	67	81	14	2.8	0.6	1.7		1.96			
73	67	81	14	2.8	0.8	2.2		1.98	1.93		75.66
87	81	93	12	2.5	0.2	0.5		2.59			
87	81	93	12	2.5	0.6	0.0		2.83			
87	81	93	12	2.5	0.8	0.0		2.43	2.62		78.50
93	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	188.36
										AVERAGE VELOCITY=	1.21

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-7

Date: 5/24/2005

Time: 15:55

Water Surface Elevation in Notch = 4835.28

Water Surface Elevation in River = 4835.28

Notes: Water flowing out of bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
34	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
41	34	49	15	2.4	0.2	0.5		-0.05			
41	34	49	15	2.4	0.6	1.4		-0.04			
41	34	49	15	2.4	0.8	1.9		-0.02	-0.04		-1.32
56	49	61	12	3.4	0.2	0.7		-0.03			
56	49	61	12	3.4	0.6	2.0		-0.01			
56	49	61	12	3.4	0.8	2.7		-0.01	-0.02		-0.68
71	61	76	15	3.3	0.2	0.7		-0.35			
71	61	76	15	3.3	0.6	2.0		-0.31			
71	61	76	15	3.3	0.8	2.6		-0.30	-0.32		-15.84
86	76	91	15	2.7	0.2	0.5		-0.63			
86	76	91	15	2.7	0.6	1.6		-0.61			
86	76	91	15	2.7	0.8	2.2		-0.48	-0.57		-23.22
101	91	108	17	2.8	0.2	0.6		-0.30			
101	91	108	17	2.8	0.6	1.7		-0.35			
101	91	108	17	2.8	0.8	2.2		-0.41	-0.35		-16.82
108	REW		0	0.0	0	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	-57.88
										AVERAGE VELOCITY=	-0.26

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-OUT

Date: 5/24/2005

Time: 17:12

Water Surface Elevation in Notch = 4833.63

Water Surface Elevation in River =

Notes: Water flowing out of bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
19	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
25	19	32	13	2.1	0.2	0.4		1.00			
25	19	32	13	2.1	0.6	1.3		1.06			
25	19	32	13	2.1	0.8	1.7		0.94	1.00		27.30
38	32	45	13	4.6	0.2	0.9		1.98			
38	32	45	13	4.6	0.6	2.8		2.08			
38	32	45	13	4.6	0.8	3.7		2.13	2.06		123.39
51	45	58	13	3.8	0.2	0.8		2.51			
51	45	58	13	3.8	0.6	2.3		2.48			
51	45	58	13	3.8	0.8	3.0		2.27	2.42		119.55
64	58	71	13	3.4	0.2	0.7		1.05			
64	58	71	13	3.4	0.6	2.0		1.35			
64	58	71	13	3.4	0.8	2.7		0.87	1.09		48.18
77	71	82	11	1.1	0.6	0.7		0.05	0.05		0.61
82	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		319.02
									AVERAGE VELOCITY=		1.64

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	BB-IN-1										
Date:	5/25/2005										
Time:	9:35										
Water Surface Elevation in Notch = 4706.41											
Water Surface Elevation in River = 4706.90											
Notes: Water flowing inot bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
28	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
29.5	28	30	2	0.3	0.6	0.2		0.17	0.17		0.10
31	30	33	3	1.5	0.6	0.9		1.68	1.68		7.56
34	33	36	3	0.6	0.6	0.4		0.06	0.06		0.11
36	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	7.77
										AVERAGE VELOCITY=	0.64

Calculating Discharge from Marsh McBirney Meter

x sect. #: BB-IN-2

Date: 5/25/2005

Time: 10:10

Water Surface Elevation in Notch = 4706.40

Water Surface Elevation in River = 4706.63

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
30	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
33	30	36	6	0.8	0.6	0.5	0.524	1.22	1.22	1.06	5.07
38	36	41	5	0.8	0.6	0.5	0.524	0.77	0.77	0.67	2.67
43	41	46	5	1.8	0.6	1.1	0.349	1.29	1.29	1.21	10.91
48	46	51	5	3.4	0.2	0.7		3.55			
48	46	51	5	3.4	0.6	2.0		3.27			
48	46	51	5	3.4	0.8	2.7		2.84	3.22		54.74
53	51	57	6	1.7	0.6	1.0		0.87	0.87		8.87
57	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		82.26
									AVERAGE VELOCITY=		1.41

Calculating Discharge from Marsh McBirney Meter

x sect. #: BB-IN-3

Date: 5/25/2005

Time: 10:45

Water Surface Elevation in Notch = 4706.57

Water Surface Elevation in River = 4706.65

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
28	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
30	28	31	3	1.0	0.6	0.6		1.08	1.08		3.24
32	31	33	2	1.3	0.6	0.8		1.59	1.59		4.13
34	33	35	2	2.9	0.2	0.6		1.97			
34	33	35	2	2.9	0.6	1.7		1.97			
34	33	35	2	2.9	0.8	2.3		1.73	1.89		10.96
36	35	37	2	2.7	0.2	0.5		2.21			
36	35	37	2	2.7	0.6	1.6		0.34			
36	35	37	2	2.7	0.8	2.2		0.85	1.13		6.12
38	37	40	3	1.7	0.6	1.0		1.55	1.55		7.91
40	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	32.36
										AVERAGE VELOCITY=	1.45

Calculating Discharge from Marsh McBirney Meter

x sect. #: BB-5B

Date: 5/25/2005

Time: 8:30

Water Surface Elevation in Notch = 4707.56

Water Surface Elevation in River = 4707.38

Notes: Water is flowing out of bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
74	LEW		0	0.0	0.6	0.0		0	0.00		0.00
81	74	88	14	1.0	0.6	0.6		0.05	0.05		0.70
96	88	103	15	2.6	0.2	0.5		0.79			
96	88	103	15	2.6	0.6	1.6		0.79			
96	88	103	15	2.6	0.8	2.1		0.47	0.68		26.65
111	103	118	15	2.3	0.2	0.5		0.34			
111	103	118	15	2.3	0.6	1.4		0.31			
111	103	118	15	2.3	0.8	1.8		0.15	0.27		9.20
126	118	133	15	2.0	0.2	0.4		0.34			
126	118	133	15	2.0	0.6	1.2		0.33			
126	118	133	15	2.0	0.8	1.6		0.23	0.30		9.00
141	133	148	15	2.1	0.2	0.4		0.74			
141	133	148	15	2.1	0.6	1.3		0.63			
141	133	148	15	2.1	0.8	1.7		0.09	0.49		15.33
156	148	163	15	2.6	0.2	0.5		0.68			
156	148	163	15	2.6	0.6	1.6		0.36			
156	148	163	15	2.6	0.8	2.1		0.05	0.36		14.17
171	163	178	15	2.2	0.2	0.4		0.56			
171	163	178	15	2.2	0.6	1.3		0.46			
171	163	178	15	2.2	0.8	1.8		0.09	0.37		12.21
186	178	193	15	2.6	0.2	0.5		0.95			
186	178	193	15	2.6	0.6	1.6		0.70			
186	178	193	15	2.6	0.8	2.1		0.20	0.62		24.05
201	193	208	15	1.6	0.6	1.0		0.04	0.04		0.96
216	208	222	14	0.5	0.6	0.3		0.02	0.02		0.14
222	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		112.41
									AVERAGE VELOCITY=		0.32

Calculating Discharge from Marsh McBirney Meter

x sect. #: ST-OUT

Date: 5/25/2005

Time: 18:25

Water Surface Elevation in Notch = 4689.05

Water Surface Elevation in River = 4689.05

Notes: Water flowing slowly into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
30	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
33	30	35	5	1.5	0.6	0.9		0.02	0.02		0.15
37	35	39	4	3.4	0.2	0.7		0.24			
37	35	39	4	3.4	0.6	2.0		0.26			
37	35	39	4	3.4	0.8	2.7		0.20	0.23		3.17
41	39	43	4	3.0	0.2	0.6		0.29			
41	39	43	4	3.0	0.6	1.8		0.25			
41	39	43	4	3.0	0.8	2.4		0.12	0.22		2.64
45	43	47	4	2.2	0.2	0.4		0.13			
45	43	47	4	2.2	0.6	1.3		0.14			
45	43	47	4	2.2	0.8	1.8		0.09	0.12		1.06
49	47	52	5	1.5	0.6	0.9		-0.02	-0.02		-0.15
52	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	6.87
										AVERAGE VELOCITY=	0.11

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	BA-MON-INLET										
Date:	5/25/2005										
Time:	17:35										
Water Surface Elevation in Notch = 4685.29											
Water Surface Elevation in River = 4685.32											
Notes: Water flowing into bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
16	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
19	16	23	7	2.1	0.2	0.4		0.20			
19	16	23	7	2.1	0.6	1.3		0.39			
19	16	23	7	2.1	0.8	1.7		0.24	0.28		4.07
26	23	30	7	3.4	0.2	0.7		0.70			
26	23	30	7	3.4	0.6	2.0		0.74			
26	23	30	7	3.4	0.8	2.7		0.77	0.74		17.53
33	30	37	7	2.8	0.2	0.6		0.23			
33	30	37	7	2.8	0.6	1.7		0.25			
33	30	37	7	2.8	0.8	2.2		0.45	0.31		6.08
40	37	44	7	1.7	0.6	1.0		-0.10	-0.10		-1.19
47	44	49	5	1.3	0.6	0.8		-0.11	-0.11		-0.72
49	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		25.77
									AVERAGE VELOCITY=		0.22

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-IN-1

Date: 5/25/2005

Time: 13:30

Water Surface Elevation in Notch = 4678.61

Water Surface Elevation in River = 4678.66

Notes: Water flowing into bottomland, most of overbank areas are flooded

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
13	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
15	13	18	5	0.6	0.6	0.4		1.29	1.29		3.87
20	18	23	5	3.1	0.2	0.6		2.07			
20	18	23	5	3.1	0.6	1.9		1.47			
20	18	23	5	3.1	0.8	2.5		1.20	1.58		24.49
25	23	28	5	4.9	0.2	1.0		1.99			
25	23	28	5	4.9	0.6	2.9		2.52			
25	23	28	5	4.9	0.8	3.9		2.21	2.24		54.88
30	28	33	5	4.7	0.2	0.9		2.38			
30	28	33	5	4.7	0.6	2.8		2.54			
30	28	33	5	4.7	0.8	3.8		2.36	2.43		57.03
35	33	38	5	2.4	0.2	0.5		1.52			
35	33	38	5	2.4	0.6	1.4		0.53			
35	33	38	5	2.4	0.8	1.9		0.53	0.86		10.32
38	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	150.59
										AVERAGE VELOCITY=	1.68

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-IN-2

Date: 5/25/2005

Time: 14:35

Water Surface Elevation in Notch = 4678.31

Water Surface Elevation in River = 4678.49

Notes: Water flowing into bottomland; water is over REP & LEP

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
0	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
4	0	8	8	0.7	0.6	0.4		0.20	0.20		1.12
12	8	16	8	1.7	0.6	1.0		0.04	0.04		0.54
20	16	24	8	2.8	0.2	0.6		0.06			
20	16	24	8	2.8	0.6	1.7		0.05			
20	16	24	8	2.8	0.8	2.2		0.04	0.05		1.12
28	24	32	8	2.3	0.2	0.5		0.05			
28	24	32	8	2.3	0.6	1.4		0.00			
28	24	32	8	2.3	0.8	1.8		0.00	0.02		0.31
36	32	40	8	2.1	0.2	0.4		0.08			
36	32	40	8	2.1	0.6	1.3		0.07			
36	32	40	8	2.1	0.8	1.7		0.03	0.06		1.01
44	40	48	8	1.8	0.6	1.1		0.12	0.12		1.73
52	48	54	6	1.2	0.6	0.7		0.20	0.20		1.44
56	54	58	4	1.9	0.6	1.1		2.60	2.60		19.76
60	58	64	6	1.0	0.6	0.6		0.49	0.49		2.94
68	64	72	8	0.9	0.6	0.5		0.15	0.15		1.08
76	72	82	10	0.8	0.6	0.5		0.07	0.07		0.56
82	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	31.61
										AVERAGE VELOCITY=	0.36

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-IN-3

Date: 5/25/2005

Time: 15:30

Water Surface Elevation in Notch = 4677.97

Water Surface Elevation in River = 4678.29

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
11	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
13	11	15	4	1.4	0.6	0.8		0.19	0.19		1.06
17	15	19	4	2.8	0.2	0.6		1.24			
17	15	19	4	2.8	0.6	1.7		2.23			
17	15	19	4	2.8	0.8	2.2		2.52	2.00		22.36
21	19	23	4	3.0	0.2	0.6		2.90			
21	19	23	4	3.0	0.6	1.8		2.78			
21	19	23	4	3.0	0.8	2.4		2.54	2.74		32.88
25	23	27	4	3.2	0.2	0.6		0.20			
25	23	27	4	3.2	0.6	1.9		1.67			
25	23	27	4	3.2	0.8	2.6		2.09	1.32		16.90
29	27	32	5	2.5	0.2	0.5		0.58			
29	27	32	5	2.5	0.6	1.5		1.07			
29	27	32	5	2.5	0.8	2.0		0.85	0.83		10.42
32	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		83.62
									AVERAGE VELOCITY=		1.42

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-OUT

Date: 5/25/2005

Time: 16:30

Water Surface Elevation in Notch = 4677.73

Water Surface Elevation in River = 4677.55

Notes: Water flowing out of bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
205	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
209	205	215	10	1.0	0.6	0.6	1.57	0.85	0.85	0.00	8.50
219	215	225	10	3.8	0.2	0.8		1.36			
219	215	225	10	3.8	0.6	2.3		1.58			
219	215	225	10	3.8	0.8	3.0		2.00	1.65		62.57
229	225	235	10	5.5	0.2	1.1		1.13			
229	225	235	10	5.5	0.6	3.3		1.42			
229	225	235	10	5.5	0.8	4.4		1.53	1.36		74.80
239	235	245	10	3.6	0.2	0.7		1.61			
239	235	245	10	3.6	0.6	2.2		1.89			
239	235	245	10	3.6	0.8	2.9		1.84	1.78		64.08
249	245	254	9	0.9	0.6	0.5	0.785	1.64	1.64	1.16	13.28
254	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	223.24
										AVERAGE VELOCITY=	1.46

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17,000 CFS DISCHARGE NOTES

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-1

Date: 5/30/2005

Time: 9:20

Water Surface Elevation in Notch = 4835.15

Water Surface Elevation in River = 4835.16

Notes: Water in notch is moving out slowly

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
17	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
23	17	29	12	1.8	0.6	1.1		-0.08	-0.08		-1.73
35	29	41	12	1.3	0.6	0.8		0.01	0.01		0.16
47	41	53	12	1.1	0.6	0.7		0.02	0.02		0.26
59	53	65	12	1.1	0.6	0.7		0.00	0.00		0.00
71	65	77	12	0.3	0.6	0.2		0.00	0.00		0.00
77	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		-1.31
									AVERAGE VELOCITY=		-0.02

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	TR-IN-2										
Date:	5/30/2005										
Time:	9:50										
Water Surface Elevation in Notch =											
Water Surface Elevation in River = 4834.77											
Notes: No water in notch, some ponding											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
										TOTAL DISCHARGE=	0.00

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-3

Date: 5/30/2005

Time: 10:10

Water Surface Elevation in Notch = 4834.74

Water Surface Elevation in River = 4834.74

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
42	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
46	42	51	9	0.4	0.6	0.2		0.49	0.49		1.76
51	REW BAR		0	0.0	0.6	0.0		0.00	0.00		0.00
77	LEW BAR		0	0.0	0.6	0.0		0.00	0.00		0.00
83	77	85.5	8.5	0.7	0.6	0.4	0.349	1.20	1.20	1.13	6.71
88	85.5	90.5	5	1.0	0.6	0.6	0.349	1.34	1.34	1.26	6.30
93	90.5	95.5	5	1.3	0.6	0.8		1.46	1.46		9.49
98	95.5	100.5	5	1.4	0.6	0.8		1.45	1.45		10.15
103	100.5	105	4.5	0.8	0.6	0.5		1.66	1.66		5.98
105	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	40.39
										AVERAGE VELOCITY=	1.24

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-4

Date: 5/30/2005

Time: 10:45

Water Surface Elevation in Notch = 4834.54

Water Surface Elevation in River = 4834.54

Notes: Some water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
38	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
43	38	48	10	1.8	0.6	1.1		-0.34	-0.34		-6.12
53	48	58	10	2.1	0.2	0.4		0.04			
53	48	58	10	2.1	0.6	1.3		-0.03			
53	48	58	10	2.1	0.8	1.7		-0.14	-0.04		-0.91
63	58	68	10	1.2	0.6	0.7		0.59	0.59		7.08
73	68	78	10	0.5	0.6	0.3		0.35	0.35		1.75
83	78	88	10	0.4	0.6	0.2		0.51	0.51		2.04
88	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		3.84
									AVERAGE VELOCITY=		0.21

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-5

Date: 5/30/2005

Time: 11:15

Water Surface Elevation in Notch = 4833.86

Water Surface Elevation in River = 4833.88

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
42	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
48	42	53	11	0.6	0.6	0.4		0.23	0.23		1.52
58	53	63	10	0.8	0.6	0.5		0.26	0.26		2.08
68	63	73	10	0.6	0.6	0.4		0.55	0.55		3.30
78	73	83	10	1.0	0.6	0.6		0.85	0.85		8.50
88	83	93	10	1.7	0.6	1.0		0.95	0.95		16.15
93	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		31.55
									AVERAGE VELOCITY=		0.57

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-IN-6

Date: 5/30/2005

Time: 11:45

Water Surface Elevation in Notch = 4833.49

Water Surface Elevation in River = 4833.51

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
31	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
34	31	37	6	0.7	0.6	0.4		0.83	0.83		3.49
40	37	43	6	0.7	0.6	0.4		0.69	0.69		2.90
46	43	49	6	0.2	0.6	0.1		0.35	0.35		0.42
49	REW BAR		0	0.0	0.6	0.0		0.00	0.00		0.00
63	LEW BAR		0	0.0	0.6	0.0		0.00	0.00		0.00
67	63	70	7	0.8	0.6	0.5		0.47	0.47		2.63
74	70	77	7	0.8	0.6	0.5		0.57	0.57		3.19
81	77	84	7	1.1	0.6	0.7		0.90	0.90		6.93
88	84	91	7	1.1	0.6	0.7		1.07	1.07		8.24
91	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		27.80
									AVERAGE VELOCITY=		0.70

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	TR-IN-7										
Date:	5/30/2005										
Time:	12:15										
Water Surface Elevation in Notch = 4834.37											
Water Surface Elevation in River = 4834.37											
Notes: Water flowing into bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
37	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
44	37	51	14	2.2	0.2	0.4		0.23			
44	37	51	14	2.2	0.6	1.3		0.10			
44	37	51	14	2.2	0.8	1.8		0.18	0.17		5.24
58	51	65	14	0.8	0.6	0.5		1.05	1.05		11.76
72	65	79	14	0.9	0.6	0.5		1.12	1.12		14.11
86	79	93	14	0.9	0.6	0.5		1.29	1.29		16.25
100	93	106	13	2.3	0.2	0.5		1.09			
100	93	106	13	2.3	0.6	1.4		1.02			
100	93	106	13	2.3	0.8	1.8		1.40	1.17		34.98
106	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		82.35
									AVERAGE VELOCITY=		0.96

Calculating Discharge from Marsh McBirney Meter

x sect. #: TR-OUT

Date: 5/30/2005

Time: 13:20

Water Surface Elevation in Notch = 4832.49

Water Surface Elevation in River =

Notes: Water flowing out of bottomland; south levee has breeched, water balance will be off

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
22	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
27	22	32	10	1.4	0.6	0.8		0.62	0.62		8.68
37	32	42	10	3.5	0.2	0.7		0.90			
37	32	42	10	3.5	0.6	2.1		0.97			
37	32	42	10	3.5	0.8	2.8		0.97	0.95		33.13
47	42	52	10	3.0	0.2	0.6		1.06			
47	42	52	10	3.0	0.6	1.8		1.05			
47	42	52	10	3.0	0.8	2.4		0.79	0.97		29.00
57	52	62	10	2.6	0.2	0.5		0.99			
57	52	62	10	2.6	0.6	1.6		0.98			
57	52	62	10	2.6	0.8	2.1		0.81	0.93		24.09
67	62	71	9	1.6	0.6	1.0		0.34	0.34		4.90
71	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		99.80
									AVERAGE VELOCITY=		0.76

Calculating Discharge from Marsh McBirney Meter

x sect. #: BB-IN-1

Date: 5/30/2005

Time: 17:35

Water Surface Elevation in Notch =

Water Surface Elevation in River = 4706.01

Notes: Notch disconnected

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
			0			0.0					0.00
										TOTAL DISCHARGE=	0.00

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	BB-IN-2										
Date:	5/30/2005										
Time:	17:50										
Water Surface Elevation in Notch = 4705.24											
Water Surface Elevation in River = 4705.60											
Notes: Water flowing into bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
42	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
44	42	46	4	0.7	0.6	0.4	0.436	0.13	0.13	0.12	0.33
48	46	50	4	2.3	0.2	0.5		3.49			
48	46	50	4	2.3	0.6	1.4		2.30			
48	46	50	4	2.3	0.8	1.8		1.10	2.30		21.13
52	50	54	4	1.2	0.6	0.7		0.13	0.13		0.62
54	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		22.08
									AVERAGE VELOCITY=		0.85

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	BB-IN-3										
Date:	5/30/2005										
Time:	18:10										
Water Surface Elevation in Notch = 4705.53											
Water Surface Elevation in River =											
Notes: Water flowing into bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
29	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
31	29	33	4	0.5	0.6	0.3		0.53	0.53		1.06
35	33	37	4	2.1	0.2	0.4		1.63			
35	33	37	4	2.1	0.6	1.3		1.80			
35	33	37	4	2.1	0.8	1.7		1.51	1.65		13.83
38	37	40	3	0.9	0.6	0.5		1.44	1.44		3.89
40	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		18.78
									AVERAGE VELOCITY=		1.21

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	BB-5B										
Date:	5/30/2005										
Time:	17:00										
Water Surface Elevation in Notch = 4706.67											
Water Surface Elevation in River = 4706.44											
Notes: Water is flowing out of bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
80	LEW		0	0.0	0.6	0.0		0	0.00		0.00
92	80	98	18	1.5	0.6	0.9		0.19	0.19		5.13
104	98	111	13	1.7	0.6	1.0		0.08	0.08		1.77
118	111	124	13	1.2	0.6	0.7		0.18	0.18		2.81
130	124	136	12	1.2	0.6	0.7		0.09	0.09		1.30
142	136	148	12	1.3	0.6	0.8		0.03	0.03		0.47
154	148	160	12	1.6	0.6	1.0		0.08	0.08		1.54
166	160	172	12	1.3	0.6	0.8		0.05	0.05		0.78
178	172	184	12	1.5	0.6	0.9		0.07	0.07		1.26
190	184	196	12	1.8	0.6	1.1		0.18	0.18		3.89
202	196	208	12	0.7	0.6	0.4		-0.01	-0.01		-0.08
208	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		18.85
									AVERAGE VELOCITY=		0.09

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	ST-OUT										
Date:	5/30/2005										
Time:	15:50										
Water Surface Elevation in Notch = 4687.96											
Water Surface Elevation in River = 4687.96											
Notes: Water flowing into bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
32	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
34	32	36	4	1.7	0.6	1.0		0.09	0.09		0.61
38	36	40	4	2.4	0.2	0.5		0.12			
38	36	40	4	2.4	0.6	1.4		0.22			
38	36	40	4	2.4	0.8	1.9		0.03	0.12		1.18
41	40	43	3	1.6	0.6	1.0		0.19	0.19		0.91
44	43	46	3	1.2	0.6	0.7		0.03	0.03		0.11
47	46	49	3	1.0	0.6	0.6		0.02	0.02		0.06
49	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		2.88
									AVERAGE VELOCITY=		0.09

Calculating Discharge from Marsh McBirney Meter

x sect. #: BA-MON-INLET

Date: 5/31/2005

Time: 11:20

Water Surface Elevation in Notch = 4684.14

Water Surface Elevation in River = 4684.14

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
17	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
20	17	23	6	0.5	0.6	0.3		0.19	0.19		0.57
26	23	29	6	1.2	0.6	0.7		0.35	0.35		2.52
32	29	35	6	0.8	0.6	0.5		0.33	0.33		1.58
38	35	41	6	0.3	0.6	0.2		-0.08	-0.08		-0.14
44	41	47	6	0.5	0.6	0.3		0.00	0.00		0.00
47	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	4.53
										AVERAGE VELOCITY=	0.16

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-IN-1

Date: 5/31/2005

Time: 8:50

Water Surface Elevation in Notch = 4677.78

Water Surface Elevation in River =

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
17	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
19	17	22	5	1.9	0.6	1.1		1.06	1.06		10.07
24	22	26	4	3.8	0.2	0.8		1.50			
24	22	26	4	3.8	0.6	2.3		1.58			
24	22	26	4	3.8	0.8	3.0		1.43	1.50		22.85
28	26	30	4	3.9	0.2	0.8		1.67			
28	26	30	4	3.9	0.6	2.3		1.70			
28	26	30	4	3.9	0.8	3.1		1.55	1.64		25.58
33	30	36	6	2.0	0.2	0.4		1.59			
33	30	36	6	2.0	0.6	1.2		1.33			
33	30	36	6	2.0	0.8	1.6		0.92	1.28		15.36
36	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		73.86
									AVERAGE VELOCITY=		1.37

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-IN-2

Date: 5/31/2005

Time: 9:30

Water Surface Elevation in Notch = 4677.24

Water Surface Elevation in River = 4677.49

Notes: Water flowing into bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
53	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
55	53	56	3	1.1	0.6	0.7		2.47	2.47		8.15
58	56	59	3	0.6	0.6	0.4		0.08	0.08		0.14
61	59	62	3	0.6	0.6	0.4		0.70	0.70		1.26
63	62	65	3	0.7	0.6	0.4		0.63	0.63		1.32
65	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	10.88
										AVERAGE VELOCITY=	0.97

Calculating Discharge from Marsh McBirney Meter											
x sect. #:	AB-IN-3										
Date:	5/31/2005										
Time:	9:50										
Water Surface Elevation in Notch = 4676.86											
Water Surface Elevation in River = 4677.27											
Notes: Water flowing into bottomland											
						OBSERVATION		**VELOCITY**	**MEAN**	**ADJUSTED**	
	REPRESENTING		**DISTANCE**	**DEPTH**		**DEPTH**	**ANGLE**	**AT POINT**	**VELOCITY**	**FOR ANGLE**	**DISCHARGE**
STATION	**FROM**	**TO**	**(FT)**	**(FT)**	**MEASURE**	**(FT)**	**(RAD)**	**(FPS)**	**(FPS)**	**(FPS)**	**(CFS)**
13	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
15	13	17	4	1.2	0.6	0.7		0.55	0.55		2.64
19	17	21	4	1.8	0.6	1.1		1.57	1.57		11.30
23	21	25	4	1.9	0.6	1.1		1.18	1.18		8.97
27	25	29	4	2.0	0.2	0.4		0.35			
27	25	29	4	2.0	0.6	1.2		0.40			
27	25	29	4	2.0	0.8	1.6		0.36	0.37		2.96
30	29	32	3	1.1	0.6	0.7		0.08	0.08		0.26
32	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
									TOTAL DISCHARGE=		26.14
									AVERAGE VELOCITY=		0.75

Calculating Discharge from Marsh McBirney Meter

x sect. #: AB-OUT

Date: 5/31/2005

Time: 10:30

Water Surface Elevation in Notch = 4676.72

Water Surface Elevation in River = 4677.65

Notes: Water flowing out of bottomland

STATION	REPRESENTING FROM	TO	DISTANCE (FT)	DEPTH (FT)	MEASURE	OBSERVATION DEPTH (FT)	ANGLE (RAD)	VELOCITY AT POINT (FPS)	MEAN VELOCITY (FPS)	ADJUSTED FOR ANGLE (FPS)	DISCHARGE (CFS)
209	LEW		0	0.0	0.6	0.0		0.00	0.00		0.00
212	209	216	7	1.1	0.6	0.7		-0.26	-0.26		-2.00
220	216	224	8	3.6	0.2	0.7		0.36			
220	216	224	8	3.6	0.6	2.2		1.60			
220	216	224	8	3.6	0.8	2.9		1.79	1.25		36.00
228	224	232	8	4.4	0.2	0.9		1.56			
228	224	232	8	4.4	0.6	2.6		1.20			
228	224	232	8	4.4	0.8	3.5		1.05	1.27		44.70
236	232	240	8	2.9	0.2	0.6		1.14			
236	232	240	8	2.9	0.6	1.7		0.99			
236	232	240	8	2.9	0.8	2.3		0.59	0.91		21.03
244	240	248	8	1.3	0.6	0.8		0.44	0.44		4.58
248	REW		0	0.0	0.6	0.0		0.00	0.00		0.00
										TOTAL DISCHARGE=	104.31
										AVERAGE VELOCITY=	0.72

A.5
POST-RUNOFF CROSS SECTION NOTES

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-1				
LEP B&C	4837.23			LEP TLP	4840.12			
REP B&C	4838.81			REP TLP	4841.91			
	HI #1 =	4844.57		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
8/11/2005	1	0	4837.23	7.34				
8/11/2005	1	0	4840.12	4.45				
8/11/2005	1	0	4837.13	7.44				
8/11/2005	1	2	4837.11	7.46				
8/11/2005	1	10	4836.62	7.95				
8/11/2005	1	14	4835.75	8.82				S
8/11/2005	1	24	4833.26	11.31				S
8/11/2005	1	34	4833.68	10.89				S
8/11/2005	1	50	4834.22	10.35				S
8/11/2005	1	62	4834.17	10.40				S
8/11/2005	1	70	4834.80	9.77				S
8/11/2005	1	78	4835.39	9.18				S
8/11/2005	1	92	4838.87	5.70				
8/11/2005	1	104	4839.33	5.24				
8/11/2005	1	122	4838.79	5.78				
8/11/2005	1	122	4841.91	2.66				
8/11/2005	1	122	4838.81	5.76				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-2				
LEP B&C	4837.35			LEP TLP	4839.95			
REP B&C	4838.46			REP TLP	4841.69			
	HI #1 =	4844.16		delta =	0.01			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
8/11/2005	2	0	4837.35	6.81				
8/11/2005	2	0	4839.94	4.22				
8/11/2005	2	0	4837.34	6.82				
8/11/2005	2	10	4837.24	6.92				
8/11/2005	2	20	4836.69	7.47				
8/11/2005	2	30	4835.92	8.24				
8/11/2005	2	38	4835.19	8.97				S
8/11/2005	2	50	4834.78	9.38				S
8/11/2005	2	70	4834.66	9.5				S
8/11/2005	2	85	4834.65	9.51				S
8/11/2005	2	88	4834.94	9.22				S
8/11/2005	2	98	4836.93	7.23				
8/11/2005	2	104	4838.02	6.14				
8/11/2005	2	120	4838.80	5.36				
8/11/2005	2	130	4838.50	5.66				
8/11/2005	2	130	4841.70	2.46				
8/11/2005	2	130	4838.47	5.69				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-3				
LEP B&C	4840.87			LEP TLP	4843.73			
REP B&C	4838.90			REP TLP	4841.79			
	HI #1 =	4844.37		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
8/11/2005	3	0	4840.87	3.50				
8/11/2005	3	0	4843.72	0.65				
8/11/2005	3	0	4840.87	3.50				
8/11/2005	3	10	4840.69	3.68				
8/11/2005	3	22	4840.01	4.36				
8/11/2005	3	29	4838.99	5.38				
8/11/2005	3	32	4834.61	9.76				S
8/11/2005	3	50	4834.73	9.64				S
8/11/2005	3	70	4834.60	9.77				S
8/11/2005	3	85	4833.96	10.41				S
8/11/2005	3	95	4833.39	10.98				S
8/11/2005	3	102	4833.12	11.25				S
8/11/2005	3	120	4838.63	5.74				S
8/11/2005	3	132	4839.71	4.66				
8/11/2005	3	140	4838.84	5.53				
8/11/2005	3	140	4841.79	2.58				
8/11/2005	3	140	4838.90	5.47				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-4				
LEP B&C	4841.64			LEP TLP	4843.94			
REP B&C	4836.47			REP TLP	4839.47			
	HI #1 =	4846.24		delta =	0.01			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
8/11/2005	4	0	4841.64	4.60				
8/11/2005	4	0	4843.95	2.29				
8/11/2005	4	0	4841.64	4.60				
8/11/2005	4	4	4841.50	4.74				
8/11/2005	4	26	4839.24	7.00				
8/11/2005	4	38	4834.43	11.81				
8/11/2005	4	44	4833.00	13.24				S
8/11/2005	4	60	4833.89	12.35				S
8/11/2005	4	80	4834.14	12.10				S
8/11/2005	4	97	4834.24	12.00				S
8/11/2005	4	108	4834.58	11.66				S
8/11/2005	4	113	4836.12	10.12				
8/11/2005	4	121	4836.53	9.71				
8/11/2005	4	121	4839.49	6.75				
8/11/2005	4	121	4836.48	9.76				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-5				
LEP B&C	4837.17			LEP TLP	4839.84			
REP B&C	4838.46			REP TLP	4840.74			
	HI #1 =	4843.62		delta =	-0.02			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
8/11/2005	5	0	4837.17	6.45				
8/11/2005	5	0	4839.84	3.78				
8/11/2005	5	0	4837.16	6.46				
8/11/2005	5	10	4837.06	6.56				
8/11/2005	5	26	4836.00	7.62				
8/11/2005	5	34	4834.69	8.93				S
8/11/2005	5	46	4833.40	10.22				S
8/11/2005	5	55	4833.02	10.60				S
8/11/2005	5	68	4833.40	10.22				S
8/11/2005	5	78	4833.22	10.40				S
8/11/2005	5	91	4833.10	10.52				S
8/11/2005	5	95	4834.65	8.97				S
8/11/2005	5	102	4835.55	8.07				
8/11/2005	5	118	4836.31	7.31				
8/11/2005	5	126	4838.92	4.70				
8/11/2005	5	137	4838.46	5.16				
8/11/2005	5	137	4840.72	2.90				
8/11/2005	5	137	4838.44	5.18				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-6				
LEP B&C	4836.74			LEP TLP	4839.30			
REP B&C	4836.88			REP TLP	4839.84			
	HI #1 =	4841.72		delta =	0.00			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
8/11/2005	6	0	4836.74	4.98				
8/11/2005	6	0	4839.30	2.42				
8/11/2005	6	0	4836.75	4.97				
8/11/2005	6	10	4836.76	4.96				
8/11/2005	6	19	4836.60	5.12				
8/11/2005	6	31	4832.86	8.86				S
8/11/2005	6	42	4833.26	8.46				S
8/11/2005	6	58	4833.52	8.20				S
8/11/2005	6	72	4833.03	8.69				S
8/11/2005	6	80	4832.48	9.24				S
8/11/2005	6	88	4832.09	9.63				S
8/11/2005	6	94	4834.82	6.90				S
8/11/2005	6	102	4836.22	5.50				
8/11/2005	6	120	4836.80	4.92				
8/11/2005	6	120	4839.83	1.89				
8/11/2005	6	120	4836.88	4.84				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-IN-7				
LEP B&C	4836.08			LEP TLP	4838.72			
REP B&C	4837.15			REP TLP	4838.95			
	HI #1 =	4842.49		delta =	-0.02			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
8/11/2005	7	0	4836.08	6.41				
8/11/2005	7	0	4838.72	3.77				
8/11/2005	7	0	4836.07	6.42				
8/11/2005	7	12	4836.13	6.36				
8/11/2005	7	30	4836.82	5.67				
8/11/2005	7	40	4833.70	8.79				S
8/11/2005	7	70	4833.34	9.15				S
8/11/2005	7	92	4833.19	9.30				S
8/11/2005	7	97	4832.44	10.05				S
8/11/2005	7	102	4832.15	10.34				S
8/11/2005	7	108	4834.69	7.80				S
8/11/2005	7	114	4837.11	5.38				
8/11/2005	7	148	4837.14	5.35				
8/11/2005	7	148	4839.93	2.56				
8/11/2005	7	148	4837.13	5.36				

			GREEN RIVER, UT					
		CROSS SECTION SURVEY NOTE REDUCTION						
		CROSS SECTION:		TR-OUT				
LEP B&C	4834.39			LEP TLP	4837.01			
REP B&C	4833.97			REP TLP	4836.60			
	HI #1 =	4837.71		delta =	-0.02			
DATE	LINE #	STATION	ELEVATION	ROD	DEPTH	WSEL	HAB	BED
8/11/2005	OUT	0	4834.39	3.32				
8/11/2005	OUT	0	4837.01	0.70				
8/11/2005	OUT	0	4834.38	3.33				
8/11/2005	OUT	16	4834.66	3.05				
8/11/2005	OUT	30	4830.53	7.18				SF
8/11/2005	OUT	34	4829.30	8.41				SF
8/11/2005	OUT	40	4829.01	8.70				SF
8/11/2005	OUT	50	4829.71	8.00				SF
8/11/2005	OUT	60	4829.81	7.90				SF
8/11/2005	OUT	63	4829.73	7.98				SF
8/11/2005	OUT	69	4831.45	6.26				SF
8/11/2005	OUT	72	4832.54	5.17				SF
8/11/2005	OUT	85	4833.46	4.25				
8/11/2005	OUT	92	4833.96	3.75				
8/11/2005	OUT	92	4836.58	1.13				
8/11/2005	OUT	92	4833.95	3.76				

APPENDIX B
SITE PLANS

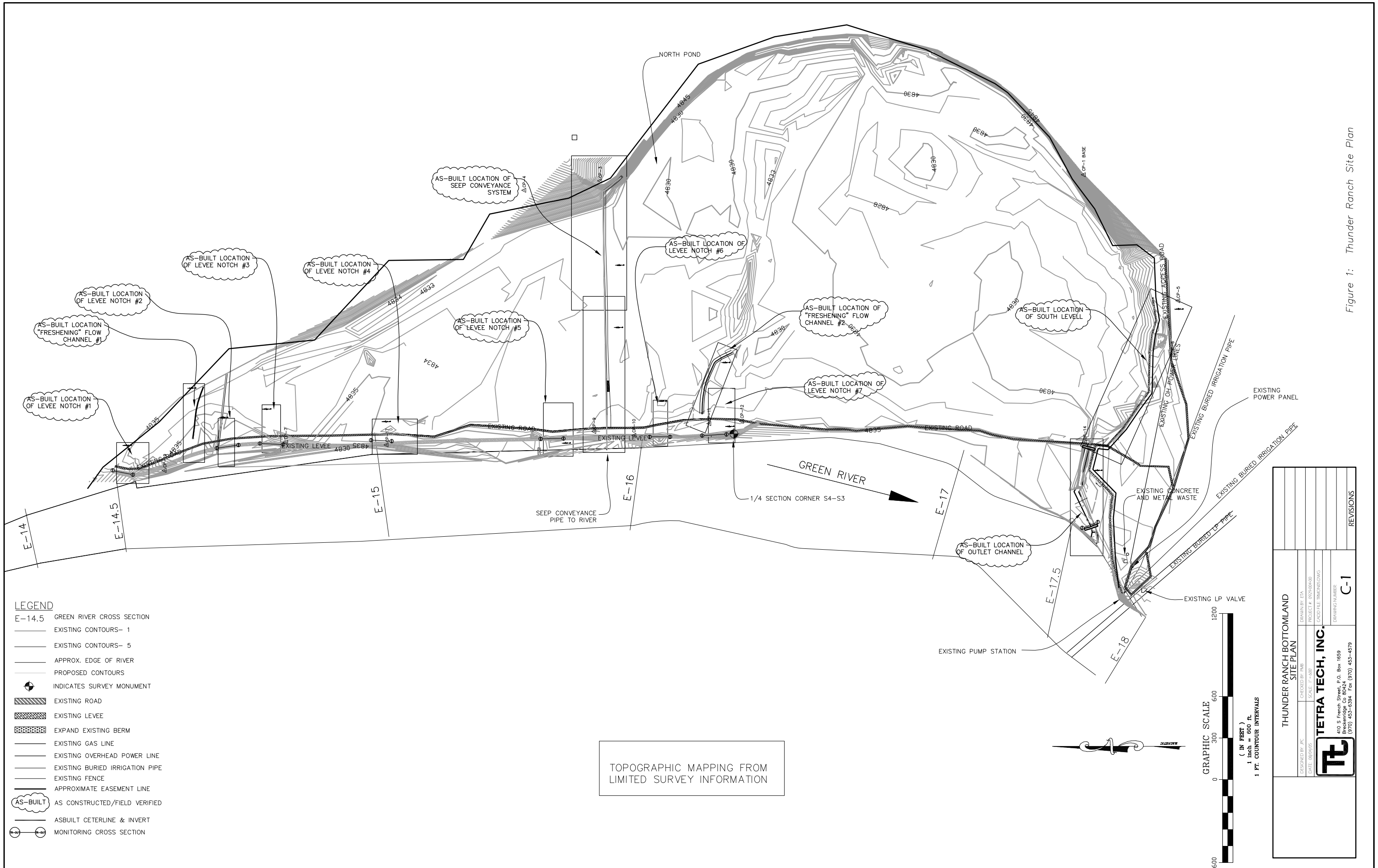
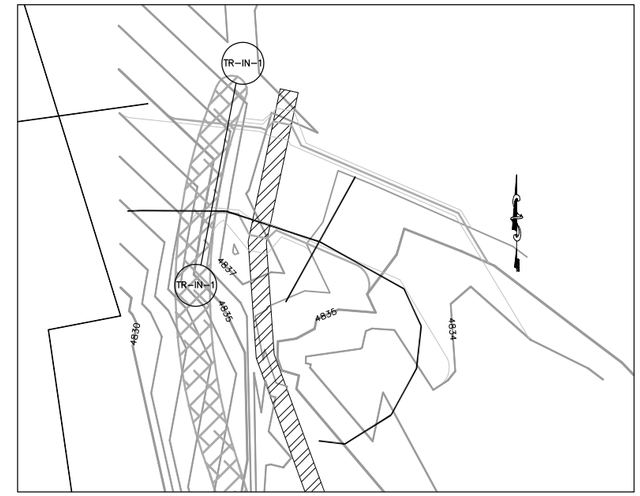
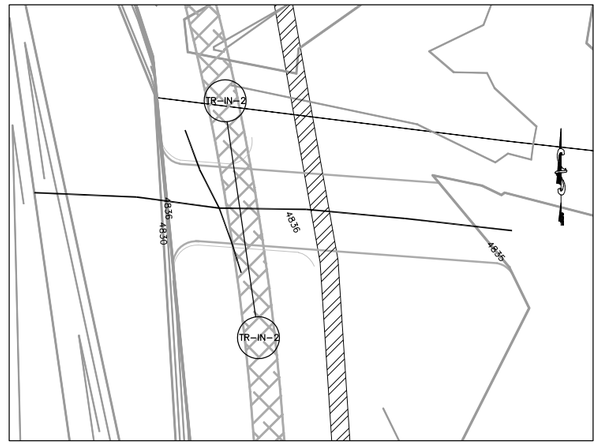
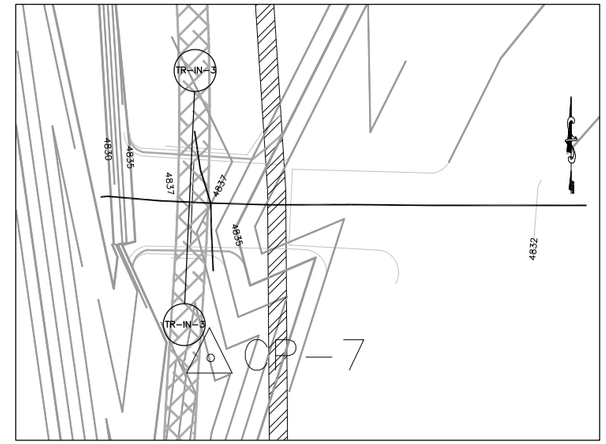
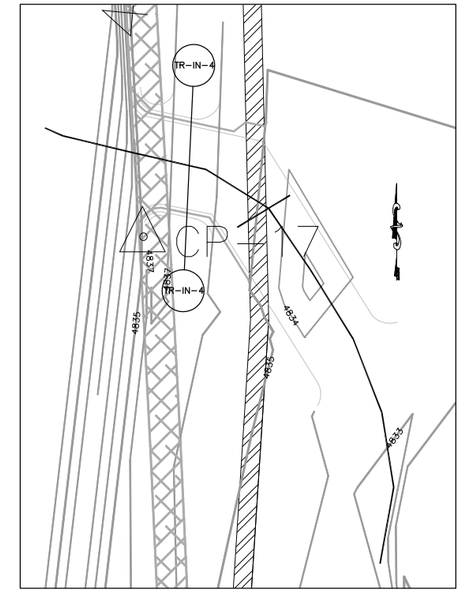


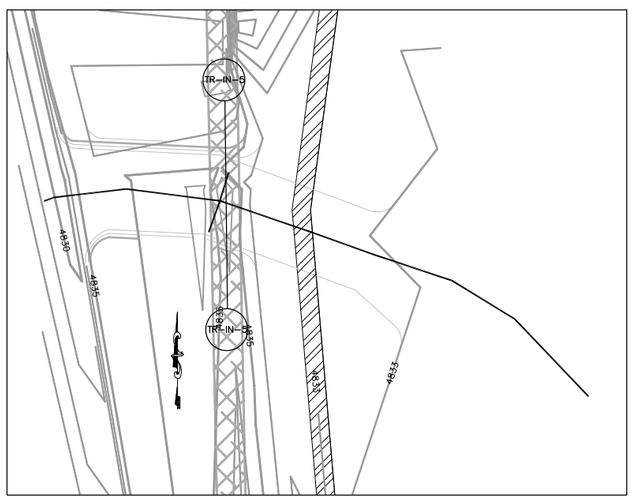
Figure 1: Thunder Ranch Site Plan











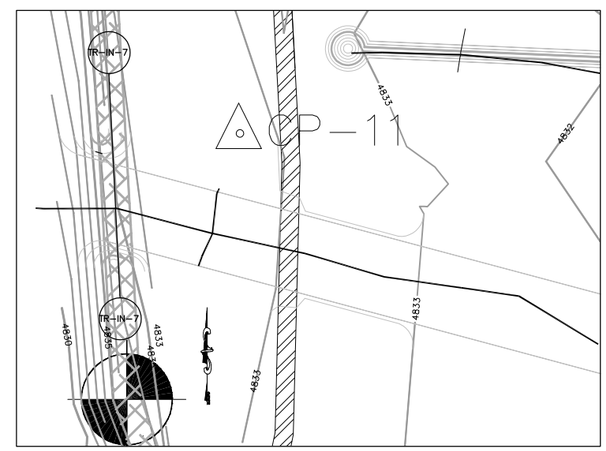
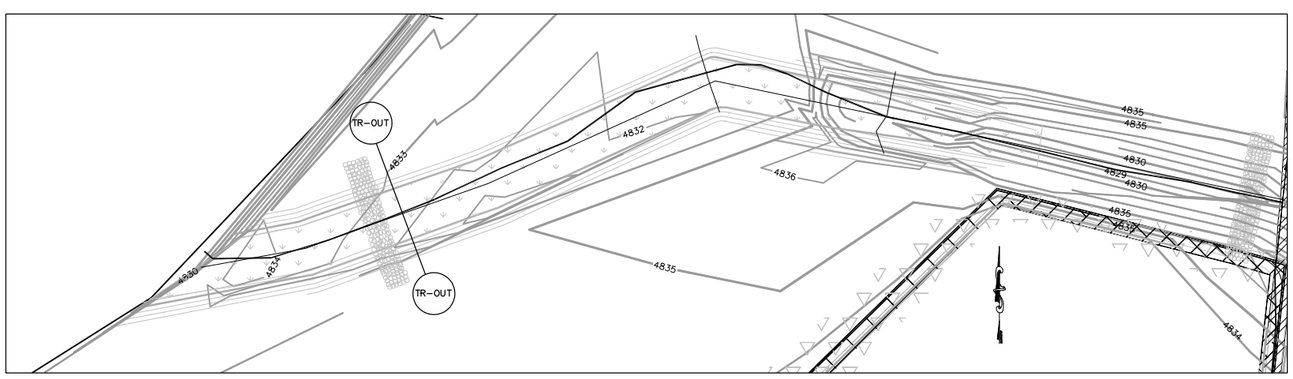


Figure 2: Thunder Ranch Inlet Monitoring Sections

LEGEND

E-14.5 GREEN RIVER CROSS SECTION
EXISTING CONTOURS- 1
EXISTING CONTOURS- 5
APPROX. EDGE OF RIVER
PROPOSED CONTOURS
INDICATES SURVEY MONUMENT
EXISTING ROAD
EXISTING LEVEE
EXPAND EXISTING BERM
EXISTING GAS LINE
EXISTING OVERHEAD POWER LINE
EXISTING BURIED IRRIGATION PIPE
EXISTING FENCE
APPROXIMATE EASEMENT LINE
AS-BUILT AS CONSTRUCTED/FIELD VERIFIED
ASBUILT CETERLINE & INVERT
TR-OUT TR-OUT MONITORING CROSS SECTION



GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 ft.
1 FT. COUNTOUR INTERVALS

NOTE: HORIZONTAL LOCATIONS OF CROSS SECTION ENPOINTS ARE APPROXIMATE

TOPOGRAPHIC MAPPING FROM LIMITED SURVEY INFORMATION

THUNDER RANCH BOTTOMLAND INLET MONITORING SECTIONS

DESIGNED BY: JPC
DRAWN BY: ETA
CHECKED BY: TWB
DATE: 09/24/08
SCALE: 1" = 100'
PROJECT #: 6920-08-20
CADD FILE: TRIN-08-SQ-MIS
DRAWING NUMBER: C-2

TETRA TECH, INC.
410 S French Street, P.O. Box 1659
Breckenridge Co 80424
(970) 453-6394 Fax (970) 453-4579

REVISIONS

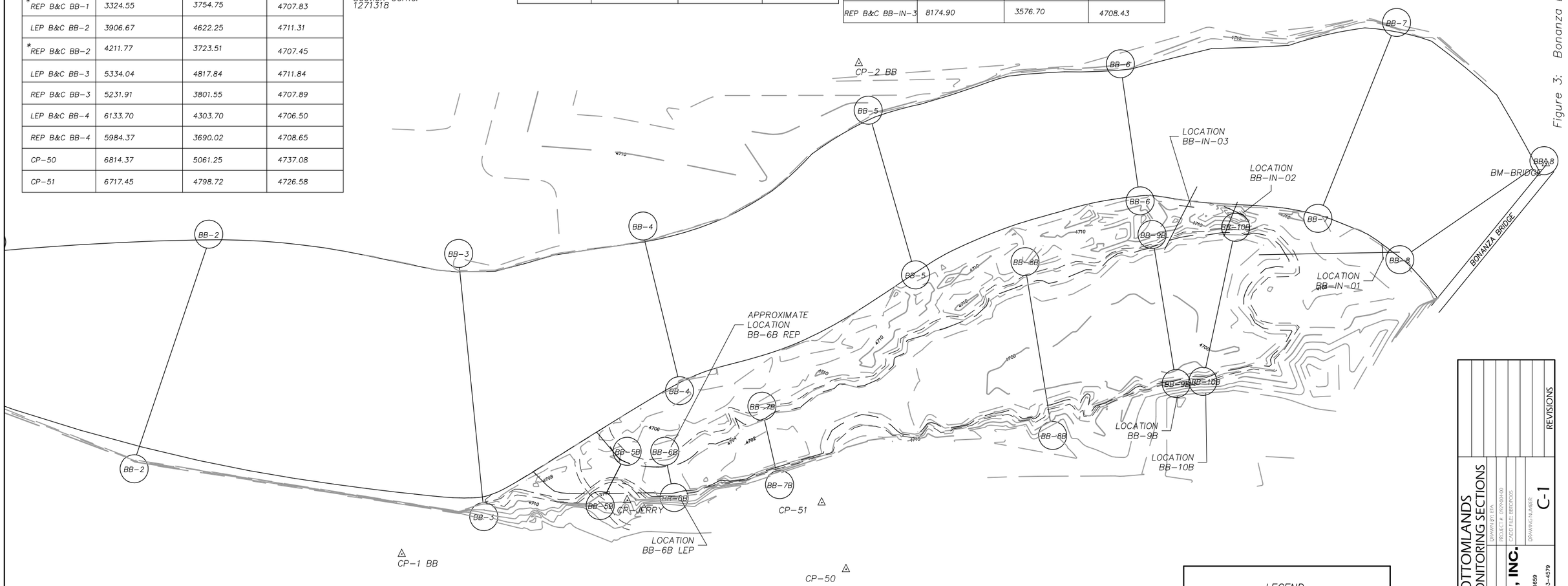
CONTROL SHEET

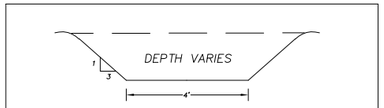
POINT	NORTHING	EASTING	ELEVATION
CP-1 BB	5000.00	5000.00	4832.59
CP-2 BB	6866.54	2996.69	4788.85
CP-3 BB	8163.60	2556.89	4820.63
CP-4 BB	5771.28	5653.54	4868.10
SEC CORNER 1271318	4819.37	2704.86	4737.08
BM BRIDGE NW	9672.93	3405.54	4728.40
LEP B&C BB-1	3112.31	4326.44	4711.06
*REP B&C BB-1	3324.55	3754.75	4707.83
LEP B&C BB-2	3906.67	4622.25	4711.31
*REP B&C BB-2	4211.77	3723.51	4707.45
LEP B&C BB-3	5334.04	4817.84	4711.84
REP B&C BB-3	5231.91	3801.55	4707.89
LEP B&C BB-4	6133.70	4303.70	4706.50
REP B&C BB-4	5984.37	3690.02	4708.65
CP-50	6814.37	5061.25	4737.08
CP-51	6717.45	4798.72	4726.58

POINT	NORTHING	EASTING	ELEVATION
LEP B&C BB-5	7097.53	3860.38	4707.90
REP B&C BB-5	6904.30	3188.22	4708.65
LEP B&C BB-6	8014.76	3558.29	4708.85
REP B&C BB-6	7934.39	2998.72	4710.44
LEP B&C BB-7	8741.21	3629.76	4708.19
REP B&C BB-7	9062.67	2830.38	4711.52
LEP B&C BB-8	9075.68	3798.43	4709.67
REP B&C BB-8	9664.42	3394.34	4721.83

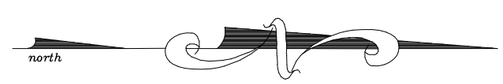
POINT	NORTHING	EASTING	ELEVATION
LEP B&C BB-9B	8162.25	4303.65	4708.97
REP B&C BB-9B	8063.53	3695.72	4709.96
LEP B&C BB-10B	8271.05	4294.86	4709.39
REP B&C BB-10B	8404.92	3666.26	4706.93
LEP B&C BB-IN-1	9007.59	3797.91	4708.03
REP B&C BB-IN-1	9003.27	3736.21	4708.51
REP B&C BB-IN-2	8358.12	3581.49	4708.08
LEP B&C BB-IN-3	8234.78	3583.86	4707.65
REP B&C BB-IN-3	8174.90	3576.70	4708.43

POINT	NORTHING	EASTING	ELEVATION
CP JERRY	5920.80	4779.43	4711.97
BM BRIDGE	9672.93	3405.54	4728.40
LEP B&C BB-5B	5810.03	4801.49	4712.58
REP B&C BB-5B	5919.90	4580.13	4708.05
REP B&C BB-6B	6111.67	4768.91	4710.66

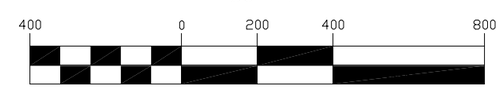




TYPICAL INLET CROSS SECTION



SCALE



1 inch = 400 ft.

LEGEND

- CL INLET
- BB-4 — BB-4 CROSS SECTION
- INUNDATION @ 18,000 CFS
- INUNDATION @ 13,000 CFS
- EXISTING GRADE 2
- EXISTING GRADE 10

Figure 3: Bonanza Bridge Inlet Monitoring Sections

GREEN RIVER BOTTOMLANDS
BONANZA BRIDGE MONITORING SECTIONS

DESIGNED BY: FFK
DATE: 09/04/05
CHECKED BY: JFC
SCALE: 1"=400'
DRAWN BY: FFK
PROJECT #: 0929-004-00
CADD FILE: BBSECTIONS

TETRA TECH, INC.
410 S French Street, P.O. Box 1659
Breckenridge Co 80424
(970) 453-6394 Fax (970) 453-4579

DRAWING NUMBER
C-1

REVISIONS

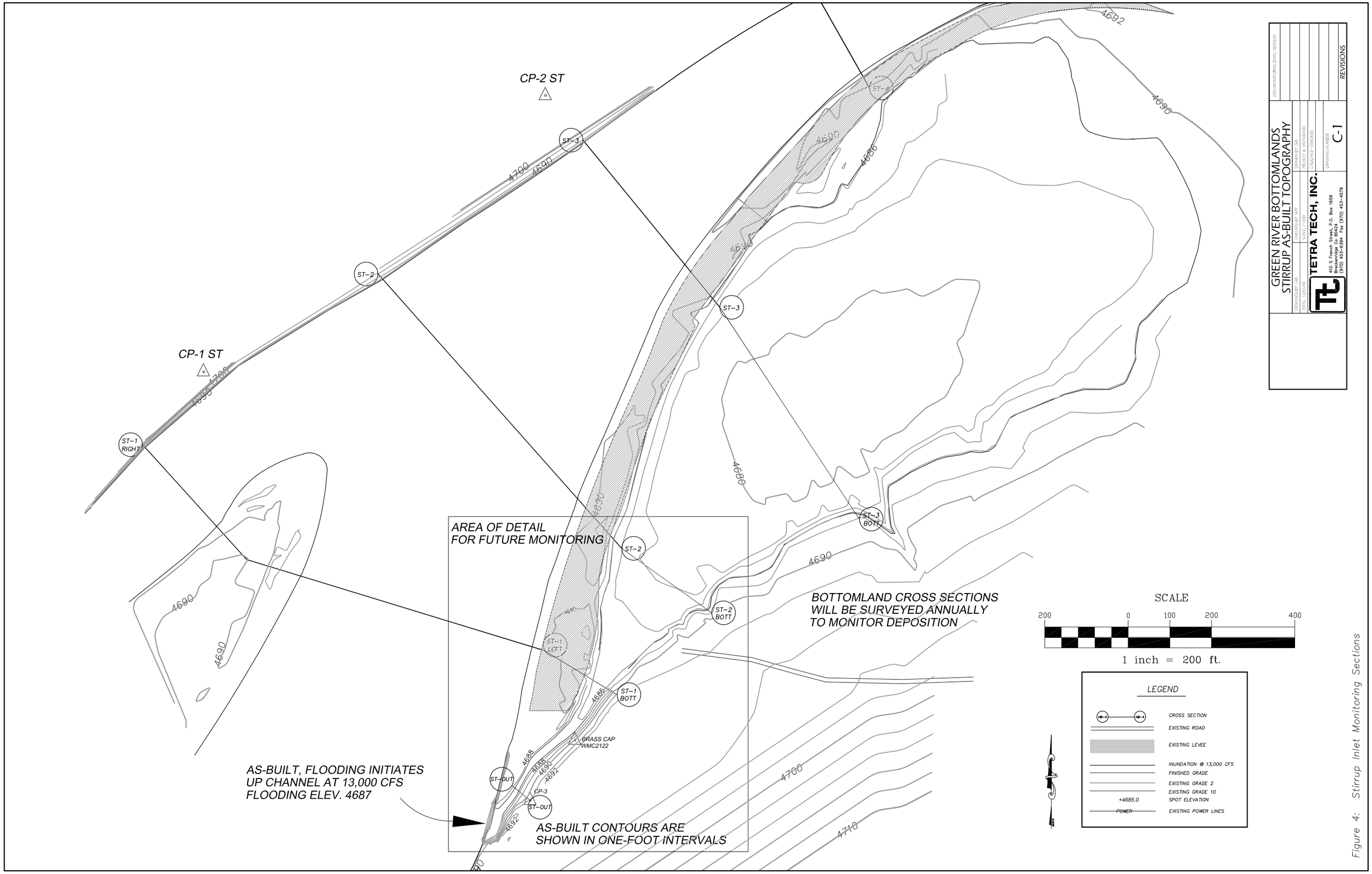
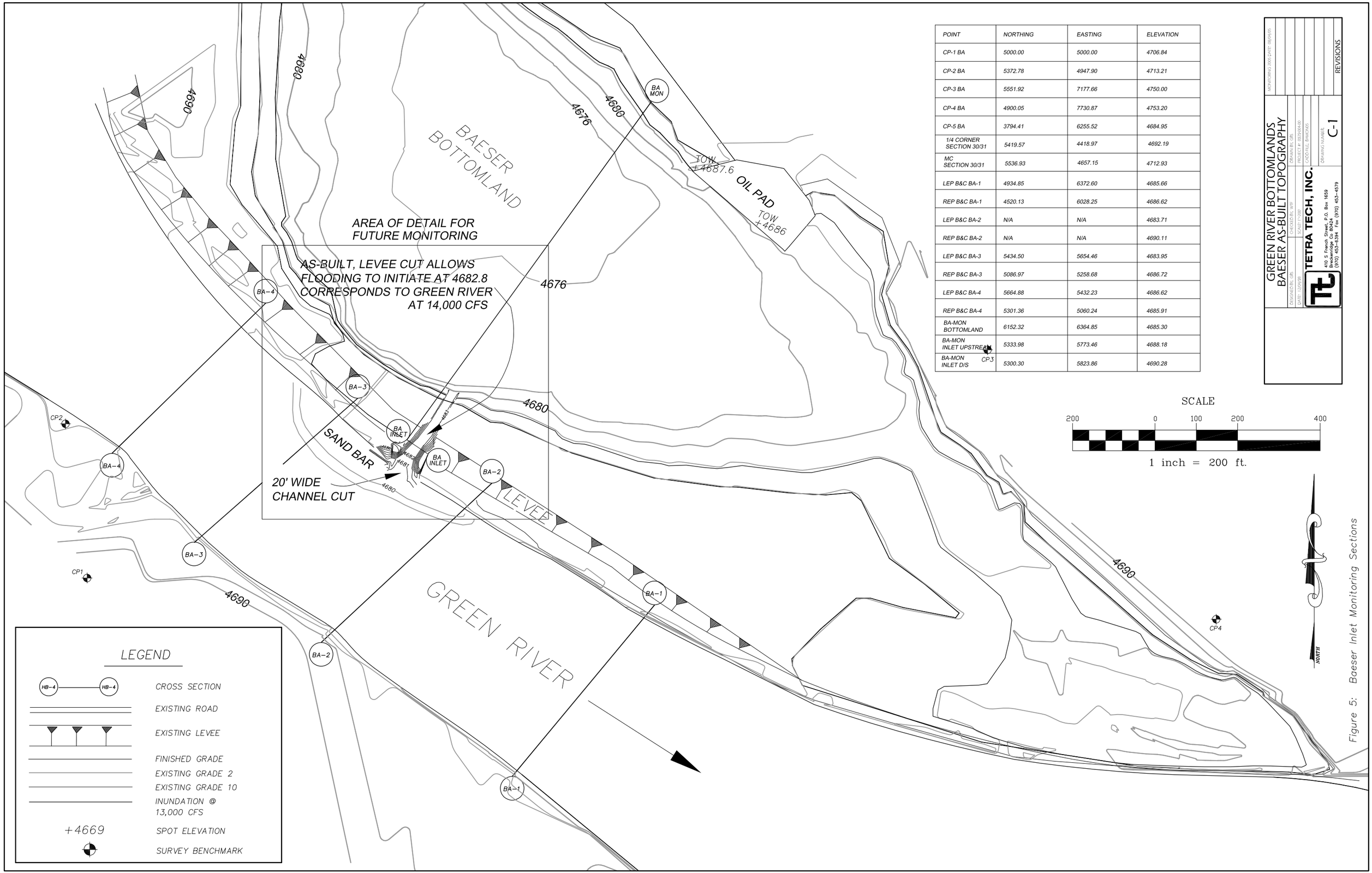


Figure 4: Stirrup Inlet Monitoring Sections



POINT	NORTHING	EASTING	ELEVATION
CP-1 BA	5000.00	5000.00	4706.84
CP-2 BA	5372.78	4947.90	4713.21
CP-3 BA	5551.92	7177.66	4750.00
CP-4 BA	4900.05	7730.87	4753.20
CP-5 BA	3794.41	6255.52	4684.95
1/4 CORNER SECTION 30/31	5419.57	4418.97	4692.19
MC SECTION 30/31	5536.93	4657.15	4712.93
LEP B&C BA-1	4934.85	6372.60	4685.66
REP B&C BA-1	4520.13	6028.25	4686.62
LEP B&C BA-2	N/A	N/A	4683.71
REP B&C BA-2	N/A	N/A	4690.11
LEP B&C BA-3	5434.50	5654.46	4683.95
REP B&C BA-3	5086.97	5258.68	4686.72
LEP B&C BA-4	5664.88	5432.23	4686.62
REP B&C BA-4	5301.36	5060.24	4685.91
BA-MON BOTTOMLAND	6152.32	6364.85	4685.30
BA-MON INLET UPSTREAM	5333.98	5773.46	4688.18
BA-MON INLET D/S CP3	5300.30	5823.86	4690.28

MONITORING 2005 DATE: 08/04/05

REVISIONS

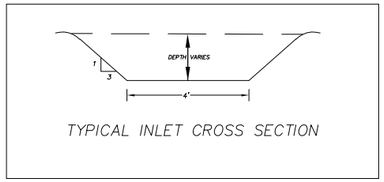
GREEN RIVER BOTTOMLANDS
BAESER AS-BUILT TOPOGRAPHY

DESIGNED BY: GRS
DRAWN BY: GRS
CHECKED BY: WTF
PROJECT #: 0972KM40
DATE: 10/04/05
SCALE: 1"=200'
CADD FILE: BAMON05

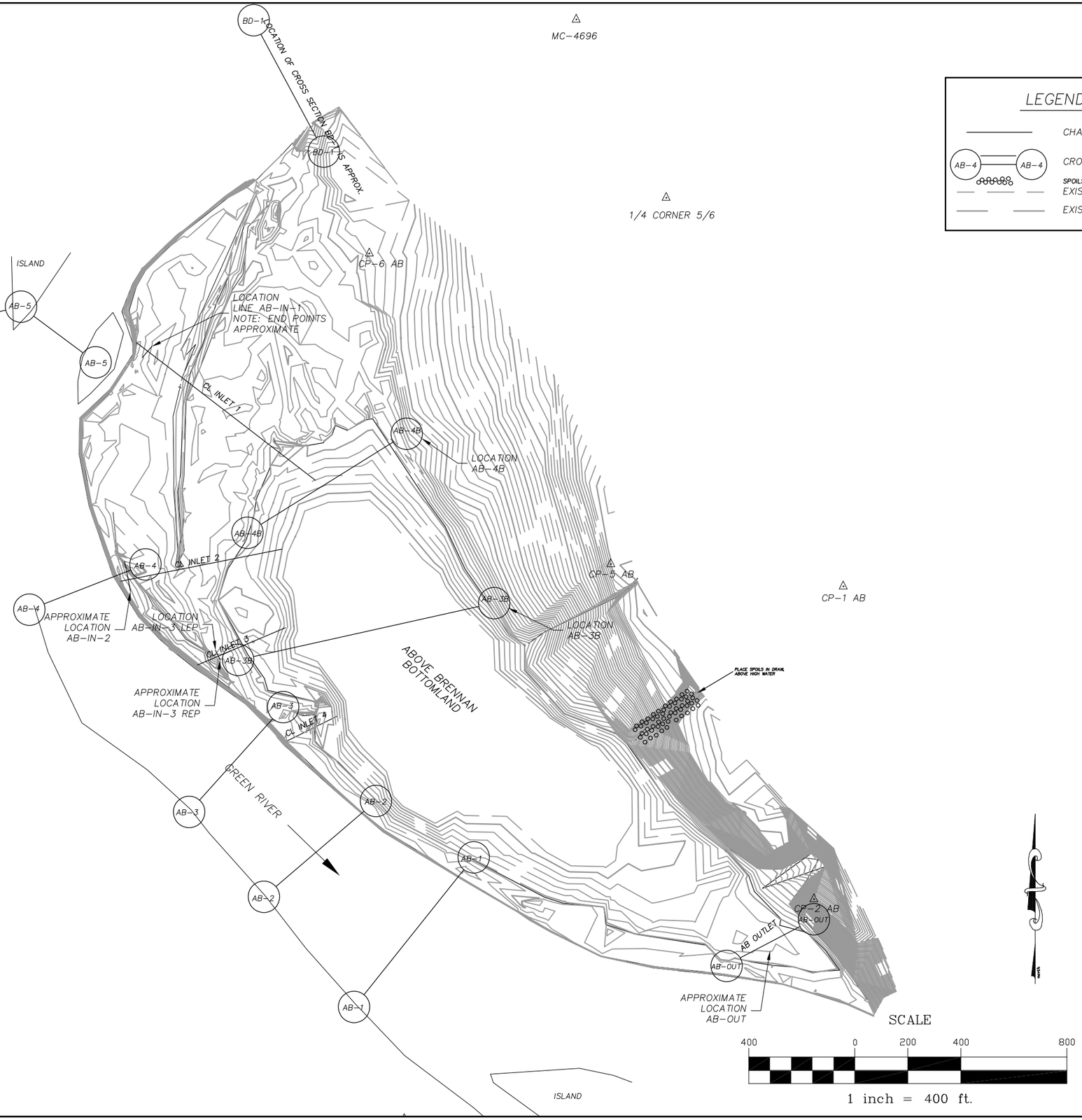
TETRA TECH, INC.
410 S French Street, P.O. Box 1659
Breckenridge Co. 80424
(970) 453-5394 Fax (970) 453-4579

DRAWING NUMBER: C-1

Figure 5: Baeser Inlet Monitoring Sections



TYPICAL INLET CROSS SECTION



LEGEND

- CHANNEL
- AB-4 — AB-4: CROSS SECTION
- SPOILS PILE
- EXISTING GRADE 1
- EXISTING GRADE 5

CONTROL SHEET

POINT	NORTHING	EASTING	ELEVATION
CP-1 AB	5000.00	5000.00	4765.46
CP-2 AB	3820.46	4889.57	4710.64
CP-3 AB	2991.64	3344.48	4855.69
CP-4 AB	5896.10	1367.39	4852.58
CP-5 AB	5083.90	4123.25	4715.64
CP-6 AB	6255.38	3212.36	4681.98
1/4 CORNER SECTION 5/6	6465.08	4332.32	4718.32
MC-4696 BRASS CAP	7137.25	3992.99	4695.21
* LEP B&C AB-1	3977.79	3605.3	4674.34
LEP B&C AB-2	4190.71	3237.28	4675.49
REP B&C AB-2	3829.24	2814.33	4682.03
*REP B&C AB-3	4152.50	2534.19	4681.95
LEP B&C AB-4	5082.96	2367.43	4675.91
REP B&C AB-4	4911.96	1929.69	4680.22
LEP B&C AB-5	5844.43	2179.39	4678.19
IP #1 B&C AB-5	6054.70	1898.53	4677.20
REP B&C AB-3B	4722.58	2716.91	4677.85
LEP B&C AB-3B	4936.83	3682.78	4677.03
LEP B&C AB-4B	5575.55	3352.87	4679.51
REP B&C AB-4B	5202.13	2752.58	4675.74
LEP B&C AB-IN-3	4758.54	2631.79	4679.43
LEP B&C BD-1	6639.50	3040.25	4682.25

HORIZONTAL LOCATIONS OF AB-1 REP, AB-3 LEP AND AB-5 REP WERE NOT SHOT, ELEVATIONS ARE 4683.04, 4672.72, AND 4675.95, RESPECTIVELY

Figure 6: Above Brennan Inlet Monitoring Sections

GREEN RIVER BOTTOMLANDS
ABOVE BRENNAN MONITORING SECTIONS

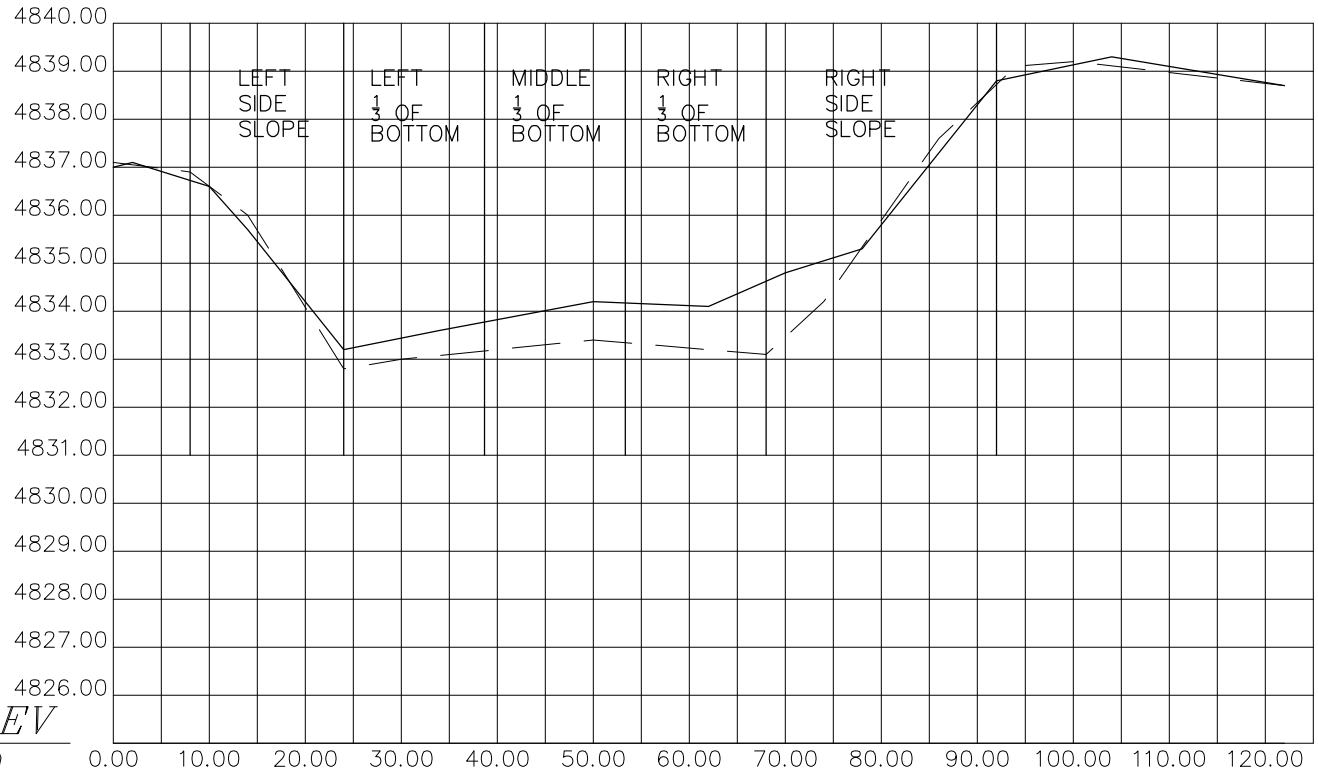
ENGINEER OF RECORD
CHIEF ENGINEER
PROJECT MANAGER
PROJECT ENGINEER
DESIGNED BY
DRAWN BY
CHECKED BY
DRAWING NUMBER: C-1

REVISIONS

TETRA TECH, INC.
410 S French Street, P.O. Box 1659
Breckenridge, CO 80424
(970) 453-4294 Fax (970) 453-4579

APPENDIX C
CROSS SECTION PLOTS

THUNDER RANCH LINES



DATUM ELEV
4825.00

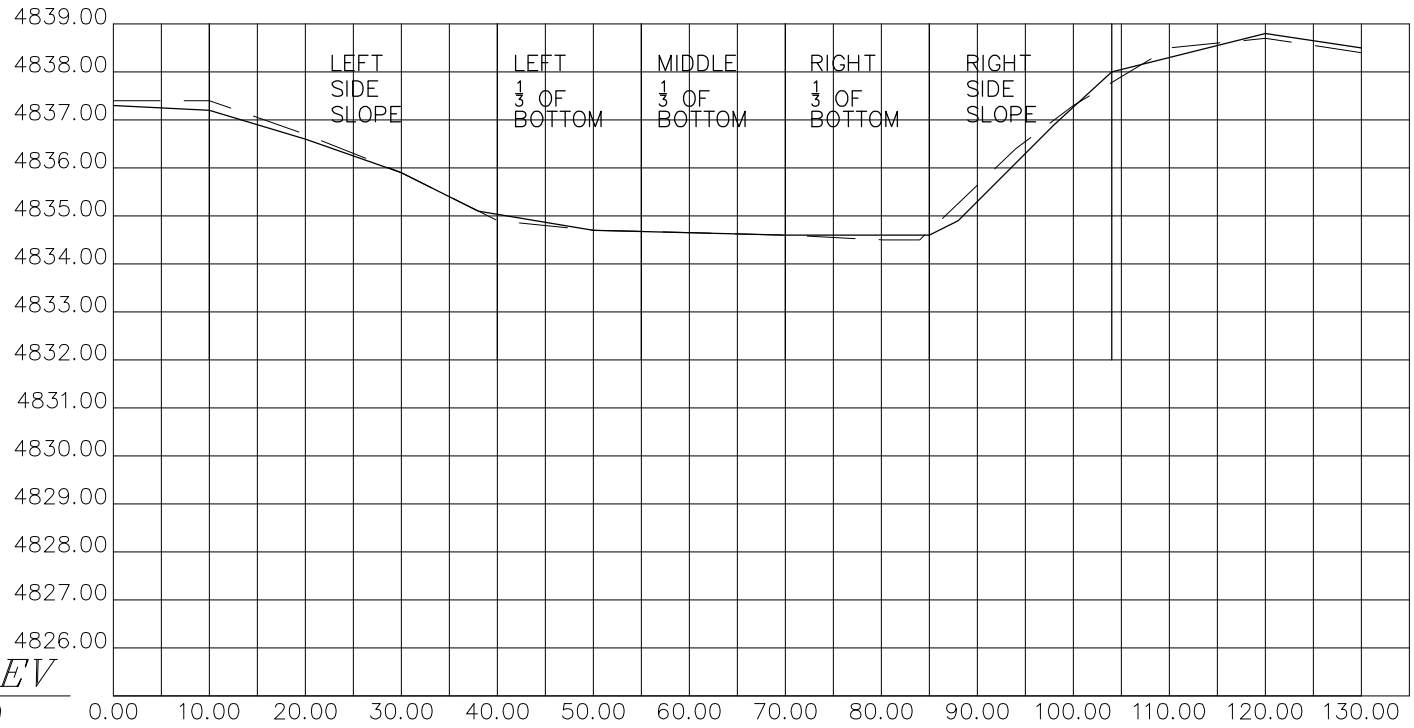
GROUP TR-LINES
SECTION TR-IN-1

(LOOKING TOWARD BOTTOMLAND)

AUGUST 2005
MAY 2005

SCALE: 1"=20'

THUNDER RANCH LINES



DATUM ELEV
4825.00

GROUP TR-LINES
SECTION TR-IN-2

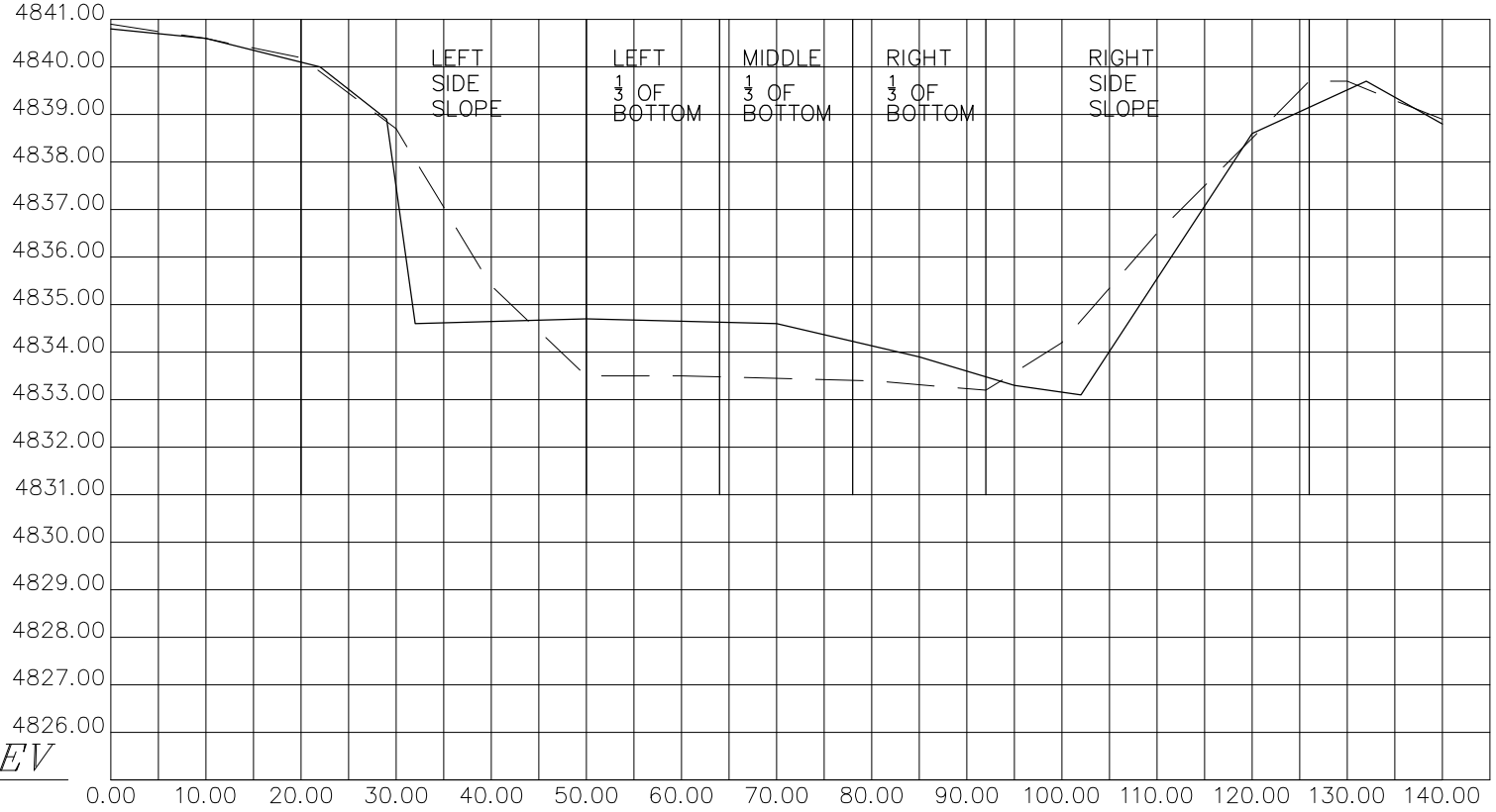
(LOOKING TOWARD BOTTOMLAND)

AUGUST 2005
MAY 2005

SCALE: 1"=20'

SHEET 2 OF 8

THUNDER RANCH LINES



DATUM ELEV
4825.00

GROUP TR-LINES
SECTION TR-IN-3

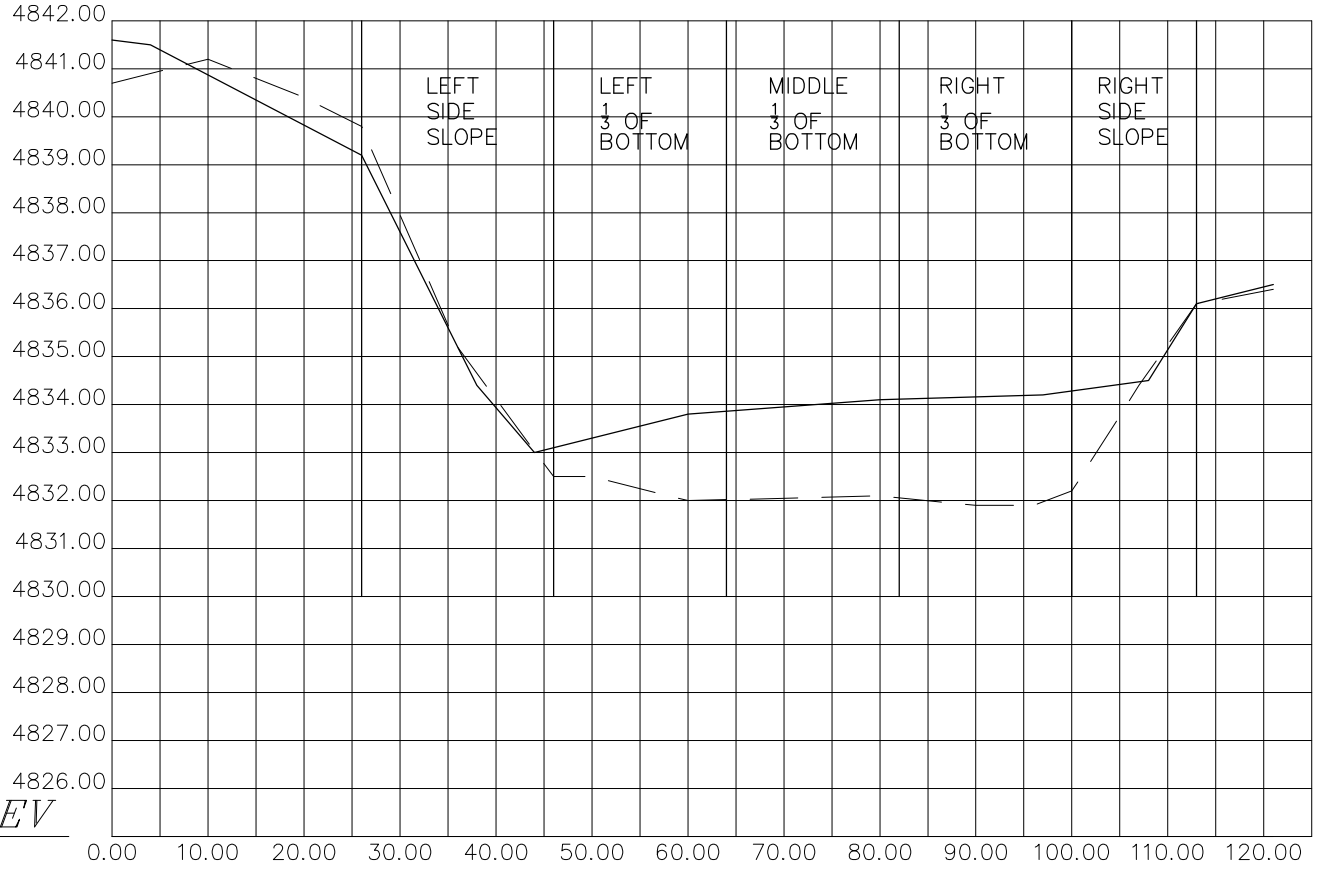
(LOOKING TOWARD BOTTOMLAND)

AUGUST 2005
MAY 2005

SCALE: 1"=20'

SHEET 3 OF 8

THUNDER RANCH LINES



DATUM ELEV
4825.00

GROUP TR-LINES
SECTION TR-IN-4

(LOOKING TOWARD BOTTOMLAND)

AUGUST 2005
MAY 2005

SCALE: 1"=20'

SHEET 4 OF 8

THUNDER RANCH LINES

DATUM ELEV
4825.00

GROUP TR-LINES
SECTION TR-IN-5

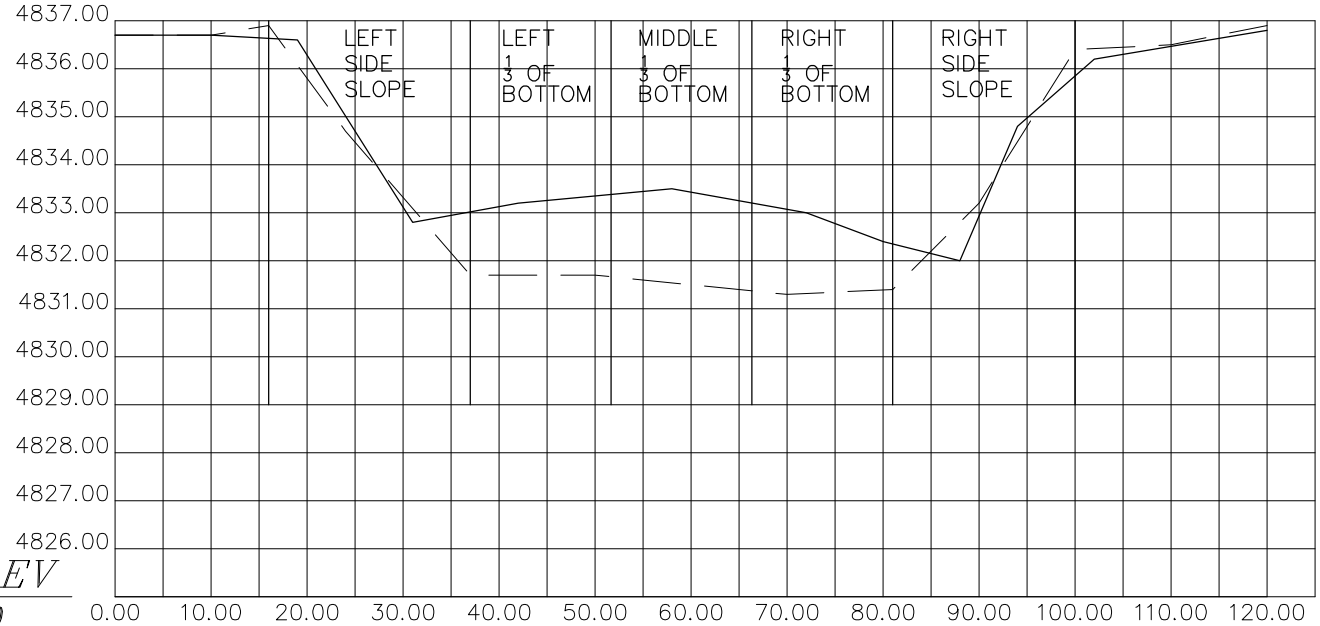
(LOOKING TOWARD BOTTOMLAND)

AUGUST 2005
MAY 2005

SCALE: 1"=20'

SHEET 5 OF 8

THUNDER RANCH LINES



DATUM ELEV
4825.00

GROUP TR-LINES
SECTION TR-IN-6

(LOOKING TOWARD BOTTOMLAND)

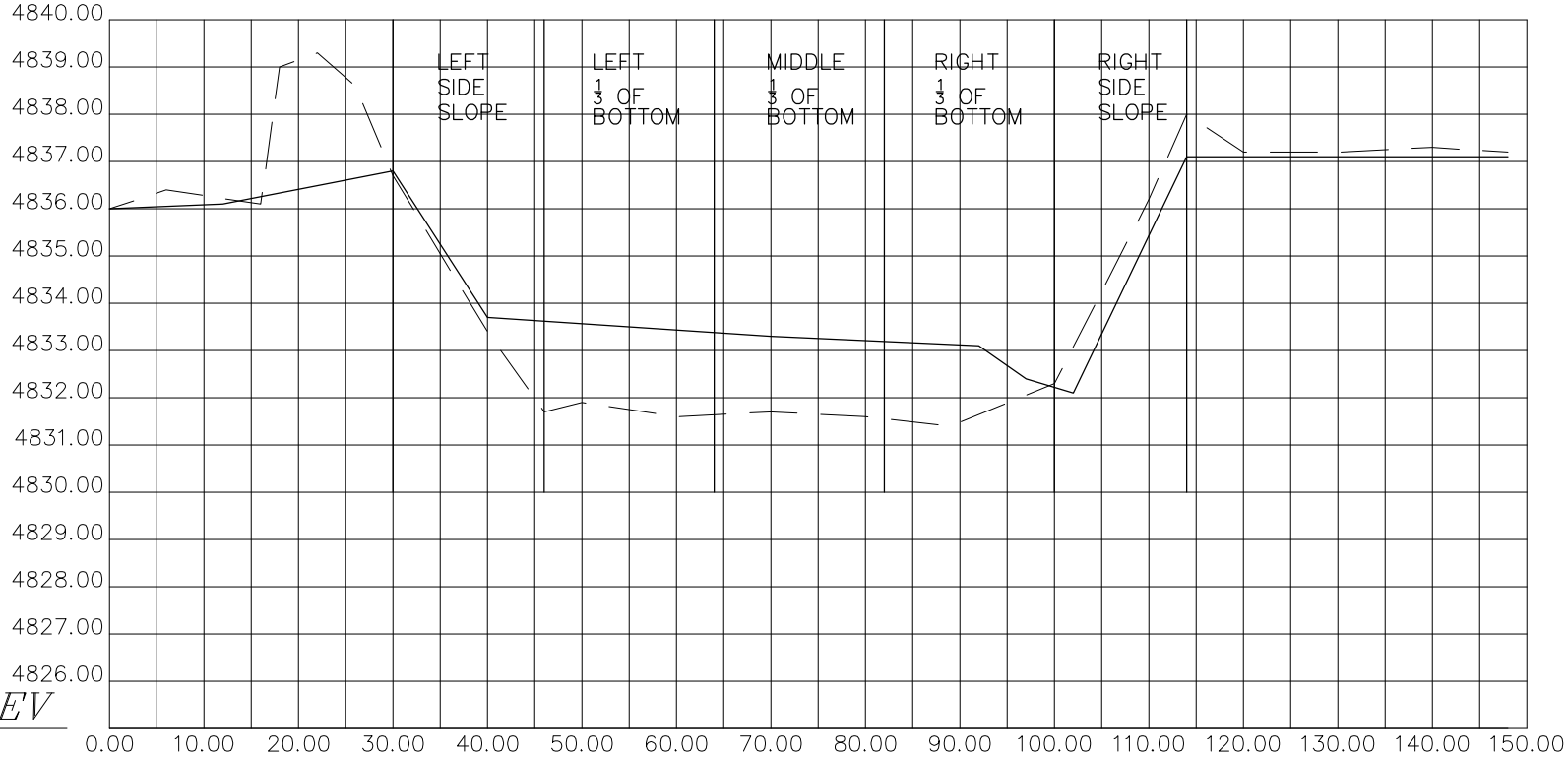
AUGUST 2005

MAY 2005

SCALE: 1"=20'

SHEET 6 OF 8

THUNDER RANCH LINES



DATUM ELEV
4825.00

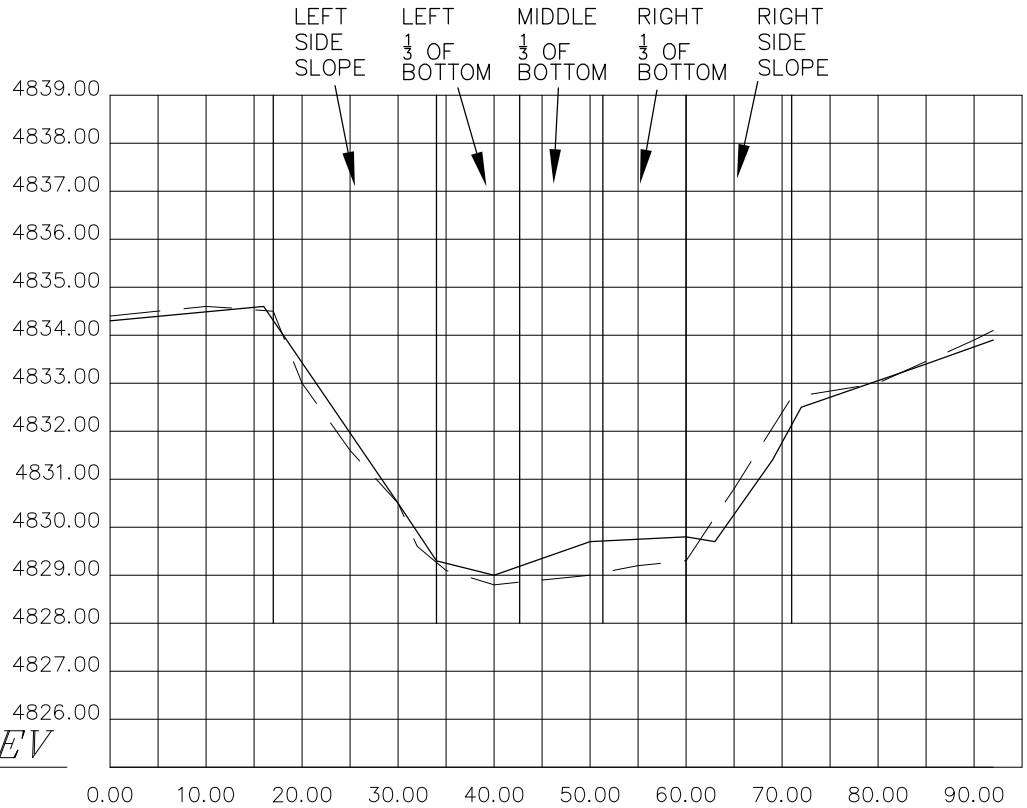
GROUP TR-LINES
SECTION TR-IN-7

(LOOKING TOWARD BOTTOMLAND)

AUGUST 2005
MAY 2005

SCALE: 1"=20'

THUNDER RANCH LINES



DATUM ELEV
4825.00

GROUP TR-LINES
SECTION TR-OUT

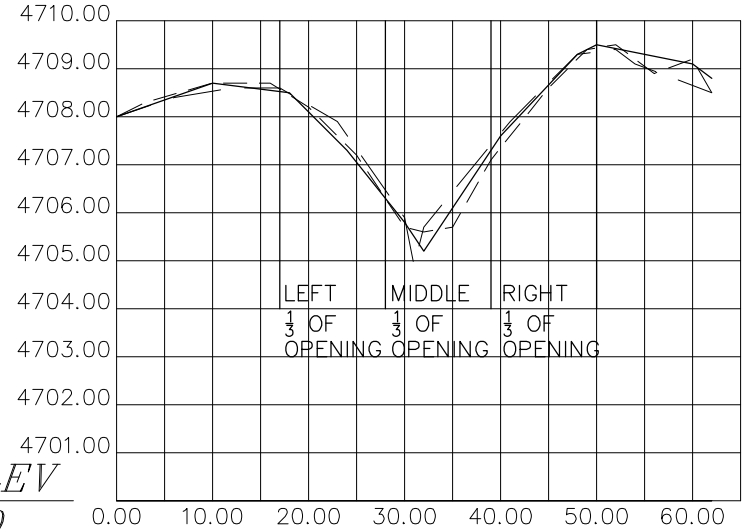
(LOOKING TOWARD RIVER)

AUGUST 2005
MAY 2005

SCALE: 1"=20'

SHEET 8 OF 8

BONANZA BRIDGE LINES



DATUM ELEV
4700.00

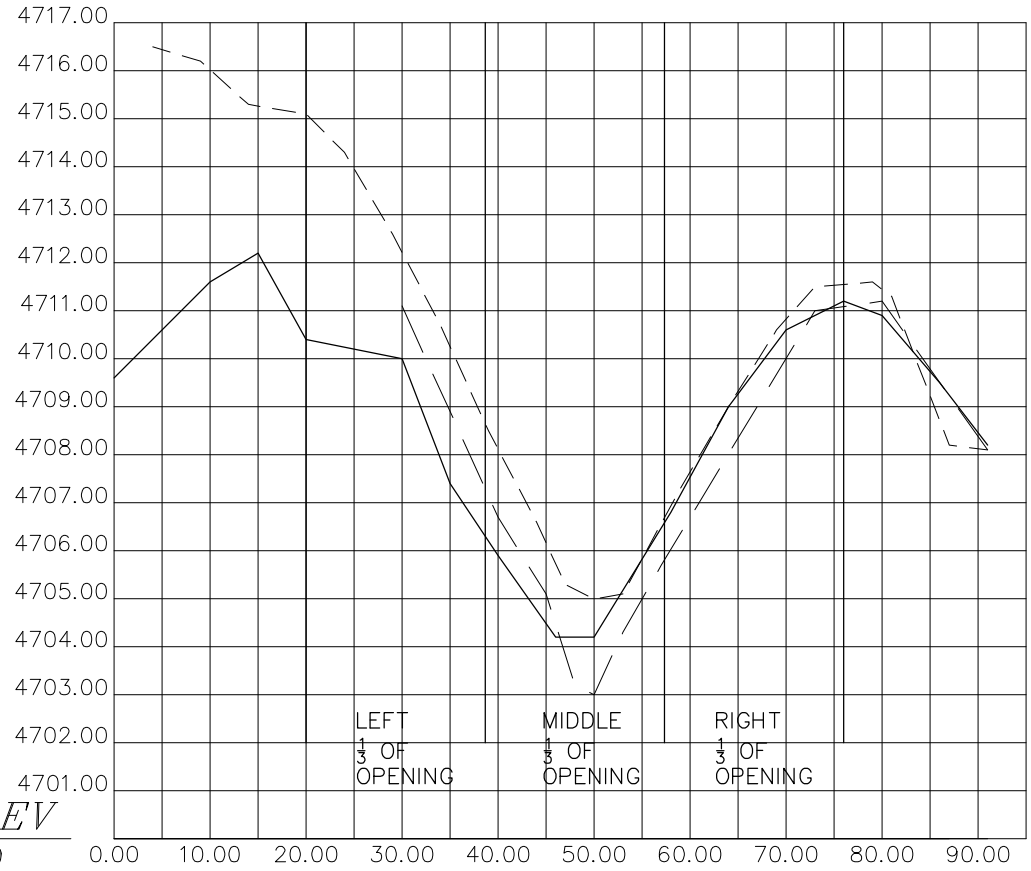
GROUP BB-LINES
SECTION BB-IN-1

(LOOKING TOWARD BOTTOMLAND)

MAY 2005
JULY 2003
MAY 2000

SCALE: 1"=20'

BONANZA BRIDGE LINES



DATUM ELEV
4700.00

GROUP BB-LINES
SECTION BB-IN-2

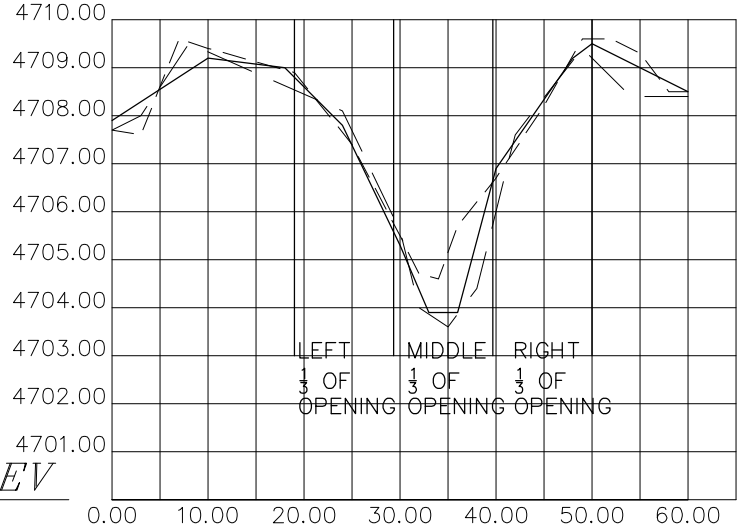
MAY 2005
JULY 2003
MAY 2000

(LOOKING TOWARD BOTTOMLAND)

SCALE: 1"=20'

SHEET 2 OF 4

BONANZA BRIDGE LINES



DATUM ELEV
4700.00

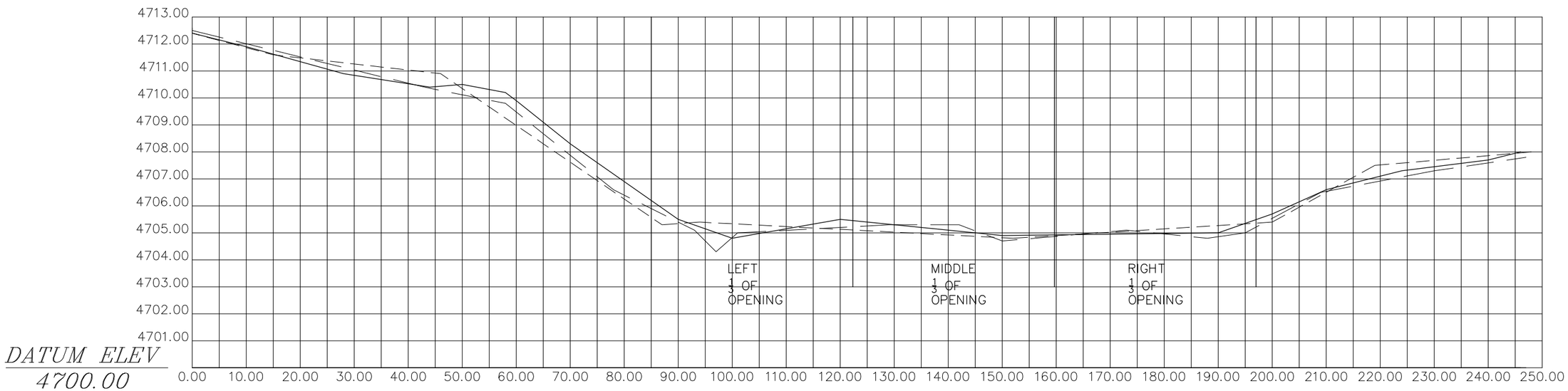
GROUP BB-LINES
SECTION BB-IN-3

MAY 2005
JULY 2003
MAY 2000

(LOOKING TOWARD BOTTOMLAND)

SCALE: 1"=20'

BONANZA BRIDGE LINES



DATUM ELEV
4700.00

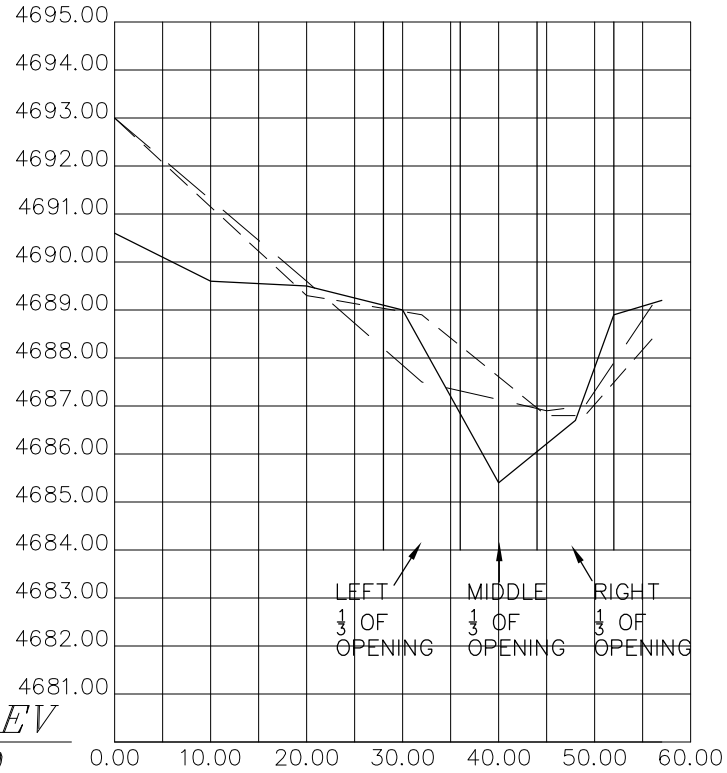
GROUP BB-LINES
SECTION 5B

(LOOKING TOWARD RIVER)

MAY 2005
JULY 2003
APRIL 1997

SCALE: 1"=20'

STIRRUP LINES



DATUM ELEV
4680.00

GROUP ST-LINES
SECTION OUT

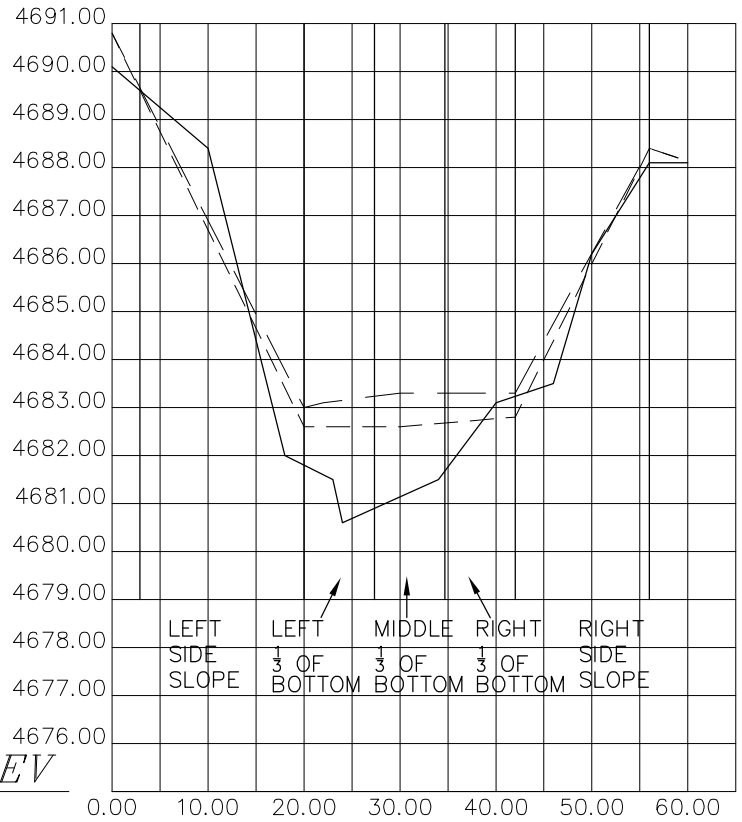
(LOOKING TOWARD RIVER)

MAY 2005
JULY 1999
APRIL 1997

SCALE: 1"=20'

SHEET 1 OF 1

BAESER LINES



DATUM ELEV
4675.00

GROUP BA-LINES
SECTION INLET

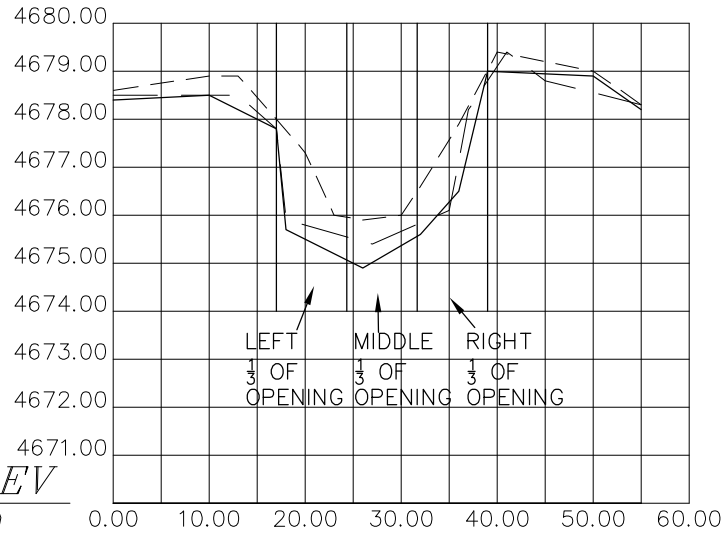
(LOOKING TOWARD RIVER)

MAY 2005
JULY 1999
MARCH 1998

SCALE: 1"=20'

SHEET 1 OF 1

ABOVE BRENNAN LINES



DATUM ELEV
4670.00

GROUP AB-LINES
SECTION AB-IN-1

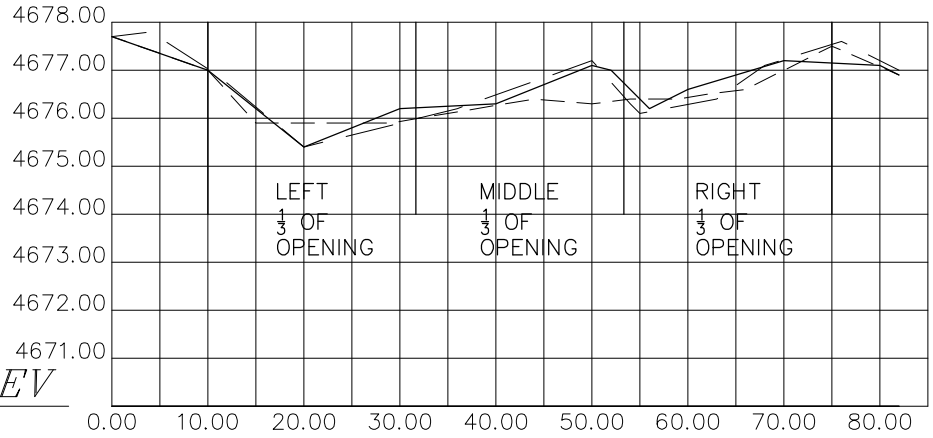
MAY 2005
JULY 2003
MAY 2000

(LOOKING TOWARD BOTTOMLAND)

SCALE: 1"=20'

SHEET 1 OF 4

ABOVE BRENNAN LINES



DATUM ELEV
4670.00

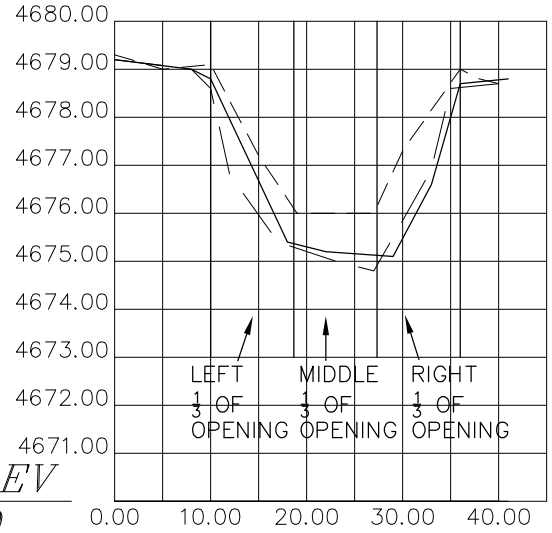
GROUP AB-LINES
SECTION AB-IN-2

(LOOKING TOWARD BOTTOMLAND)

MAY 2005
JULY 2003
MAY 2000

SCALE: 1"=20'

ABOVE BRENNAN LINES



DATUM ELEV
4670.00

GROUP AB-LINES
SECTION AB-IN-3

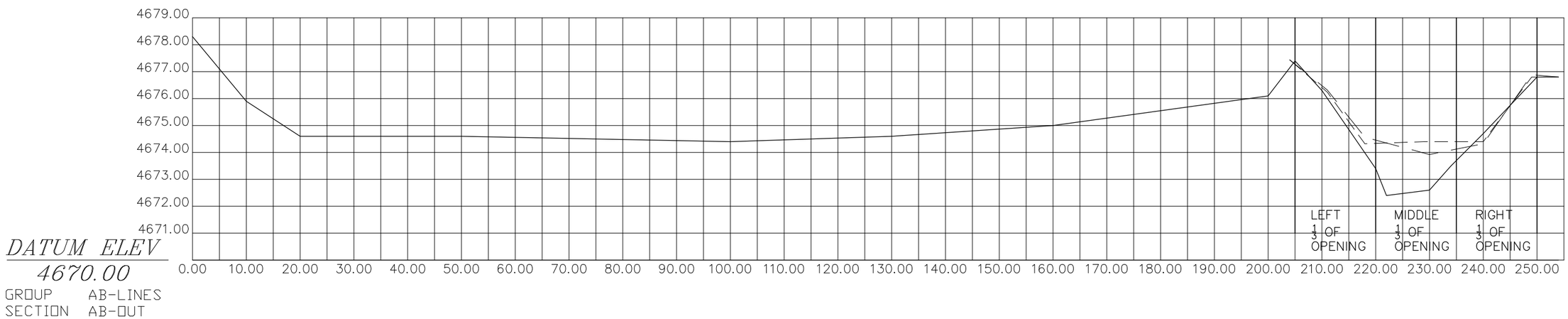
(LOOKING TOWARD BOTTOMLAND)

MAY 2005
JULY 2003
MAY 2000

SCALE: 1"=20'

SHEET 3 OF 4

ABOVE BRENNAN LINES



(LOOKING TOWARD RIVER)

MAY 2005
JULY 1999
MARCH 1998

SCALE: 1"=20'

APPENDIX D
CALCULATIONS

FLO-2D® *Two Dimensional Flood Routing Model*

FAX

TO: Eric Anderson

FROM: Jim O'Brien

DATE: 10/8/05

PAGES (including cover page): 3

PHONE/FAX No: 970-453-4579

RE: Eric - Attached is memo describing the Green River Dinosaur Survey Reference Elevations for the Benchmarks.

Authorized by: JOB

102 County Road 2315 P.O. Box 66, Nutrioso, Arizona 85932 phone & fax: (928) 339-1935
email: flo2d@cybertrails.com

March 29, 1995

Memo

To: George Smith, Ed Wick

From: J. S. O'Brien

Re: Correction of the Escalante Wetlands and Razorback Sucker Spawning Bar Elevations

As we previously discussed, the FLO staff was cognizant of a potential base elevation error in our Escalante Wetland and Razorback Sucker Spawning Bar cross section elevations. After receiving other comments on the potential elevation error, I rechecked the maps and decided to investigate further. As you know we ran into several benchmark elevation problems in the Dinosaur Quarry reach of the Green River. The important benchmark elevation error involves the weatherstation benchmark near the Park Service employee housing.

We used the weatherstation benchmark to assign an elevation to all of our cross section data. This benchmark elevation became the base elevation for our entire study reach. Level loops were initially surveyed around the upstream 6 cross section endpoints and the downstream 10 cross section endpoints. A level loop was then surveyed through middle cross section endpoints tying the upstream and downstream endpoints together using the weatherstation benchmark elevation. We were able to close all the level loops within 0.05 ft. The weatherstation benchmark was labeled with an elevation of 4959.50. Realizing that this was an impossible elevation for this benchmark, we called the USGS for the appropriate elevation. Repeated requests for this information from the USGS were initially unsuccessful, the inference from the USGS was that the benchmark elevation was unavailable. Finally an elevation of 4865.896 was obtained from the USGS. This was a more logical elevation than the 4950.50. At least two independent inquiries to the USGS were made regarding this elevation. Finally, it was decided to use this elevation as the base elevation for our cross section data.

During a recent review of the mapping, it became apparent that the presumed weatherstation elevation was still too high. Additional requests were made to the USGS and they sent us a listing of all the benchmarks in the area. The benchmark with the elevation of 4865.896 was listed as being labeled I 10. This label did not correspond to the weatherstation benchmark. During the recent Ouray Wildlife Refuge survey work, we went to the Dinosaur Quarry area and located the I 10 benchmark along the road up to the Quarry and surveyed the elevation difference between the I 10 and the weatherstation benchmarks. The level loop was surveyed within 0.05 ft. The new weatherstation benchmark elevation is 4766.60, an elevation difference of 99.30 ft compared to the base elevation used in the Escalante cross section survey.

In addition, the HEC [illegible] correction factor of -99.30 in Field 9 of the X1 card for each cross section. This correction factor is the PXSECE variable. It must appear in each X1 card at the start of each cross section data block in the HEC-2 data file. Consult the HEC-2 manual for further explanation. Using this factor will adjust all the corresponding water surface elevations in the HEC-2 to the correct elevations.

I apologize for the error. I should have obtained the benchmark printout from the USGS staff rather than assume that the verification from the two other independent sources was accurate. I also assumed that because the weatherstation benchmark was labeled 4959.50, the 4865.896 elevation as communicated to me must be correct. As it turned out, the weatherstation elevation of 4766.60 was actually off by almost 200 ft.

Please feel free to distribute this memo with the data base to interested parties.

Discharge measurements in the Green River were obtained from USGS gage # 09261000, 'Green River Near Jensen, UT', approximate Green River Mile (RM) 316.50. The gage is located at Latitude 40°24'34", Longitude 109°14'05" NAD27 in Uintah County, Utah, Hydrologic Unit 14060001.

Discharge measurements in Ashley Creek were obtained from NOAA gage ASHLEY CK - JENSEN, NR, UNION CANAL, BLO (ACJU1). The gage is located at Latitude 40°21'29", Longitude 109°23'13" NAD27 in Uintah County, Utah, Hydrologic Unit 14060002.

The reasons for using gage readings from two different governmental bodies were twofold. First, NOAA discharge readings were used for Ashley Creek because discharge readings were not available through USGS. Second, USGS discharge readings were used for the Green River near Jensen because this is consistent with what the Bureau of Reclamation uses to report flows relative to Flaming Gorge.

In order to estimate flows at the five bottomland sites, flows were taken from the Jensen Gage, lagged by the approximate time it takes for flows to travel from the Jensen Gage to each site. For sites downstream of Ashley Creek, the gaged discharges from Ashley Creek were added to the Green River flows, again lagged by the travel time from the Ashley Creek Gage to the bottomland sites. An average velocity of 2.5 mi/hr (3.67 ft/sec) was utilized for the full range of flows. This velocity was provided by the U.S. Fish and Wildlife Service and the Bureau of Reclamation and is based on exiting models developed by the Bureau to estimate travel time from Flaming Gorge to Jensen Gage. This velocity is in close agreement with values determined by FLO Engineering, Inc. and Tetra Tech, Inc from previous field surveys, HECRAS computations, and level logger data for flows in the Green River ranging between 12,000 cfs and 20,000cfs. It is possible that some attenuation of the hydrograph could occur as the flows pass Jensen Gage and proceed downstream. In general, flows tend to be relatively stable over many days, typical of snow melt events, thus making flow attenuation relatively unlikely. A flood routing analysis for the Green River was not conducted for this study. See the table below for results.

The river velocities presented are average river velocities, which will tend to be higher than velocities on the surface, or the drift velocities of larvae and beads observed by Fish and Wildlife biologists. The slower drift velocities are due to such things as losses from friction, irregular channel geometry and wind at the water surface.

Green River Flow Travel Times

Gage Stations

Name: Green River near Jensen
USGS gage number: 09261000
Latitude: 40 24' 34"
Longitude: 109 14' 05"
Elevation: 4,758' ASL (4,739.37' thalweg based on 0.0003025 assumed constant slope)
Location: Green River RM 316.5

Name: Ashley Creek near Jensen, below Union Canal
USGS gage number: 09271550
Latitude: 40 21' 29"
Longitude: 109 23' 13"
Elevation: 4,740' ASL (4,721.37' thalweg)
Location: 1.7 river miles upstream from confluence with Green River (RM 299.2)

Sites

Name: Thunder Ranch Levee Notch #3
Latitude: 40 25' 27"
Longitude: 109 19' 42"
Thalweg Elevation: 4,724.61
Location (RM): 306.2
Distance downstream from Jensen gage: 10.3

Name: Thunder Ranch Outlet
Latitude: 40 24' 26"
Longitude: 109 19' 51"
Thalweg Elevation: 4,720.97
Location (RM): 305.0
Distance downstream from Jensen gage: 11.5

Name: Ashley Creek confluence with the Green River
Latitude: 40 20' 28"
Longitude: 109 21' 50"
Thalweg Elevation: Unknown (4,711.74')
Location (RM): 299.2
Distance downstream from Jensen gage: 17.3
Distance downstream from Ashley Creek confluence: 0.0

Name: Bonanza Bridge Levee Notch # 2
Latitude: 40 18' 51"
Longitude: 109 29' 14"
Thalweg Elevation: 4,690.5
Location (RM): 289.6
Distance downstream from Jensen gage: 26.9
Distance downstream from Ashley Creek confluence: 9.6

Name: Bonanza Bridge Outlet
Latitude: 40 18' 21"
Longitude: 109 29' 22"
Thalweg Elevation: 4,693.6
Location (RM): 288.9
Distance downstream from Jensen gage: 27.6
Distance downstream from Ashley Creek confluence: 10.3

Name: Stirrup Inlet/Outlet
Latitude: 40 17' 05"
Longitude: 109 33' 15"
Thalweg Elevation: 4,677.9
Location (RM): 275.7
Distance downstream from Jensen gage: 40.8
Distance downstream from Ashley Creek confluence: 23.5

Name: Baeser Bend Inlet/Outlet
Latitude: 40 15' 39"
Longitude: 109 35' 46"
Thalweg Elevation: 4,666.8
Location (RM): 272.7
Distance downstream from Jensen gage: 43.8
Distance downstream from Ashley Creek confluence: 26.5

Name: Above Brennan Notch #1
Latitude: 40 14' 40"
Longitude: 109 35' 52"
Thalweg Elevation: 4,663.5
Location (RM): 269.0
Distance downstream from Jensen gage: 47.5
Distance downstream from Ashley Creek confluence: 30.2

Name: Above Brennan Outlet
Latitude: 40 13' 56"
Longitude: 109 35' 40"
Thalweg Elevation: 4,662.2
Location (RM): 267.9
Distance downstream from Jensen gage: 48.6
Distance downstream from Ashley Creek confluence: 31.3

Notes

-Latitude and Longitude points and elevations for each of the USGS gage stations were obtained from the USGS web site (waterdata.usgs.gov).
-Latitude and Longitude points for each of the habitat sites were determined using TopoZone (www.topozone.com). The points are located in the center of the Green River channel, adjacent to each site inlet or outlet, at the specified river mile.
-River miles were identified using the “Green River Wilderness Desolation River Guide” by Laura Evans and Buzz Belknap, Westwater Books, Second Printing (1978).
-Thalweg elevations were estimated by Tetra Tech, Inc., using cross-sectional profiles of the Green River surveyed between 1996 and 1998 and extrapolating up or down stream.

Green River Flow Travel Times

From	To	Miles	Hours	MPH
Jensen Gage	Thunder Ranch	11.5	5	2.3 (2.1–2.9)
Jensen Gage	Ashley Creek Confluence	17.3	7	2.5 (2.1–2.9)
Ashley Creek Gage	Ashley Creek Confluence	1.7	1	1.7
Ashley Creek Confluence	Bonanza Bridge	10.3	4	2.6 (2.2–3.2)
Ashley Creek Confluence	The Stirrup	23.5	11	2.1 (1.9–2.6)
Ashley Creek Confluence	Baeser Bend	26.5	12	2.2 (2.1–2.9)
Ashley Creek Confluence	Above Brennan	30.2	12	2.5 (2.1–2.9)

Notes

-Used thalweg elevations from the Thunder Ranch Outlet to Above Brennan Notch #1 to calculate slope (0.0003025).
-Assumed constant slope from Jensen Gage to Above Brennan.
-Calculated thalweg elevation for the Jensen Gage (4,739.37') and the Ashley Creek Confluence (4,711.74') using constant slope of 0.0003025.
-The thalweg elevation at the Jensen Gage using slope is 18.63' lower than the published elevation for the Jensen Gage (4,758' minus 4,739.37' = 18.63')
-Calculated thalweg elevation for the Ashley Creek Gage by subtracting from the published elevation the same amount as from the Jensen Gage (4,740' minus 18.63' = 4,721.37).
-Travel time between locations based on model developed by Shane Coors (BR-SLC).
-Travel time range is based on a friction factor of 7 ± 10%.

Green River Flow Travel Times (assuming 2.5 miles per hour)

From	To	Miles	Hours
Jensen Gage	Thunder Ranch	11.5	5
Jensen Gage	Ashley Creek Confluence	17.3	7
Ashley Creek Gage	Ashley Creek Confluence	1.7	1
Ashley Creek Confluence	Bonanza Bridge	10.3	4
Ashley Creek Confluence	The Stirrup	23.5	9
Ashley Creek Confluence	Baeser Bend	26.5	11
Ashley Creek Confluence	Above Brennan	30.2	12

Location	Green River Miles per River Guide			Estimated lag from Jensen	Green River Miles per River Guide			Estimated lag from Ashley gage*
	miles	incremental miles	miles below Jensen	hours	miles	incremental miles on Green River	miles below Ashley Gage	hours
Jensen gage	316.50		0.00	0				
		10.30						
Thunder Ranch IN 3	306.20		10.30	4				
		1.20						
Thunder Ranch OUTLET	305.00		11.50	5				
		5.80				0		
Ashley Creek confluence	299.20		17.30	7	299.20		1.70	1
		9.60				9.60		
Bonanza Bridge IN 2	289.60		26.90	11	289.60		11.30	5
		0.70				0.70		
Bonanza Bridge OUTLET	288.90		27.60	11	288.90		12.00	5
		13.20				13.20		
Stirrup	275.70		40.80	16	275.70		25.20	10
		3.00				3.00		
Baser	272.70		43.80	18	272.70		28.20	11
		3.70				3.70		
Above Brennan IN 1	269.00		47.50	19	269.00		31.90	13
		1.10				1.10		
Above Brennan OUTLET	267.90		48.60	19	267.90		33.00	13

* Gage on Ashely Creek is estimated to be 1.7 miles above confluence with an estimated lag time of 1 hr

ESTIMATED DISCHARGES AT BOTTOMLAND SITES WHEN JENSEN GAGE IS AT APPROXIMATELY 14,000 CFS

Location	Time of discharge measurement at notch	Approx Lag from Jensen (hrs)	Time of flow at Jensen	Flow at Jensen at time of measurement (cfs)	Approx Lag from Ashley Creek gage (hrs)*	Time of flow at Ashley Creek gage	Flow at Ashley Creek gage at time of measurement (cfs)	Estimated total flow at site (cfs) (no attenuation)
Jensen gage	-	0	-	-	-	-	-	-
Thunder Ranch IN 3	5/19/2005 13:35	4	5/19/2005 9:35	14100	-	-	-	14100
Thunder Ranch OUTLET	5/19/2005 11:40	5	5/19/2005 6:40	13700	-	-	-	13700
Ashley Creek confluence	-	7	-	-	1	-	-	-
Bonanza Bridge IN 2	5/19/2005 18:30	11	5/19/2005 7:30	13900	5	5/19/2005 13:30	0	13900
Bonanza Bridge OUTLET	5/19/2005 18:50	11	5/19/2005 7:50	13900	5	5/19/2005 13:50	0	13900
Stirrup	5/20/2005 11:40	16	5/19/2005 19:40	13900	10	5/20/2005 1:40	459	14359
Baser	5/20/2005 12:40	18	5/19/2005 18:40	14000	11	5/19/2005 1:40	0	14000
Above Brennan IN 1	5/20/2005 10:35	19	5/19/2005 15:35	14100	13	5/19/2005 21:35	280	14380
Above Brennan OUTLET	5/20/2005 7:50	19	5/19/2005 12:50	14200	13	5/19/2005 18:50	97	14297

* One hour added for lag time from gage

ESTIMATED DISCHARGES AT BOTTOMLAND SITES WHEN JENSEN GAGE IS AT APPROXIMATELY 20,000 CFS

Location	Time of discharge measurement at notch	Approx Lag from Jensen (hrs)	Time of flow at Jensen	Flow at Jensen at time of measurement (cfs)	Approx Lag from Ashley Creek gage (hrs)*	Time of flow at Ashley Creek gage	Flow at Ashley Creek gage at time of measurement (cfs)	Estimated total flow at site (cfs) (no attenuation)
Jensen gage	-	0	-	-	-	-	-	-
Thunder Ranch IN 3	5/24/2005 12:25	4	5/24/2005 8:25	19500	-	-	-	19500
Thunder Ranch OUTLET	5/24/2005 17:12	5	5/24/2005 12:12	19600	-	-	-	19600
Ashley Creek confluence	-	7	-	-	1	-	-	-
Bonanza Bridge IN 2	5/25/2005 10:10	11	5/24/2005 23:10	19300	5	5/25/2005 5:10	2222	21522
Bonanza Bridge OUTLET	5/25/2005 8:30	11	5/24/2005 21:30	19400	5	5/25/2005 3:30	2271	21671
Stirrup	5/25/2005 18:25	16	5/25/2005 2:25	19500	10	5/25/2005 8:25	2099	21599
Baser	5/25/2005 17:35	18	5/24/2005 23:35	19400	11	5/25/2005 6:35	2174	21574
Above Brennan IN 1	5/25/2005 13:30	19	5/24/2005 18:30	19600	13	5/25/2005 0:30	2348	21948
Above Brennan OUTLET	5/25/2005 16:30	19	5/24/2005 21:30	19300	13	5/25/2005 3:30	2271	21571

* One hour added for lag time from gage

ESTIMATED DISCHARGES AT BOTTOMLAND SITES WHEN JENSEN GAGE IS AT APPROXIMATELY 17,000 CFS

Location	Time of discharge measurement at notch	Approx Lag from Jensen (hrs)	Time of flow at Jensen	Flow at Jensen at time of measurement (cfs)	Approx Lag from Ashley Creek gage (hrs)*	Time of flow at Ashley Creek gage	Flow at Ashley Creek gage at time of measurement (cfs)	Estimated total flow at site (cfs) (no attenuation)
Jensen gage	-	0	-	-	-	-	-	-
Thunder Ranch IN 3	5/30/2005 10:10	4	5/30/2005 6:10	16700	-	-	-	16700
Thunder Ranch OUTLET	5/30/2005 13:20	5	5/30/2005 8:20	16800	-	-	-	16800
Ashley Creek confluence	-	7	-	-	1	-	-	-
Bonanza Bridge IN 2	5/30/2005 17:50	11	5/30/2005 6:50	16700	5	5/30/2005 12:50	1730	18430
Bonanza Bridge OUTLET	5/30/2005 17:00	11	5/30/2005 6:00	16800	5	5/30/2005 12:00	1749	18549
Stirrup	5/30/2005 15:50	16	5/29/2005 23:50	16700	10	5/30/2005 5:50	1799	18499
Baser	5/31/2005 11:20	18	5/30/2005 17:20	16900	11	5/31/2005 0:20	1432	18332
Above Brennan IN 1	5/31/2005 8:50	19	5/30/2005 13:50	16900	13	5/30/2005 19:50	1554	18454
Above Brennan OUTLET	5/31/2005 10:30	19	5/30/2005 15:30	16800	13	5/30/2005 21:30	1512	18312

* One hour added for lag time from gage

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/17/2005 0:00	6550
USGS	9261000	5/17/2005 0:15	6580
USGS	9261000	5/17/2005 0:30	6580
USGS	9261000	5/17/2005 0:45	6600
USGS	9261000	5/17/2005 1:00	6600
USGS	9261000	5/17/2005 1:15	6630
USGS	9261000	5/17/2005 1:30	6630
USGS	9261000	5/17/2005 1:45	6650
USGS	9261000	5/17/2005 2:00	6650
USGS	9261000	5/17/2005 2:15	6680
USGS	9261000	5/17/2005 2:30	6680
USGS	9261000	5/17/2005 2:45	6700
USGS	9261000	5/17/2005 3:00	6730
USGS	9261000	5/17/2005 3:15	6760
USGS	9261000	5/17/2005 3:30	6780
USGS	9261000	5/17/2005 3:45	6780
USGS	9261000	5/17/2005 4:00	6810
USGS	9261000	5/17/2005 4:15	6830
USGS	9261000	5/17/2005 4:30	6830
USGS	9261000	5/17/2005 4:45	6860
USGS	9261000	5/17/2005 5:00	6880
USGS	9261000	5/17/2005 5:15	6910
USGS	9261000	5/17/2005 5:30	6930
USGS	9261000	5/17/2005 5:45	6960
USGS	9261000	5/17/2005 6:00	6960
USGS	9261000	5/17/2005 6:15	6960
USGS	9261000	5/17/2005 6:30	6980
USGS	9261000	5/17/2005 6:45	6980
USGS	9261000	5/17/2005 7:00	6980
USGS	9261000	5/17/2005 7:15	7010
USGS	9261000	5/17/2005 7:30	7010
USGS	9261000	5/17/2005 7:45	7010
USGS	9261000	5/17/2005 8:00	7010
USGS	9261000	5/17/2005 8:15	7010
USGS	9261000	5/17/2005 8:30	7010
USGS	9261000	5/17/2005 8:45	7040
USGS	9261000	5/17/2005 9:00	7040
USGS	9261000	5/17/2005 9:15	7010
USGS	9261000	5/17/2005 9:30	7010
USGS	9261000	5/17/2005 9:45	7040
USGS	9261000	5/17/2005 10:00	7040
USGS	9261000	5/17/2005 10:15	7040
USGS	9261000	5/17/2005 10:30	7040
USGS	9261000	5/17/2005 10:45	7040

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/17/2005 11:00	7040
USGS	9261000	5/17/2005 11:15	7040
USGS	9261000	5/17/2005 11:30	7060
USGS	9261000	5/17/2005 11:45	7060
USGS	9261000	5/17/2005 12:00	7040
USGS	9261000	5/17/2005 12:15	7060
USGS	9261000	5/17/2005 12:30	7060
USGS	9261000	5/17/2005 12:45	7060
USGS	9261000	5/17/2005 13:00	7090
USGS	9261000	5/17/2005 13:15	7110
USGS	9261000	5/17/2005 13:30	7110
USGS	9261000	5/17/2005 13:45	7140
USGS	9261000	5/17/2005 14:00	7140
USGS	9261000	5/17/2005 14:15	7170
USGS	9261000	5/17/2005 14:30	7190
USGS	9261000	5/17/2005 14:45	7220
USGS	9261000	5/17/2005 15:00	7250
USGS	9261000	5/17/2005 15:15	7250
USGS	9261000	5/17/2005 15:30	7270
USGS	9261000	5/17/2005 15:45	7320
USGS	9261000	5/17/2005 16:00	7350
USGS	9261000	5/17/2005 16:15	7400
USGS	9261000	5/17/2005 16:30	7430
USGS	9261000	5/17/2005 16:45	7480
USGS	9261000	5/17/2005 17:00	7540
USGS	9261000	5/17/2005 17:15	7590
USGS	9261000	5/17/2005 17:30	7670
USGS	9261000	5/17/2005 17:45	7730
USGS	9261000	5/17/2005 18:00	7810
USGS	9261000	5/17/2005 18:15	7890
USGS	9261000	5/17/2005 18:30	7980
USGS	9261000	5/17/2005 18:45	8060
USGS	9261000	5/17/2005 19:00	8140
USGS	9261000	5/17/2005 19:15	8260
USGS	9261000	5/17/2005 19:30	8340
USGS	9261000	5/17/2005 19:45	8430
USGS	9261000	5/17/2005 20:00	8510
USGS	9261000	5/17/2005 20:15	8600
USGS	9261000	5/17/2005 20:30	8690
USGS	9261000	5/17/2005 20:45	8780
USGS	9261000	5/17/2005 21:00	8860
USGS	9261000	5/17/2005 21:15	8920
USGS	9261000	5/17/2005 21:30	9010
USGS	9261000	5/17/2005 21:45	9070

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/17/2005 22:00	9130
USGS	9261000	5/17/2005 22:15	9160
USGS	9261000	5/17/2005 22:30	9220
USGS	9261000	5/17/2005 22:45	9250
USGS	9261000	5/17/2005 23:00	9310
USGS	9261000	5/17/2005 23:15	9370
USGS	9261000	5/17/2005 23:30	9400
USGS	9261000	5/17/2005 23:45	9460
USGS	9261000	5/18/2005 0:00	9500
USGS	9261000	5/18/2005 0:15	9530
USGS	9261000	5/18/2005 0:30	9590
USGS	9261000	5/18/2005 0:45	9620
USGS	9261000	5/18/2005 1:00	9650
USGS	9261000	5/18/2005 1:15	9680
USGS	9261000	5/18/2005 1:30	9710
USGS	9261000	5/18/2005 1:45	9740
USGS	9261000	5/18/2005 2:00	9770
USGS	9261000	5/18/2005 2:15	9810
USGS	9261000	5/18/2005 2:30	9840
USGS	9261000	5/18/2005 2:45	9870
USGS	9261000	5/18/2005 3:00	9870
USGS	9261000	5/18/2005 3:15	9900
USGS	9261000	5/18/2005 3:30	9930
USGS	9261000	5/18/2005 3:45	9930
USGS	9261000	5/18/2005 4:00	9960
USGS	9261000	5/18/2005 4:15	9990
USGS	9261000	5/18/2005 4:30	9990
USGS	9261000	5/18/2005 4:45	10000
USGS	9261000	5/18/2005 5:00	10000
USGS	9261000	5/18/2005 5:15	10000
USGS	9261000	5/18/2005 5:30	10100
USGS	9261000	5/18/2005 5:45	10100
USGS	9261000	5/18/2005 6:00	10100
USGS	9261000	5/18/2005 6:15	10100
USGS	9261000	5/18/2005 6:30	10100
USGS	9261000	5/18/2005 6:45	10100
USGS	9261000	5/18/2005 7:00	10200
USGS	9261000	5/18/2005 7:15	10200
USGS	9261000	5/18/2005 7:30	10200
USGS	9261000	5/18/2005 7:45	10200
USGS	9261000	5/18/2005 8:00	10200
USGS	9261000	5/18/2005 8:15	10200
USGS	9261000	5/18/2005 8:30	10300
USGS	9261000	5/18/2005 8:45	10300

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/18/2005 9:00	10300
USGS	9261000	5/18/2005 9:15	10400
USGS	9261000	5/18/2005 9:30	10400
USGS	9261000	5/18/2005 9:45	10400
USGS	9261000	5/18/2005 10:00	10500
USGS	9261000	5/18/2005 10:15	10500
USGS	9261000	5/18/2005 10:30	10500
USGS	9261000	5/18/2005 10:45	10600
USGS	9261000	5/18/2005 11:00	10600
USGS	9261000	5/18/2005 11:15	10600
USGS	9261000	5/18/2005 11:30	10700
USGS	9261000	5/18/2005 11:45	10700
USGS	9261000	5/18/2005 12:00	10700
USGS	9261000	5/18/2005 12:15	10800
USGS	9261000	5/18/2005 12:30	10800
USGS	9261000	5/18/2005 12:45	10800
USGS	9261000	5/18/2005 13:00	10900
USGS	9261000	5/18/2005 13:15	10900
USGS	9261000	5/18/2005 13:30	10900
USGS	9261000	5/18/2005 13:45	10900
USGS	9261000	5/18/2005 14:00	11000
USGS	9261000	5/18/2005 14:15	11000
USGS	9261000	5/18/2005 14:30	11000
USGS	9261000	5/18/2005 14:45	11100
USGS	9261000	5/18/2005 15:00	11100
USGS	9261000	5/18/2005 15:15	11100
USGS	9261000	5/18/2005 15:30	11200
USGS	9261000	5/18/2005 15:45	11200
USGS	9261000	5/18/2005 16:00	11300
USGS	9261000	5/18/2005 16:15	11300
USGS	9261000	5/18/2005 16:30	11400
USGS	9261000	5/18/2005 16:45	11400
USGS	9261000	5/18/2005 17:00	11500
USGS	9261000	5/18/2005 17:15	11500
USGS	9261000	5/18/2005 17:30	11600
USGS	9261000	5/18/2005 17:45	11600
USGS	9261000	5/18/2005 18:00	11700
USGS	9261000	5/18/2005 18:15	11800
USGS	9261000	5/18/2005 18:30	11800
USGS	9261000	5/18/2005 18:45	11900
USGS	9261000	5/18/2005 19:00	12000
USGS	9261000	5/18/2005 19:15	12000
USGS	9261000	5/18/2005 19:30	12100
USGS	9261000	5/18/2005 19:45	12100

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/18/2005 20:00	12200
USGS	9261000	5/18/2005 20:15	12200
USGS	9261000	5/18/2005 20:30	12300
USGS	9261000	5/18/2005 20:45	12400
USGS	9261000	5/18/2005 21:00	12500
USGS	9261000	5/18/2005 21:15	12500
USGS	9261000	5/18/2005 21:30	12600
USGS	9261000	5/18/2005 21:45	12600
USGS	9261000	5/18/2005 22:00	12700
USGS	9261000	5/18/2005 22:15	12700
USGS	9261000	5/18/2005 22:30	12800
USGS	9261000	5/18/2005 22:45	12800
USGS	9261000	5/18/2005 23:00	12800
USGS	9261000	5/18/2005 23:15	12800
USGS	9261000	5/18/2005 23:30	12900
USGS	9261000	5/18/2005 23:45	12900
USGS	9261000	5/19/2005 0:00	13000
USGS	9261000	5/19/2005 0:15	13000
USGS	9261000	5/19/2005 0:30	13000
USGS	9261000	5/19/2005 0:45	13100
USGS	9261000	5/19/2005 1:00	13100
USGS	9261000	5/19/2005 1:15	13100
USGS	9261000	5/19/2005 1:30	13100
USGS	9261000	5/19/2005 1:45	13200
USGS	9261000	5/19/2005 2:00	13200
USGS	9261000	5/19/2005 2:15	13200
USGS	9261000	5/19/2005 2:30	13200
USGS	9261000	5/19/2005 2:45	13300
USGS	9261000	5/19/2005 3:00	13300
USGS	9261000	5/19/2005 3:15	13300
USGS	9261000	5/19/2005 3:30	13300
USGS	9261000	5/19/2005 3:45	13400
USGS	9261000	5/19/2005 4:00	13400
USGS	9261000	5/19/2005 4:15	13400
USGS	9261000	5/19/2005 4:30	13500
USGS	9261000	5/19/2005 4:45	13500
USGS	9261000	5/19/2005 5:00	13500
USGS	9261000	5/19/2005 5:15	13500
USGS	9261000	5/19/2005 5:30	13600
USGS	9261000	5/19/2005 5:45	13600
USGS	9261000	5/19/2005 6:00	13600
USGS	9261000	5/19/2005 6:15	13700
USGS	9261000	5/19/2005 6:30	13700
USGS	9261000	5/19/2005 6:45	13700

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/19/2005 7:00	13800
USGS	9261000	5/19/2005 7:15	13800
USGS	9261000	5/19/2005 7:30	13900
USGS	9261000	5/19/2005 7:45	13900
USGS	9261000	5/19/2005 8:00	14000
USGS	9261000	5/19/2005 8:15	14000
USGS	9261000	5/19/2005 8:30	14000
USGS	9261000	5/19/2005 8:45	14100
USGS	9261000	5/19/2005 9:00	14100
USGS	9261000	5/19/2005 9:15	14100
USGS	9261000	5/19/2005 9:30	14100
USGS	9261000	5/19/2005 9:45	14100
USGS	9261000	5/19/2005 10:00	14100
USGS	9261000	5/19/2005 10:15	14200
USGS	9261000	5/19/2005 10:30	14200
USGS	9261000	5/19/2005 10:45	14200
USGS	9261000	5/19/2005 11:00	14100
USGS	9261000	5/19/2005 11:15	14100
USGS	9261000	5/19/2005 11:30	14100
USGS	9261000	5/19/2005 11:45	14200
USGS	9261000	5/19/2005 12:00	14200
USGS	9261000	5/19/2005 12:15	14200
USGS	9261000	5/19/2005 12:30	14200
USGS	9261000	5/19/2005 12:45	14200
USGS	9261000	5/19/2005 13:00	14100
USGS	9261000	5/19/2005 13:15	14100
USGS	9261000	5/19/2005 13:30	14100
USGS	9261000	5/19/2005 13:45	14100
USGS	9261000	5/19/2005 14:00	14100
USGS	9261000	5/19/2005 14:15	14100
USGS	9261000	5/19/2005 14:30	14100
USGS	9261000	5/19/2005 14:45	14100
USGS	9261000	5/19/2005 15:00	14100
USGS	9261000	5/19/2005 15:15	14000
USGS	9261000	5/19/2005 15:30	14100
USGS	9261000	5/19/2005 15:45	14000
USGS	9261000	5/19/2005 16:00	14000
USGS	9261000	5/19/2005 16:15	14000
USGS	9261000	5/19/2005 16:30	14000
USGS	9261000	5/19/2005 16:45	14000
USGS	9261000	5/19/2005 17:00	14000
USGS	9261000	5/19/2005 17:15	14000
USGS	9261000	5/19/2005 17:30	14000
USGS	9261000	5/19/2005 17:45	14000

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/19/2005 18:00	14000
USGS	9261000	5/19/2005 18:15	14000
USGS	9261000	5/19/2005 18:30	14000
USGS	9261000	5/19/2005 18:45	14000
USGS	9261000	5/19/2005 19:00	14000
USGS	9261000	5/19/2005 19:15	14000
USGS	9261000	5/19/2005 19:30	14000
USGS	9261000	5/19/2005 19:45	13900
USGS	9261000	5/19/2005 20:00	13900
USGS	9261000	5/19/2005 20:15	13900
USGS	9261000	5/19/2005 20:30	13900
USGS	9261000	5/19/2005 20:45	13900
USGS	9261000	5/19/2005 21:00	13800
USGS	9261000	5/19/2005 21:15	13800
USGS	9261000	5/19/2005 21:30	13800
USGS	9261000	5/19/2005 21:45	13800
USGS	9261000	5/19/2005 22:00	13800
USGS	9261000	5/19/2005 22:15	13800
USGS	9261000	5/19/2005 22:30	13800
USGS	9261000	5/19/2005 22:45	13800
USGS	9261000	5/19/2005 23:00	13800
USGS	9261000	5/19/2005 23:15	13800
USGS	9261000	5/19/2005 23:30	13800
USGS	9261000	5/19/2005 23:45	13700
USGS	9261000	5/20/2005 0:00	13700
USGS	9261000	5/20/2005 0:15	13700
USGS	9261000	5/20/2005 0:30	13700
USGS	9261000	5/20/2005 0:45	13700
USGS	9261000	5/20/2005 1:00	13700
USGS	9261000	5/20/2005 1:15	13700
USGS	9261000	5/20/2005 1:30	13700
USGS	9261000	5/20/2005 1:45	13600
USGS	9261000	5/20/2005 2:00	13600
USGS	9261000	5/20/2005 2:15	13600
USGS	9261000	5/20/2005 2:30	13600
USGS	9261000	5/20/2005 2:45	13600
USGS	9261000	5/20/2005 3:00	13600
USGS	9261000	5/20/2005 3:15	13600
USGS	9261000	5/20/2005 3:30	13500
USGS	9261000	5/20/2005 3:45	13500
USGS	9261000	5/20/2005 4:00	13500
USGS	9261000	5/20/2005 4:15	13500
USGS	9261000	5/20/2005 4:30	13500
USGS	9261000	5/20/2005 4:45	13500

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/20/2005 5:00	13500
USGS	9261000	5/20/2005 5:15	13500
USGS	9261000	5/20/2005 5:30	13500
USGS	9261000	5/20/2005 5:45	13500
USGS	9261000	5/20/2005 6:00	13500
USGS	9261000	5/20/2005 6:15	13400
USGS	9261000	5/20/2005 6:30	13400
USGS	9261000	5/20/2005 6:45	13400
USGS	9261000	5/20/2005 7:00	13400
USGS	9261000	5/20/2005 7:15	13400
USGS	9261000	5/20/2005 7:30	13400
USGS	9261000	5/20/2005 7:45	13400
USGS	9261000	5/20/2005 8:00	13400
USGS	9261000	5/20/2005 8:15	13400
USGS	9261000	5/20/2005 8:30	13400
USGS	9261000	5/20/2005 8:45	13400
USGS	9261000	5/20/2005 9:00	13400
USGS	9261000	5/20/2005 9:15	13400
USGS	9261000	5/20/2005 9:30	13400
USGS	9261000	5/20/2005 9:45	13400
USGS	9261000	5/20/2005 10:00	13400
USGS	9261000	5/20/2005 10:15	13400
USGS	9261000	5/20/2005 10:30	13400
USGS	9261000	5/20/2005 10:45	13400
USGS	9261000	5/20/2005 11:00	13400
USGS	9261000	5/20/2005 11:15	13400
USGS	9261000	5/20/2005 11:30	13400
USGS	9261000	5/20/2005 11:45	13400
USGS	9261000	5/20/2005 12:00	13600
USGS	9261000	5/20/2005 12:15	13600
USGS	9261000	5/20/2005 12:30	13600
USGS	9261000	5/20/2005 12:45	13600
USGS	9261000	5/20/2005 13:00	13600
USGS	9261000	5/20/2005 13:15	13700
USGS	9261000	5/20/2005 13:30	13700
USGS	9261000	5/20/2005 13:45	13800
USGS	9261000	5/20/2005 14:00	13800
USGS	9261000	5/20/2005 14:15	13800
USGS	9261000	5/20/2005 14:30	13800
USGS	9261000	5/20/2005 14:45	13800
USGS	9261000	5/20/2005 15:00	13800
USGS	9261000	5/20/2005 15:15	13800
USGS	9261000	5/20/2005 15:30	13900
USGS	9261000	5/20/2005 15:45	13900

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/20/2005 16:00	13900
USGS	9261000	5/20/2005 16:15	13900
USGS	9261000	5/20/2005 16:30	13900
USGS	9261000	5/20/2005 16:45	14000
USGS	9261000	5/20/2005 17:00	14000
USGS	9261000	5/20/2005 17:15	14000
USGS	9261000	5/20/2005 17:30	14000
USGS	9261000	5/20/2005 17:45	14000
USGS	9261000	5/20/2005 18:00	14000
USGS	9261000	5/20/2005 18:15	14000
USGS	9261000	5/20/2005 18:30	14000
USGS	9261000	5/20/2005 18:45	14000
USGS	9261000	5/20/2005 19:00	14100
USGS	9261000	5/20/2005 19:15	14100
USGS	9261000	5/20/2005 19:30	14200
USGS	9261000	5/20/2005 19:45	14200
USGS	9261000	5/20/2005 20:00	14300
USGS	9261000	5/20/2005 20:15	14200
USGS	9261000	5/20/2005 20:30	14200
USGS	9261000	5/20/2005 20:45	14200
USGS	9261000	5/20/2005 21:00	14300
USGS	9261000	5/20/2005 21:15	14300
USGS	9261000	5/20/2005 21:30	14200
USGS	9261000	5/20/2005 21:45	14200
USGS	9261000	5/20/2005 22:00	14200
USGS	9261000	5/20/2005 22:15	14300
USGS	9261000	5/20/2005 22:30	14200
USGS	9261000	5/20/2005 22:45	14200
USGS	9261000	5/20/2005 23:00	14200
USGS	9261000	5/20/2005 23:15	14300
USGS	9261000	5/20/2005 23:30	14300
USGS	9261000	5/20/2005 23:45	14300
USGS	9261000	5/21/2005 0:00	14300
USGS	9261000	5/21/2005 0:15	14300
USGS	9261000	5/21/2005 0:30	14200
USGS	9261000	5/21/2005 0:45	14200
USGS	9261000	5/21/2005 1:00	14300
USGS	9261000	5/21/2005 1:15	14200
USGS	9261000	5/21/2005 1:30	14300
USGS	9261000	5/21/2005 1:45	14300
USGS	9261000	5/21/2005 2:00	14300
USGS	9261000	5/21/2005 2:15	14300
USGS	9261000	5/21/2005 2:30	14300
USGS	9261000	5/21/2005 2:45	14300

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/21/2005 3:00	14300
USGS	9261000	5/21/2005 3:15	14300
USGS	9261000	5/21/2005 3:30	14300
USGS	9261000	5/21/2005 3:45	14300
USGS	9261000	5/21/2005 4:00	14300
USGS	9261000	5/21/2005 4:15	14300
USGS	9261000	5/21/2005 4:30	14300
USGS	9261000	5/21/2005 4:45	14400
USGS	9261000	5/21/2005 5:00	14400
USGS	9261000	5/21/2005 5:15	14400
USGS	9261000	5/21/2005 5:30	14400
USGS	9261000	5/21/2005 5:45	14400
USGS	9261000	5/21/2005 6:00	14300
USGS	9261000	5/21/2005 6:15	14400
USGS	9261000	5/21/2005 6:30	14400
USGS	9261000	5/21/2005 6:45	14500
USGS	9261000	5/21/2005 7:00	14500
USGS	9261000	5/21/2005 7:15	14500
USGS	9261000	5/21/2005 7:30	14600
USGS	9261000	5/21/2005 7:45	14600
USGS	9261000	5/21/2005 8:00	14600
USGS	9261000	5/21/2005 8:15	14600
USGS	9261000	5/21/2005 8:30	14600
USGS	9261000	5/21/2005 8:45	14600
USGS	9261000	5/21/2005 9:00	14600
USGS	9261000	5/21/2005 9:15	14600
USGS	9261000	5/21/2005 9:30	14600
USGS	9261000	5/21/2005 9:45	14600
USGS	9261000	5/21/2005 10:00	14600
USGS	9261000	5/21/2005 10:15	14600
USGS	9261000	5/21/2005 10:30	14600
USGS	9261000	5/21/2005 10:45	14700
USGS	9261000	5/21/2005 11:00	14700
USGS	9261000	5/21/2005 11:15	14700
USGS	9261000	5/21/2005 11:30	14700
USGS	9261000	5/21/2005 11:45	14600
USGS	9261000	5/21/2005 12:00	14600
USGS	9261000	5/21/2005 12:15	14600
USGS	9261000	5/21/2005 12:30	14600
USGS	9261000	5/21/2005 12:45	14600
USGS	9261000	5/21/2005 13:00	14600
USGS	9261000	5/21/2005 13:15	14600
USGS	9261000	5/21/2005 13:30	14600
USGS	9261000	5/21/2005 13:45	14600

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/21/2005 14:00	14600
USGS	9261000	5/21/2005 14:15	14600
USGS	9261000	5/21/2005 14:30	14600
USGS	9261000	5/21/2005 14:45	14600
USGS	9261000	5/21/2005 15:00	14600
USGS	9261000	5/21/2005 15:15	14600
USGS	9261000	5/21/2005 15:30	14600
USGS	9261000	5/21/2005 15:45	14600
USGS	9261000	5/21/2005 16:00	14600
USGS	9261000	5/21/2005 16:15	14500
USGS	9261000	5/21/2005 16:30	14500
USGS	9261000	5/21/2005 16:45	14500
USGS	9261000	5/21/2005 17:00	14600
USGS	9261000	5/21/2005 17:15	14600
USGS	9261000	5/21/2005 17:30	14600
USGS	9261000	5/21/2005 17:45	14600
USGS	9261000	5/21/2005 18:00	14600
USGS	9261000	5/21/2005 18:15	14600
USGS	9261000	5/21/2005 18:30	14600
USGS	9261000	5/21/2005 18:45	14600
USGS	9261000	5/21/2005 19:00	14600
USGS	9261000	5/21/2005 19:15	14600
USGS	9261000	5/21/2005 19:30	14500
USGS	9261000	5/21/2005 19:45	14600
USGS	9261000	5/21/2005 20:00	14600
USGS	9261000	5/21/2005 20:15	14600
USGS	9261000	5/21/2005 20:30	14600
USGS	9261000	5/21/2005 20:45	14600
USGS	9261000	5/21/2005 21:00	14700
USGS	9261000	5/21/2005 21:15	14600
USGS	9261000	5/21/2005 21:30	14600
USGS	9261000	5/21/2005 21:45	14700
USGS	9261000	5/21/2005 22:00	14700
USGS	9261000	5/21/2005 22:15	14700
USGS	9261000	5/21/2005 22:30	14700
USGS	9261000	5/21/2005 22:45	14700
USGS	9261000	5/21/2005 23:00	14700
USGS	9261000	5/21/2005 23:15	14700
USGS	9261000	5/21/2005 23:30	14700
USGS	9261000	5/21/2005 23:45	14700
USGS	9261000	5/22/2005 0:00	14800
USGS	9261000	5/22/2005 0:15	14800
USGS	9261000	5/22/2005 0:30	14800
USGS	9261000	5/22/2005 0:45	14800

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/22/2005 1:00	14900
USGS	9261000	5/22/2005 1:15	14900
USGS	9261000	5/22/2005 1:30	14900
USGS	9261000	5/22/2005 1:45	15000
USGS	9261000	5/22/2005 2:00	15000
USGS	9261000	5/22/2005 2:15	15100
USGS	9261000	5/22/2005 2:30	15200
USGS	9261000	5/22/2005 2:45	15300
USGS	9261000	5/22/2005 3:00	15200
USGS	9261000	5/22/2005 3:15	15300
USGS	9261000	5/22/2005 3:30	15400
USGS	9261000	5/22/2005 3:45	15500
USGS	9261000	5/22/2005 4:00	15500
USGS	9261000	5/22/2005 4:15	15500
USGS	9261000	5/22/2005 4:30	15500
USGS	9261000	5/22/2005 4:45	15600
USGS	9261000	5/22/2005 5:00	15700
USGS	9261000	5/22/2005 5:15	15700
USGS	9261000	5/22/2005 5:30	15800
USGS	9261000	5/22/2005 5:45	15900
USGS	9261000	5/22/2005 6:00	15800
USGS	9261000	5/22/2005 6:15	15900
USGS	9261000	5/22/2005 6:30	16000
USGS	9261000	5/22/2005 6:45	16000
USGS	9261000	5/22/2005 7:00	16100
USGS	9261000	5/22/2005 7:15	16200
USGS	9261000	5/22/2005 7:30	16200
USGS	9261000	5/22/2005 7:45	16200
USGS	9261000	5/22/2005 8:00	16200
USGS	9261000	5/22/2005 8:15	16300
USGS	9261000	5/22/2005 8:30	16200
USGS	9261000	5/22/2005 8:45	16300
USGS	9261000	5/22/2005 9:00	16300
USGS	9261000	5/22/2005 9:15	16400
USGS	9261000	5/22/2005 9:30	16400
USGS	9261000	5/22/2005 9:45	16400
USGS	9261000	5/22/2005 10:00	16400
USGS	9261000	5/22/2005 10:15	16500
USGS	9261000	5/22/2005 10:30	16500
USGS	9261000	5/22/2005 10:45	16500
USGS	9261000	5/22/2005 11:00	16500
USGS	9261000	5/22/2005 11:15	16500
USGS	9261000	5/22/2005 11:30	16500
USGS	9261000	5/22/2005 11:45	16500

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/22/2005 12:00	16500
USGS	9261000	5/22/2005 12:15	16400
USGS	9261000	5/22/2005 12:30	16500
USGS	9261000	5/22/2005 12:45	16500
USGS	9261000	5/22/2005 13:00	16500
USGS	9261000	5/22/2005 13:15	16500
USGS	9261000	5/22/2005 13:30	16500
USGS	9261000	5/22/2005 13:45	16600
USGS	9261000	5/22/2005 14:00	16500
USGS	9261000	5/22/2005 14:15	16500
USGS	9261000	5/22/2005 14:30	16500
USGS	9261000	5/22/2005 14:45	16600
USGS	9261000	5/22/2005 15:00	16500
USGS	9261000	5/22/2005 15:15	16600
USGS	9261000	5/22/2005 15:30	16600
USGS	9261000	5/22/2005 15:45	16500
USGS	9261000	5/22/2005 16:00	16400
USGS	9261000	5/22/2005 16:15	16500
USGS	9261000	5/22/2005 16:30	16500
USGS	9261000	5/22/2005 16:45	16500
USGS	9261000	5/22/2005 17:00	16400
USGS	9261000	5/22/2005 17:15	16400
USGS	9261000	5/22/2005 17:30	16500
USGS	9261000	5/22/2005 17:45	16400
USGS	9261000	5/22/2005 18:00	16400
USGS	9261000	5/22/2005 18:15	16500
USGS	9261000	5/22/2005 18:30	16400
USGS	9261000	5/22/2005 18:45	16400
USGS	9261000	5/22/2005 19:00	16500
USGS	9261000	5/22/2005 19:15	16400
USGS	9261000	5/22/2005 19:30	16500
USGS	9261000	5/22/2005 19:45	16400
USGS	9261000	5/22/2005 20:00	16500
USGS	9261000	5/22/2005 20:15	16500
USGS	9261000	5/22/2005 20:30	16500
USGS	9261000	5/22/2005 20:45	16500
USGS	9261000	5/22/2005 21:00	16500
USGS	9261000	5/22/2005 21:15	16500
USGS	9261000	5/22/2005 21:30	16600
USGS	9261000	5/22/2005 21:45	16600
USGS	9261000	5/22/2005 22:00	16700
USGS	9261000	5/22/2005 22:15	16700
USGS	9261000	5/22/2005 22:30	16600
USGS	9261000	5/22/2005 22:45	16700

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/22/2005 23:00	16800
USGS	9261000	5/22/2005 23:15	16700
USGS	9261000	5/22/2005 23:30	16900
USGS	9261000	5/22/2005 23:45	16900
USGS	9261000	5/23/2005 0:00	16900
USGS	9261000	5/23/2005 0:15	17000
USGS	9261000	5/23/2005 0:30	17000
USGS	9261000	5/23/2005 0:45	17000
USGS	9261000	5/23/2005 1:00	17100
USGS	9261000	5/23/2005 1:15	17100
USGS	9261000	5/23/2005 1:30	17200
USGS	9261000	5/23/2005 1:45	17300
USGS	9261000	5/23/2005 2:00	17300
USGS	9261000	5/23/2005 2:15	17400
USGS	9261000	5/23/2005 2:30	17400
USGS	9261000	5/23/2005 2:45	17500
USGS	9261000	5/23/2005 3:00	17500
USGS	9261000	5/23/2005 3:15	17500
USGS	9261000	5/23/2005 3:30	17600
USGS	9261000	5/23/2005 3:45	17600
USGS	9261000	5/23/2005 4:00	17700
USGS	9261000	5/23/2005 4:15	17700
USGS	9261000	5/23/2005 4:30	17800
USGS	9261000	5/23/2005 4:45	17800
USGS	9261000	5/23/2005 5:00	18000
USGS	9261000	5/23/2005 5:15	18100
USGS	9261000	5/23/2005 5:30	18000
USGS	9261000	5/23/2005 5:45	18100
USGS	9261000	5/23/2005 6:00	18100
USGS	9261000	5/23/2005 6:15	18100
USGS	9261000	5/23/2005 6:30	18200
USGS	9261000	5/23/2005 6:45	18200
USGS	9261000	5/23/2005 7:00	18200
USGS	9261000	5/23/2005 7:15	18200
USGS	9261000	5/23/2005 7:30	18300
USGS	9261000	5/23/2005 7:45	18400
USGS	9261000	5/23/2005 8:00	18400
USGS	9261000	5/23/2005 8:15	18400
USGS	9261000	5/23/2005 8:30	18400
USGS	9261000	5/23/2005 8:45	18400
USGS	9261000	5/23/2005 9:00	18500
USGS	9261000	5/23/2005 9:15	18500
USGS	9261000	5/23/2005 9:30	18500
USGS	9261000	5/23/2005 9:45	18600

USGS gage # 09261000, ‘Green River Near Jensen, UT’
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Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/23/2005 10:00	18600
USGS	9261000	5/23/2005 10:15	18500
USGS	9261000	5/23/2005 10:30	18500
USGS	9261000	5/23/2005 10:45	18500
USGS	9261000	5/23/2005 11:00	18600
USGS	9261000	5/23/2005 11:15	18500
USGS	9261000	5/23/2005 11:30	18500
USGS	9261000	5/23/2005 11:45	18500
USGS	9261000	5/23/2005 12:00	18600
USGS	9261000	5/23/2005 12:15	18600
USGS	9261000	5/23/2005 12:30	18600
USGS	9261000	5/23/2005 12:45	18600
USGS	9261000	5/23/2005 13:00	18600
USGS	9261000	5/23/2005 13:15	18600
USGS	9261000	5/23/2005 13:30	18600
USGS	9261000	5/23/2005 13:45	18500
USGS	9261000	5/23/2005 14:00	18600
USGS	9261000	5/23/2005 14:15	18500
USGS	9261000	5/23/2005 14:30	18600
USGS	9261000	5/23/2005 14:45	18600
USGS	9261000	5/23/2005 15:00	18600
USGS	9261000	5/23/2005 15:15	18500
USGS	9261000	5/23/2005 15:30	18600
USGS	9261000	5/23/2005 15:45	18500
USGS	9261000	5/23/2005 16:00	18500
USGS	9261000	5/23/2005 16:15	18500
USGS	9261000	5/23/2005 16:30	18500
USGS	9261000	5/23/2005 16:45	18500
USGS	9261000	5/23/2005 17:00	18500
USGS	9261000	5/23/2005 17:15	18500
USGS	9261000	5/23/2005 17:30	18500
USGS	9261000	5/23/2005 17:45	18400
USGS	9261000	5/23/2005 18:00	18500
USGS	9261000	5/23/2005 18:15	18500
USGS	9261000	5/23/2005 18:30	18500
USGS	9261000	5/23/2005 18:45	18500
USGS	9261000	5/23/2005 19:00	18300
USGS	9261000	5/23/2005 19:15	18300
USGS	9261000	5/23/2005 19:30	18400
USGS	9261000	5/23/2005 19:45	18300
USGS	9261000	5/23/2005 20:00	18300
USGS	9261000	5/23/2005 20:15	18300
USGS	9261000	5/23/2005 20:30	18300
USGS	9261000	5/23/2005 20:45	18300

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/23/2005 21:00	18300
USGS	9261000	5/23/2005 21:15	18300
USGS	9261000	5/23/2005 21:30	18300
USGS	9261000	5/23/2005 21:45	18300
USGS	9261000	5/23/2005 22:00	18300
USGS	9261000	5/23/2005 22:15	18300
USGS	9261000	5/23/2005 22:30	18300
USGS	9261000	5/23/2005 22:45	18300
USGS	9261000	5/23/2005 23:00	18400
USGS	9261000	5/23/2005 23:15	18500
USGS	9261000	5/23/2005 23:30	18400
USGS	9261000	5/23/2005 23:45	18500
USGS	9261000	5/24/2005 0:00	18500
USGS	9261000	5/24/2005 0:15	18500
USGS	9261000	5/24/2005 0:30	18500
USGS	9261000	5/24/2005 0:45	18500
USGS	9261000	5/24/2005 1:00	18600
USGS	9261000	5/24/2005 1:15	18600
USGS	9261000	5/24/2005 1:30	18600
USGS	9261000	5/24/2005 1:45	18600
USGS	9261000	5/24/2005 2:00	18700
USGS	9261000	5/24/2005 2:15	18800
USGS	9261000	5/24/2005 2:30	18700
USGS	9261000	5/24/2005 2:45	18900
USGS	9261000	5/24/2005 3:00	18700
USGS	9261000	5/24/2005 3:15	18700
USGS	9261000	5/24/2005 3:30	18900
USGS	9261000	5/24/2005 3:45	18900
USGS	9261000	5/24/2005 4:00	18900
USGS	9261000	5/24/2005 4:15	18900
USGS	9261000	5/24/2005 4:30	19000
USGS	9261000	5/24/2005 4:45	18900
USGS	9261000	5/24/2005 5:00	19000
USGS	9261000	5/24/2005 5:15	19000
USGS	9261000	5/24/2005 5:30	19000
USGS	9261000	5/24/2005 5:45	19000
USGS	9261000	5/24/2005 6:00	19100
USGS	9261000	5/24/2005 6:15	19200
USGS	9261000	5/24/2005 6:30	19200
USGS	9261000	5/24/2005 6:45	19200
USGS	9261000	5/24/2005 7:00	19200
USGS	9261000	5/24/2005 7:15	19400
USGS	9261000	5/24/2005 7:30	19300
USGS	9261000	5/24/2005 7:45	19400

USGS gage # 09261000, ‘Green River Near Jensen, UT’
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Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/24/2005 8:00	19400
USGS	9261000	5/24/2005 8:15	19400
USGS	9261000	5/24/2005 8:30	19500
USGS	9261000	5/24/2005 8:45	19500
USGS	9261000	5/24/2005 9:00	19500
USGS	9261000	5/24/2005 9:15	19500
USGS	9261000	5/24/2005 9:30	19600
USGS	9261000	5/24/2005 9:45	19600
USGS	9261000	5/24/2005 10:00	19600
USGS	9261000	5/24/2005 10:15	19600
USGS	9261000	5/24/2005 10:30	19600
USGS	9261000	5/24/2005 10:45	19600
USGS	9261000	5/24/2005 11:00	19600
USGS	9261000	5/24/2005 11:15	19500
USGS	9261000	5/24/2005 11:30	19500
USGS	9261000	5/24/2005 11:45	19500
USGS	9261000	5/24/2005 12:00	19500
USGS	9261000	5/24/2005 12:15	19600
USGS	9261000	5/24/2005 12:30	19600
USGS	9261000	5/24/2005 12:45	19600
USGS	9261000	5/24/2005 13:00	19600
USGS	9261000	5/24/2005 13:15	19600
USGS	9261000	5/24/2005 13:30	19600
USGS	9261000	5/24/2005 13:45	19600
USGS	9261000	5/24/2005 14:00	19600
USGS	9261000	5/24/2005 14:15	19600
USGS	9261000	5/24/2005 14:30	19500
USGS	9261000	5/24/2005 14:45	19600
USGS	9261000	5/24/2005 15:00	19600
USGS	9261000	5/24/2005 15:15	19700
USGS	9261000	5/24/2005 15:30	19700
USGS	9261000	5/24/2005 15:45	19700
USGS	9261000	5/24/2005 16:00	19700
USGS	9261000	5/24/2005 16:15	19700
USGS	9261000	5/24/2005 16:30	19700
USGS	9261000	5/24/2005 16:45	19700
USGS	9261000	5/24/2005 17:00	19700
USGS	9261000	5/24/2005 17:15	19600
USGS	9261000	5/24/2005 17:30	19700
USGS	9261000	5/24/2005 17:45	19600
USGS	9261000	5/24/2005 18:00	19700
USGS	9261000	5/24/2005 18:15	19600
USGS	9261000	5/24/2005 18:30	19600
USGS	9261000	5/24/2005 18:45	19600

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/24/2005 19:00	19400
USGS	9261000	5/24/2005 19:15	19400
USGS	9261000	5/24/2005 19:30	19500
USGS	9261000	5/24/2005 19:45	19500
USGS	9261000	5/24/2005 20:00	19400
USGS	9261000	5/24/2005 20:15	19400
USGS	9261000	5/24/2005 20:30	19600
USGS	9261000	5/24/2005 20:45	19400
USGS	9261000	5/24/2005 21:00	19400
USGS	9261000	5/24/2005 21:15	19400
USGS	9261000	5/24/2005 21:30	19400
USGS	9261000	5/24/2005 21:45	19300
USGS	9261000	5/24/2005 22:00	19300
USGS	9261000	5/24/2005 22:15	19300
USGS	9261000	5/24/2005 22:30	19300
USGS	9261000	5/24/2005 22:45	19300
USGS	9261000	5/24/2005 23:00	19300
USGS	9261000	5/24/2005 23:15	19300
USGS	9261000	5/24/2005 23:30	19400
USGS	9261000	5/24/2005 23:45	19300
USGS	9261000	5/25/2005 0:00	19400
USGS	9261000	5/25/2005 0:15	19300
USGS	9261000	5/25/2005 0:30	19300
USGS	9261000	5/25/2005 0:45	19300
USGS	9261000	5/25/2005 1:00	19300
USGS	9261000	5/25/2005 1:15	19300
USGS	9261000	5/25/2005 1:30	19300
USGS	9261000	5/25/2005 1:45	19400
USGS	9261000	5/25/2005 2:00	19500
USGS	9261000	5/25/2005 2:15	19500
USGS	9261000	5/25/2005 2:30	19500
USGS	9261000	5/25/2005 2:45	19500
USGS	9261000	5/25/2005 3:00	19600
USGS	9261000	5/25/2005 3:15	19500
USGS	9261000	5/25/2005 3:30	19600
USGS	9261000	5/25/2005 3:45	19600
USGS	9261000	5/25/2005 4:00	19700
USGS	9261000	5/25/2005 4:15	19700
USGS	9261000	5/25/2005 4:30	19700
USGS	9261000	5/25/2005 4:45	19800
USGS	9261000	5/25/2005 5:00	19700
USGS	9261000	5/25/2005 5:15	19700
USGS	9261000	5/25/2005 5:30	19700
USGS	9261000	5/25/2005 5:45	19800

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/25/2005 6:00	19900
USGS	9261000	5/25/2005 6:15	19900
USGS	9261000	5/25/2005 6:30	19900
USGS	9261000	5/25/2005 6:45	19800
USGS	9261000	5/25/2005 7:00	19900
USGS	9261000	5/25/2005 7:15	19900
USGS	9261000	5/25/2005 7:30	20000
USGS	9261000	5/25/2005 7:45	20000
USGS	9261000	5/25/2005 8:00	19900
USGS	9261000	5/25/2005 8:15	20000
USGS	9261000	5/25/2005 8:30	20000
USGS	9261000	5/25/2005 8:45	20000
USGS	9261000	5/25/2005 9:00	20000
USGS	9261000	5/25/2005 9:15	20000
USGS	9261000	5/25/2005 9:30	20100
USGS	9261000	5/25/2005 9:45	20100
USGS	9261000	5/25/2005 10:00	20200
USGS	9261000	5/25/2005 10:15	20100
USGS	9261000	5/25/2005 10:30	20100
USGS	9261000	5/25/2005 10:45	20200
USGS	9261000	5/25/2005 11:00	20200
USGS	9261000	5/25/2005 11:15	20200
USGS	9261000	5/25/2005 11:30	20200
USGS	9261000	5/25/2005 11:45	20000
USGS	9261000	5/25/2005 12:00	20100
USGS	9261000	5/25/2005 12:15	20100
USGS	9261000	5/25/2005 12:30	20100
USGS	9261000	5/25/2005 12:45	20000
USGS	9261000	5/25/2005 13:00	20000
USGS	9261000	5/25/2005 13:15	20000
USGS	9261000	5/25/2005 13:30	20000
USGS	9261000	5/25/2005 13:45	19900
USGS	9261000	5/25/2005 14:00	19900
USGS	9261000	5/25/2005 14:15	19800
USGS	9261000	5/25/2005 14:30	20000
USGS	9261000	5/25/2005 14:45	19900
USGS	9261000	5/25/2005 15:00	19900
USGS	9261000	5/25/2005 15:15	19900
USGS	9261000	5/25/2005 15:30	19900
USGS	9261000	5/25/2005 15:45	20000
USGS	9261000	5/25/2005 16:00	19900
USGS	9261000	5/25/2005 16:15	19800
USGS	9261000	5/25/2005 16:30	19800
USGS	9261000	5/25/2005 16:45	19800

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/25/2005 17:00	19800
USGS	9261000	5/25/2005 17:15	19900
USGS	9261000	5/25/2005 17:30	19800
USGS	9261000	5/25/2005 17:45	19800
USGS	9261000	5/25/2005 18:00	19700
USGS	9261000	5/25/2005 18:15	19700
USGS	9261000	5/25/2005 18:30	19700
USGS	9261000	5/25/2005 18:45	19600
USGS	9261000	5/25/2005 19:00	19600
USGS	9261000	5/25/2005 19:15	19600
USGS	9261000	5/25/2005 19:30	19700
USGS	9261000	5/25/2005 19:45	19700
USGS	9261000	5/25/2005 20:00	19600
USGS	9261000	5/25/2005 20:15	19600
USGS	9261000	5/25/2005 20:30	19600
USGS	9261000	5/25/2005 20:45	19600
USGS	9261000	5/25/2005 21:00	19600
USGS	9261000	5/25/2005 21:15	19700
USGS	9261000	5/25/2005 21:30	19700
USGS	9261000	5/25/2005 21:45	19700
USGS	9261000	5/25/2005 22:00	19600
USGS	9261000	5/25/2005 22:15	19600
USGS	9261000	5/25/2005 22:30	19600
USGS	9261000	5/25/2005 22:45	19600
USGS	9261000	5/25/2005 23:00	19600
USGS	9261000	5/25/2005 23:15	19600
USGS	9261000	5/25/2005 23:30	19600
USGS	9261000	5/25/2005 23:45	19700
USGS	9261000	5/26/2005 0:00	19600
USGS	9261000	5/26/2005 0:15	19600
USGS	9261000	5/26/2005 0:30	19600
USGS	9261000	5/26/2005 0:45	19600
USGS	9261000	5/26/2005 1:00	19500
USGS	9261000	5/26/2005 1:15	19700
USGS	9261000	5/26/2005 1:30	19600
USGS	9261000	5/26/2005 1:45	19600
USGS	9261000	5/26/2005 2:00	19600
USGS	9261000	5/26/2005 2:15	19700
USGS	9261000	5/26/2005 2:30	19700
USGS	9261000	5/26/2005 2:45	19700
USGS	9261000	5/26/2005 3:00	19700
USGS	9261000	5/26/2005 3:15	19700
USGS	9261000	5/26/2005 3:30	19800
USGS	9261000	5/26/2005 3:45	19700

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/26/2005 4:00	19800
USGS	9261000	5/26/2005 4:15	19700
USGS	9261000	5/26/2005 4:30	19700
USGS	9261000	5/26/2005 4:45	19800
USGS	9261000	5/26/2005 5:00	19800
USGS	9261000	5/26/2005 5:15	19900
USGS	9261000	5/26/2005 5:30	19900
USGS	9261000	5/26/2005 5:45	19900
USGS	9261000	5/26/2005 6:00	19900
USGS	9261000	5/26/2005 6:15	19900
USGS	9261000	5/26/2005 6:30	20000
USGS	9261000	5/26/2005 6:45	19900
USGS	9261000	5/26/2005 7:00	20000
USGS	9261000	5/26/2005 7:15	20000
USGS	9261000	5/26/2005 7:30	20000
USGS	9261000	5/26/2005 7:45	20100
USGS	9261000	5/26/2005 8:00	20000
USGS	9261000	5/26/2005 8:15	20200
USGS	9261000	5/26/2005 8:30	20100
USGS	9261000	5/26/2005 8:45	20200
USGS	9261000	5/26/2005 9:00	20100
USGS	9261000	5/26/2005 9:15	20200
USGS	9261000	5/26/2005 9:30	20300
USGS	9261000	5/26/2005 9:45	20300
USGS	9261000	5/26/2005 10:00	20200
USGS	9261000	5/26/2005 10:15	20200
USGS	9261000	5/26/2005 10:30	20100
USGS	9261000	5/26/2005 10:45	20100
USGS	9261000	5/26/2005 11:00	20200
USGS	9261000	5/26/2005 11:15	20000
USGS	9261000	5/26/2005 11:30	20100
USGS	9261000	5/26/2005 11:45	20100
USGS	9261000	5/26/2005 12:00	20200
USGS	9261000	5/26/2005 12:15	20200
USGS	9261000	5/26/2005 12:30	20200
USGS	9261000	5/26/2005 12:45	20100
USGS	9261000	5/26/2005 13:00	20200
USGS	9261000	5/26/2005 13:15	20100
USGS	9261000	5/26/2005 13:30	20100
USGS	9261000	5/26/2005 13:45	20200
USGS	9261000	5/26/2005 14:00	20100
USGS	9261000	5/26/2005 14:15	20000
USGS	9261000	5/26/2005 14:30	20000
USGS	9261000	5/26/2005 14:45	20100

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/26/2005 15:00	20000
USGS	9261000	5/26/2005 15:15	20000
USGS	9261000	5/26/2005 15:30	19900
USGS	9261000	5/26/2005 15:45	19900
USGS	9261000	5/26/2005 16:00	20000
USGS	9261000	5/26/2005 16:15	20000
USGS	9261000	5/26/2005 16:30	19900
USGS	9261000	5/26/2005 16:45	19900
USGS	9261000	5/26/2005 17:00	19900
USGS	9261000	5/26/2005 17:15	19900
USGS	9261000	5/26/2005 17:30	19800
USGS	9261000	5/26/2005 17:45	19900
USGS	9261000	5/26/2005 18:00	19800
USGS	9261000	5/26/2005 18:15	19700
USGS	9261000	5/26/2005 18:30	19800
USGS	9261000	5/26/2005 18:45	19700
USGS	9261000	5/26/2005 19:00	19700
USGS	9261000	5/26/2005 19:15	19600
USGS	9261000	5/26/2005 19:30	19500
USGS	9261000	5/26/2005 19:45	19500
USGS	9261000	5/26/2005 20:00	19600
USGS	9261000	5/26/2005 20:15	19500
USGS	9261000	5/26/2005 20:30	19500
USGS	9261000	5/26/2005 20:45	19500
USGS	9261000	5/26/2005 21:00	19600
USGS	9261000	5/26/2005 21:15	19600
USGS	9261000	5/26/2005 21:30	19600
USGS	9261000	5/26/2005 21:45	19700
USGS	9261000	5/26/2005 22:00	19500
USGS	9261000	5/26/2005 22:15	19600
USGS	9261000	5/26/2005 22:30	19400
USGS	9261000	5/26/2005 22:45	19500
USGS	9261000	5/26/2005 23:00	19500
USGS	9261000	5/26/2005 23:15	19500
USGS	9261000	5/26/2005 23:30	19500
USGS	9261000	5/26/2005 23:45	19500
USGS	9261000	5/27/2005 0:00	19400
USGS	9261000	5/27/2005 0:15	19500
USGS	9261000	5/27/2005 0:30	19500
USGS	9261000	5/27/2005 0:45	19400
USGS	9261000	5/27/2005 1:00	19400
USGS	9261000	5/27/2005 1:15	19400
USGS	9261000	5/27/2005 1:30	19600
USGS	9261000	5/27/2005 1:45	19500

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/27/2005 2:00	19500
USGS	9261000	5/27/2005 2:15	19600
USGS	9261000	5/27/2005 2:30	19600
USGS	9261000	5/27/2005 2:45	19600
USGS	9261000	5/27/2005 3:00	19600
USGS	9261000	5/27/2005 3:15	19500
USGS	9261000	5/27/2005 3:30	19500
USGS	9261000	5/27/2005 3:45	19600
USGS	9261000	5/27/2005 4:00	19600
USGS	9261000	5/27/2005 4:15	19600
USGS	9261000	5/27/2005 4:30	19600
USGS	9261000	5/27/2005 4:45	19600
USGS	9261000	5/27/2005 5:00	19700
USGS	9261000	5/27/2005 5:15	19700
USGS	9261000	5/27/2005 5:30	19700
USGS	9261000	5/27/2005 5:45	19700
USGS	9261000	5/27/2005 6:00	19700
USGS	9261000	5/27/2005 6:15	19700
USGS	9261000	5/27/2005 6:30	19700
USGS	9261000	5/27/2005 6:45	19700
USGS	9261000	5/27/2005 7:00	19700
USGS	9261000	5/27/2005 7:15	19600
USGS	9261000	5/27/2005 7:30	19600
USGS	9261000	5/27/2005 7:45	19700
USGS	9261000	5/27/2005 8:00	19700
USGS	9261000	5/27/2005 8:15	19700
USGS	9261000	5/27/2005 8:30	19700
USGS	9261000	5/27/2005 8:45	19700
USGS	9261000	5/27/2005 9:00	19700
USGS	9261000	5/27/2005 9:15	19600
USGS	9261000	5/27/2005 9:30	19700
USGS	9261000	5/27/2005 9:45	19700
USGS	9261000	5/27/2005 10:00	19700
USGS	9261000	5/27/2005 10:15	19700
USGS	9261000	5/27/2005 10:30	19600
USGS	9261000	5/27/2005 10:45	19700
USGS	9261000	5/27/2005 11:00	19800
USGS	9261000	5/27/2005 11:15	19700
USGS	9261000	5/27/2005 11:30	19700
USGS	9261000	5/27/2005 11:45	19600
USGS	9261000	5/27/2005 12:00	19600
USGS	9261000	5/27/2005 12:15	19600
USGS	9261000	5/27/2005 12:30	19600
USGS	9261000	5/27/2005 12:45	19600

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/27/2005 13:00	19600
USGS	9261000	5/27/2005 13:15	19600
USGS	9261000	5/27/2005 13:30	19600
USGS	9261000	5/27/2005 13:45	19500
USGS	9261000	5/27/2005 14:00	19500
USGS	9261000	5/27/2005 14:15	19400
USGS	9261000	5/27/2005 14:30	19400
USGS	9261000	5/27/2005 14:45	19500
USGS	9261000	5/27/2005 15:00	19500
USGS	9261000	5/27/2005 15:15	19400
USGS	9261000	5/27/2005 15:30	19500
USGS	9261000	5/27/2005 15:45	19400
USGS	9261000	5/27/2005 16:00	19400
USGS	9261000	5/27/2005 16:15	19300
USGS	9261000	5/27/2005 16:30	19300
USGS	9261000	5/27/2005 16:45	19300
USGS	9261000	5/27/2005 17:00	19300
USGS	9261000	5/27/2005 17:15	19200
USGS	9261000	5/27/2005 17:30	19200
USGS	9261000	5/27/2005 17:45	19100
USGS	9261000	5/27/2005 18:00	19100
USGS	9261000	5/27/2005 18:15	19000
USGS	9261000	5/27/2005 18:30	19000
USGS	9261000	5/27/2005 18:45	19000
USGS	9261000	5/27/2005 19:00	19000
USGS	9261000	5/27/2005 19:15	18900
USGS	9261000	5/27/2005 19:30	18900
USGS	9261000	5/27/2005 19:45	18900
USGS	9261000	5/27/2005 20:00	18900
USGS	9261000	5/27/2005 20:15	18800
USGS	9261000	5/27/2005 20:30	18700
USGS	9261000	5/27/2005 20:45	18700
USGS	9261000	5/27/2005 21:00	18700
USGS	9261000	5/27/2005 21:15	18700
USGS	9261000	5/27/2005 21:30	18600
USGS	9261000	5/27/2005 21:45	18700
USGS	9261000	5/27/2005 22:00	18600
USGS	9261000	5/27/2005 22:15	18600
USGS	9261000	5/27/2005 22:30	18500
USGS	9261000	5/27/2005 22:45	18500
USGS	9261000	5/27/2005 23:00	18500
USGS	9261000	5/27/2005 23:15	18600
USGS	9261000	5/27/2005 23:30	18500
USGS	9261000	5/27/2005 23:45	18500

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/28/2005 0:00	18600
USGS	9261000	5/28/2005 0:15	18500
USGS	9261000	5/28/2005 0:30	18500
USGS	9261000	5/28/2005 0:45	18500
USGS	9261000	5/28/2005 1:00	18400
USGS	9261000	5/28/2005 1:15	18600
USGS	9261000	5/28/2005 1:30	18500
USGS	9261000	5/28/2005 1:45	18400
USGS	9261000	5/28/2005 2:00	18400
USGS	9261000	5/28/2005 2:15	18300
USGS	9261000	5/28/2005 2:30	18300
USGS	9261000	5/28/2005 2:45	18300
USGS	9261000	5/28/2005 3:00	18300
USGS	9261000	5/28/2005 3:15	18500
USGS	9261000	5/28/2005 3:30	18400
USGS	9261000	5/28/2005 3:45	18300
USGS	9261000	5/28/2005 4:00	18300
USGS	9261000	5/28/2005 4:15	18200
USGS	9261000	5/28/2005 4:30	18200
USGS	9261000	5/28/2005 4:45	18300
USGS	9261000	5/28/2005 5:00	18200
USGS	9261000	5/28/2005 5:15	18300
USGS	9261000	5/28/2005 5:30	18300
USGS	9261000	5/28/2005 5:45	18300
USGS	9261000	5/28/2005 6:00	18300
USGS	9261000	5/28/2005 6:15	18200
USGS	9261000	5/28/2005 6:30	18200
USGS	9261000	5/28/2005 6:45	18200
USGS	9261000	5/28/2005 7:00	18300
USGS	9261000	5/28/2005 7:15	18200
USGS	9261000	5/28/2005 7:30	18200
USGS	9261000	5/28/2005 7:45	18300
USGS	9261000	5/28/2005 8:00	18200
USGS	9261000	5/28/2005 8:15	18200
USGS	9261000	5/28/2005 8:30	18200
USGS	9261000	5/28/2005 8:45	18200
USGS	9261000	5/28/2005 9:00	18200
USGS	9261000	5/28/2005 9:15	18200
USGS	9261000	5/28/2005 9:30	18200
USGS	9261000	5/28/2005 9:45	18200
USGS	9261000	5/28/2005 10:00	18100
USGS	9261000	5/28/2005 10:15	18100
USGS	9261000	5/28/2005 10:30	18100
USGS	9261000	5/28/2005 10:45	18100

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/28/2005 11:00	18000
USGS	9261000	5/28/2005 11:15	17900
USGS	9261000	5/28/2005 11:30	18000
USGS	9261000	5/28/2005 11:45	18000
USGS	9261000	5/28/2005 12:00	17900
USGS	9261000	5/28/2005 12:15	17900
USGS	9261000	5/28/2005 12:30	17900
USGS	9261000	5/28/2005 12:45	17900
USGS	9261000	5/28/2005 13:00	17800
USGS	9261000	5/28/2005 13:15	17800
USGS	9261000	5/28/2005 13:30	17800
USGS	9261000	5/28/2005 13:45	17800
USGS	9261000	5/28/2005 14:00	17700
USGS	9261000	5/28/2005 14:15	17800
USGS	9261000	5/28/2005 14:30	17700
USGS	9261000	5/28/2005 14:45	17700
USGS	9261000	5/28/2005 15:00	17700
USGS	9261000	5/28/2005 15:15	17600
USGS	9261000	5/28/2005 15:30	17600
USGS	9261000	5/28/2005 15:45	17500
USGS	9261000	5/28/2005 16:00	17500
USGS	9261000	5/28/2005 16:15	17500
USGS	9261000	5/28/2005 16:30	17500
USGS	9261000	5/28/2005 16:45	17400
USGS	9261000	5/28/2005 17:00	17400
USGS	9261000	5/28/2005 17:15	17300
USGS	9261000	5/28/2005 17:30	17300
USGS	9261000	5/28/2005 17:45	17300
USGS	9261000	5/28/2005 18:00	17200
USGS	9261000	5/28/2005 18:15	17200
USGS	9261000	5/28/2005 18:30	17200
USGS	9261000	5/28/2005 18:45	17200
USGS	9261000	5/28/2005 19:00	17200
USGS	9261000	5/28/2005 19:15	17100
USGS	9261000	5/28/2005 19:30	17000
USGS	9261000	5/28/2005 19:45	17100
USGS	9261000	5/28/2005 20:00	17000
USGS	9261000	5/28/2005 20:15	17000
USGS	9261000	5/28/2005 20:30	17000
USGS	9261000	5/28/2005 20:45	16900
USGS	9261000	5/28/2005 21:00	16900
USGS	9261000	5/28/2005 21:15	17000
USGS	9261000	5/28/2005 21:30	16900
USGS	9261000	5/28/2005 21:45	17000

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
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org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/28/2005 22:00	16900
USGS	9261000	5/28/2005 22:15	16800
USGS	9261000	5/28/2005 22:30	16900
USGS	9261000	5/28/2005 22:45	16800
USGS	9261000	5/28/2005 23:00	16800
USGS	9261000	5/28/2005 23:15	16900
USGS	9261000	5/28/2005 23:30	16800
USGS	9261000	5/28/2005 23:45	16900
USGS	9261000	5/29/2005 0:00	16800
USGS	9261000	5/29/2005 0:15	16800
USGS	9261000	5/29/2005 0:30	16800
USGS	9261000	5/29/2005 0:45	16900
USGS	9261000	5/29/2005 1:00	16900
USGS	9261000	5/29/2005 1:15	16800
USGS	9261000	5/29/2005 1:30	16900
USGS	9261000	5/29/2005 1:45	16900
USGS	9261000	5/29/2005 2:00	16800
USGS	9261000	5/29/2005 2:15	16800
USGS	9261000	5/29/2005 2:30	16800
USGS	9261000	5/29/2005 2:45	16800
USGS	9261000	5/29/2005 3:00	16800
USGS	9261000	5/29/2005 3:15	16900
USGS	9261000	5/29/2005 3:30	16800
USGS	9261000	5/29/2005 3:45	16800
USGS	9261000	5/29/2005 4:00	16900
USGS	9261000	5/29/2005 4:15	16800
USGS	9261000	5/29/2005 4:30	16800
USGS	9261000	5/29/2005 4:45	16900
USGS	9261000	5/29/2005 5:00	16900
USGS	9261000	5/29/2005 5:15	16800
USGS	9261000	5/29/2005 5:30	16900
USGS	9261000	5/29/2005 5:45	16800
USGS	9261000	5/29/2005 6:00	16800
USGS	9261000	5/29/2005 6:15	16900
USGS	9261000	5/29/2005 6:30	16900
USGS	9261000	5/29/2005 6:45	16900
USGS	9261000	5/29/2005 7:00	16800
USGS	9261000	5/29/2005 7:15	16900
USGS	9261000	5/29/2005 7:30	16800
USGS	9261000	5/29/2005 7:45	16700
USGS	9261000	5/29/2005 8:00	16800
USGS	9261000	5/29/2005 8:15	16700
USGS	9261000	5/29/2005 8:30	16700
USGS	9261000	5/29/2005 8:45	16800

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/29/2005 9:00	16700
USGS	9261000	5/29/2005 9:15	16600
USGS	9261000	5/29/2005 9:30	16700
USGS	9261000	5/29/2005 9:45	16800
USGS	9261000	5/29/2005 10:00	16700
USGS	9261000	5/29/2005 10:15	16800
USGS	9261000	5/29/2005 10:30	16700
USGS	9261000	5/29/2005 10:45	16600
USGS	9261000	5/29/2005 11:00	16600
USGS	9261000	5/29/2005 11:15	16500
USGS	9261000	5/29/2005 11:30	16600
USGS	9261000	5/29/2005 11:45	16500
USGS	9261000	5/29/2005 12:00	16600
USGS	9261000	5/29/2005 12:15	16500
USGS	9261000	5/29/2005 12:30	16500
USGS	9261000	5/29/2005 12:45	16500
USGS	9261000	5/29/2005 13:00	16500
USGS	9261000	5/29/2005 13:15	16500
USGS	9261000	5/29/2005 13:30	16500
USGS	9261000	5/29/2005 13:45	16600
USGS	9261000	5/29/2005 14:00	16500
USGS	9261000	5/29/2005 14:15	16600
USGS	9261000	5/29/2005 14:30	16500
USGS	9261000	5/29/2005 14:45	16500
USGS	9261000	5/29/2005 15:00	16500
USGS	9261000	5/29/2005 15:15	16400
USGS	9261000	5/29/2005 15:30	16400
USGS	9261000	5/29/2005 15:45	16500
USGS	9261000	5/29/2005 16:00	16500
USGS	9261000	5/29/2005 16:15	16400
USGS	9261000	5/29/2005 16:30	16500
USGS	9261000	5/29/2005 16:45	16400
USGS	9261000	5/29/2005 17:00	16500
USGS	9261000	5/29/2005 17:15	16400
USGS	9261000	5/29/2005 17:30	16400
USGS	9261000	5/29/2005 17:45	16400
USGS	9261000	5/29/2005 18:00	16400
USGS	9261000	5/29/2005 18:15	16400
USGS	9261000	5/29/2005 18:30	16500
USGS	9261000	5/29/2005 18:45	16400
USGS	9261000	5/29/2005 19:00	16300
USGS	9261000	5/29/2005 19:15	16400
USGS	9261000	5/29/2005 19:30	16400
USGS	9261000	5/29/2005 19:45	16400

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/29/2005 20:00	16400
USGS	9261000	5/29/2005 20:15	16400
USGS	9261000	5/29/2005 20:30	16500
USGS	9261000	5/29/2005 20:45	16500
USGS	9261000	5/29/2005 21:00	16500
USGS	9261000	5/29/2005 21:15	16500
USGS	9261000	5/29/2005 21:30	16500
USGS	9261000	5/29/2005 21:45	16500
USGS	9261000	5/29/2005 22:00	16500
USGS	9261000	5/29/2005 22:15	16400
USGS	9261000	5/29/2005 22:30	16500
USGS	9261000	5/29/2005 22:45	16600
USGS	9261000	5/29/2005 23:00	16500
USGS	9261000	5/29/2005 23:15	16500
USGS	9261000	5/29/2005 23:30	16600
USGS	9261000	5/29/2005 23:45	16700
USGS	9261000	5/30/2005 0:00	16600
USGS	9261000	5/30/2005 0:15	16700
USGS	9261000	5/30/2005 0:30	16700
USGS	9261000	5/30/2005 0:45	16600
USGS	9261000	5/30/2005 1:00	16700
USGS	9261000	5/30/2005 1:15	16800
USGS	9261000	5/30/2005 1:30	16700
USGS	9261000	5/30/2005 1:45	16700
USGS	9261000	5/30/2005 2:00	16800
USGS	9261000	5/30/2005 2:15	16800
USGS	9261000	5/30/2005 2:30	16800
USGS	9261000	5/30/2005 2:45	16800
USGS	9261000	5/30/2005 3:00	16800
USGS	9261000	5/30/2005 3:15	16800
USGS	9261000	5/30/2005 3:30	16800
USGS	9261000	5/30/2005 3:45	16800
USGS	9261000	5/30/2005 4:00	16800
USGS	9261000	5/30/2005 4:15	16800
USGS	9261000	5/30/2005 4:30	16700
USGS	9261000	5/30/2005 4:45	16900
USGS	9261000	5/30/2005 5:00	16800
USGS	9261000	5/30/2005 5:15	16800
USGS	9261000	5/30/2005 5:30	16800
USGS	9261000	5/30/2005 5:45	16700
USGS	9261000	5/30/2005 6:00	16800
USGS	9261000	5/30/2005 6:15	16700
USGS	9261000	5/30/2005 6:30	16800
USGS	9261000	5/30/2005 6:45	16700

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/30/2005 7:00	16800
USGS	9261000	5/30/2005 7:15	16800
USGS	9261000	5/30/2005 7:30	16800
USGS	9261000	5/30/2005 7:45	16800
USGS	9261000	5/30/2005 8:00	16700
USGS	9261000	5/30/2005 8:15	16800
USGS	9261000	5/30/2005 8:30	16700
USGS	9261000	5/30/2005 8:45	16800
USGS	9261000	5/30/2005 9:00	16700
USGS	9261000	5/30/2005 9:15	16700
USGS	9261000	5/30/2005 9:30	16700
USGS	9261000	5/30/2005 9:45	16600
USGS	9261000	5/30/2005 10:00	16700
USGS	9261000	5/30/2005 10:15	16600
USGS	9261000	5/30/2005 10:30	16700
USGS	9261000	5/30/2005 10:45	16600
USGS	9261000	5/30/2005 11:00	16700
USGS	9261000	5/30/2005 11:15	16600
USGS	9261000	5/30/2005 11:30	16600
USGS	9261000	5/30/2005 11:45	16500
USGS	9261000	5/30/2005 12:00	16500
USGS	9261000	5/30/2005 12:15	16600
USGS	9261000	5/30/2005 12:30	16600
USGS	9261000	5/30/2005 12:45	16600
USGS	9261000	5/30/2005 13:00	16800
USGS	9261000	5/30/2005 13:15	16800
USGS	9261000	5/30/2005 13:30	16800
USGS	9261000	5/30/2005 13:45	16900
USGS	9261000	5/30/2005 14:00	16900
USGS	9261000	5/30/2005 14:15	16800
USGS	9261000	5/30/2005 14:30	16800
USGS	9261000	5/30/2005 14:45	16700
USGS	9261000	5/30/2005 15:00	16700
USGS	9261000	5/30/2005 15:15	16800
USGS	9261000	5/30/2005 15:30	16800
USGS	9261000	5/30/2005 15:45	16700
USGS	9261000	5/30/2005 16:00	16800
USGS	9261000	5/30/2005 16:15	16900
USGS	9261000	5/30/2005 16:30	16900
USGS	9261000	5/30/2005 16:45	16900
USGS	9261000	5/30/2005 17:00	16900
USGS	9261000	5/30/2005 17:15	16900
USGS	9261000	5/30/2005 17:30	16900
USGS	9261000	5/30/2005 17:45	16900

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/30/2005 18:00	17000
USGS	9261000	5/30/2005 18:15	17000
USGS	9261000	5/30/2005 18:30	17000
USGS	9261000	5/30/2005 18:45	17000
USGS	9261000	5/30/2005 19:00	17000
USGS	9261000	5/30/2005 19:15	17000
USGS	9261000	5/30/2005 19:30	17000
USGS	9261000	5/30/2005 19:45	17000
USGS	9261000	5/30/2005 20:00	17000
USGS	9261000	5/30/2005 20:15	17000
USGS	9261000	5/30/2005 20:30	17000
USGS	9261000	5/30/2005 20:45	17000
USGS	9261000	5/30/2005 21:00	17000
USGS	9261000	5/30/2005 21:15	17000
USGS	9261000	5/30/2005 21:30	17000
USGS	9261000	5/30/2005 21:45	17100
USGS	9261000	5/30/2005 22:00	17100
USGS	9261000	5/30/2005 22:15	17100
USGS	9261000	5/30/2005 22:30	17100
USGS	9261000	5/30/2005 22:45	17100
USGS	9261000	5/30/2005 23:00	17100
USGS	9261000	5/30/2005 23:15	17100
USGS	9261000	5/30/2005 23:30	17200
USGS	9261000	5/30/2005 23:45	17200
USGS	9261000	5/31/2005 0:00	17200
USGS	9261000	5/31/2005 0:15	17200
USGS	9261000	5/31/2005 0:30	17200
USGS	9261000	5/31/2005 0:45	17200
USGS	9261000	5/31/2005 1:00	17200
USGS	9261000	5/31/2005 1:15	17200
USGS	9261000	5/31/2005 1:30	17200
USGS	9261000	5/31/2005 1:45	17200
USGS	9261000	5/31/2005 2:00	17300
USGS	9261000	5/31/2005 2:15	17300
USGS	9261000	5/31/2005 2:30	17300
USGS	9261000	5/31/2005 2:45	17200
USGS	9261000	5/31/2005 3:00	17300
USGS	9261000	5/31/2005 3:15	17300
USGS	9261000	5/31/2005 3:30	17300
USGS	9261000	5/31/2005 3:45	17300
USGS	9261000	5/31/2005 4:00	17300
USGS	9261000	5/31/2005 4:15	17400
USGS	9261000	5/31/2005 4:30	17400
USGS	9261000	5/31/2005 4:45	17400

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/31/2005 5:00	17400
USGS	9261000	5/31/2005 5:15	17400
USGS	9261000	5/31/2005 5:30	17400
USGS	9261000	5/31/2005 5:45	17400
USGS	9261000	5/31/2005 6:00	17300
USGS	9261000	5/31/2005 6:15	17500
USGS	9261000	5/31/2005 6:30	17400
USGS	9261000	5/31/2005 6:45	17400
USGS	9261000	5/31/2005 7:00	17400
USGS	9261000	5/31/2005 7:15	17400
USGS	9261000	5/31/2005 7:30	17400
USGS	9261000	5/31/2005 7:45	17500
USGS	9261000	5/31/2005 8:00	17400
USGS	9261000	5/31/2005 8:15	17400
USGS	9261000	5/31/2005 8:30	17400
USGS	9261000	5/31/2005 8:45	17400
USGS	9261000	5/31/2005 9:00	17400
USGS	9261000	5/31/2005 9:15	17400
USGS	9261000	5/31/2005 9:30	17400
USGS	9261000	5/31/2005 9:45	17400
USGS	9261000	5/31/2005 10:00	17400
USGS	9261000	5/31/2005 10:15	17500
USGS	9261000	5/31/2005 10:30	17400
USGS	9261000	5/31/2005 10:45	17400
USGS	9261000	5/31/2005 11:00	17400
USGS	9261000	5/31/2005 11:15	17400
USGS	9261000	5/31/2005 11:30	17400
USGS	9261000	5/31/2005 11:45	17400
USGS	9261000	5/31/2005 12:00	17400
USGS	9261000	5/31/2005 12:15	17400
USGS	9261000	5/31/2005 12:30	17400
USGS	9261000	5/31/2005 12:45	17400
USGS	9261000	5/31/2005 13:00	17400
USGS	9261000	5/31/2005 13:15	17300
USGS	9261000	5/31/2005 13:30	17300
USGS	9261000	5/31/2005 13:45	17300
USGS	9261000	5/31/2005 14:00	17400
USGS	9261000	5/31/2005 14:15	17300
USGS	9261000	5/31/2005 14:30	17300
USGS	9261000	5/31/2005 14:45	17400
USGS	9261000	5/31/2005 15:00	17300
USGS	9261000	5/31/2005 15:15	17200
USGS	9261000	5/31/2005 15:30	17300
USGS	9261000	5/31/2005 15:45	17200

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	5/31/2005 16:00	17300
USGS	9261000	5/31/2005 16:15	17200
USGS	9261000	5/31/2005 16:30	17300
USGS	9261000	5/31/2005 16:45	17300
USGS	9261000	5/31/2005 17:00	17400
USGS	9261000	5/31/2005 17:15	17400
USGS	9261000	5/31/2005 17:30	17400
USGS	9261000	5/31/2005 17:45	17300
USGS	9261000	5/31/2005 18:00	17300
USGS	9261000	5/31/2005 18:15	17200
USGS	9261000	5/31/2005 18:30	17200
USGS	9261000	5/31/2005 18:45	17300
USGS	9261000	5/31/2005 19:00	17300
USGS	9261000	5/31/2005 19:15	17300
USGS	9261000	5/31/2005 19:30	17400
USGS	9261000	5/31/2005 19:45	17400
USGS	9261000	5/31/2005 20:00	17400
USGS	9261000	5/31/2005 20:15	17400
USGS	9261000	5/31/2005 20:30	17400
USGS	9261000	5/31/2005 20:45	17400
USGS	9261000	5/31/2005 21:00	17400
USGS	9261000	5/31/2005 21:15	17300
USGS	9261000	5/31/2005 21:30	17300
USGS	9261000	5/31/2005 21:45	17300
USGS	9261000	5/31/2005 22:00	17300
USGS	9261000	5/31/2005 22:15	17300
USGS	9261000	5/31/2005 22:30	17300
USGS	9261000	5/31/2005 22:45	17400
USGS	9261000	5/31/2005 23:00	17400
USGS	9261000	5/31/2005 23:15	17400
USGS	9261000	5/31/2005 23:30	17400
USGS	9261000	5/31/2005 23:45	17400
USGS	9261000	6/1/2005 0:00	17400
USGS	9261000	6/1/2005 0:15	17400
USGS	9261000	6/1/2005 0:30	17500
USGS	9261000	6/1/2005 0:45	17400
USGS	9261000	6/1/2005 1:00	17400
USGS	9261000	6/1/2005 1:15	17500
USGS	9261000	6/1/2005 1:30	17400
USGS	9261000	6/1/2005 1:45	17500
USGS	9261000	6/1/2005 2:00	17400
USGS	9261000	6/1/2005 2:15	17400
USGS	9261000	6/1/2005 2:30	17500
USGS	9261000	6/1/2005 2:45	17500

USGS gage # 09261000, ‘Green River Near Jensen, UT’
approximate Green River Mile (RM) 316.50
Latitude 40°24’34”, Longitude 109°14’05” NAD27
Uintah County, Utah, Hydrologic Unit 14060001

org.	gage #	mm/dd/yyyy hr MNTN	cfs
USGS	9261000	6/1/2005 3:00	17500
USGS	9261000	6/1/2005 3:15	17500
USGS	9261000	6/1/2005 3:30	17400
USGS	9261000	6/1/2005 3:45	17500
USGS	9261000	6/1/2005 4:00	17500
USGS	9261000	6/1/2005 4:15	17400
USGS	9261000	6/1/2005 4:30	17500
USGS	9261000	6/1/2005 4:45	17500
USGS	9261000	6/1/2005 5:00	17400
USGS	9261000	6/1/2005 5:15	17400
USGS	9261000	6/1/2005 5:30	17400
USGS	9261000	6/1/2005 5:45	17400
USGS	9261000	6/1/2005 6:00	17400
USGS	9261000	6/1/2005 6:15	17300
USGS	9261000	6/1/2005 6:30	17400
USGS	9261000	6/1/2005 6:45	17300
USGS	9261000	6/1/2005 7:00	17200
USGS	9261000	6/1/2005 7:15	17200
USGS	9261000	6/1/2005 7:30	17300
USGS	9261000	6/1/2005 7:45	17200

NOAA gage ASHLEY CK - JENSEN, NR, UNION CANAL, BLO (ACJU1)
Latitude 40°21’29”, Longitude 109°23’13” NAD27
Uintah County, Utah, Hydrologic Unit 14060002.

mo/day.hr GMT	mm/dd/yyyy hr MNTN		cfs
05/20.00	5/19/2005 18:00	M	41
05/20.01	5/19/2005 19:00	M	108
05/20.02	5/19/2005 20:00	M	175
05/20.03	5/19/2005 21:00	M	242
05/20.04	5/19/2005 22:00	M	308
05/20.05	5/19/2005 23:00	M	375
05/20.06	5/20/2005 0:00	M	442
05/20.07	5/20/2005 1:00	M	448
05/20.08	5/20/2005 2:00	M	464
05/20.09	5/20/2005 3:00	M	470
05/20.10	5/20/2005 4:00	M	476
05/20.11	5/20/2005 5:00	M	482
05/20.12	5/20/2005 6:00	M	488
05/20.13	5/20/2005 7:00	M	473
05/20.14	5/20/2005 8:00	M	458
05/20.15	5/20/2005 9:00	M	443
05/20.16	5/20/2005 10:00	M	428
05/20.17	5/20/2005 11:00	M	412
05/20.18	5/20/2005 12:00	M	397
05/20.19	5/20/2005 13:00	M	458
05/20.20	5/20/2005 14:00	M	518
05/20.21	5/20/2005 15:00	M	578
05/20.22	5/20/2005 16:00	M	638
05/20.23	5/20/2005 17:00	M	698
05/21.00	5/20/2005 18:00	M	758
05/21.01	5/20/2005 19:00	M	836
05/21.02	5/20/2005 20:00	M	914
05/21.03	5/20/2005 21:00	M	992
05/21.04	5/20/2005 22:00	M	1070
05/21.05	5/20/2005 23:00	M	1148
05/21.06	5/21/2005 0:00	M	1226
05/21.07	5/21/2005 1:00	M	1228
05/21.08	5/21/2005 2:00	M	1239
05/21.09	5/21/2005 3:00	M	1240
05/21.10	5/21/2005 4:00	M	1242
05/21.11	5/21/2005 5:00	M	1244
05/21.12	5/21/2005 6:00	M	1245
05/21.13	5/21/2005 7:00	M	1227
05/21.14	5/21/2005 8:00	M	1206
05/21.15	5/21/2005 9:00	M	1185
05/21.16	5/21/2005 10:00	M	1164
05/21.17	5/21/2005 11:00	M	1143
05/21.18	5/21/2005 12:00	M	1122
05/21.19	5/21/2005 13:00	M	1183
05/21.20	5/21/2005 14:00	M	1244
05/21.21	5/21/2005 15:00	M	1305
05/21.22	5/21/2005 16:00	M	1366

NOAA gage ASHLEY CK - JENSEN, NR, UNION CANAL, BLO (ACJU1)
Latitude 40°21’29”, Longitude 109°23’13” NAD27
Uintah County, Utah, Hydrologic Unit 14060002.

mo/day.hr GMT	mm/dd/yyyy hr MNTN		cfs
05/21.23	5/21/2005 17:00	M	1426
05/22.00	5/21/2005 18:00	M	1487
05/22.01	5/21/2005 19:00	M	1518
05/22.02	5/21/2005 20:00	M	1548
05/22.03	5/21/2005 21:00	M	1579
05/22.04	5/21/2005 22:00	M	1609
05/22.05	5/21/2005 23:00	M	1640
05/22.06	5/22/2005 0:00	M	1670
05/22.07	5/22/2005 1:00	M	1648
05/22.08	5/22/2005 2:00	M	1636
05/22.09	5/22/2005 3:00	M	1614
05/22.10	5/22/2005 4:00	M	1592
05/22.11	5/22/2005 5:00	M	1570
05/22.12	5/22/2005 6:00	M	1548
05/22.13	5/22/2005 7:00	M	1509
05/22.14	5/22/2005 8:00	M	1470
05/22.15	5/22/2005 9:00	M	1432
05/22.16	5/22/2005 10:00	M	1393
05/22.17	5/22/2005 11:00	M	1354
05/22.18	5/22/2005 12:00	M	1315
05/22.19	5/22/2005 13:00	M	1373
05/22.20	5/22/2005 14:00	M	1431
05/22.21	5/22/2005 15:00	M	1489
05/22.22	5/22/2005 16:00	M	1547
05/22.23	5/22/2005 17:00	M	1605
05/23.00	5/22/2005 18:00	M	1663
05/23.01	5/22/2005 19:00	M	1698
05/23.02	5/22/2005 20:00	M	1733
05/23.03	5/22/2005 21:00	M	1769
05/23.04	5/22/2005 22:00	M	1804
05/23.05	5/22/2005 23:00	M	1839
05/23.06	5/23/2005 0:00	M	1875
05/23.07	5/23/2005 1:00	M	1856
05/23.08	5/23/2005 2:00	M	1846
05/23.09	5/23/2005 3:00	M	1827
05/23.10	5/23/2005 4:00	M	1809
05/23.11	5/23/2005 5:00	M	1790
05/23.12	5/23/2005 6:00	M	1771
05/23.13	5/23/2005 7:00	M	2110
05/23.14	5/23/2005 8:00	M	2078
05/23.15	5/23/2005 9:00	M	2045
05/23.16	5/23/2005 10:00	M	2013
05/23.17	5/23/2005 11:00	M	1981
05/23.18	5/23/2005 12:00	M	1948
05/23.19	5/23/2005 13:00	M	2018
05/23.20	5/23/2005 14:00	M	2087
05/23.21	5/23/2005 15:00	M	2156

NOAA gage ASHLEY CK - JENSEN, NR, UNION CANAL, BLO (ACJU1)
Latitude 40°21’29”, Longitude 109°23’13” NAD27
Uintah County, Utah, Hydrologic Unit 14060002.

mo/day.hr GMT	mm/dd/yyyy hr MNTN		cfs
05/23.22	5/23/2005 16:00	M	2226
05/23.23	5/23/2005 17:00	M	2295
05/24.00	5/23/2005 18:00	M	2365
05/24.01	5/23/2005 19:00	M	2568
05/24.02	5/23/2005 20:00	M	2770
05/24.03	5/23/2005 21:00	M	2973
05/24.04	5/23/2005 22:00	M	3176
05/24.05	5/23/2005 23:00	M	3379
05/24.06	5/24/2005 0:00	M	3582
05/24.07	5/24/2005 1:00	M	3383
05/24.08	5/24/2005 2:00	M	3194
05/24.09	5/24/2005 3:00	M	2995
05/24.10	5/24/2005 4:00	M	2797
05/24.11	5/24/2005 5:00	M	2598
05/24.12	5/24/2005 6:00	M	2400
05/24.13	5/24/2005 7:00	M	2364
05/24.14	5/24/2005 8:00	M	2327
05/24.15	5/24/2005 9:00	M	2291
05/24.16	5/24/2005 10:00	M	2255
05/24.17	5/24/2005 11:00	M	2218
05/24.18	5/24/2005 12:00	M	2182
05/24.19	5/24/2005 13:00	M	1824
05/24.20	5/24/2005 14:00	M	2257
05/24.21	5/24/2005 15:00	M	2294
05/24.22	5/24/2005 16:00	M	2331
05/24.23	5/24/2005 17:00	M	2368
05/25.00	5/24/2005 18:00	M	2406
05/25.01	5/24/2005 19:00	M	2398
05/25.02	5/24/2005 20:00	M	2391
05/25.03	5/24/2005 21:00	M	2384
05/25.04	5/24/2005 22:00	M	2377
05/25.05	5/24/2005 23:00	M	2369
05/25.06	5/25/2005 0:00	M	2362
05/25.07	5/25/2005 1:00	M	2333
05/25.08	5/25/2005 2:00	M	2314
05/25.09	5/25/2005 3:00	M	2285
05/25.10	5/25/2005 4:00	M	2256
05/25.11	5/25/2005 5:00	M	2227
05/25.12	5/25/2005 6:00	M	2198
05/25.13	5/25/2005 7:00	M	2157
05/25.14	5/25/2005 8:00	M	2116
05/25.15	5/25/2005 9:00	M	2076
05/25.16	5/25/2005 10:00	M	2035
05/25.17	5/25/2005 11:00	M	1994
05/25.18	5/25/2005 12:00	M	1953
05/25.19	5/25/2005 13:00	M	1946
05/25.20	5/25/2005 14:00	M	1939

NOAA gage ASHLEY CK - JENSEN, NR, UNION CANAL, BLO (ACJU1)
Latitude 40°21’29”, Longitude 109°23’13” NAD27
Uintah County, Utah, Hydrologic Unit 14060002.

mo/day.hr GMT	mm/dd/yyyy hr MNTN		cfs
05/25.21	5/25/2005 15:00	M	1932
05/25.22	5/25/2005 16:00	M	1925
05/25.23	5/25/2005 17:00	M	1918
05/26.00	5/25/2005 18:00	M	1911
05/26.01	5/25/2005 19:00	M	1926
05/26.02	5/25/2005 20:00	M	1940
05/26.03	5/25/2005 21:00	M	1955
05/26.04	5/25/2005 22:00	M	1970
05/26.05	5/25/2005 23:00	M	1984
05/26.06	5/26/2005 0:00	M	1999
05/26.07	5/26/2005 1:00	M	1976
05/26.08	5/26/2005 2:00	M	1963
05/26.09	5/26/2005 3:00	M	1940
05/26.10	5/26/2005 4:00	M	1917
05/26.11	5/26/2005 5:00	M	1895
05/26.12	5/26/2005 6:00	M	1872
05/26.13	5/26/2005 7:00	M	1839
05/26.14	5/26/2005 8:00	M	1807
05/26.15	5/26/2005 9:00	M	1774
05/26.16	5/26/2005 10:00	M	1741
05/26.17	5/26/2005 11:00	M	1709
05/26.18	5/26/2005 12:00	M	1676
05/26.19	5/26/2005 13:00	M	1672
05/26.20	5/26/2005 14:00	M	1669
05/26.21	5/26/2005 15:00	M	1665
05/26.22	5/26/2005 16:00	M	1661
05/26.23	5/26/2005 17:00	M	1658
05/27.00	5/26/2005 18:00	M	1654
05/27.01	5/26/2005 19:00	M	1676
05/27.02	5/26/2005 20:00	M	1699
05/27.03	5/26/2005 21:00	M	1721
05/27.04	5/26/2005 22:00	M	1743
05/27.05	5/26/2005 23:00	M	1765
05/27.06	5/27/2005 0:00	M	1788
05/27.07	5/27/2005 1:00	M	1769
05/27.08	5/27/2005 2:00	M	1760
05/27.09	5/27/2005 3:00	M	1742
05/27.10	5/27/2005 4:00	M	1724
05/27.11	5/27/2005 5:00	M	1706
05/27.12	5/27/2005 6:00	M	1688
05/27.13	5/27/2005 7:00	M	1661
05/27.14	5/27/2005 8:00	M	1635
05/27.15	5/27/2005 9:00	M	1608
05/27.16	5/27/2005 10:00	M	1582
05/27.17	5/27/2005 11:00	M	1555
05/27.18	5/27/2005 12:00	M	1529
05/27.19	5/27/2005 13:00	M	1544

NOAA gage ASHLEY CK - JENSEN, NR, UNION CANAL, BLO (ACJU1)
Latitude 40°21’29”, Longitude 109°23’13” NAD27
Uintah County, Utah, Hydrologic Unit 14060002.

mo/day.hr GMT	mm/dd/yyyy hr MNTN		cfs
05/27.20	5/27/2005 14:00	M	1560
05/27.21	5/27/2005 15:00	M	1575
05/27.22	5/27/2005 16:00	M	1591
05/27.23	5/27/2005 17:00	M	1607
05/28.00	5/27/2005 18:00	M	1622
05/28.01	5/27/2005 19:00	M	1641
05/28.02	5/27/2005 20:00	M	1660
05/28.03	5/27/2005 21:00	M	1679
05/28.04	5/27/2005 22:00	M	1698
05/28.05	5/27/2005 23:00	M	1716
05/28.06	5/28/2005 0:00	M	1735
05/28.07	5/28/2005 1:00	M	1722
05/28.08	5/28/2005 2:00	M	1718
05/28.09	5/28/2005 3:00	M	1704
05/28.10	5/28/2005 4:00	M	1691
05/28.11	5/28/2005 5:00	M	1677
05/28.12	5/28/2005 6:00	M	1664
05/28.13	5/28/2005 7:00	M	1641
05/28.14	5/28/2005 8:00	M	1617
05/28.15	5/28/2005 9:00	M	1594
05/28.16	5/28/2005 10:00	M	1571
05/28.17	5/28/2005 11:00	M	1548
05/28.18	5/28/2005 12:00	M	1524
05/28.19	5/28/2005 13:00	M	1546
05/28.20	5/28/2005 14:00	M	1568
05/28.21	5/28/2005 15:00	M	1590
05/28.22	5/28/2005 16:00	M	1612
05/28.23	5/28/2005 17:00	M	1635
05/29.00	5/28/2005 18:00	M	1657
05/29.01	5/28/2005 19:00	M	1681
05/29.02	5/28/2005 20:00	M	1706
05/29.03	5/28/2005 21:00	M	1730
05/29.04	5/28/2005 22:00	M	1755
05/29.05	5/28/2005 23:00	M	1779
05/29.06	5/29/2005 0:00	M	1804
05/29.07	5/29/2005 1:00	M	1795
05/29.08	5/29/2005 2:00	M	1796
05/29.09	5/29/2005 3:00	M	1788
05/29.10	5/29/2005 4:00	M	1780
05/29.11	5/29/2005 5:00	M	1772
05/29.12	5/29/2005 6:00	M	1764
05/29.13	5/29/2005 7:00	M	1750
05/29.14	5/29/2005 8:00	M	1736
05/29.15	5/29/2005 9:00	M	1723
05/29.16	5/29/2005 10:00	M	1709
05/29.17	5/29/2005 11:00	M	1696
05/29.18	5/29/2005 12:00	M	1682

NOAA gage ASHLEY CK - JENSEN, NR, UNION CANAL, BLO (ACJU1)
Latitude 40°21’29”, Longitude 109°23’13” NAD27
Uintah County, Utah, Hydrologic Unit 14060002.

mo/day.hr GMT	mm/dd/yyyy hr MNTN		cfs
05/29.19	5/29/2005 13:00	M	1712
05/29.20	5/29/2005 14:00	M	1742
05/29.21	5/29/2005 15:00	M	1772
05/29.22	5/29/2005 16:00	M	1802
05/29.23	5/29/2005 17:00	M	1832
05/30.00	5/29/2005 18:00	M	1862
05/30.01	5/29/2005 19:00	M	1866
05/30.02	5/29/2005 20:00	M	1871
05/30.03	5/29/2005 21:00	M	1876
05/30.04	5/29/2005 22:00	M	1880
05/30.05	5/29/2005 23:00	M	1885
05/30.06	5/30/2005 0:00	M	1889
05/30.07	5/30/2005 1:00	M	1872
05/30.08	5/30/2005 2:00	M	1864
05/30.09	5/30/2005 3:00	M	1847
05/30.10	5/30/2005 4:00	M	1830
05/30.11	5/30/2005 5:00	M	1813
05/30.12	5/30/2005 6:00	M	1796
05/30.13	5/30/2005 7:00	M	1788
05/30.14	5/30/2005 8:00	M	1780
05/30.15	5/30/2005 9:00	M	1772
05/30.16	5/30/2005 10:00	M	1765
05/30.17	5/30/2005 11:00	M	1757
05/30.18	5/30/2005 12:00	M	1749
05/30.19	5/30/2005 13:00	M	1726
05/30.20	5/30/2005 14:00	M	1704
05/30.21	5/30/2005 15:00	M	1681
05/30.22	5/30/2005 16:00	M	1658
05/30.23	5/30/2005 17:00	M	1636
05/31.00	5/30/2005 18:00	M	1613
05/31.01	5/30/2005 19:00	M	1584
05/31.02	5/30/2005 20:00	M	1555
05/31.03	5/30/2005 21:00	M	1526
05/31.04	5/30/2005 22:00	M	1498
05/31.05	5/30/2005 23:00	M	1469
05/31.06	5/31/2005 0:00	M	1440
05/31.07	5/31/2005 1:00	M	1417
05/31.08	5/31/2005 2:00	M	1403
05/31.09	5/31/2005 3:00	M	1380
05/31.10	5/31/2005 4:00	M	1357
05/31.11	5/31/2005 5:00	M	1334
05/31.12	5/31/2005 6:00	M	1311
05/31.13	5/31/2005 7:00	M	1289
05/31.14	5/31/2005 8:00	M	1267
05/31.15	5/31/2005 9:00	M	1244
05/31.16	5/31/2005 10:00	M	1222
05/31.17	5/31/2005 11:00	M	1200

NOAA gage ASHLEY CK - JENSEN, NR, UNION CANAL, BLO (ACJU1)
Latitude 40°21’29”, Longitude 109°23’13” NAD27
Uintah County, Utah, Hydrologic Unit 14060002.

mo/day.hr GMT	mm/dd/yyyy hr MNTN		cfs
05/31.18	5/31/2005 12:00	M	1177
05/31.19	5/31/2005 13:00	M	1158
05/31.20	5/31/2005 14:00	M	1139
05/31.21	5/31/2005 15:00	M	1119
05/31.22	5/31/2005 16:00	M	1100
05/31.23	5/31/2005 17:00	M	1081
06/01.00	5/31/2005 18:00	M	1061
06/01.01	5/31/2005 19:00	M	1074
06/01.02	5/31/2005 20:00	M	1086
06/01.03	5/31/2005 21:00	M	1098
06/01.04	5/31/2005 22:00	M	1111
06/01.05	5/31/2005 23:00	M	1123
06/01.06	6/1/2005 0:00	M	1135
06/01.07	6/1/2005 1:00	M	1127
06/01.08	6/1/2005 2:00	M	1128
06/01.09	6/1/2005 3:00	M	1120
06/01.10	6/1/2005 4:00	M	1112
06/01.11	6/1/2005 5:00	M	1104
06/01.12	6/1/2005 6:00	M	1096
06/01.13	6/1/2005 7:00	M	1085
06/01.14	6/1/2005 8:00	M	1074
06/01.15	6/1/2005 9:00	M	1063
06/01.16	6/1/2005 10:00	M	1052
06/01.17	6/1/2005 11:00	M	1042
06/01.18	6/1/2005 12:00	M	1031
06/01.19	6/1/2005 13:00	M	1037
06/01.20	6/1/2005 14:00	M	1043

APPENDIX E
PHOTO LOG

TR-IN-1 looking toward bottomland at 14,000 cfs

TR-IN-2 looking toward river at 14,000 cfs

TR-IN-3 looking toward bottomland at 14,000 cfs

TR-IN-5 looking toward bottomland at 14,000 cfs

TR-IN-6 looking toward bottomland at 14,000 cfs

TR-IN-7 looking toward bottomland at 14,000 cfs

BB-IN-2 looking toward river at 14,000 cfs

BB-IN-3 looking toward bottomland at 14,000 cfs

ST-OUT looking toward river at 14,000 cfs

BA-MON-INLET looking from REP toward LEP at 14,000 cfs

AB-IN-1 looking toward river at 14,000 cfs

AB-IN-2 looking toward river at 14,000 cfs

AB-OUT looking toward bottomland at 14,000 cfs

TR-IN-1 looking toward bottomland at 20,000 cfs

TR-IN-2 looking toward bottomland at 20,000 cfs

TR-IN-3 looking toward bottomland at 20,000 cfs

TR-IN-4 looking toward bottomland at 20,000 cfs

TR-IN-5 looking toward bottomland at 20,000 cfs

TR-IN-6 looking toward bottomland at 20,000 cfs

TR-IN-7 looking toward bottomland at 20,000 cfs

TR-OUT looking toward bottomland at 20,000 cfs

BB-IN-1 looking toward bottomland at 20,000 cfs

BB-IN-2 looking toward bottomland at 20,000 cfs

BB-IN-3 looking toward bottomland at 20,000 cfs

ST-OUT looking toward bottomland at 20,000 cfs

BA-MON-INLET looking toward bottomland at 20,000 cfs

AB-IN-1 looking toward bottomland at 20,000 cfs

AB-IN-2 looking toward bottomland at 20,000 cfs

AB-IN-3 looking toward bottomland at 20,000 cfs

AB-OUT looking toward bottomland at 20,000 cfs

TR-IN-1 looking toward bottomland at 17,000 cfs

TR-IN-2 looking toward bottomland at 17,000 cfs

TR-IN-3 looking toward bottomland at 17,000 cfs

TR-IN-4 looking toward bottomland at 17,000 cfs

TR-IN-5 looking toward river at 17,000 cfs

TR-IN-6 looking toward bottomland at 17,000 cfs

TR-IN-7 looking toward bottomland at 17,000 cfs

TR-OUT looking toward bottomland at 17,000 cfs

BB-IN-1 looking toward bottomland at 17,000 cfs

BB-IN-2 looking toward bottomland at 17,000 cfs

BB-IN-3 looking toward river at 17,000 cfs

BB-5B looking toward river at 17,000 cfs

BA-MON-INLET looking from LEP toward REP at 17,000 cfs

AB-IN-1 looking toward bottomland at 17,000 cfs

AB-IN-2 looking toward bottomland at 17,000 cfs

AB-IN-3 looking toward bottomland at 17,000 cfs

AB-OUT looking toward bottomland at 17,000 cfs