
***Lake Thunderbird TMDL Monitoring Plan Implementation:
Sample Year (SY) 2019- November Report***



SY2019 Monthly Report

Lake Thunderbird TMDL Monitoring Plan Implementation:

November 2019 Monitoring Report

Oklahoma Water Resources Board
Water Quality Programs Division
Monitoring and Assessment Section
3800 N. Classen, Oklahoma City, Oklahoma 73118
405-530-8800

Contact

Sarah Dexter, Project Leader, sarah.dexter@owrb.ok.gov

Jason Murphy, Project Supervisor, jason.murphy@owrb.ok.gov

Lance Phillips, Streams Program Manager, lance.phillips@owrb.ok.gov

Bill Cauthron, Monitoring Coordinator, bill.cauthron@owrb.ok.gov

TABLE OF CONTENTS

Table of Contents	3
List of Tables	3
List of Figures	3
Summary of November Water Quality Sampling	4
Results	4

LIST OF TABLES

TABLE 1 FIELD DATA FORM	5
TABLE 2 LABORATORY ANALYSIS SUMMARY	6
TABLE 3 QA/QC DATA WHERE AN ASTERISK DENOTES RPD 2	6
TABLE 4 STATION DISCHARGE SUMMARY	6

LIST OF FIGURES

FIGURE 1 MONITORING STATION MAP	4
FIGURE 2 DISCHARGE MEASUREMENT SUMMARY CC-1.....	7
FIGURE 3 DISCHARGE MEASUREMENT SUMMARY UDB-1.....	8
FIGURE 4 DISCHARGE MEASUREMENT SUMMARY LT-1	9
FIGURE 5 DISCHARGE MEASUREMENT SUMMARY LRC-1	10
FIGURE 6 DISCHARGE MEASUREMENT SUMMARY TE-1	11
FIGURE 7 DISCHARGE MEASUREMENT SUMMARY TG-1	12
FIGURE 8 DISCHARGE MEASUREMENT SUMMARY URC-2	13
FIGURE 9 DISCHARGE MEASUREMENT SUMMARY WC-1	14
FIGURE 10 MONTHLY HYDROGRAPH TG-1	15
FIGURE 11 MONTHLY HYDROGRAPH TE-1	15
FIGURE 12 MONTHLY HYDROGRAPH WC-1.....	16
FIGURE 13 MONTHLY HYDROGRAPH URC-2	16
FIGURE 14 MONTHLY HYDROGRAPH LRC-1	17
FIGURE 15 MONTHLY HYDROGRAPH LDB-1	17
FIGURE 16 MONTHLY HYDROGRAPH JB-1	18
FIGURE 17 MONTHLY HYDROGRAPH UDB-1	18
FIGURE 18 MONTHLY HYDROGRAPH CC-1	19
FIGURE 19 NOVEMBER MESONET DATA	20

SUMMARY OF NOVEMBER WATER QUALITY SAMPLING

Sampling for November 2019 occurred on the twelfth and was considered a base flow collection. Water samples were collected at all ten locations, and discharge measurements were collected at eight locations. Mesonet data shows no precipitation occurring on the twelfth, 0.02 inches of precipitation in the 72 hours prior to sampling, and no precipitation in the 72 hours after the sampling event. The total rainfall amount in Norman for the month of November was 2.09 inches. All water level gauges were operational for the month, with the exception of LT-1 due to equipment malfunction.

RESULTS

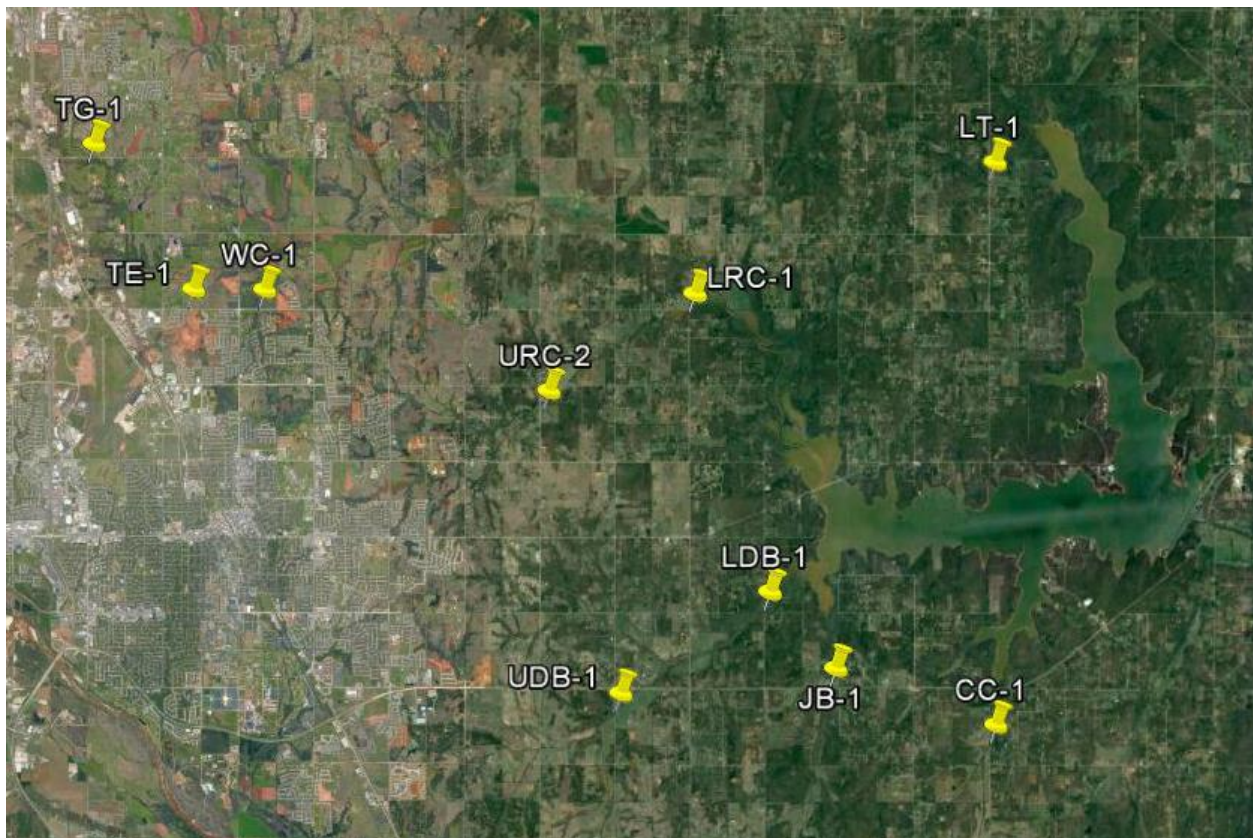


Figure 1 Monitoring Station Map

Monitoring Location ID	Monitoring Location Name	Date	Time	Field Crew	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/l)	pH	Specific Conductance (mS/cm)	Turbidity (NTU)	Notes
CC-1	Clear Creek	11-12-2019	10:42	LO	3.5	12.01	7.96	714	7	used RP2
JB-1	Jim Blue Creek	11-12-2019	11:12	LO	3.4	8.92	7.55	882	21	frozen, RPs not over water
LDB-1	Lower Dave Blue Creek	11-12-2019	11:40	LO	5.9	6.64	7.88	861	4	
LRC-1	Lower Rock Creek	11-12-2019	11:55	SD	3.1	10.05	7.64	683	8	icy edges, ice around bridge area
LT-1	Lake Laterals	11-12-2019	13:26	LO	5.6	8.09	7.45	508	5	frozen
TE-1	Little River Tributary	11-12-2019	9:45	SD	2.7	10.91	7.81	820	34	upstream frozen
TG-1	Little River Tributary	11-12-2019	8:50	SD	2.3	9.99	7.56	933	6	edges frozen
UDB-1	Upper Dave Blue Creek	11-12-2019	9:10	LO	2.5	8.75	7.71	884	4	
URC-2	Upper Rock Creek	11-12-2019	11:15	SD	6.1	5.68	7.46	600	29	
WC-1	Woodcrest Creek	11-12-2019	10:35	SD	4.4	7.35	7.50	775	7	icy edges

Table 1 Field Data Form

Monitoring Location Name	Nitrate and Nitrite (mg/l)	Kjeldahl Nitrogen (mg/l)	Phosphorus (mg/l)	Total Suspended Solids (mg/l)
Clear Creek	0.08	0.13	0.033	<5.0
Jim Blue Creek	0.06	0.36	0.112	<5.0
Lower Dave Blue Creek	<0.05	0.38	0.057	<5.0
Lower Rock Creek	<0.05	0.30	0.059	<5.0
Lake Laterals	<0.05	0.55	0.041	<5.0
Little River Tributary	<0.05	0.47	0.049	14.0
Little River Tributary	0.06	0.36	0.084	10.0
Upper Dave Blue Creek	<0.05	0.28	0.081	<5.0
Upper Rock Creek	<0.05	0.69	0.105	18.0
Woodcrest Creek	<0.05	0.49	0.124	<5.0

Table 2 Laboratory Analysis Summary

Monitoring Location Name	Nitrate and Nitrite (mg/l)	Kjeldahl Nitrogen (mg/l)	Phosphorus (mg/l)	Total Suspended Solids (mg/l)
Field Blank	<0.05	<0.10	<0.010	<5.0
Duplicate	0.07	0.13	0.032	<5.0
Duplicate RPD	13.33%*	0%	3.08%	0%

Table 3 QA/QC Data Where an Asterisk Denotes RPD 2

Quality assurance/quality control (QA/QC) of the data includes a field blank and duplicate sample from each collection event, and is qualified by the OWRB. Relative Percent Difference (RPD) of the duplicate sample can be categorized into four levels, where Level 1 likely has no QA issues and Level 4 has major QA issues, and should be used with caution.

Monitoring Location ID	Monitoring Location Name	Discharge (cfs)	Stream Stage (ft)
CC-1	Clear Creek	0.67	20.55
JB-1	Jim Blue Creek	0	15.48
LDB-1	Lower Dave Blue Creek	4.12	16.51
LRC-1	Lower Rock Creek	1.07	18.58
LT-1	Lake Laterals	0.12	4.38
TE-1	Little River Tributary	0.10	11.37
TG-1	Little River Tributary	1.08	9.09
UDB-1	Upper Dave Blue Creek	0.40	17.42
URC-2	Upper Rock Creek	0.22	10.93
WC-1	Woodcrest Creek	0.10	7.75

Table 4 Station Discharge Summary

Discharge Measurement Summary

Date Generated: Wed Nov 20 2019

File Information File Name: CC1112.WAD Start Date and Time: 2019/11/12 10:30:28		Site Details Site Name: CC Operator(s): JTW																																																																																																																																																																																																																														
System Information Sensor Type: FlowTracker Serial #: P4709 CPU Firmware Version: 3.9 Software Ver: 2.30 Mounting Correction: 0.0%		Units (English Units) Distance: ft Velocity: ft/s Area: ft^2 Discharge: cfs																																																																																																																																																																																																																														
Summary Averaging Int.: 40 # Stations: 16 Start Edge: LEW Total Width: 10.000 Mean SNR: 32.7 dB Total Area: 2.674 Mean Temp: 37.93 °F Mean Depth: 0.267 Disch. Equation: Mid-Section Mean Velocity: 0.2519 Total Discharge: 0.6736		Discharge Uncertainty <table border="1"> <thead> <tr> <th>Category</th> <th>ISO</th> <th>Stats</th> </tr> </thead> <tbody> <tr> <td>Accuracy</td> <td>1.0%</td> <td>1.0%</td> </tr> <tr> <td>Depth</td> <td>0.5%</td> <td>3.0%</td> </tr> <tr> <td>Velocity</td> <td>2.3%</td> <td>11.4%</td> </tr> <tr> <td>Width</td> <td>0.2%</td> <td>0.2%</td> </tr> <tr> <td>Method</td> <td>2.4%</td> <td>-</td> </tr> <tr> <td># Stations</td> <td>3.1%</td> <td>-</td> </tr> <tr> <td>Overall</td> <td>4.7%</td> <td>11.8%</td> </tr> </tbody> </table>		Category	ISO	Stats	Accuracy	1.0%	1.0%	Depth	0.5%	3.0%	Velocity	2.3%	11.4%	Width	0.2%	0.2%	Method	2.4%	-	# Stations	3.1%	-	Overall	4.7%	11.8%																																																																																																																																																																																																					
Category	ISO	Stats																																																																																																																																																																																																																														
Accuracy	1.0%	1.0%																																																																																																																																																																																																																														
Depth	0.5%	3.0%																																																																																																																																																																																																																														
Velocity	2.3%	11.4%																																																																																																																																																																																																																														
Width	0.2%	0.2%																																																																																																																																																																																																																														
Method	2.4%	-																																																																																																																																																																																																																														
# Stations	3.1%	-																																																																																																																																																																																																																														
Overall	4.7%	11.8%																																																																																																																																																																																																																														
Supplemental Data <table border="1"> <thead> <tr> <th>#</th> <th>Time</th> <th>Location</th> <th>Gauge Height</th> <th>Rated Flow</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tue Nov 12 10:29:27 CST 2019</td> <td>0.000</td> <td>20.550</td> <td></td> <td></td> </tr> </tbody> </table>				#	Time	Location	Gauge Height	Rated Flow	Comments	1	Tue Nov 12 10:29:27 CST 2019	0.000	20.550																																																																																																																																																																																																																			
#	Time	Location	Gauge Height	Rated Flow	Comments																																																																																																																																																																																																																											
1	Tue Nov 12 10:29:27 CST 2019	0.000	20.550																																																																																																																																																																																																																													
Measurement Results <table border="1"> <thead> <tr> <th>St</th> <th>Clock</th> <th>Loc</th> <th>Method</th> <th>Depth</th> <th>%Dep</th> <th>MeasD</th> <th>Vel</th> <th>CorrFact</th> <th>MeanV</th> <th>Area</th> <th>Flow</th> <th>%Q</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>10:30</td> <td>0.00</td> <td>None</td> <td>0.000</td> <td>0.0</td> <td>0.0</td> <td>0.0000</td> <td>1.00</td> <td>0.0000</td> <td>0.000</td> <td>0.0000</td> <td>0.0</td> </tr> <tr> <td>1</td> <td>10:30</td> <td>1.00</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.1053</td> <td>1.00</td> <td>0.1053</td> <td>0.225</td> <td>0.0237</td> <td>3.5</td> </tr> <tr> <td>2</td> <td>10:31</td> <td>1.50</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.0794</td> <td>1.00</td> <td>0.0794</td> <td>0.225</td> <td>0.0179</td> <td>2.7</td> </tr> <tr> <td>3</td> <td>10:34</td> <td>2.50</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.3186</td> <td>1.00</td> <td>0.3186</td> <td>0.225</td> <td>0.0716</td> <td>10.6</td> </tr> <tr> <td>4</td> <td>10:35</td> <td>3.00</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.1447</td> <td>1.00</td> <td>0.1447</td> <td>0.150</td> <td>0.0217</td> <td>3.2</td> </tr> <tr> <td>5</td> <td>10:37</td> <td>3.50</td> <td>0.6</td> <td>0.400</td> <td>0.6</td> <td>0.160</td> <td>0.2014</td> <td>1.00</td> <td>0.2014</td> <td>0.200</td> <td>0.0403</td> <td>6.0</td> </tr> <tr> <td>6</td> <td>10:38</td> <td>4.00</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.2362</td> <td>1.00</td> <td>0.2362</td> <td>0.150</td> <td>0.0354</td> <td>5.3</td> </tr> <tr> <td>7</td> <td>10:39</td> <td>4.50</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.2877</td> <td>1.00</td> <td>0.2877</td> <td>0.150</td> <td>0.0431</td> <td>6.4</td> </tr> <tr> <td>8</td> <td>10:40</td> <td>5.00</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.3888</td> <td>1.00</td> <td>0.3888</td> <td>0.150</td> <td>0.0583</td> <td>8.7</td> </tr> <tr> <td>9</td> <td>10:42</td> <td>5.50</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.2365</td> <td>1.00</td> <td>0.2365</td> <td>0.150</td> <td>0.0355</td> <td>5.3</td> </tr> <tr> <td>10</td> <td>10:43</td> <td>6.00</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.2963</td> <td>1.00</td> <td>0.2963</td> <td>0.150</td> <td>0.0444</td> <td>6.6</td> </tr> <tr> <td>11</td> <td>10:44</td> <td>6.50</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.2674</td> <td>1.00</td> <td>0.2674</td> <td>0.225</td> <td>0.0601</td> <td>8.9</td> </tr> <tr> <td>12</td> <td>10:46</td> <td>7.50</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.6276</td> <td>1.00</td> <td>0.6276</td> <td>0.225</td> <td>0.1412</td> <td>21.0</td> </tr> <tr> <td>13</td> <td>10:47</td> <td>8.00</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.3671</td> <td>1.00</td> <td>0.3671</td> <td>0.150</td> <td>0.0550</td> <td>8.2</td> </tr> <tr> <td>14</td> <td>10:48</td> <td>8.50</td> <td>0.6</td> <td>0.300</td> <td>0.6</td> <td>0.120</td> <td>0.0846</td> <td>1.00</td> <td>0.0846</td> <td>0.300</td> <td>0.0254</td> <td>3.8</td> </tr> <tr> <td>15</td> <td>10:48</td> <td>10.00</td> <td>None</td> <td>0.000</td> <td>0.0</td> <td>0.0</td> <td>0.0000</td> <td>1.00</td> <td>0.0000</td> <td>0.000</td> <td>0.0000</td> <td>0.0</td> </tr> </tbody> </table> <p>Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.</p>				St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q	0	10:30	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0	1	10:30	1.00	0.6	0.300	0.6	0.120	0.1053	1.00	0.1053	0.225	0.0237	3.5	2	10:31	1.50	0.6	0.300	0.6	0.120	0.0794	1.00	0.0794	0.225	0.0179	2.7	3	10:34	2.50	0.6	0.300	0.6	0.120	0.3186	1.00	0.3186	0.225	0.0716	10.6	4	10:35	3.00	0.6	0.300	0.6	0.120	0.1447	1.00	0.1447	0.150	0.0217	3.2	5	10:37	3.50	0.6	0.400	0.6	0.160	0.2014	1.00	0.2014	0.200	0.0403	6.0	6	10:38	4.00	0.6	0.300	0.6	0.120	0.2362	1.00	0.2362	0.150	0.0354	5.3	7	10:39	4.50	0.6	0.300	0.6	0.120	0.2877	1.00	0.2877	0.150	0.0431	6.4	8	10:40	5.00	0.6	0.300	0.6	0.120	0.3888	1.00	0.3888	0.150	0.0583	8.7	9	10:42	5.50	0.6	0.300	0.6	0.120	0.2365	1.00	0.2365	0.150	0.0355	5.3	10	10:43	6.00	0.6	0.300	0.6	0.120	0.2963	1.00	0.2963	0.150	0.0444	6.6	11	10:44	6.50	0.6	0.300	0.6	0.120	0.2674	1.00	0.2674	0.225	0.0601	8.9	12	10:46	7.50	0.6	0.300	0.6	0.120	0.6276	1.00	0.6276	0.225	0.1412	21.0	13	10:47	8.00	0.6	0.300	0.6	0.120	0.3671	1.00	0.3671	0.150	0.0550	8.2	14	10:48	8.50	0.6	0.300	0.6	0.120	0.0846	1.00	0.0846	0.300	0.0254	3.8	15	10:48	10.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q																																																																																																																																																																																																																				
0	10:30	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0																																																																																																																																																																																																																				
1	10:30	1.00	0.6	0.300	0.6	0.120	0.1053	1.00	0.1053	0.225	0.0237	3.5																																																																																																																																																																																																																				
2	10:31	1.50	0.6	0.300	0.6	0.120	0.0794	1.00	0.0794	0.225	0.0179	2.7																																																																																																																																																																																																																				
3	10:34	2.50	0.6	0.300	0.6	0.120	0.3186	1.00	0.3186	0.225	0.0716	10.6																																																																																																																																																																																																																				
4	10:35	3.00	0.6	0.300	0.6	0.120	0.1447	1.00	0.1447	0.150	0.0217	3.2																																																																																																																																																																																																																				
5	10:37	3.50	0.6	0.400	0.6	0.160	0.2014	1.00	0.2014	0.200	0.0403	6.0																																																																																																																																																																																																																				
6	10:38	4.00	0.6	0.300	0.6	0.120	0.2362	1.00	0.2362	0.150	0.0354	5.3																																																																																																																																																																																																																				
7	10:39	4.50	0.6	0.300	0.6	0.120	0.2877	1.00	0.2877	0.150	0.0431	6.4																																																																																																																																																																																																																				
8	10:40	5.00	0.6	0.300	0.6	0.120	0.3888	1.00	0.3888	0.150	0.0583	8.7																																																																																																																																																																																																																				
9	10:42	5.50	0.6	0.300	0.6	0.120	0.2365	1.00	0.2365	0.150	0.0355	5.3																																																																																																																																																																																																																				
10	10:43	6.00	0.6	0.300	0.6	0.120	0.2963	1.00	0.2963	0.150	0.0444	6.6																																																																																																																																																																																																																				
11	10:44	6.50	0.6	0.300	0.6	0.120	0.2674	1.00	0.2674	0.225	0.0601	8.9																																																																																																																																																																																																																				
12	10:46	7.50	0.6	0.300	0.6	0.120	0.6276	1.00	0.6276	0.225	0.1412	21.0																																																																																																																																																																																																																				
13	10:47	8.00	0.6	0.300	0.6	0.120	0.3671	1.00	0.3671	0.150	0.0550	8.2																																																																																																																																																																																																																				
14	10:48	8.50	0.6	0.300	0.6	0.120	0.0846	1.00	0.0846	0.300	0.0254	3.8																																																																																																																																																																																																																				
15	10:48	10.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0																																																																																																																																																																																																																				

Figure 2 Discharge Measurement Summary CC-1

Discharge Measurement Summary

Date Generated: Wed Nov 20 2019

File Information		Site Details	
File Name	UDB1112.WAD	Site Name	UDB
Start Date and Time	2019/11/12 09:19:58	Operator(s)	JTW

System Information		Units (English Units)		Discharge Uncertainty		
Sensor Type	FlowTracker	Distance	ft	Category	ISO	Stats
Serial #	P4709	Velocity	ft/s	Accuracy	1.0%	1.0%
CPU Firmware Version	3.9	Area	ft^2	Depth	0.3%	3.3%
Software Ver	2.30	Discharge	cfs	Velocity	1.6%	5.3%
Mounting Correction	0.0%			Width	0.1%	0.1%
				Method	2.0%	-
				# Stations	1.8%	-
				Overall	3.3%	6.3%

Summary			
Averaging Int.	40	# Stations	28
Start Edge	LEW	Total Width	15.000
Mean SNR	20.3 dB	Total Area	11.425
Mean Temp	35.91 °F	Mean Depth	0.762
Disch. Equation	Mid-Section	Mean Velocity	0.0354
		Total Discharge	0.4040

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 12 09:17:31 CST 2019	0.000	17.420		

Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:19	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	09:19	1.00	0.6	0.500	0.6	0.200	-0.0374	1.00	-0.0374	0.500	-0.0187	-4.6
2	09:21	2.00	0.6	0.500	0.6	0.200	0.0125	1.00	0.0125	0.375	0.0047	1.2
3	09:22	2.50	0.6	0.900	0.6	0.360	0.0033	1.00	0.0033	0.450	0.0015	0.4
4	09:24	3.00	0.6	0.900	0.6	0.360	0.0190	1.00	0.0190	0.450	0.0086	2.1
5	09:25	3.50	0.6	0.800	0.6	0.320	0.0184	1.00	0.0184	0.400	0.0073	1.8
6	09:26	4.00	0.6	0.900	0.6	0.360	0.0190	1.00	0.0190	0.450	0.0086	2.1
7	09:27	4.50	0.6	0.900	0.6	0.360	0.0210	1.00	0.0210	0.450	0.0094	2.3
8	09:28	5.00	0.6	0.900	0.6	0.360	0.0217	1.00	0.0217	0.450	0.0097	2.4
9	09:29	5.50	0.6	1.000	0.6	0.400	0.0259	1.00	0.0259	0.500	0.0130	3.2
10	09:30	6.00	0.6	0.900	0.6	0.360	0.0249	1.00	0.0249	0.450	0.0112	2.8
11	09:32	6.50	0.6	1.100	0.6	0.440	0.0420	1.00	0.0420	0.550	0.0231	5.7
12	09:33	7.00	0.6	1.200	0.6	0.480	0.0338	1.00	0.0338	0.600	0.0203	5.0
13	09:34	7.50	0.6	1.200	0.6	0.480	0.0331	1.00	0.0331	0.600	0.0199	4.9
14	09:35	8.00	0.6	1.200	0.6	0.480	0.0344	1.00	0.0344	0.600	0.0207	5.1
15	09:36	8.50	0.6	1.100	0.6	0.440	0.0512	1.00	0.0512	0.550	0.0282	7.0
16	09:37	9.00	0.6	1.300	0.6	0.520	0.0689	1.00	0.0689	0.650	0.0448	11.1
17	09:38	9.50	0.6	1.100	0.6	0.440	0.0801	1.00	0.0801	0.550	0.0440	10.9
18	09:40	10.00	0.6	0.600	0.6	0.240	0.1047	1.00	0.1047	0.300	0.0314	7.8
19	09:41	10.50	0.6	0.800	0.6	0.320	0.1083	1.00	0.1083	0.400	0.0433	10.7
20	09:42	11.00	0.6	0.800	0.6	0.320	0.0676	1.00	0.0676	0.400	0.0270	6.7
21	09:43	11.50	0.6	0.700	0.6	0.280	0.0371	1.00	0.0371	0.350	0.0130	3.2
22	09:44	12.00	0.6	0.600	0.6	0.240	0.0489	1.00	0.0489	0.300	0.0147	3.6
23	09:46	12.50	0.6	0.700	0.6	0.280	0.0141	1.00	0.0141	0.350	0.0049	1.2
24	09:47	13.00	0.6	0.500	0.6	0.200	0.0118	1.00	0.0118	0.250	0.0030	0.7
25	09:48	13.50	0.6	0.400	0.6	0.160	0.0157	1.00	0.0157	0.200	0.0031	0.8
26	09:49	14.00	0.6	0.400	0.6	0.160	0.0246	1.00	0.0246	0.300	0.0074	1.8
27	09:49	15.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

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

Figure 3 Discharge Measurement Summary UDB-1

Discharge Measurement Summary

Date Generated: Wed Nov 20 2019

File Information

File Name LT1112.WAD
Start Date and Time 2019/11/12 12:18:05

Site Details

Site Name LT
Operator(s) JTW

System Information

Sensor Type FlowTracker
Serial # P4709
CPU Firmware Version 3.9
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.4%	5.7%
Velocity	12.6%	67.2%
Width	0.4%	0.4%
Method	6.4%	-
# Stations	2.8%	-
Overall	14.4%	67.4%

Summary

Averaging Int.	40	# Stations	18
Start Edge	LEW	Total Width	20.000
Mean SNR	38.4 dB	Total Area	31.101
Mean Temp	40.59 °F	Mean Depth	1.555
Disch. Equation	Mid-Section	Mean Velocity	0.0038
		Total Discharge	0.1197

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 12 12:42:16 CST 2019	20.000	4.380		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:18	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>12:18</i>	<i>3.00</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>-0.0207</i>	<i>1.00</i>	<i>-0.0207</i>	<i>2.200</i>	<i>-0.0455</i>	<i>-38.0</i>
2	12:19	4.00	0.6	1.400	0.6	0.560	-0.0033	1.00	-0.0033	1.400	-0.0046	-3.8
3	12:20	5.00	0.6	1.500	0.6	0.600	0.0141	1.00	0.0141	1.500	0.0212	17.7
<i>4</i>	<i>12:21</i>	<i>6.00</i>	<i>0.6</i>	<i>1.200</i>	<i>0.6</i>	<i>0.480</i>	<i>-0.0236</i>	<i>1.00</i>	<i>-0.0236</i>	<i>1.200</i>	<i>-0.0283</i>	<i>-23.7</i>
5	12:22	7.00	0.6	1.500	0.6	0.600	-0.0075	1.00	-0.0075	1.500	-0.0113	-9.5
6	12:24	8.00	0.6	2.100	0.6	0.840	-0.0108	1.00	-0.0108	2.100	-0.0227	-19.0
7	12:26	9.00	0.6	2.300	0.6	0.920	0.0079	1.00	0.0079	2.300	0.0181	15.1
8	12:27	10.00	0.6	2.200	0.6	0.880	0.0174	1.00	0.0174	2.200	0.0383	32.0
9	12:28	11.00	0.6	2.200	0.6	0.880	0.0049	1.00	0.0049	2.200	0.0108	9.0
10	12:29	12.00	0.6	2.200	0.6	0.880	0.0154	1.00	0.0154	2.200	0.0339	28.3
<i>11</i>	<i>12:30</i>	<i>13.00</i>	<i>0.6</i>	<i>2.200</i>	<i>0.6</i>	<i>0.880</i>	<i>0.0157</i>	<i>1.00</i>	<i>0.0157</i>	<i>2.200</i>	<i>0.0346</i>	<i>28.9</i>
12	12:31	14.00	0.6	2.200	0.6	0.880	0.0039	1.00	0.0039	2.200	0.0087	7.2
13	12:33	15.00	0.6	2.100	0.6	0.840	0.0121	1.00	0.0121	2.100	0.0255	21.3
<i>14</i>	<i>12:34</i>	<i>16.00</i>	<i>0.6</i>	<i>2.000</i>	<i>0.6</i>	<i>0.800</i>	<i>0.0164</i>	<i>1.00</i>	<i>0.0164</i>	<i>2.000</i>	<i>0.0328</i>	<i>27.4</i>
15	12:35	17.00	0.6	1.700	0.6	0.680	0.0085	1.00	0.0085	1.700	0.0145	12.1
16	12:36	18.00	0.6	1.400	0.6	0.560	-0.0030	1.00	-0.0030	2.100	-0.0062	-5.2
17	12:36	20.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

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

Figure 4 Discharge Measurement Summary LT-1

Discharge Measurement Summary

Date Generated: Wed Nov 20 2019

File Information		Site Details	
File Name	LRC1112.WAD	Site Name	LRC111219
Start Date and Time	2019/11/12 10:29:03	Operator(s)	ZMM

System Information		Units (English Units)		Discharge Uncertainty		
Sensor Type	FlowTracker	Distance	ft	Category	ISO	Stats
Serial #	P4713	Velocity	ft/s	Accuracy	1.0%	1.0%
CPU Firmware Version	3.9	Area	ft ²	Depth	0.2%	1.1%
Software Ver	2.30	Discharge	cfs	Velocity	0.7%	3.5%
Mounting Correction	0.0%			Width	0.1%	0.1%
				Method	2.0%	-
				# Stations	2.3%	-
				Overall	3.3%	3.8%

Summary			
Averaging Int.	40	# Stations	22
Start Edge	LEW	Total Width	22.000
Mean SNR	18.7 dB	Total Area	18.399
Mean Temp	36.68 °F	Mean Depth	0.836
Disch. Equation	Mid-Section	Mean Velocity	0.0580
		Total Discharge	1.0665

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 12 10:33:09 CST 2019	5.000	18.580		

Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:29	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	10:29	2.00	0.6	0.400	0.6	0.160	0.0210	1.00	0.0210	0.600	0.0126	1.2
2	10:30	3.00	0.6	0.400	0.6	0.160	0.0574	1.00	0.0574	0.400	0.0230	2.2
3	10:32	4.00	0.6	0.600	0.6	0.240	0.0633	1.00	0.0633	0.600	0.0380	3.6
4	10:33	5.00	0.6	1.000	0.6	0.400	0.0725	1.00	0.0725	1.000	0.0725	6.8
5	10:34	6.00	0.6	1.200	0.6	0.480	0.0633	1.00	0.0633	1.200	0.0760	7.1
6	10:35	7.00	0.6	1.300	0.6	0.520	0.0692	1.00	0.0692	1.300	0.0900	8.4
7	10:37	8.00	0.6	1.300	0.6	0.520	0.0827	1.00	0.0827	1.300	0.1075	10.1
8	10:38	9.00	0.6	1.300	0.6	0.520	0.0781	1.00	0.0781	1.300	0.1015	9.5
9	10:39	10.00	0.6	1.300	0.6	0.520	0.0679	1.00	0.0679	1.300	0.0883	8.3
10	10:40	11.00	0.6	1.300	0.6	0.520	0.0692	1.00	0.0692	1.300	0.0900	8.4
11	10:41	12.00	0.6	1.300	0.6	0.520	0.0577	1.00	0.0577	1.300	0.0751	7.0
12	10:42	13.00	0.6	1.100	0.6	0.440	0.0630	1.00	0.0630	1.100	0.0693	6.5
13	10:43	14.00	0.6	1.100	0.6	0.440	0.0610	1.00	0.0610	1.100	0.0671	6.3
14	10:45	15.00	0.6	1.000	0.6	0.400	0.0636	1.00	0.0636	1.000	0.0636	6.0
15	10:46	16.00	0.6	0.900	0.6	0.360	0.0584	1.00	0.0584	0.900	0.0526	4.9
16	10:48	17.00	0.6	0.800	0.6	0.320	0.0328	1.00	0.0328	0.800	0.0262	2.5
17	10:49	18.00	0.6	0.700	0.6	0.280	-0.0007	1.00	-0.0007	0.700	-0.0005	0.0
18	10:51	19.00	0.6	0.500	0.6	0.200	0.0197	1.00	0.0197	0.500	0.0098	0.9
19	10:53	20.00	0.6	0.400	0.6	0.160	0.0033	1.00	0.0033	0.400	0.0013	0.1
20	10:54	21.00	0.6	0.300	0.6	0.120	0.0085	1.00	0.0085	0.300	0.0026	0.2
21	10:54	22.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

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

Figure 5 Discharge Measurement Summary LRC-1

Discharge Measurement Summary

Date Generated: Wed Nov 20 2019

File Information

File Name TE111219.WAD
 Start Date and Time 2019/11/12 08:16:54

Site Details

Site Name TE111219
 Operator(s) ZMM

System Information

Sensor Type FlowTracker
 Serial # P4713
 CPU Firmware Version 3.9
 Software Ver 2.30
 Mounting Correction 0.0%

Units (English Units)

Distance ft
 Velocity ft/s
 Area ft²
 Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.6%	11.5%
Velocity	5.2%	17.5%
Width	0.3%	0.3%
Method	4.5%	-
# Stations	2.4%	-
Overall	7.4%	20.9%

Summary

Averaging Int. 40 # Stations 21
 Start Edge LEW Total Width 13.500
 Mean SNR 39.0 dB Total Area 10.425
 Mean Temp 36.15 °F Mean Depth 0.772
 Disch. Equation Mid-Section Mean Velocity 0.0096
Total Discharge 0.1003

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 12 08:14:28 CST 2019	0.000	11.370		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:16	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>08:16</i>	<i>4.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.0394</i>	<i>1.00</i>	<i>-0.0394</i>	<i>0.675</i>	<i>-0.0266</i>	<i>-26.5</i>
<i>2</i>	<i>08:19</i>	<i>4.50</i>	<i>0.6</i>	<i>1.300</i>	<i>0.6</i>	<i>0.520</i>	<i>-0.0240</i>	<i>1.00</i>	<i>-0.0240</i>	<i>0.650</i>	<i>-0.0156</i>	<i>-15.5</i>
3	08:20	5.00	0.6	1.300	0.6	0.520	-0.0020	1.00	-0.0020	0.650	-0.0013	-1.3
4	08:21	5.50	0.6	1.200	0.6	0.480	0.0062	1.00	0.0062	0.600	0.0037	3.7
5	08:22	6.00	0.6	1.200	0.6	0.480	0.0171	1.00	0.0171	0.600	0.0102	10.2
6	08:24	6.50	0.6	1.400	0.6	0.560	0.0043	1.00	0.0043	0.700	0.0030	3.0
7	08:25	7.00	0.6	1.400	0.6	0.560	0.0220	1.00	0.0220	0.700	0.0154	15.3
8	08:26	7.50	0.6	1.500	0.6	0.600	0.0043	1.00	0.0043	0.750	0.0032	3.2
9	08:27	8.00	0.6	1.400	0.6	0.560	-0.0056	1.00	-0.0056	0.700	-0.0039	-3.9
10	08:28	8.50	0.6	1.400	0.6	0.560	0.0043	1.00	0.0043	0.700	0.0030	3.0
<i>11</i>	<i>08:30</i>	<i>9.00</i>	<i>0.6</i>	<i>1.300</i>	<i>0.6</i>	<i>0.520</i>	<i>0.0312</i>	<i>1.00</i>	<i>0.0312</i>	<i>0.650</i>	<i>0.0203</i>	<i>20.2</i>
12	08:31	9.50	0.6	1.300	0.6	0.520	0.0413	1.00	0.0413	0.650	0.0269	26.8
<i>13</i>	<i>08:32</i>	<i>10.00</i>	<i>0.6</i>	<i>1.100</i>	<i>0.6</i>	<i>0.440</i>	<i>0.0482</i>	<i>1.00</i>	<i>0.0482</i>	<i>0.550</i>	<i>0.0265</i>	<i>26.4</i>
<i>14</i>	<i>08:33</i>	<i>10.50</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>0.0420</i>	<i>1.00</i>	<i>0.0420</i>	<i>0.450</i>	<i>0.0189</i>	<i>18.8</i>
15	08:34	11.00	0.6	0.700	0.6	0.280	0.0177	1.00	0.0177	0.350	0.0062	6.2
16	08:35	11.50	0.6	0.700	0.6	0.280	0.0138	1.00	0.0138	0.350	0.0048	4.8
17	08:36	12.00	0.6	0.500	0.6	0.200	0.0131	1.00	0.0131	0.250	0.0033	3.3
18	08:38	12.50	0.6	0.500	0.6	0.200	0.0072	1.00	0.0072	0.250	0.0018	1.8
19	08:39	13.00	0.6	0.400	0.6	0.160	0.0023	1.00	0.0023	0.200	0.0005	0.5
20	08:39	13.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

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

Figure 6 Discharge Measurement Summary TE-1

Discharge Measurement Summary

Date Generated: Wed Nov 20 2019

File Information

File Name TG111219.WAD
 Start Date and Time 2019/11/12 07:19:32

Site Details

Site Name TG111219
 Operator(s) ZMM

System Information

Sensor Type FlowTracker
 Serial # P4713
 CPU Firmware Version 3.9
 Software Ver 2.30
 Mounting Correction 0.0%

Units (English Units)

Distance ft
 Velocity ft/s
 Area ft²
 Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	1.2%
Velocity	0.9%	4.4%
Width	0.1%	0.1%
Method	2.1%	-
# Stations	2.5%	-
Overall	3.6%	4.7%

Summary

Averaging Int. 40 # Stations 20
 Start Edge LEW Total Width 19.000
 Mean SNR 18.8 dB Total Area 18.600
 Mean Temp 35.37 °F Mean Depth 0.979
 Disch. Equation Mid-Section Mean Velocity 0.0582
Total Discharge 1.0824

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 12 07:28:53 CST 2019	8.000	9.090		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	07:19	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	07:19	1.00	0.6	0.300	0.6	0.120	0.0095	1.00	0.0095	0.300	0.0029	0.3
2	07:21	2.00	0.6	0.600	0.6	0.240	-0.0223	1.00	-0.0223	0.600	-0.0134	-1.2
3	07:22	3.00	0.6	0.700	0.6	0.280	0.0272	1.00	0.0272	0.700	0.0191	1.8
4	07:23	4.00	0.6	1.000	0.6	0.400	0.0453	1.00	0.0453	1.000	0.0453	4.2
5	07:25	5.00	0.6	1.200	0.6	0.480	0.0676	1.00	0.0676	1.200	0.0811	7.5
6	07:26	6.00	0.6	1.200	0.6	0.480	0.0761	1.00	0.0761	1.200	0.0913	8.4
7	07:28	7.00	0.6	1.200	0.6	0.480	0.0679	1.00	0.0679	1.200	0.0815	7.5
8	07:29	8.00	0.6	1.200	0.6	0.480	0.0663	1.00	0.0663	1.200	0.0795	7.3
9	07:30	9.00	0.6	1.300	0.6	0.520	0.0810	1.00	0.0810	1.300	0.1053	9.7
10	07:31	10.00	0.6	1.300	0.6	0.520	0.0817	1.00	0.0817	1.300	0.1062	9.8
11	07:33	11.00	0.6	1.400	0.6	0.560	0.0692	1.00	0.0692	1.400	0.0969	9.0
12	07:34	12.00	0.6	1.300	0.6	0.520	0.0702	1.00	0.0702	1.300	0.0913	8.4
13	07:35	13.00	0.6	1.200	0.6	0.480	0.0846	1.00	0.0846	1.200	0.1016	9.4
14	07:36	14.00	0.6	1.100	0.6	0.440	0.0702	1.00	0.0702	1.100	0.0772	7.1
15	07:38	15.00	0.6	1.100	0.6	0.440	0.0646	1.00	0.0646	1.100	0.0711	6.6
16	07:39	16.00	0.6	1.000	0.6	0.400	0.0463	1.00	0.0463	1.000	0.0463	4.3
17	07:40	17.00	0.6	0.900	0.6	0.360	0.0177	1.00	0.0177	0.900	0.0159	1.5
18	07:41	18.00	0.6	0.600	0.6	0.240	-0.0279	1.00	-0.0279	0.600	-0.0167	-1.5
19	07:41	19.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

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

Figure 7 Discharge Measurement Summary TG-1

Discharge Measurement Summary

Date Generated: Wed Nov 20 2019

File Information		Site Details	
File Name	URC1112.WAD	Site Name	URC111219
Start Date and Time	2019/11/12 09:52:37	Operator(s)	ZMM

System Information		Units (English Units)		Discharge Uncertainty		
Sensor Type	FlowTracker	Distance	ft	Category	ISO	Stats
Serial #	P4713	Velocity	ft/s	Accuracy	1.0%	1.0%
CPU Firmware Version	3.9	Area	ft^2	Depth	0.7%	3.8%
Software Ver	2.30	Discharge	cfs	Velocity	2.6%	21.7%
Mounting Correction	0.0%			Width	0.2%	0.2%
				Method	3.5%	-
				# Stations	4.6%	-
				Overall	6.5%	22.0%

Summary			
Averaging Int.	40	# Stations	11
Start Edge	LEW	Total Width	8.000
Mean SNR	43.2 dB	Total Area	2.250
Mean Temp	42.39 °F	Mean Depth	0.281
Disch. Equation	Mid-Section	Mean Velocity	0.0965
		Total Discharge	0.2172

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 12 09:49:47 CST 2019	0.000	10.930		

Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:52	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>09:52</i>	<i>3.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0600</i>	<i>1.00</i>	<i>0.0600</i>	<i>0.600</i>	<i>0.0360</i>	<i>16.6</i>
<i>2</i>	<i>09:54</i>	<i>4.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0568</i>	<i>1.00</i>	<i>0.0568</i>	<i>0.150</i>	<i>0.0085</i>	<i>3.9</i>
3	09:58	4.50	0.6	0.400	0.6	0.160	0.0535	1.00	0.0535	0.200	0.0107	4.9
4	09:59	5.00	0.6	0.400	0.6	0.160	0.2133	1.00	0.2133	0.200	0.0426	19.6
5	10:00	5.50	0.6	0.500	0.6	0.200	0.2352	1.00	0.2352	0.250	0.0588	27.1
6	10:01	6.00	0.6	0.500	0.6	0.200	0.2402	1.00	0.2402	0.250	0.0600	27.6
7	10:02	6.50	0.6	0.500	0.6	0.200	0.0213	1.00	0.0213	0.250	0.0053	2.5
8	10:03	7.00	0.6	0.400	0.6	0.160	-0.0187	1.00	-0.0187	0.200	-0.0037	-1.7
9	10:04	7.50	0.6	0.300	0.6	0.120	-0.0075	1.00	-0.0075	0.150	-0.0011	-0.5
10	10:04	8.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

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

Figure 8 Discharge Measurement Summary URC-2

Discharge Measurement Summary

Date Generated: Wed Nov 20 2019

File Information		Site Details	
File Name	WC111219.WAD	Site Name	WC111219
Start Date and Time	2019/11/12 09:14:16	Operator(s)	ZMM

System Information		Units (English Units)		Discharge Uncertainty		
Sensor Type	FlowTracker	Distance	ft	Category	ISO	Stats
Serial #	P4713	Velocity	ft/s	Accuracy	1.0%	1.0%
CPU Firmware Version	3.9	Area	ft^2	Depth	0.7%	5.5%
Software Ver	2.30	Discharge	cfs	Velocity	2.1%	23.5%
Mounting Correction	0.0%			Width	0.2%	0.2%
				Method	3.6%	-
				# Stations	3.9%	-
				Overall	5.8%	24.1%

Summary			
Averaging Int.	40	# Stations	13
Start Edge	LEW	Total Width	7.000
Mean SNR	45.3 dB	Total Area	2.300
Mean Temp	39.10 °F	Mean Depth	0.329
Disch. Equation	Mid-Section	Mean Velocity	0.0424
		Total Discharge	0.0975

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 12 09:14:04 CST 2019	1.500	7.750		

Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:14	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
<i>1</i>	<i>09:14</i>	<i>1.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0026</i>	<i>1.00</i>	<i>0.0026</i>	<i>0.300</i>	<i>0.0008</i>	<i>0.8</i>
2	09:15	2.00	0.6	0.300	0.6	0.120	0.0292	1.00	0.0292	0.150	0.0044	4.5
<i>3</i>	<i>09:17</i>	<i>2.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0075</i>	<i>1.00</i>	<i>0.0075</i>	<i>0.150</i>	<i>0.0011</i>	<i>1.2</i>
4	09:18	3.00	0.6	0.400	0.6	0.160	0.1401	1.00	0.1401	0.200	0.0280	28.7
5	09:19	3.50	0.6	0.500	0.6	0.200	0.1188	1.00	0.1188	0.250	0.0297	30.5
6	09:20	4.00	0.6	0.400	0.6	0.160	0.0820	1.00	0.0820	0.200	0.0164	16.8
7	09:21	4.50	0.6	0.500	0.6	0.200	0.0436	1.00	0.0436	0.250	0.0109	11.2
<i>8</i>	<i>09:22</i>	<i>5.00</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.0292</i>	<i>1.00</i>	<i>0.0292</i>	<i>0.200</i>	<i>0.0058</i>	<i>6.0</i>
9	09:23	5.50	0.6	0.400	0.6	0.160	0.0207	1.00	0.0207	0.200	0.0041	4.2
<i>10</i>	<i>09:24</i>	<i>6.00</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>-0.0223</i>	<i>1.00</i>	<i>-0.0223</i>	<i>0.200</i>	<i>-0.0045</i>	<i>-4.6</i>
11	09:25	6.50	0.6	0.400	0.6	0.160	0.0033	1.00	0.0033	0.200	0.0007	0.7
12	09:25	7.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

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

Figure 9 Discharge Measurement Summary WC-1

Period Selected: 2019-11-01 00:00 - 2019-11-30 23:59

UTC Offs et: -06:00

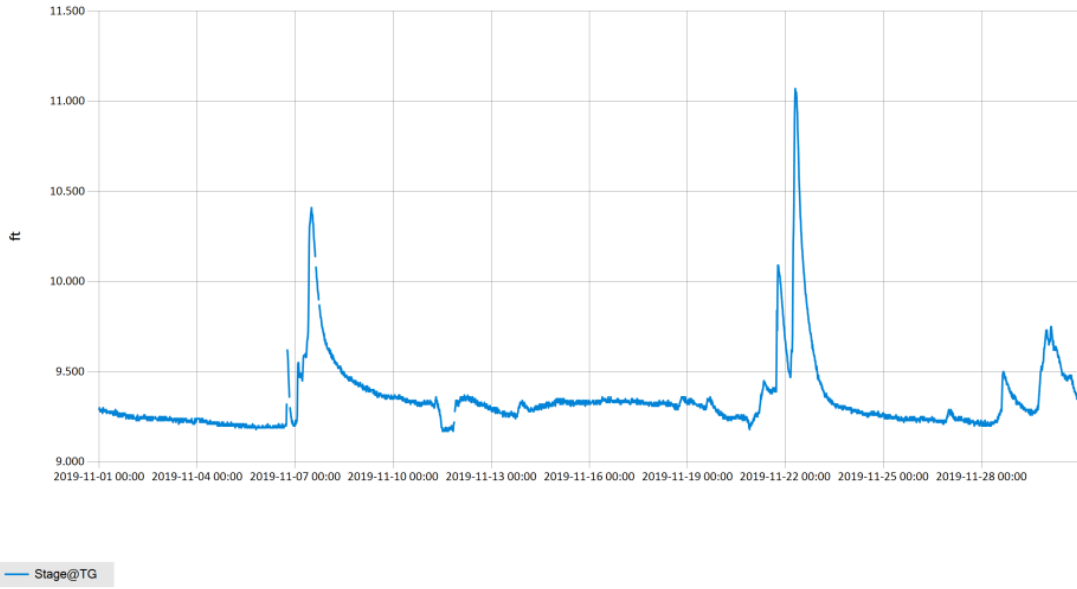


Figure 10 Monthly Hydrograph TG-1

Period Selected: 2019-11-01 00:00 - 2019-11-30 23:59

UTC Offs et: -06:00

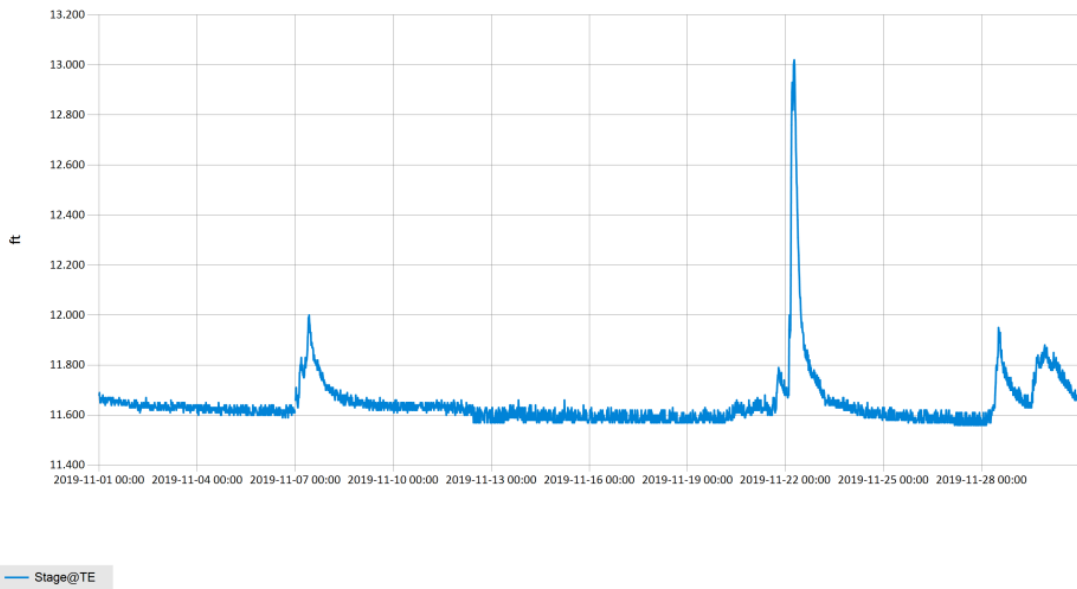


Figure 11 Monthly Hydrograph TE-1

Period Selected: 2019-11-01 00:00 - 2019-11-30 23:59

UTC Offs et: -06:00

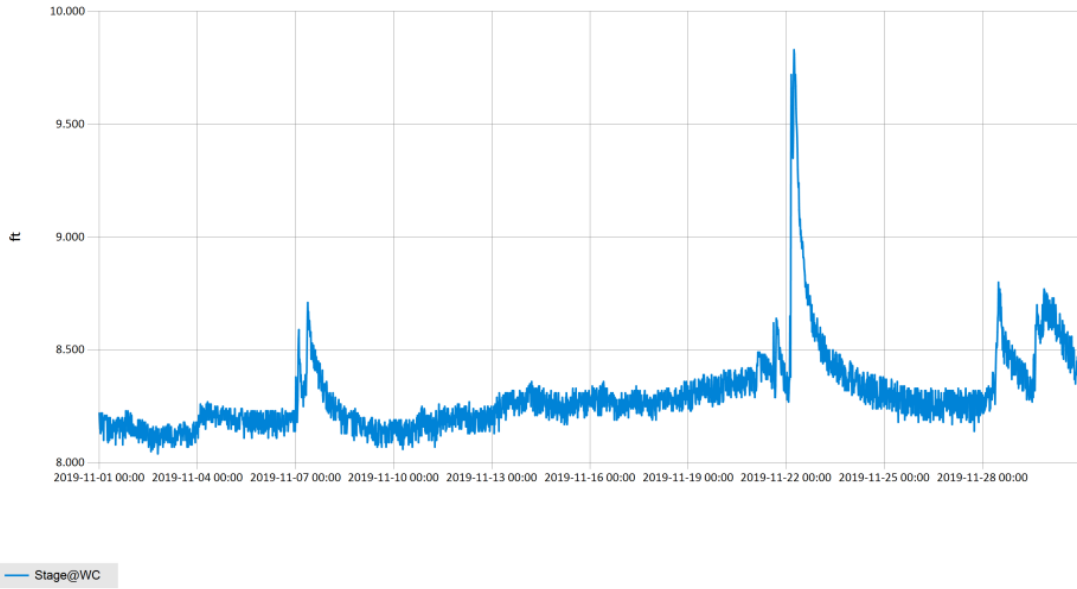


Figure 12 Monthly Hydrograph WC-1

Period Selected: 2019-11-01 00:00 - 2019-11-30 23:59

UTC Offs et: -06:00

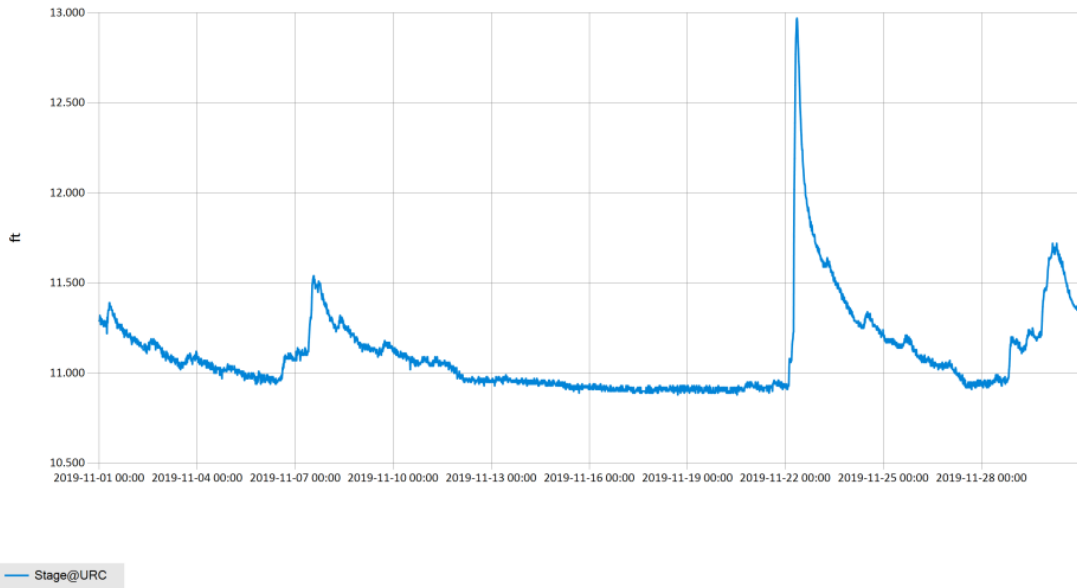
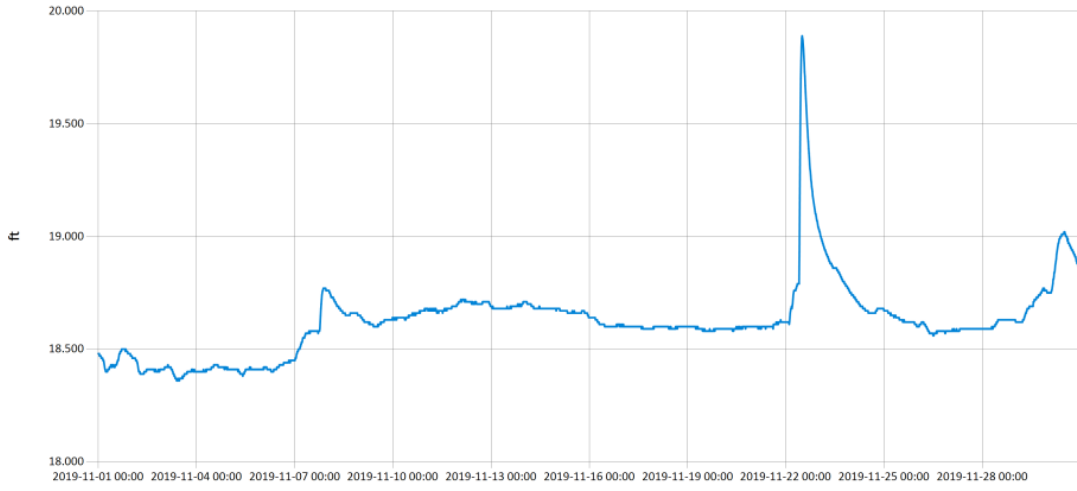


Figure 13 Monthly Hydrograph URC-2

Period Selected: 2019-11-01 00:00 - 2019-11-30 23:59

UTC Offs et: -06:00

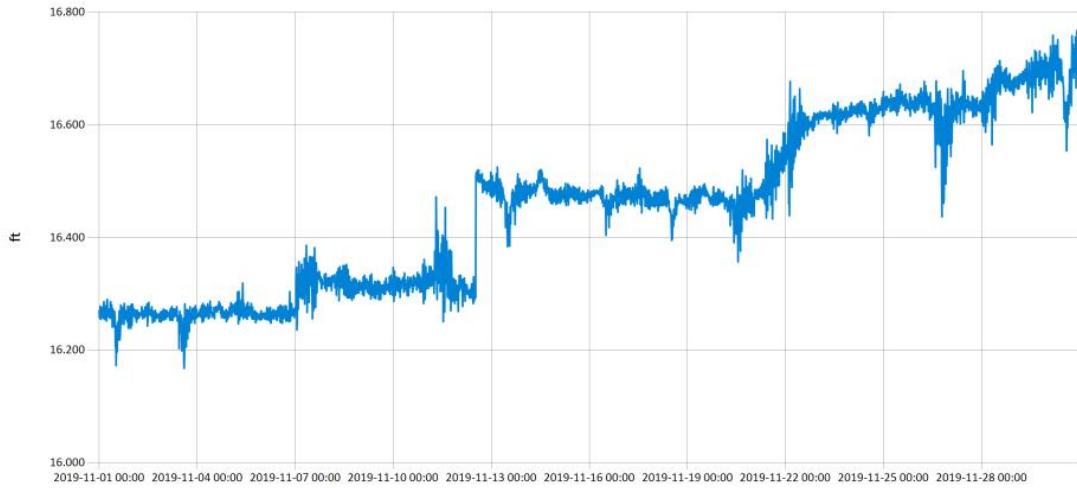


— Stage@LRC

Figure 14 Monthly Hydrograph LRC-1

Period Selected: 2019-11-01 00:00 - 2019-11-30 23:59

UTC Offs et: -06:00

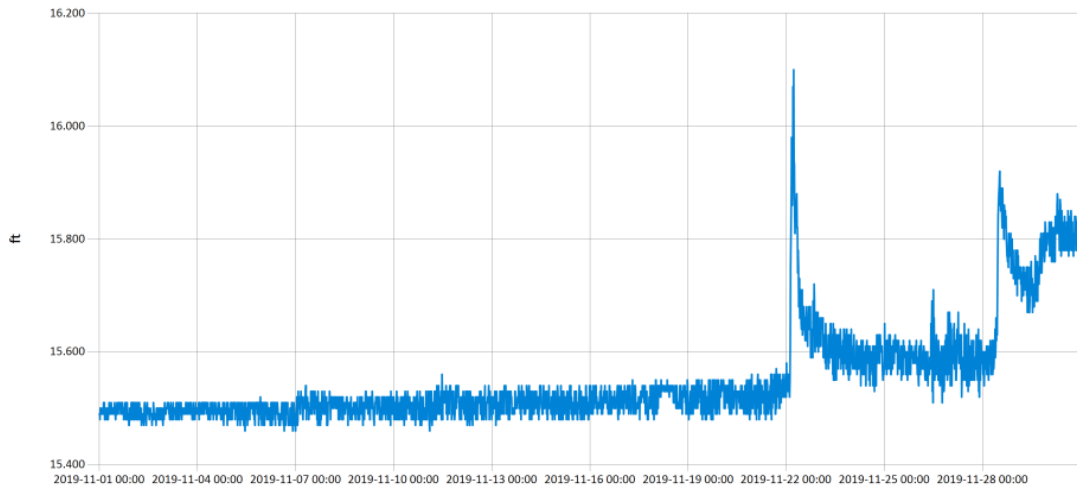


— Stage@LDB

Figure 15 Monthly Hydrograph LDB-1

Period Selected: 2019-11-01 00:00 - 2019-11-30 23:59

UTC Offs et: -06:00

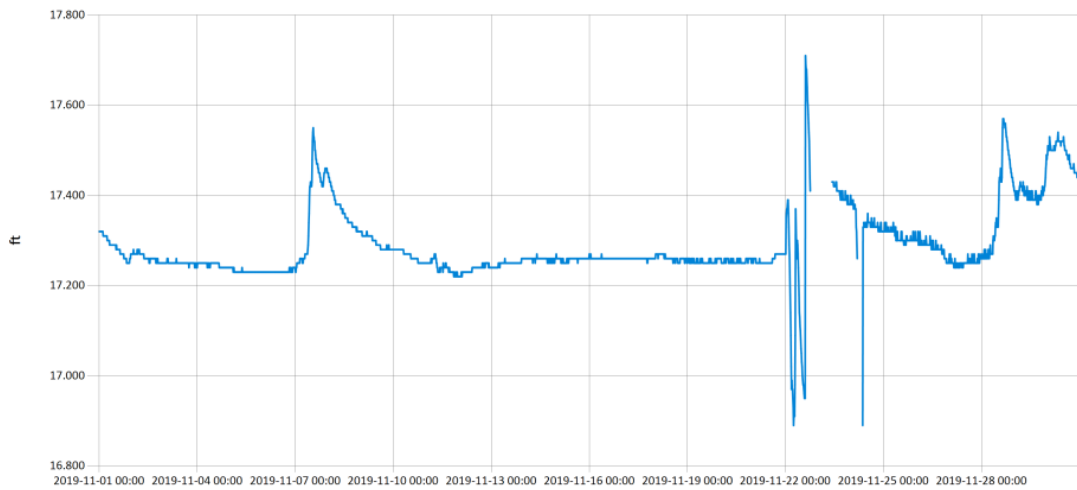


— Stage@JB

Figure 16 Monthly Hydrograph JB-1

Period Selected: 2019-11-01 00:00 - 2019-11-30 23:59

UTC Offs et: -06:00



— Stage@UDB

Figure 17 Monthly Hydrograph UDB-1

Period Selected: 2019-11-01 00:00 - 2019-11-30 23:59 UTC Offs et: -06:00

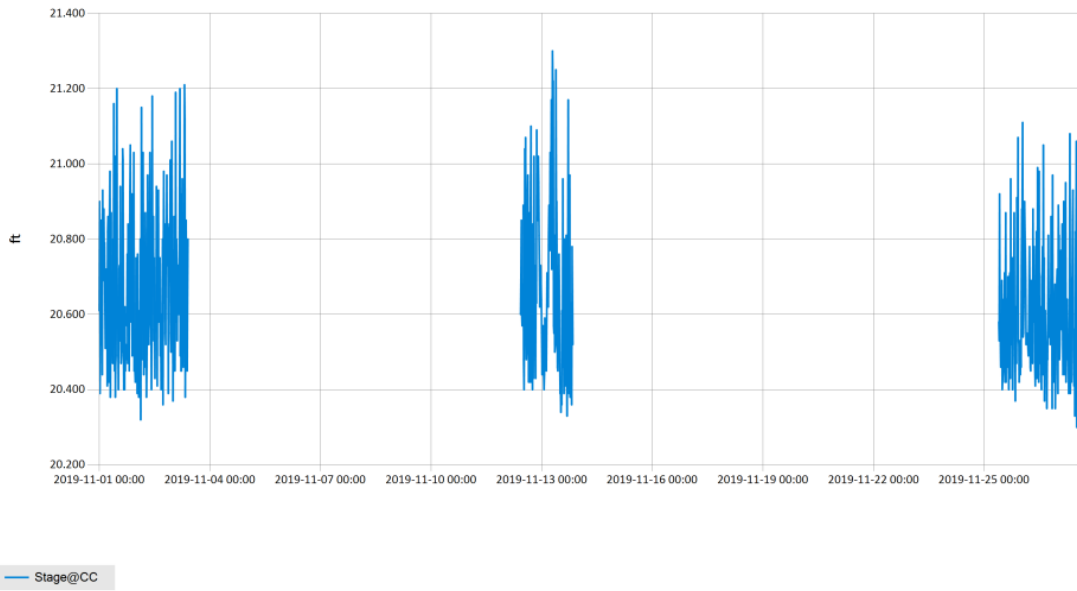


Figure 18 Monthly Hydrograph CC-1

MESONET CLIMATOLOGICAL DATA SUMMARY
 (NRMN) Norman
 Latitude: 35-14-09

November 2019
 Nearest City: 2.1 NW Norman
 Longitude: 97-27-53

Time Zone: Midnight-Midnight CST
 County: Cleveland
 Elevation: 1171 feet

DAY	TEMPERATURE (°F)				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND SPEED (mph)			SOLAR (MJ/m ²)	4" SOIL TEMPERATURES			
	MAX	MIN	AVG	DEWPT	HDD	CDD	MAX	MIN	AVG		STN	MSL	DIR	AVG	MAX		SOD	BARE	MAX	MIN
1	61	32	44.4	22.9	19	0	72	20	46	0.00	28.99	30.24	S	7.4	28.4	16.56	48.6	45.8	52	41
2	57	31	42.9	28.8	21	0	91	25	63	0.00	29.12	30.38	NW	4.2	17.0	16.20	49.5	46.8	54	41
3	68	36	51.4	32.9	13	0	74	29	52	0.00	28.83	30.08	S	8.8	26.0	15.22	50.1	47.3	53	42
4	68*	42*	53.1*	43.6*	10*	0*	91*	47*	71*	0.00*	28.74*	29.99*	SSE*	6.2*	17.2*	NA	52.6*	50.8*	58*	46*
5	68	42	55.1	43.2	10	0	83	45	66	0.00	28.95	30.21	NE	6.2	18.3	14.39	54.2	53.0	59	47
6	66	57	61.2	58.9	4	0	97	71	92	0.20	28.88	30.13	S	5.4	26.0	3.24	57.3	58.0	60	56
7	59	31	37.4	32.2	20	0	97	64	82	0.26	29.12	30.39	N	14.8	33.8	3.08	54.2	51.6	60	46
8	52	30	40.2	25.2	24	0	83	33	57	0.00	29.12	30.38	NNE	4.6	11.1	11.68	50.7	46.7	52	43
9	70	36	51.9	42.0	12	0	91	43	71	0.00	28.89	30.14	S	6.6	19.7	14.72	51.7	48.9	56	43
10	74	46	59.8	51.5	5	0	98	52	76	0.01	28.70	29.94	S	8.0	20.7	13.35	54.8	53.9	60	49
11	59	20	35.0	26.9	26	0	93	53	73	0.01	29.04	30.30	N	20.2	48.1	1.99	52.4	48.4	56	41
12	36	14	24.5	7.5	40	0	78	24	51	0.00	29.27	30.54	N	7.8	26.4	15.10	45.5	38.6	41	37
13	51	23	35.9	15.0	28	0	70	22	45	0.00	28.86	30.11	S	9.9	27.3	14.40	44.9	38.9	42	37
14	55	25	39.2	27.5	25	0	90	39	65	0.00	29.05	30.31	N	5.9	24.9	14.00	45.7	41.4	47	38
15	58	25	42.5	28.7	23	0	96	32	63	0.00	29.08	30.34	SSE	3.7	13.1	14.32	46.1	43.2	50	38
16	63	37	49.3	31.0	15	0	72	30	51	0.00	28.87	30.12	SSE	8.8	22.7	13.03	47.6	44.9	50	40
17	64	34	48.9	33.5	16	0	83	36	57	0.00	28.78	30.03	SSE	7.0	25.4	13.09	49.4	47.0	52	43
18	73	35	52.9	35.7	11	0	87	28	56	0.00	28.65	29.90	SW	6.9	26.6	13.24	49.2	47.3	53	42
19	77	38	58.6	38.4	8	0	90	25	53	0.00	28.66	29.91	SSE	7.1	22.2	13.56	50.5	50.2	57	44
20	72	57	63.0	55.5	0	0	93	53	77	0.06	28.61	29.85	SSE	12.1	30.9	6.90	53.8	55.0	59	52
21	65	41	51.6	48.7	12	0	96	75	90	0.21	28.74	29.99	N	12.3	25.7	2.49	55.4	55.3	59	50
22	41	31	37.9	35.5	29	0	97	83	91	0.71	28.86	30.11	NNW	10.6	31.4	2.46	50.5	48.2	50	47
23	54	31	41.4	34.2	22	0	95	51	77	0.00	28.80	30.05	WNW	7.1	19.5	12.66	48.7	47.9	52	44
24	69	30	49.1	32.2	15	0	97	25	59	0.01	28.65	29.89	SSW	6.4	21.3	13.59	47.9	47.6	53	42
25	65	32	48.8	36.7	16	0	94	35	66	0.00	28.38	29.62	SSE	3.3	13.9	12.16	49.0	48.1	54	43
26	70	38	52.6	34.2	11	0	92	14	54	0.00	28.33	29.56	WSW	13.0	45.5	8.21	49.4	47.9	52	45
27	47	28	39.5	23.8	28	0	83	36	55	0.00	28.99	30.25	N	8.7	30.9	10.73	47.6	44.0	48	40
28	41	37	39.0	37.1	26	0	99	61	93	0.35	29.03	30.28	ESE	6.9	18.8	1.46	47.3	44.2	45	43
29	56	41	44.9	44.7	16	0	100	97	99	0.24	28.76	30.01	SE	5.8	22.6	1.33	47.8	46.0	48	45
30	64	40	52.7	34.6	13	0	100	18	58	0.03	28.50	29.74	WSW	14.5	42.2	12.41	49.8	49.5	53	47
	61*	35*	46.8*	34.7*	←- Monthly Averages →-						28.84*	30.09*	SSE*	8.3*	48.1*	10.54*	50.1*	47.9*	53*	44*
Temperature - Highest: 77*					Degree Days - Total HDD: 518*					Number of Days With:										
Lowest: 14*					Total CDD: 0*					Tmax ≥ 90: 0* Rainfall ≥ 0.01 inch: 11*										
Rainfall: Monthly Total: 2.09* in.					Humidity - Highest: 100*					Tmax ≤ 32: 0* Rainfall ≥ 0.10 inch: 6*										
Greatest 24 Hr: 0.71* in.					Lowest: 14*					Tmin ≤ 32: 14* Avg Wind Speed ≥ 10 mph: 7*										
										Tmin ≤ 0: 0* Max Wind Speed ≥ 30 mph: 7*										

Figure 19 November Mesonet Data