

Geological Survey  
Water Resources Division

Processed by CBE

## Acoustic Profiler Discharge Measurement Notes

Ck'd by Bm

Sta. Name Mississippi before Confluence

Date 05/12 2011 Party CBR/KMH

Width 50'40 Area 171 500 Vel. 3.01 G.H. - Disch. 545735

Profiler Water Temp. 18.45 °C at 1140 Rated area: — Index Velocity —

Profiler S/N: 5954 Mfgr: RDI Freq: 1200 Firmware: 10.16 Software Ver: 2.07

Depth Cell Size 0.82 Other commands: Profiler Depth 0.12

No. of Cells	110	Config. file	
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Blanking Distance	0.82	Deployment	February
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Water Mode	12	Moving Bed	Loop Test 3
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Ambiguity Vel. Moving Bed Present: ☒ Y ☐ N

Water pings	1	Diag. Test	ADCP TEST
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Bottom pings	1	Diag Test Errors:	Y
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Boat/Motor Used SR ADCP Time to WT ☐ @ \_\_\_\_\_ GPS: UTG

Mag. Var. 1) -1.4 2)          3)          4)          Avg:          Comp. Cal.: 0.42

GAGE READINGS		Samples collected: water quality, sediment
		biological, other: _____

[illegible]

							Measurements documented on other sheet.
1145	START						water quality, aux/base gage, other:

[illegible]

1300	TND					Rain gage serviced/calibrated _____
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Weather Clear Hot

		12.2	10.6	D = 7.15		Wind Spd	Dir
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7.2	Max V = 12.8	Air Temp 23.7 °C at 1141
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						Air Temp.	_____	C at _____
						Water Temp.	18.4	%C at 1140

[illegible][illegible]

GH correction						Checklist/chain round
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Correct MGH						Changed to _____ at _____
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Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total

Wading, cable, ice, boat, upstr., downstr., side bridge, \_\_\_\_\_ ft., mi. upstr., downstr. of gage.

Measurement rated: excellent (2%), good (5%), fair (8%), poor (>8%) based on following conditions:

Flow: uneven, turbulent

Cross section: Low grass bridge abutment R/W Levee (trees)

Control: \_\_\_\_\_

Gage operating: \_\_\_\_\_ Record removed: Y or N      Filename: \_\_\_\_\_

Battery voltage: \_\_\_\_\_ Intakes/Orifice cleaned/purged: \_\_\_\_\_

Bubble-gage psi: Tank          Line         : Bubble rate          /min.

Extreme-GH indicators: max \_\_\_\_\_ min \_\_\_\_\_

CSG checked: ☒ HWM height on stick ☒ Refe lev ☒ HWM elev ☒

Remarks: 500' W of Hwy 60 bridge.

[illegible]

GH of zero flow = GH \_\_\_\_\_ - depth at control \_\_\_\_\_ = \_\_\_\_\_ ft. rated \_\_\_\_\_

Sheet No. 1 of 1 sheet

Sheet No. 1 of 1 sheets

## MEASUREMENT NOTES

LEFT BANK Sloping Vertical Other \_\_\_\_\_RIGHT BANK Sloping Vertical Other \_\_\_\_\_

Transect Number	Start			Ending		Total Discharge	<u>M.B. Corr</u>	Remarks
	Bank	Time	Distance	Distance	Time			
000	LEW	1145	80	100	1208	516670	552117	
001	REW	1208	100	80	1225	512607	544708	
002	LEW	1226	80	100	1250	510128	536865	
003	REW	1250	100	80	1307	516125	549251	

Notes:

528552  
520321  

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578  
8231

REV 1340 Length

D = 1275 DMG

Q = 7853

Station Number: Mississippi\_US\_60\_Bridge  
Station Name: Mississippi\_Rr\_before\_Confluence

Meas. No: 4  
Date: 05/12/2011

Party: CBR/KMH	Width: 5,040 ft	Processed by: CBR
Boat/Motor: 513	Area: 171,000 ft²	Mean Velocity: 3.01 ft/s
Gage Height: 0.00 ft	G.H.Change: 0.000 ft	Discharge: 514,000 ft³/s

Area Method: Avg. Course	ADCP Depth: 0.420 ft	Index Vel.: 0.00 ft/s	Rating No.: 1
Nav. Method: Bottom Track	Shore Ens.:10	Adj.Mean Vel: 0.00 ft/s	Qm Rating: F
MagVar Method: Model (-1.4°)	Bottom Est: Power (0.1667)	Rated Area: 0.000 ft²	Diff.: 0.000%
Depth Sounder: Not Used	Top Est: Power (0.1667)	Control1: Unspecified	
		Control2: Unspecified	
		Control3: Unspecified	

Screening Thresholds:		ADCP:
BT 3-Beam Solution: YES	Max. Vel.: 7.03 ft/s	Type/Freq.: Rio Grande/600 kHz
WT 3-Beam Solution: NO	Max. Depth: 72.2 ft	Serial #: 5954      Firmware: 10.16
BT Error Vel.: 0.33 ft/s	Mean Depth: 34.0 ft	Bin Size: 50 cm      Blank: 25 cm
WT Error Vel.: 3.50 ft/s	% Meas.: 85.81	BT Mode: 5      BT Pings: 1
BT Up Vel.: 1.00 ft/s	Water Temp.: 18.4 °C	WT Mode: 12      WT Pings: 1
WT Up Vel.: 8.00 ft/s	ADCP Temp.: 18.4 °C	WV : 175      WO : 4, 13
Use Weighted Mean Depth: YES		

Performed Diag. Test: YES  
Performed Moving Bed Test: YES  
Performed Compass Test: YES  
Meas. Location: US of 60 bridge 20' - 500'

Project Name: Mississippi\_US\_60\_Bridge\_4.1  
Software: 2.07

Tr.#	Edge Distance			#Ens.	Discharge						Width	Area	Time		Mean Vel.		% Bad	
	L	R			Top	Middle	Bottom	Left	Right	Total			Start	End	Boat	Water	Ens.	Bins
000	L	80	100	1089	23542	440810	51616	635	67.7	516671	5063	169870	11:45	12:08	4.04	3.04	3	0
001	R	90	100	776	23130	439793	48537	853	295	512607	5009	169767	12:08	12:25	5.38	3.02	3	0
002	L	80	100	1111	23159	437502	49015	408	45.1	510128	5037	170688	12:26	12:50	3.88	2.99	2	0
003	R	80	100	754	23126	445735	46894	271	98.5	516125	5032	173598	12:50	13:07	5.44	2.97	5	0
Mean	83	100	932	23239	440960	49016	542	127	513883	5035	170981	Total	01:22		4.68	3.01	3	0
SDev	5	0	194	202	3471	1957	256	114	3084	22.2	1792.7				0.84	0.03		
SD/M	0.06	0.00	0.21	0.01	0.01	0.04	0.47	0.90	0.01	0.00	0.01				0.18	0.01		

Remarks: BT Reference

Mississippi\_US\_60\_Bridge\_4\_000\_11-05-12\_ASC20110512

LC Version 3.00, February 1, 2010

Processed on: 12-May-2011

Loop File: Mississippi\_US\_60\_Bridge\_4\_004\_11-05-12\_LBT\_ASC.TXT

Distance Made Good (ft)	Loop Time (sec)	Moving Bed Velocity (ft/s)	Moving Bed Direction (degrees)	Flow Direction (degrees)	Estimated Percent Correction (percent)
99.74	873.05	0.11	249.73	72.27	3.29

Percent Bad Bottom Track: 0.3

Difference in flow direction between out and back sections: 1.1 deg

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Loop Indicates a Moving Bed -- Select transects to be corrected

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File Name	Original Discharge cfs	Adjusted Discharge cfs
0_Bridge_4_000_11-05-12_ASC.TXT	516670.90	552117.03
0_Bridge_4_001_11-05-12_ASC.TXT	512607.50	544708.70
0_Bridge_4_002_11-05-12_ASC.TXT	510128.00	536865.51
0_Bridge_4_003_11-05-12_ASC.TXT	516125.40	549251.27
Average	513882.95	545735.63

Party: CBR/KMH	Width: 2,290 ft	Processed by:
Boat/Motor: 513	Area: 144,000 ft²	Mean Velocity: 3.32 ft/s
Gage Height: 0.00 ft	G.H.Change: 0.000 ft	Discharge: 477,000 ft³/s

Area Method: Avg. Course	ADCP Depth: 0.420 ft	Index Vel.: 0.00 ft/s	Rating No.: 1
Nav. Method: Bottom Track	Shore Ens.:10	Adj.Mean Vel: 0.00 ft/s	Qm Rating: U
MagVar Method: Model (-1.4°)	Bottom Est: Power (0.1667)	Rated Area: 0.000 ft²	Diff.: 0.000%
Depth Sounder: Not Used	Top Est: Power (0.1667)	Control1: Unspecified	
		Control2: Unspecified	
		Control3: Unspecified	

Screening Thresholds:		ADCP:
BT 3-Beam Solution: YES	Max. Vel.: 7.03 ft/s	Type/Freq.: Rio Grande / 1200 kHz
WT 3-Beam Solution: NO	Max. Depth: 72.2 ft	Serial #: 5954      Firmware: 10.16
BT Error Vel.: 0.33 ft/s*	Mean Depth: 62.8 ft	Bin Size: 25 cm      Blank: 25 cm
WT Error Vel.: 3.50 ft/s	% Meas.: 87.30	BT Mode: 5      BT Pings: 1
BT Up Vel.: 1.00 ft/s	Water Temp.: None	WT Mode: 12      WT Pings: 1
WT Up Vel.: 8.00 ft/s	ADCP Temp.: 64.4 °F	WV : 175      WO : 4, 13
Use Weighted Mean Depth: YES		

Performed Diag. Test: YES  
 Performed Moving Bed Test: YES  
 Performed Compass Test: YES  
 Meas. Location: US of hwy 60 bridge

Project Name: Mississippi\_US\_60\_Bridge\_4\_n  
 Software: 2.08

Tr.#		Edge Distance		#Ens.	Discharge						Width	Area	Time		Mean Vel.		% Bad	
		L	R		Top	Middle	Bottom	Left	Right	Total			Start	End	Boat	Water	Ens.	Bins
000	L	0	0	382	17037	414223	46100	0.000	0.000	477361	2293	139394	11:51	11:59	5.10	3.43	2	0
001	R	0	0	272	16932	415817	43179	0.000	0.000	475928	2264	144104	12:14	12:20	6.61	3.30	0	0
002	L	0	0	495	16970	413620	43810	0.000	0.000	474400	2311	144193	12:34	12:45	3.79	3.29	2	0
003	R	0	0	233	16982	422728	41471	0.000	0.000	481181	2300	148321	12:56	13:01	7.53	3.24	0	0
<b>Mean</b>		0	0	345	16980	416597	43640	0.000	0.000	477217	2292	144003	<b>Total</b>	01:09	5.76	3.32	1	0
<b>SDev</b>		0	0	118	43.7	4191	1915	0.000	0.000	2906	20.2	3648.4			1.65	0.08		
<b>SD/M</b>		0.00	0.00	0.34	0.00	0.01	0.04	0.00	0.00	0.01	0.01	0.03			0.29	0.02		

**Remarks:** This mmt subsectioned by TAK on 2/17/12 to determine main channel vs overflow for the purpose of estimating overflow on other dates.  
 Endpoints close to tree lines chosen for MAIN channel subsections using 0 ft edges.  
 Overflow computed as OVERFLOW = TOTAL - MAIN.

# - transect has been subsectioned

\* - value not consistent for all transects