
***Lake Thunderbird TMDL Monitoring Plan Implementation:
Sample Year (SY) 2016- September Report***



SY2016 Monthly Report

Lake Thunderbird TMDL Monitoring Plan Implementation:

September 2016 Monitoring Report

Oklahoma Water Resources Board
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SUMMARY OF SEPTEMBER WATER QUALITY SAMPLING

Sampling for September 2016 occurred on the sixth and seventh and was considered a typical base flow collection. Water quality and discharge measurements were made at the ten designated monitoring stations with a few exceptions necessitated by low flow or dry conditions. LT-1 was completely dry up and downstream of the station location, consequently, no water or discharge measurements were taken. TE-1 was disconnected downstream of the sampling location, therefore, water quality parameters were collected but no discharge measurement could be taken. Water quality samples were collected at JB-1, but the stream was nearly disconnected downstream of the monitoring location with no detectable flow. All water level gages were operational for the month with the exception of CC-1. CC-1 was vandalized in August and is currently awaiting replacement equipment from the manufacturer. All stations had markedly lower discharge values than has been measured thus far. Mesonet data for Norman shows a total of 4.22 inches of rainfall for the month of September with no precipitation within 72 hours before or after the sampling event.

RESULTS

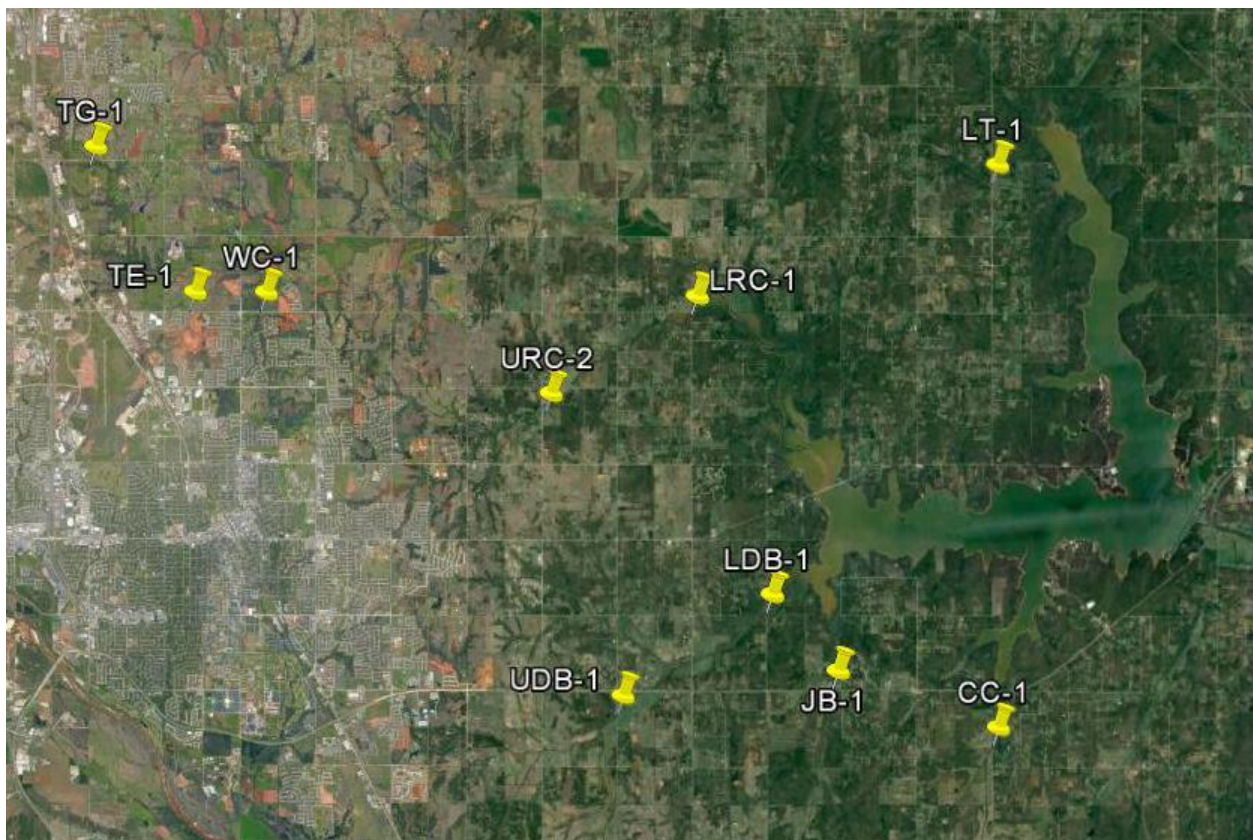


Figure 1 Monitoring Station Map

Field Data Form

Field Measurement Record

Reviewed By: JM

Station	Date	Time	Field Crew	Temp C°	DO mg/L	SpC µS	pH	Turb (NTU)	Notes
CC-1	9/6/2016	09:21	JW	23.7	7.6	675.0	8.0	23.0	0
LRC-1	9/7/2016	13:15	JW	0.0	0.0	0.0	0.0	0.0	0
UDB-1	9/6/2016	10:37	JW	24.0	2.2	901.0	7.6	9.0	0
LDB-1	9/6/2016	12:00	JW	26.1	2.9	676.0	7.9	58.0	0
JB-1	9/6/2016	13:41	JW	25.5	6.1	915.0	7.9	39.0	Channel almost completely disconnected, no visual flow in shallow est portion
IRC-1	9/6/2016	14:36	JW	21.0	6.5	758.0	7.7	12.0	0
LT-1	9/6/2016	15:30	JW	0.0	0.0	0.0	0.0	0.0	Site was completely dry
TG-1	9/7/2016	08:40	JW	25.0	3.9	986.0	7.5	5.0	0
TE-1	9/7/2016	09:06	JW	24.6	5.6	926.0	8.2	18.0	Channel stops DS of bridge
WC-1	9/7/2016	09:49	JW	24.7	6.5	834.0	8.1	41.0	Channel completely disconnected US and DS of bridge
URC-2	9/7/2016	11:34	JW	24.9	3.0	1192.0	7.3	11.0	0

Table 1 Field Data Form

SITE NAME	QA CODE	TKN	NITRATE/NITRITE	TP	TSS
TG-1	10	0.46	0.06	0.053	<10.0
CC-1	12	0.75	0.12	0.152	50.0
CC-1	22	0.48	0.10	0.106	28.8
JB-1	10	1.70	<0.05	0.180	21.3
UDB-1	10	0.56	<0.05	0.039	<10.0
LDB-1	10	1.09	<0.05	0.830	62.5
LRC-1	10	0.32	<0.05	0.036	<10.0
URC-2	10	0.57	<0.05	0.036	10.0
WC-1	10	0.39	<0.05	0.051	33.8
TE-1	10	0.67	<0.05	0.040	10.0
LRC-1	33	<0.10	<0.05	<0.010	<10.0
LT-1	10	N/A	N/A	N/A	N/A

Table 2 Laboratory Analysis Summary

SITE	TG-1	CC-1	JB-1	UDB-1	LDB-1	LRC-1	URC-2	WC-1	TE-1	LT-1
STAGE	24.76	0.22	17.26	17.22	14.26	14.59	18.47	22.14	18.61	N/A
DISCHARGE	0.222	0.202	N/A	0.089	5.890	0.238	0.010	N/A	N/A	N/A

Table 3 Measured Discharge Summary

Discharge Measurement Summary

Date Generated: Thu Oct 13 2016

File Information

File Name CC10906.WAD
Start Date and Time 2016/09/06 07:12:54

Site Details

Site Name CC1
Operator(s) JW

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	0.8%	5.1%
Velocity	3.1%	19.3%
Width	0.3%	0.3%
Method	4.1%	-
# Stations	3.1%	-
Overall	6.2%	20.0%

Summary

Averaging Int. 40 # Stations 16
Start Edge LEW Total Width 10.000
Mean SNR 39.7 dB Total Area 5.300
Mean Temp 72.28 °F Mean Depth 0.530
Disch. Equation Mid-Section Mean Velocity 0.0380
Total Discharge 0.2015

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Sep 6 07:11:14 CDT 2016	0.000	0.220		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	07:12	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	07:12	1.50	0.6	0.300	0.6	0.120	-0.0200	1.00	-0.0200	0.450	-0.0090	-4.5
2	07:14	3.00	0.6	0.500	0.6	0.200	-0.0377	1.00	-0.0377	0.625	-0.0236	-11.7
3	07:16	4.00	0.6	0.500	0.6	0.200	0.0266	1.00	0.0266	0.375	0.0100	4.9
4	07:18	4.50	0.6	0.700	0.6	0.280	-0.0128	1.00	-0.0128	0.350	-0.0045	-2.2
5	07:20	5.00	0.6	0.700	0.6	0.280	-0.0020	1.00	-0.0020	0.350	-0.0007	-0.3
6	07:22	5.50	0.6	0.800	0.6	0.320	0.0072	1.00	0.0072	0.400	0.0029	1.4
7	07:23	6.00	0.6	0.800	0.6	0.320	-0.0049	1.00	-0.0049	0.400	-0.0020	-1.0
8	07:24	6.50	0.6	0.800	0.6	0.320	0.0010	1.00	0.0010	0.400	0.0004	0.2
9	07:25	7.00	0.6	0.700	0.6	0.280	0.0233	1.00	0.0233	0.350	0.0082	4.0
10	07:26	7.50	0.6	0.700	0.6	0.280	0.0879	1.00	0.0879	0.350	0.0308	15.3
11	07:28	8.00	0.6	0.700	0.6	0.280	0.2057	1.00	0.2057	0.350	0.0720	35.7
12	07:29	8.50	0.6	0.700	0.6	0.280	0.1673	1.00	0.1673	0.350	0.0586	29.1
13	07:29	9.00	0.6	0.700	0.6	0.280	0.1132	1.00	0.1132	0.350	0.0396	19.7
14	07:31	9.50	0.6	0.400	0.6	0.160	0.0942	1.00	0.0942	0.200	0.0188	9.3
15	07:31	10.00	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 2 Discharge Summary CC-1

Discharge Measurement Summary

Date Generated: Thu Oct 13 2016

File Information

File Name UDB10906.WAD
Start Date and Time 2016/09/06 08:31:48

Site Details

Site Name UDB1
Operator(s) JW

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	0.3%	3.4%
Velocity	5.8%	33.9%
Width	0.3%	0.3%
Method	4.5%	-
# Stations	2.6%	-
Overall	7.9%	34.0%

Summary

Averaging Int. 40 # Stations 19
Start Edge LEW Total Width 10.500
Mean SNR 44.7 dB Total Area 11.100
Mean Temp 73.38 °F Mean Depth 1.057
Disch. Equation Mid-Section Mean Velocity 0.0080
Total Discharge 0.0885

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Sep 6 08:30:27 CDT 2016	0.000	15.190		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:31	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	08:31	1.00	0.6	0.800	0.6	0.320	-0.0105	1.00	-0.0105	0.800	-0.0084	-9.5
2	08:32	2.00	0.6	1.200	0.6	0.480	-0.0236	1.00	-0.0236	1.200	-0.0283	-32.0
3	08:34	3.00	0.6	1.200	0.6	0.480	0.0148	1.00	0.0148	0.900	0.0133	15.0
4	08:35	3.50	0.6	1.300	0.6	0.520	0.0223	1.00	0.0223	0.650	0.0145	16.4
5	08:36	4.00	0.6	1.300	0.6	0.520	0.0167	1.00	0.0167	0.650	0.0109	12.3
6	08:37	4.50	0.6	1.300	0.6	0.520	0.0377	1.00	0.0377	0.650	0.0245	27.7
7	08:38	5.00	0.6	1.400	0.6	0.560	0.0226	1.00	0.0226	0.700	0.0158	17.9
8	08:40	5.50	0.6	1.400	0.6	0.560	-0.0056	1.00	-0.0056	0.700	-0.0039	-4.4
9	08:41	6.00	0.6	1.400	0.6	0.560	0.0194	1.00	0.0194	0.700	0.0135	15.3
10	08:42	6.50	0.6	1.200	0.6	0.480	0.0148	1.00	0.0148	0.600	0.0089	10.0
11	08:43	7.00	0.6	1.000	0.6	0.400	0.0210	1.00	0.0210	0.500	0.0105	11.9
12	08:44	7.50	0.6	1.000	0.6	0.400	0.0226	1.00	0.0226	0.500	0.0113	12.8
13	08:45	8.00	0.6	1.200	0.6	0.480	0.0095	1.00	0.0095	0.600	0.0057	6.4
14	08:46	8.50	0.6	1.200	0.6	0.480	0.0095	1.00	0.0095	0.600	0.0057	6.4
15	08:47	9.00	0.6	1.000	0.6	0.400	-0.0043	1.00	-0.0043	0.500	-0.0021	-2.4
16	08:48	9.50	0.6	0.900	0.6	0.360	-0.0121	1.00	-0.0121	0.450	-0.0055	-6.2
17	08:49	10.00	0.6	0.800	0.6	0.320	0.0052	1.00	0.0052	0.400	0.0021	2.4
18	08:49	10.50	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 3 Discharge Summary UDB-1

Discharge Measurement Summary

Date Generated: Thu Oct 13 2016

File Information

File Name LRC10906.WAD
Start Date and Time 2016/09/06 12:35:37

Site Details

Site Name JB1
Operator(s) JW

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	0.5%	2.5%
Velocity	1.4%	8.4%
Width	0.2%	0.2%
Method	2.3%	-
# Stations	3.0%	-
Overall	4.2%	8.8%

Summary

Averaging Int. 40 # Stations 17
Start Edge LEW Total Width 11.000
Mean SNR 25.6 dB Total Area 5.025
Mean Temp 78.89 °F Mean Depth 0.457
Disch. Equation Mid-Section Mean Velocity 0.0474
Total Discharge 0.2384

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Sep 6 12:33:47 CDT 2016	0.000	17.710		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:35	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>12:35</i>	<i>1.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0131</i>	<i>1.00</i>	<i>0.0131</i>	<i>0.300</i>	<i>0.0039</i>	<i>1.7</i>
<i>2</i>	<i>12:36</i>	<i>2.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0715</i>	<i>1.00</i>	<i>0.0715</i>	<i>0.375</i>	<i>0.0268</i>	<i>11.2</i>
<i>3</i>	<i>12:38</i>	<i>4.00</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.0528</i>	<i>1.00</i>	<i>0.0528</i>	<i>0.500</i>	<i>0.0264</i>	<i>11.1</i>
<i>4</i>	<i>12:40</i>	<i>4.50</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>0.0755</i>	<i>1.00</i>	<i>0.0755</i>	<i>0.250</i>	<i>0.0189</i>	<i>7.9</i>
<i>5</i>	<i>12:41</i>	<i>5.00</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>0.0709</i>	<i>1.00</i>	<i>0.0709</i>	<i>0.250</i>	<i>0.0177</i>	<i>7.4</i>
<i>6</i>	<i>12:42</i>	<i>5.50</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.0591</i>	<i>1.00</i>	<i>0.0591</i>	<i>0.300</i>	<i>0.0177</i>	<i>7.4</i>
<i>7</i>	<i>12:43</i>	<i>6.00</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>0.0623</i>	<i>1.00</i>	<i>0.0623</i>	<i>0.350</i>	<i>0.0218</i>	<i>9.2</i>
<i>8</i>	<i>12:44</i>	<i>6.50</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>0.0804</i>	<i>1.00</i>	<i>0.0804</i>	<i>0.400</i>	<i>0.0321</i>	<i>13.5</i>
<i>9</i>	<i>12:45</i>	<i>7.00</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>0.0696</i>	<i>1.00</i>	<i>0.0696</i>	<i>0.400</i>	<i>0.0278</i>	<i>11.7</i>
<i>10</i>	<i>12:46</i>	<i>7.50</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>0.0502</i>	<i>1.00</i>	<i>0.0502</i>	<i>0.400</i>	<i>0.0201</i>	<i>8.4</i>
<i>11</i>	<i>12:47</i>	<i>8.00</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>0.0256</i>	<i>1.00</i>	<i>0.0256</i>	<i>0.350</i>	<i>0.0090</i>	<i>3.8</i>
<i>12</i>	<i>12:48</i>	<i>8.50</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>0.0344</i>	<i>1.00</i>	<i>0.0344</i>	<i>0.350</i>	<i>0.0121</i>	<i>5.1</i>
<i>13</i>	<i>12:49</i>	<i>9.00</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.0420</i>	<i>1.00</i>	<i>0.0420</i>	<i>0.300</i>	<i>0.0126</i>	<i>5.3</i>
<i>14</i>	<i>12:50</i>	<i>9.50</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.0016</i>	<i>1.00</i>	<i>0.0016</i>	<i>0.200</i>	<i>0.0003</i>	<i>0.1</i>
<i>15</i>	<i>12:51</i>	<i>10.00</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>-0.0295</i>	<i>1.00</i>	<i>-0.0295</i>	<i>0.300</i>	<i>-0.0089</i>	<i>-3.7</i>
<i>16</i>	<i>12:51</i>	<i>11.00</i>	<i>None</i>	<i>0.000</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.000</i>	<i>0.0000</i>	<i>0.0</i>

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

Figure 4 Discharge Summary LRC-1

Discharge Measurement Summary

Date Generated: Thu Oct 13 2016

File Information		Site Details	
File Name	TG10907.WAD	Site Name	TG1
Start Date and Time	2016/09/07 06:37:52	Operator(s)	JW

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		Area	ft^2	Depth	0.4%	1.1%
Software Ver	2.30	Discharge	cfs	Velocity	2.3%	13.9%
Mounting Correction	0.0%			Width	0.1%	0.1%
				Method	2.1%	-
				# Stations	2.2%	-
				Overall	3.9%	14.0%

Summary			
Averaging Int.	40	# Stations	23
Start Edge	LEW	Total Width	17.500
Mean SNR	26.2 dB	Total Area	11.300
Mean Temp	74.45 °F	Mean Depth	0.646
Disch. Equation	Mid-Section	Mean Velocity	0.0197
		Total Discharge	0.2221

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Wed Sep 7 06:36:37 CDT 2016	0.000	8.120		

Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	06:37	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	06:37	2.00	0.6	0.400	0.6	0.160	-0.0312	1.00	-0.0312	0.600	-0.0187	-8.4
2	06:39	3.00	0.6	0.500	0.6	0.200	0.0210	1.00	0.0210	0.500	0.0105	4.7
3	06:40	4.00	0.6	0.600	0.6	0.240	0.0459	1.00	0.0459	0.600	0.0276	12.4
4	06:41	5.00	0.6	0.700	0.6	0.280	0.0223	1.00	0.0223	0.700	0.0156	7.0
5	06:42	6.00	0.6	0.800	0.6	0.320	0.0118	1.00	0.0118	0.800	0.0094	4.3
6	06:43	7.00	0.6	0.800	0.6	0.320	0.0177	1.00	0.0177	0.800	0.0142	6.4
7	06:45	8.00	0.6	0.900	0.6	0.360	0.0207	1.00	0.0207	0.900	0.0186	8.4
8	06:47	9.00	0.6	0.900	0.6	0.360	0.0033	1.00	0.0033	0.675	0.0022	1.0
9	06:51	9.50	0.6	0.800	0.6	0.320	0.0440	1.00	0.0440	0.400	0.0176	7.9
10	06:48	10.00	0.6	0.800	0.6	0.320	0.0240	1.00	0.0240	0.400	0.0096	4.3
11	06:50	10.50	0.6	0.800	0.6	0.320	0.0364	1.00	0.0364	0.400	0.0146	6.6
12	06:49	11.00	0.6	0.800	0.6	0.320	0.0335	1.00	0.0335	0.400	0.0134	6.0
13	06:53	11.50	0.6	0.800	0.6	0.320	0.0348	1.00	0.0348	0.400	0.0139	6.3
14	06:54	12.00	0.6	0.800	0.6	0.320	0.0207	1.00	0.0207	0.400	0.0083	3.7
15	06:56	12.50	0.6	0.700	0.6	0.280	0.0246	1.00	0.0246	0.350	0.0086	3.9
16	06:55	13.00	0.6	0.700	0.6	0.280	0.0249	1.00	0.0249	0.350	0.0087	3.9
17	06:57	13.50	0.6	0.700	0.6	0.280	0.0292	1.00	0.0292	0.350	0.0102	4.6
18	06:58	14.00	0.6	0.700	0.6	0.280	0.0177	1.00	0.0177	0.525	0.0093	4.2
19	07:00	15.00	0.6	0.700	0.6	0.280	0.0161	1.00	0.0161	0.525	0.0084	3.8
20	07:01	15.50	0.6	0.700	0.6	0.280	0.0322	1.00	0.0322	0.525	0.0169	7.6
21	07:02	16.50	0.6	0.700	0.6	0.280	0.0046	1.00	0.0046	0.700	0.0032	1.4
22	07:02	17.50	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 5 Discharge Summary TG-1

Discharge Measurement Summary

Date Generated: Thu Oct 13 2016

File Information

File Name URC10907.WAD
Start Date and Time 2016/09/07 09:31:49

Site Details

Site Name URC1
Operator(s) JW

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	0.9%	7.8%
Velocity	22.5%	112.0%
Width	0.5%	0.5%
Method	7.2%	-
# Stations	4.2%	-
Overall	24.1%	112.3%

Summary

Averaging Int. 40 # Stations 12
Start Edge LEW Total Width 6.500
Mean SNR 45.7 dB Total Area 3.925
Mean Temp 75.40 °F Mean Depth 0.604
Disch. Equation Mid-Section Mean Velocity 0.0026
Total Discharge 0.0103

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Wed Sep 7 09:30:48 CDT 2016	0.000	12.040		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:31	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>09:31</i>	<i>1.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.0069</i>	<i>1.00</i>	<i>-0.0069</i>	<i>0.225</i>	<i>-0.0015</i>	<i>-15.0</i>
<i>2</i>	<i>09:32</i>	<i>1.50</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>-0.0007</i>	<i>1.00</i>	<i>-0.0007</i>	<i>0.450</i>	<i>-0.0003</i>	<i>-2.9</i>
<i>3</i>	<i>09:34</i>	<i>2.50</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>-0.0023</i>	<i>1.00</i>	<i>-0.0023</i>	<i>0.600</i>	<i>-0.0014</i>	<i>-13.4</i>
4	09:35	3.00	0.6	1.000	0.6	0.400	0.0167	1.00	0.0167	0.500	0.0084	81.1
5	09:36	3.50	0.6	0.900	0.6	0.360	0.0016	1.00	0.0016	0.450	0.0007	7.2
6	09:37	4.00	0.6	0.800	0.6	0.320	0.0089	1.00	0.0089	0.400	0.0035	34.4
7	09:38	4.50	0.6	0.700	0.6	0.280	-0.0003	1.00	-0.0003	0.350	-0.0001	-1.1
8	09:39	5.00	0.6	0.700	0.6	0.280	0.0043	1.00	0.0043	0.350	0.0015	14.5
9	09:40	5.50	0.6	0.600	0.6	0.240	-0.0079	1.00	-0.0079	0.300	-0.0024	-22.9
<i>10</i>	<i>09:40</i>	<i>6.00</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.0062</i>	<i>1.00</i>	<i>0.0062</i>	<i>0.300</i>	<i>0.0019</i>	<i>18.1</i>
11	09:40	6.50	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 Summary URC-2

Station Number:
Station Name: LDB-1

Meas. No: 1
Date: 09/06/2016

Party: jw, sd	Width: 36.9 ft	Processed by:
Boat/Motor:	Area: 104 ft ²	Mean Velocity: 0.069 ft/s
Gage Height: 16.21 ft	G.H.Change: 0.000 ft	Discharge: 5.89 ft ³ /s

Area Method: Avg. Course	ADCP Depth: 0.270 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: None (0.0°)	Bottom Est: Power (0.1667)	Rated Area: 0.000 ft ²	Diff.: 0.000%
Depth: Composite (VB)	Top Est: Power (0.1667)	Control1: Unspecified	
Discharge Method: None		Control2: Unspecified	
% Correction: 0.00		Control3: Unspecified	

Screening Thresholds:		ADCP:
BT 3-Beam Solution: YES	Max. Vel.: 10.3 ft/s	Type/Freq.: RiverRay / 0 kHz
WT 3-Beam Solution: YES	Max. Depth: 4.17 ft	Serial #: 645654 Firmware: 44.16
BT Error Vel.: 3.28 ft/s	Mean Depth: 2.82 ft	Bin Size: 50 cm Blank: 50 cm
WT Error Vel.: 32.81 ft/s	% Meas.: 22.42	BT Mode: 0 BT Pings: 1
BT Up Vel.: 32.81 ft/s	Water Temp.: None	WT Mode: 1 WT Pings: 1
WT Up Vel.: 32.81 ft/s	ADCP Temp.: 81.2 °F	WV : 170
Use Weighted Mean Depth: YES		

Performed Diag. Test: NO
Performed Moving Bed Test: NO
Performed Compass Calibration: YES Evaluation: YES
Meas. Location:

Project Name: LDB-1_1.mmt
Software: 2.17

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	2	2	291	-1.77	-0.953	-1.09	0.742	-0.459	-3.57	31	87	16:02	16:05	0.21	0.04	34	4
001	R	2	2	256	1.94	1.98	1.20	0.565	0.177	5.86	35	102	16:05	16:08	0.27	0.06	36	4
002	L	2	2	248	-1.77	3.25	0.706	-0.283	0.530	2.47	50	140	16:08	16:11	0.22	0.02	38	7
003	R	2	2	342	0.742	-1.48	0.035	0.565	1.17	1.02	29	86	16:11	16:15	0.20	0.01	32	7
004	L	2	2	256	5.23	3.04	5.33	0.706	0.141	14.5	37	101	16:15	16:18	0.27	0.14	32	5
005	R	2	2	290	7.24	2.08	4.73	0.424	0.565	15.0	39	105	16:18	16:21	0.31	0.14	31	4
Mean	2	2	280	1.94	1.32	1.82	0.453	0.353	5.89	37	104	Total	00:18	0.25	0.07	34	5	
SDev	0	0	35	3.68	2.04	2.61	0.378	0.543	7.51	7.5	19.7			0.04	0.06			
SD/M	0.00	0.00	0.13	1.90	1.54	1.44	0.83	1.54	1.28	0.20	0.19			0.18	0.87			

Remarks:

Discharge for transects in *italics* have a total Q more than 5% from the mean

Figure 7 Discharge Summary LDB-1

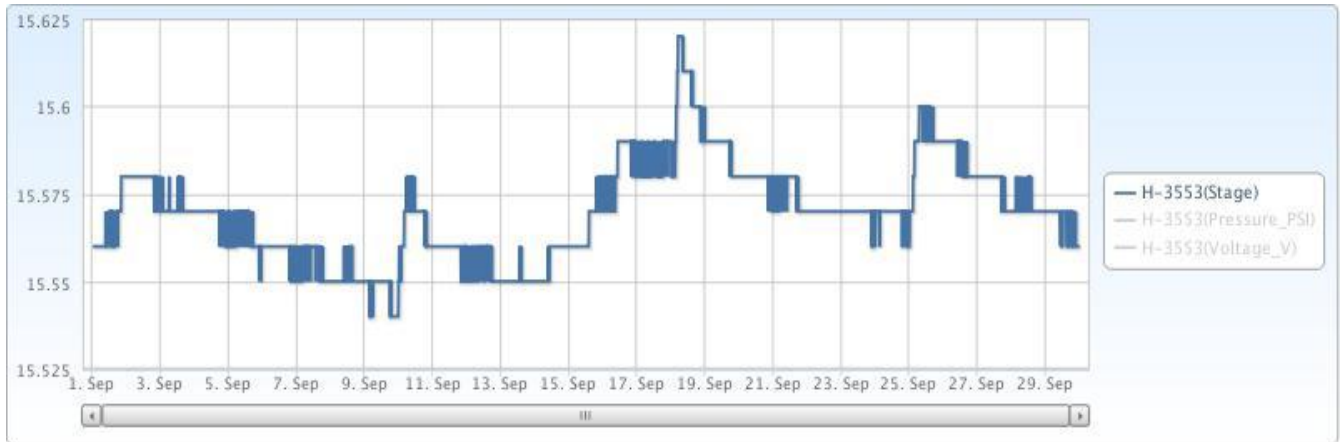


Figure 8 Monthly Hydrograph JB-1

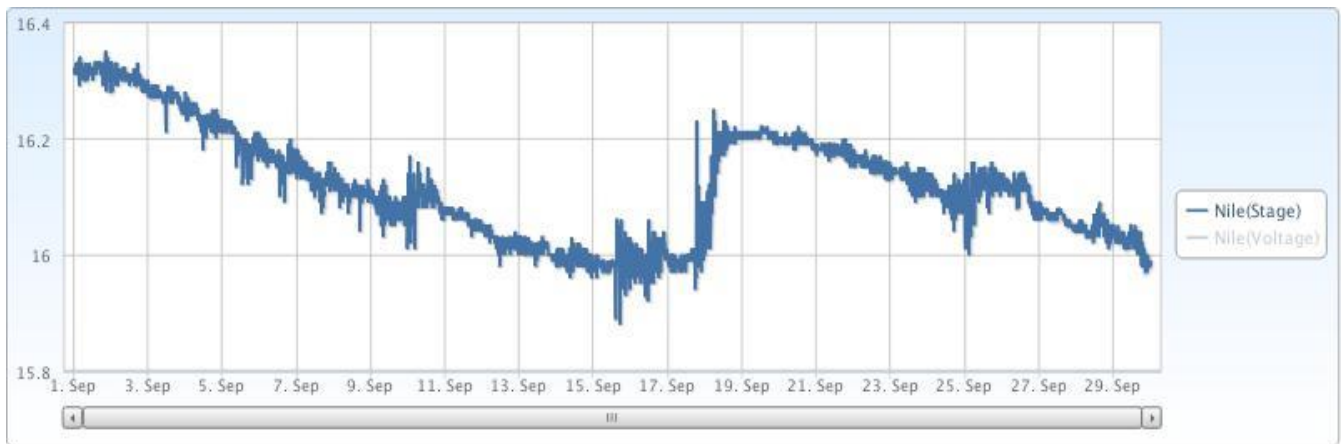


Figure 9 Monthly Hydrograph LDB-1

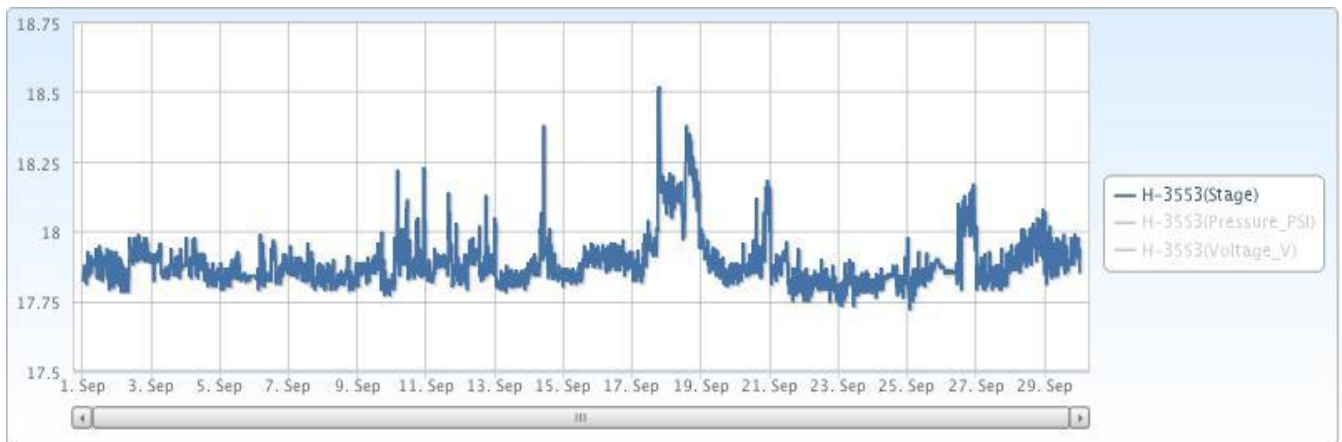


Figure 10 Monthly Hydrograph LRC-1



Figure 11 Monthly Hydrograph LT-1

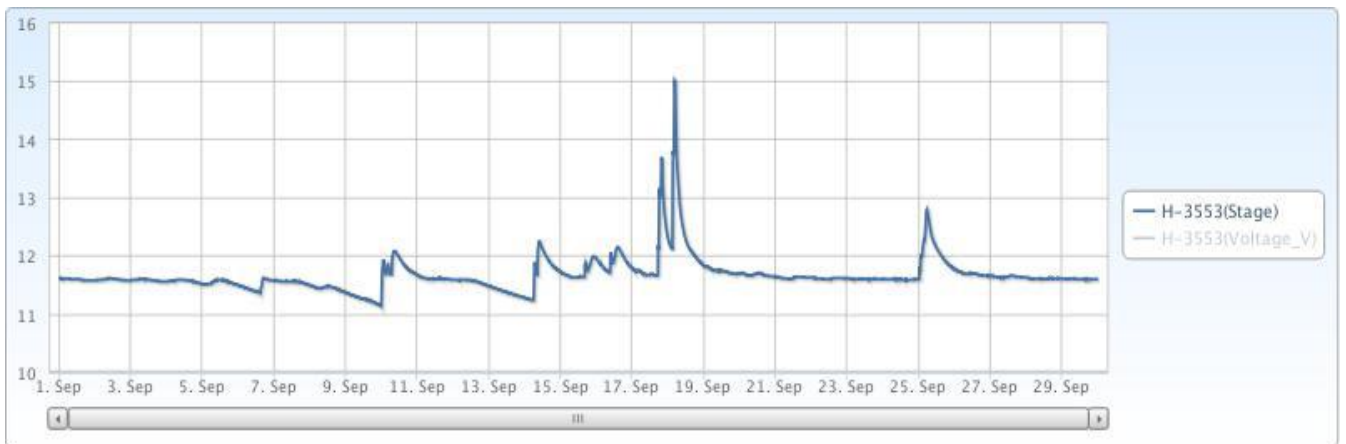


Figure 12 Monthly Hydrograph TE-1

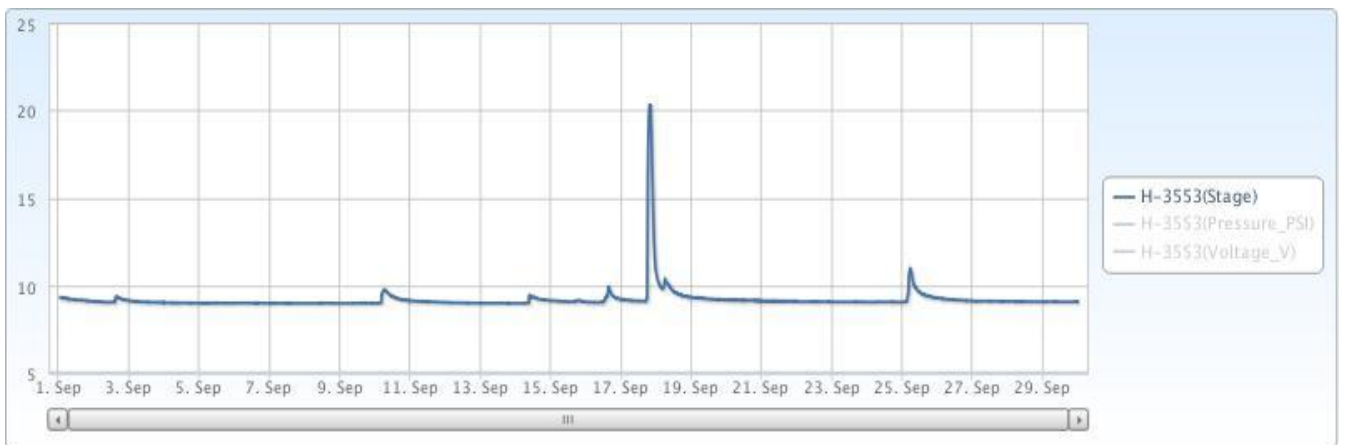


Figure 13 Monthly Hydrograph TG-1



Figure 14 Monthly Hydrograph UDB-1

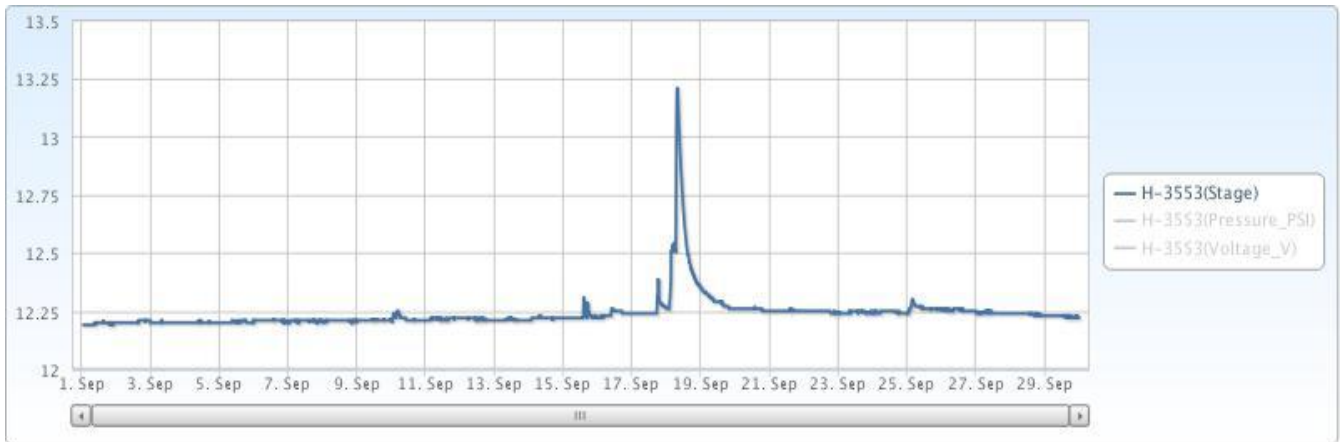


Figure 15 Monthly Hydrograph URC-2

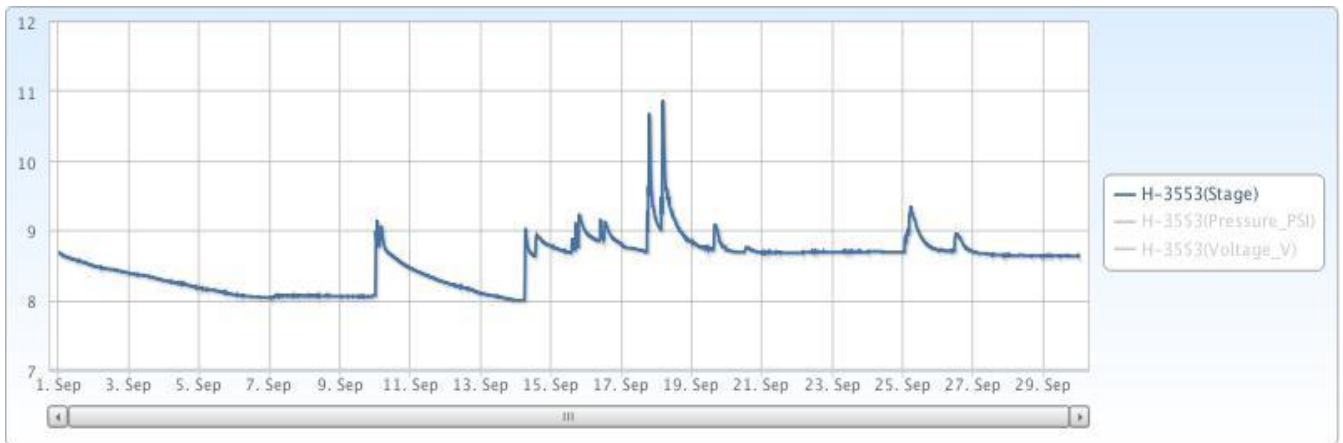


Figure 16 Monthly Hydrograph WC-1

MESONET CLIMATOLOGICAL DATA SUMMARY September 2016 Time Zone: Midnight-Midnight CST
 (NRMN) Norman Nearest City: 2.1 NW Norman County: Cleveland
 Latitude: 35-14-09 Longitude: 97-27-53 Elevation: 1171 feet

DAY	TEMPERATURE (°)				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND SPEED (mph)			SOLAR (MJ/m ²)	4" SOIL TEMPERATURES			
	X	MIN	AVG	DEW	HDD	CDD	MAX	MIN	AVG		STN	MSL	DIR	AVG	MAX		SOD	BARE	MAX	MIN
1	86	69	75.0	70.2	0	13	98	53	86	0	28.81	30.06	NNE	7.6	212	13.48	78.7	81.6	86	79
2	83	67	73.1	64.4	0	10	97	49	76	0.03	28.83	30.08	ENE	5.1	14.0	12.95	77.3	79.9	84	77
3	88	65	75.6	62.5	0	11	83	46	65	0	28.78	30.03	SSE	7.7	17.4	20.47	77.2	80.7	88	75
4	91	68	78.9	66.1	0	14	83	46	66	0	28.74	29.98	SSE	10.2	23.6	21.1	78.3	82.3	88	77
5	94	72	82.9	68.3	0	18	92	38	64	0	28.74	29.99	S	10.6	29.9	23.14	79.6	84.3	91	79
6	94	74	83.0	70.5	0	19	92	45	68	0	28.80	30.05	S	11.0	30.9	20.31	80.4	85.1	90	80
7	94	76	83.8	71.4	0	20	89	44	68	0	28.78	30.03	S	11.1	24.3	17.09	80.6	84.9	90	81
8	96	78	86.2	69.1	0	22	78	39	58	0	28.67	29.92	S	10.5	22.0	18.19	81.2	86.1	91	82
9	93	67	82.7	68.5	0	15	97	42	64	0.16	28.64*	29.88*	S	10.7	43.9	19.18	81.3	86.1	91	82
10	80	57	69.1	55.7	0	3	100	32	67	0.25	28.95*	30.20*	N	8.9	25.1	21.23	78.6	79.2	85	74
11	86	53	70.0	54.1	0	4	100	31	63	0	28.87	30.13	SSE	5.3	19.9	23.71	75.0	76.1	85	68
12	90	64	76.9	62.5	0	12	89	36	63	0	28.71	29.96	SSE	9.6	24.2	21.06	76.3	78.9	86	72
13	93*	70*	79.9*	65.5*	0*	16*	87*	31*	64*	0.00*	28.77*	30.02*	SSE*	7.3*	20.8*	NA	78.1*	81.9*	89*	76*
14	83	65	72.5	66.8	0	9	99	58	84	0.64	28.88	30.13	N	5.0	14.8	12.03	77.2	78.3	82	76
15	83	66	72.7	68.7	0	10	99	64	88	0.23	28.79	30.04	SE	4.8	24.6	10.24	76.3	75.7	79	73
16	85	67	74.4	68.6	0	11	98	53	84	0.21	28.71	29.96	SSE	5.5	18.7	15.09	76.6	75.7	81	72
17	87	63	70.5	64.8	0	10	100	55	84	0.91	28.78	30.02	ESE	4.7	49.2	17.55	76.3	76.2	85	71
18	88	63	76.0	67.4	0	11	100	49	77	1.1	28.73	29.97	SSW	6.2	53.0	21.59	75.2	75.7	81	71
19	95	72	82.3	71.6	0	18	95	42	73	0	28.76	30.01	SSE	5.2	18.1	21.43	78.1	78.1	84	73
20	94	74	83.3	71.2	0	19	95	38	70	0	28.82	30.07	SSE	6.2	15.7	20.55	79.4	80.7	88	75
21	89	73	80.1	71.2	0	16	96	56	76	0	28.80	30.05	SSE	6.6	18.6	17.16	79.7	81.5	87	77
22	89	68	77.9	64.7	0	13	91	40	66	0	28.75	30.00	SSE	6.8	17.4	20.97	78.9	80.8	88	75
23	89	69	78.9	67.6	0	14	84	52	69	0	28.72	29.97	SSE	8.4	23.2	17.17	78.2	80.5	86	75
24	87	69	78.0	70.0	0	13	100	56	78	0.24	28.72	29.96	SSE	9.2	26.2	13.48	78.2	80.7	85	77
25	77	64	68.0	63.4	0	6	100	69	86	0.45	28.86	30.11	N	9.5	25.7	8.6	76.2	75.0	79	70
26	76	54	65.1	47.3	0	0	83	24	57	0	28.96	30.22	NNE	8.4	23.6	20.55	73.4	69.0	73	66
27	80	51	65.6	48.8	0	0	98	30	60	0	28.84	30.09	SSW	4.2	13.4	21.29	72.0	69.6	78	62
28	87	57	70.6	50.3	0	7	77	29	52	0	28.82	30.07	N	8.2	21.3	21.07	72.0	72.3	81	65
29	73*	51*	60.3*	49.1*	3*	0*	90*	41*	69*	0.00*	29.04*	30.30*	NNE*	7.5*	21.3*	NA	70.8*	70.6*	78*	65*
30	76	48	61.9	48.9	3	0	100	30	67	0	28.93	30.19	SE	2.3	9.3	20.92	69.9	70.7	79	63
<- Monthly Averages ->										28.80* 30.05*		SSE* 7.5* 53.0*			18.27*	77.0* 78.6* 85* 73*				
Temperature - Highest: 96* Lowest: 48*					Degree Days - Total HDD: 6* Total CDD: 335*					Number of Days With: Tmax ≥ 90: 10* Rainfall ≥ 0.01 inch: 10* Tmax ≤ 32: 0* Rainfall ≥ 0.10 inch: 9* Tmin ≤ 32: 0* Avg Wind Speed ≥ 10 mph: 6* Tmin ≤ 0: 0* Max Wind Speed ≥ 30 mph: 4*										
Rainfall: Monthly Total: 4.22* in. Greatest 24 Hr: 1.10* in.					Humidity - Highest: 100* Lowest: 24*															

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* Denotes incomplete record

Monthly data generated at 2016-10-14 11:02:29 UTC

Figure 17 Mesonet Data