Lake Thunderbird TMDL Monitoring Plan Implementation: Sample Year (SY) 2020- October Report

SY2020 Monthly Report

Lake Thunderbird TMDL Monitoring Plan Implementation:

October 2020 Monitoring Report

Oklahoma Water Resources Board
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SUMMARY OF OCTOBER WATER QUALITY SAMPLING

Sampling for October 2020 occurred on the fifth and was considered a base flow collection. Water samples were collected at all ten locations, and discharge measurements were collected at three locations. Mesonet data shows no precipitation on the fifth, in the 72 hours prior to sampling, or in the 72 hours after the sampling event. The total rainfall amount in Norman for the month of October was 5.00 inches. All water level gauges were operational for the month, except for LT-1 and UDB-1 due to equipment malfunction.

RESULTS

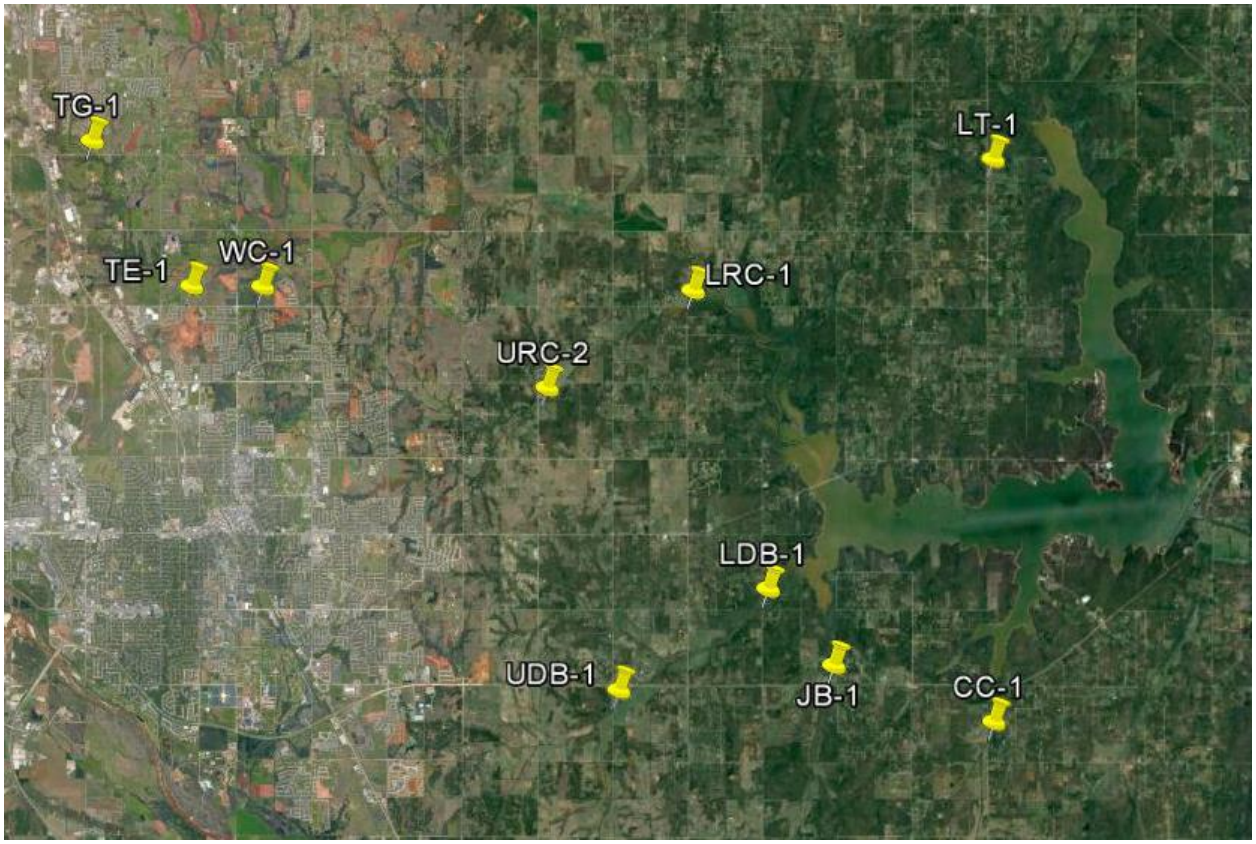

Figure 1 Monitoring Station Map

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	10/5/2020	10:05	SD	14.06	8.38	7.90	695	6	Used dcp for flow, not sure rp2 over main channel, rp3 definitely over main channel
JB-1	Jim Blue Creek	10/5/2020	11:30	SD	14.78	8.04	7.52	912	5	Neither rp over water, orifice out of water
LDB-1	Lower Dave Blue Creek	10/5/2020	12:05	SD	16.33	4.45	7.75	521	37	Low visual flow
LRC-1	Lower Rock Creek	10/5/2020	13:25	SD	15.00	9.22	7.91	719	5	Borderline low/normal visual flow conditions
LT-1	Lake Laterals	10/5/2020	12:45	SD	21.22	7.43	7.83	601	232	Small isolated pool on downstream
TE-1	Little River Tributary	10/5/2020	15:55	SD	17.72	7.85	7.89	1193	4	Small beaver dam approx 25ft upstream of bridge. Very scummy above dam, very clear below dam. Barely connected to downstream
TG-1	Little River Tributary	10/5/2020	16:45	SD	18.31	9.74	7.83	1110	3	Lots of filamentous up/down of bridge, orifice just under water
UDB-1	Upper Dave Blue Creek	10/5/2020	9:20	SD	13.97	5.84	7.46	895	4	No bubbler, dcp not working
URC-2	Upper Rock Creek	10/5/2020	14:40	SD	17.98	10.71	7.58	743	7	Orifice out of water, rp1 not over water
WC-1	Woodcrest Creek	10/5/2020	15:15	SD	16.32	8.00	7.50	1051	9	Small beaver dam on upstream of bridge

Table 1 Field Data Form

Monitoring Location ID	Monitoring Location Name	Nitrate and Nitrite (mg/l)	Kjeldahl Nitrogen (mg/l)	Phosphorus (mg/l)	Total Suspended Solids (mg/l)
CC-1	Clear Creek	0.05	0.28	0.045	<5.0
JB-1	Jim Blue Creek	<0.05	0.29	0.028	<5.0
LDB-1	Lower Dave Blue Creek	<0.05	0.69	0.105	8.0
LRC-1	Lower Rock Creek	<0.05	0.22	0.032	<5.0
LT-1	Lake Laterals	<0.05	3.72	0.430	88
TE-1	Little River Tributary	<0.05	0.33	0.016	<5.0
TG-1	Little River Tributary	<0.05	0.38	0.049	<5.0
UDB-1	Upper Dave Blue Creek	<0.05	0.27	0.057	<5.0
URC-2	Upper Rock Creek	<0.05	0.46	0.039	<5.0
WC-1	Woodcrest Creek	<0.05	0.25	0.039	<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	0.06	0.27	0.045	<5.0
Duplicate RPD	18.18%*	3.64%	0%	0%

Table 3 QA/QC Data Where the Asterisk Denotes RPD2

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	0.35	20.53
JB-1	Jim Blue Creek	-0.02	15.18
LDB-1	Lower Dave Blue Creek	1.20	15.66
LRC-1	Lower Rock Creek	0.22	17.85
LT-1	Lake Laterals	N/A	N/A
TE-1	Little River Tributary	0.56	11.34
TG-1	Little River Tributary	0.22	9.05
UDB-1	Upper Dave Blue Creek	0.15	17.36
URC-2	Upper Rock Creek	0.01	11.04
WC-1	Woodcrest Creek	-0.01	7.60

Table 4 Station Discharge Summary

Discharge Measurement Summary

Date Generated: Wed Oct 7 2020

File Information	
File Name	CC1005.WAD
Start Date and Time	2020/10/05 10:40:27

Site Details	
Site Name	CC
Operator(s)	SCD

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

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.5%	3.6%
Velocity	1.0%	6.4%
Width	0.2%	0.2%
Method	2.4%	-
# Stations	2.4%	-
Overall	**3.7%**	**7.4%**

Summary

Averaging Int.	40	# Stations	21
Start Edge	LEW	Total Width	10.000
Mean SNR	28.8 dB	Total Area	3.850
Mean Temp	57.63 °F	Mean Depth	0.385
Disch. Equation	Mid-Section	Mean Velocity	0.0900
		Total Discharge	**0.3464**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Mon Oct 5 11:01:29 CDT 2020	10.000	20.530		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:40	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	*10:40*	*0.50*	*0.6*	*0.300*	*0.6*	*0.120*	*0.2077*	*1.00*	*0.2077*	*0.150*	*0.0311*	*9.0*
2	10:41	1.00	0.6	0.300	0.6	0.120	0.3776	1.00	0.3776	0.150	0.0566	16.3
3	*10:42*	*1.50*	*0.6*	*0.300*	*0.6*	*0.120*	*0.3907*	*1.00*	*0.3907*	*0.150*	*0.0586*	*16.9*
4	10:43	2.00	0.6	0.200	0.6	0.080	0.3868	1.00	0.3868	0.100	0.0387	11.2
5	10:44	2.50	0.6	0.200	0.6	0.080	0.3471	1.00	0.3471	0.100	0.0347	10.0
6	*10:45*	*3.00*	*0.6*	*0.200*	*0.6*	*0.080*	*0.3225*	*1.00*	*0.3225*	*0.100*	*0.0323*	*9.3*
7	*10:46*	*3.50*	*0.6*	*0.200*	*0.6*	*0.080*	*0.2005*	*1.00*	*0.2005*	*0.100*	*0.0201*	*5.8*
8	*10:47*	*4.00*	*0.6*	*0.300*	*0.6*	*0.120*	*0.0994*	*1.00*	*0.0994*	*0.150*	*0.0149*	*4.3*
9	10:49	4.50	0.6	0.400	0.6	0.160	0.0636	1.00	0.0636	0.200	0.0127	3.7
10	10:50	5.00	0.6	0.500	0.6	0.200	0.0377	1.00	0.0377	0.250	0.0094	2.7
11	10:51	5.50	0.6	0.600	0.6	0.240	0.0410	1.00	0.0410	0.300	0.0123	3.6
12	10:52	6.00	0.6	0.650	0.6	0.260	0.0276	1.00	0.0276	0.325	0.0090	2.6
13	10:53	6.50	0.6	0.700	0.6	0.280	0.0397	1.00	0.0397	0.350	0.0139	4.0
14	*10:54*	*7.00*	*0.6*	*0.750*	*0.6*	*0.300*	*0.0039*	*1.00*	*0.0039*	*0.375*	*0.0015*	*0.4*
15	*10:55*	*7.50*	*0.6*	*0.650*	*0.6*	*0.260*	*0.0256*	*1.00*	*0.0256*	*0.325*	*0.0083*	*2.4*
16	10:56	8.00	0.6	0.500	0.6	0.200	-0.0066	1.00	-0.0066	0.250	-0.0016	-0.5
17	*10:57*	*8.50*	*0.6*	*0.450*	*0.6*	*0.180*	*-0.0217*	*1.00*	*-0.0217*	*0.225*	*-0.0049*	*-1.4*
18	*10:59*	*9.00*	*0.6*	*0.300*	*0.6*	*0.120*	*-0.0023*	*1.00*	*-0.0023*	*0.150*	*-0.0003*	*-0.1*
19	*11:00*	*9.50*	*0.6*	*0.200*	*0.6*	*0.080*	*-0.0092*	*1.00*	*-0.0092*	*0.100*	*-0.0009*	*-0.3*
20	11:00	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 Measurement Summary CC-1

Discharge Measurement Summary

Date Generated: Wed Oct 7 2020

File Information	
File Name	LRC1005A.WAD
Start Date and Time	2020/10/05 13:49:21

Site Details	
Site Name	LRC
Operator(s)	SCD

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

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.6%	2.2%
Velocity	4.8%	12.7%
Width	0.2%	0.2%
Method	2.9%	-
# Stations	3.1%	-
Overall	**6.6%**	**12.9%**

Summary

Averaging Int.	40	# Stations	16
Start Edge	LEW	Total Width	7.500
Mean SNR	31.6 dB	Total Area	4.450
Mean Temp	60.09 °F	Mean Depth	0.593
Disch. Equation	Mid-Section	Mean Velocity	0.0482
		Total Discharge	**0.2146**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Mon Oct 5 14:04:54 CDT 2020	7.500	17.850		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	13:49	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	*13:49*	*0.50*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0003*	*1.00*	*0.0003*	*0.200*	*0.0001*	*0.0*
2	*13:50*	*1.00*	*0.6*	*0.500*	*0.6*	*0.200*	*-0.0003*	*1.00*	*-0.0003*	*0.250*	*-0.0001*	*0.0*
3	*13:51*	*1.50*	*0.6*	*0.600*	*0.6*	*0.240*	*0.0709*	*1.00*	*0.0709*	*0.300*	*0.0213*	*9.9*
4	*13:53*	*2.00*	*0.6*	*0.750*	*0.6*	*0.300*	*0.0623*	*1.00*	*0.0623*	*0.375*	*0.0234*	*10.9*
5	*13:54*	*2.50*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0830*	*1.00*	*0.0830*	*0.350*	*0.0291*	*13.5*
6	*13:55*	*3.00*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0715*	*1.00*	*0.0715*	*0.350*	*0.0250*	*11.7*
7	*13:56*	*3.50*	*0.6*	*0.700*	*0.6*	*0.280*	*0.1155*	*1.00*	*0.1155*	*0.350*	*0.0404*	*18.8*
8	*13:57*	*4.00*	*0.6*	*0.700*	*0.6*	*0.280*	*0.1178*	*1.00*	*0.1178*	*0.350*	*0.0412*	*19.2*
9	*13:58*	*4.50*	*0.6*	*0.700*	*0.6*	*0.280*	*0.1001*	*1.00*	*0.1001*	*0.350*	*0.0350*	*16.3*
10	*13:59*	*5.00*	*0.6*	*0.750*	*0.6*	*0.300*	*-0.0003*	*1.00*	*-0.0003*	*0.375*	*-0.0001*	*-0.1*
11	*14:00*	*5.50*	*0.6*	*0.800*	*0.6*	*0.320*	*0.0010*	*1.00*	*0.0010*	*0.400*	*0.0004*	*0.2*
12	14:01	6.00	0.6	0.700	0.6	0.280	-0.0010	1.00	-0.0010	0.350	-0.0003	-0.2
13	*14:02*	*6.50*	*0.6*	*0.600*	*0.6*	*0.240*	*0.0003*	*1.00*	*0.0003*	*0.300*	*0.0001*	*0.0*
14	*14:03*	*7.00*	*0.6*	*0.300*	*0.6*	*0.120*	*-0.0056*	*1.00*	*-0.0056*	*0.150*	*-0.0008*	*-0.4*
15	14:03	7.50	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 Measurement Summary LRC-1

Discharge Measurement Summary

Date Generated: Wed Oct 7 2020

File Information	
File Name	TG1005.WAD
Start Date and Time	2020/10/05 17:14:46

Site Details	
Site Name	TG
Operator(s)	SCD

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

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.5%	2.3%
Velocity	1.2%	14.6%
Width	0.2%	0.2%
Method	2.6%	-
# Stations	2.0%	-
Overall	**3.7%**	**14.8%**

Summary

Averaging Int.	40	# Stations	26
Start Edge	LEW	Total Width	17.000
Mean SNR	36.3 dB	Total Area	9.925
Mean Temp	63.82 °F	Mean Depth	0.584
Disch. Equation	Mid-Section	Mean Velocity	0.0218
		Total Discharge	**0.2166**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Mon Oct 5 17:39:04 CDT 2020	17.000	9.050		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	17:14	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	*17:14*	*0.50*	*0.6*	*0.300*	*0.6*	*0.120*	*0.0003*	*1.00*	*0.0003*	*0.150*	*0.0000*	*0.0*
2	*17:15*	*1.00*	*0.6*	*0.300*	*0.6*	*0.120*	*-0.0003*	*1.00*	*-0.0003*	*0.225*	*-0.0001*	*0.0*
3	*17:16*	*2.00*	*0.6*	*0.450*	*0.6*	*0.180*	*-0.0003*	*1.00*	*-0.0003*	*0.450*	*-0.0001*	*-0.1*
4	*17:18*	*3.00*	*0.6*	*0.600*	*0.6*	*0.240*	*0.0010*	*1.00*	*0.0010*	*0.450*	*0.0004*	*0.2*
5	*17:20*	*3.50*	*0.6*	*0.950*	*0.6*	*0.380*	*0.0003*	*1.00*	*0.0003*	*0.475*	*0.0002*	*0.1*
6	*17:19*	*4.00*	*0.6*	*0.900*	*0.6*	*0.360*	*0.0837*	*1.00*	*0.0837*	*0.450*	*0.0376*	*17.4*
7	*17:21*	*4.50*	*0.6*	*0.900*	*0.6*	*0.360*	*0.0928*	*1.00*	*0.0928*	*0.450*	*0.0418*	*19.3*
8	*17:22*	*5.00*	*0.6*	*0.800*	*0.6*	*0.320*	*0.0663*	*1.00*	*0.0663*	*0.400*	*0.0265*	*12.2*
9	*17:23*	*5.50*	*0.6*	*0.800*	*0.6*	*0.320*	*0.0719*	*1.00*	*0.0719*	*0.400*	*0.0287*	*13.3*
10	*17:24*	*6.00*	*0.6*	*0.800*	*0.6*	*0.320*	*0.0617*	*1.00*	*0.0617*	*0.400*	*0.0247*	*11.4*
11	*17:25*	*6.50*	*0.6*	*0.750*	*0.6*	*0.300*	*0.0003*	*1.00*	*0.0003*	*0.375*	*0.0001*	*0.1*
12	*17:26*	*7.00*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0236*	*1.00*	*0.0236*	*0.350*	*0.0083*	*3.8*
13	*17:27*	*7.50*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0335*	*1.00*	*0.0335*	*0.350*	*0.0117*	*5.4*
14	*17:28*	*8.00*	*0.6*	*0.750*	*0.6*	*0.300*	*-0.0016*	*1.00*	*-0.0016*	*0.375*	*-0.0006*	*-0.3*
15	*17:29*	*8.50*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0197*	*1.00*	*0.0197*	*0.350*	*0.0069*	*3.2*
16	*17:30*	*9.00*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0269*	*1.00*	*0.0269*	*0.350*	*0.0094*	*4.3*
17	*17:31*	*9.50*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0072*	*1.00*	*0.0072*	*0.350*	*0.0025*	*1.2*
18	*17:32*	*10.00*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0069*	*1.00*	*0.0069*	*0.525*	*0.0036*	*1.7*
19	17:33	11.00	0.6	0.600	0.6	0.240	0.0030	1.00	0.0030	0.600	0.0018	0.8
20	*17:34*	*12.00*	*0.6*	*0.550*	*0.6*	*0.220*	*-0.0003*	*1.00*	*-0.0003*	*0.550*	*-0.0002*	*-0.1*
21	*17:35*	*13.00*	*0.6*	*0.500*	*0.6*	*0.200*	*0.0000*	*1.00*	*0.0000*	*0.500*	*0.0000*	*0.0*
22	*17:36*	*14.00*	*0.6*	*0.500*	*0.6*	*0.200*	*0.0266*	*1.00*	*0.0266*	*0.500*	*0.0133*	*6.1*
23	*17:37*	*15.00*	*0.6*	*0.450*	*0.6*	*0.180*	*0.0000*	*1.00*	*0.0000*	*0.450*	*0.0000*	*0.0*
24	*17:38*	*16.00*	*0.6*	*0.450*	*0.6*	*0.180*	*0.0000*	*1.00*	*0.0000*	*0.450*	*0.0000*	*0.0*
25	17:38	17.00	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 TG-1

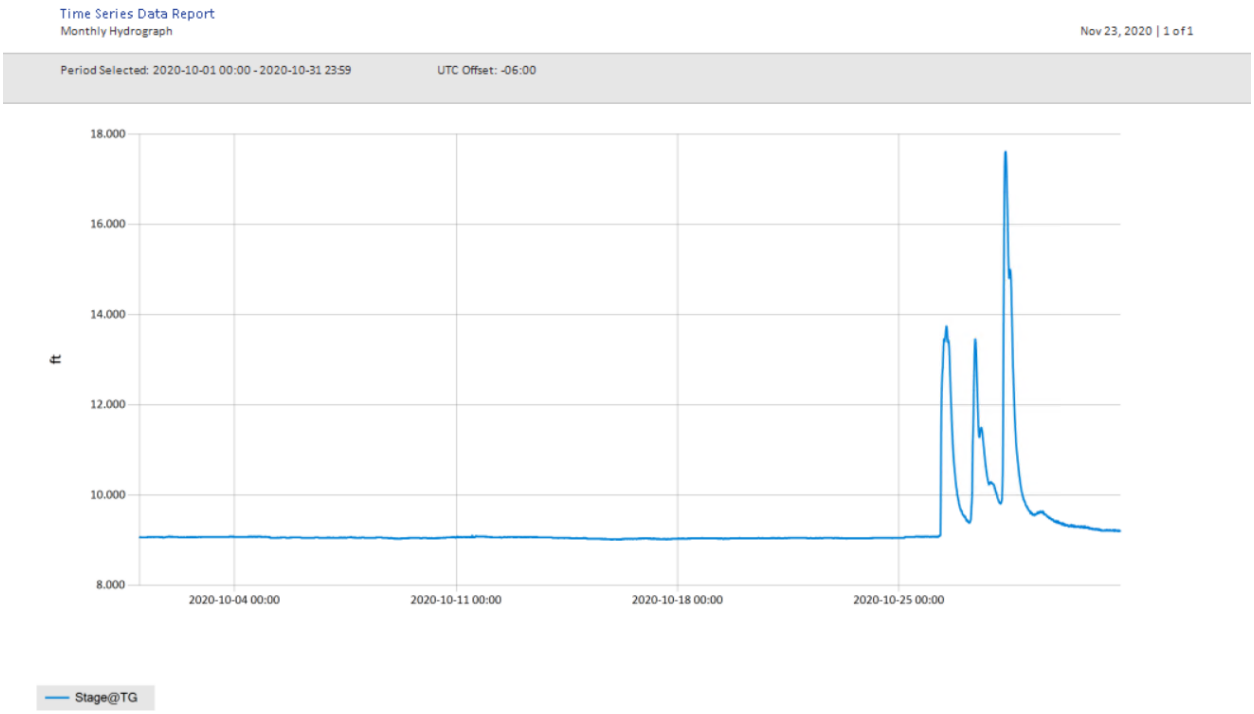

Figure 5 Monthly Hydrograph TG-1

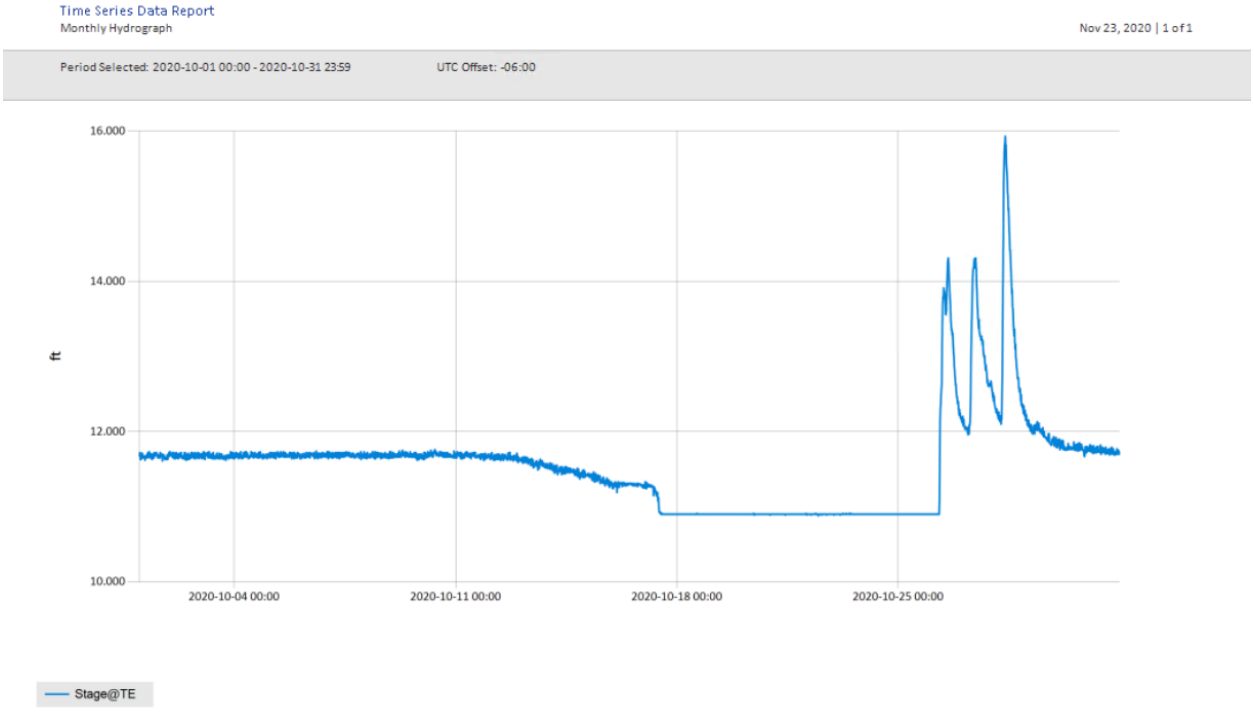

Figure 6 Monthly Hydrograph TE-1

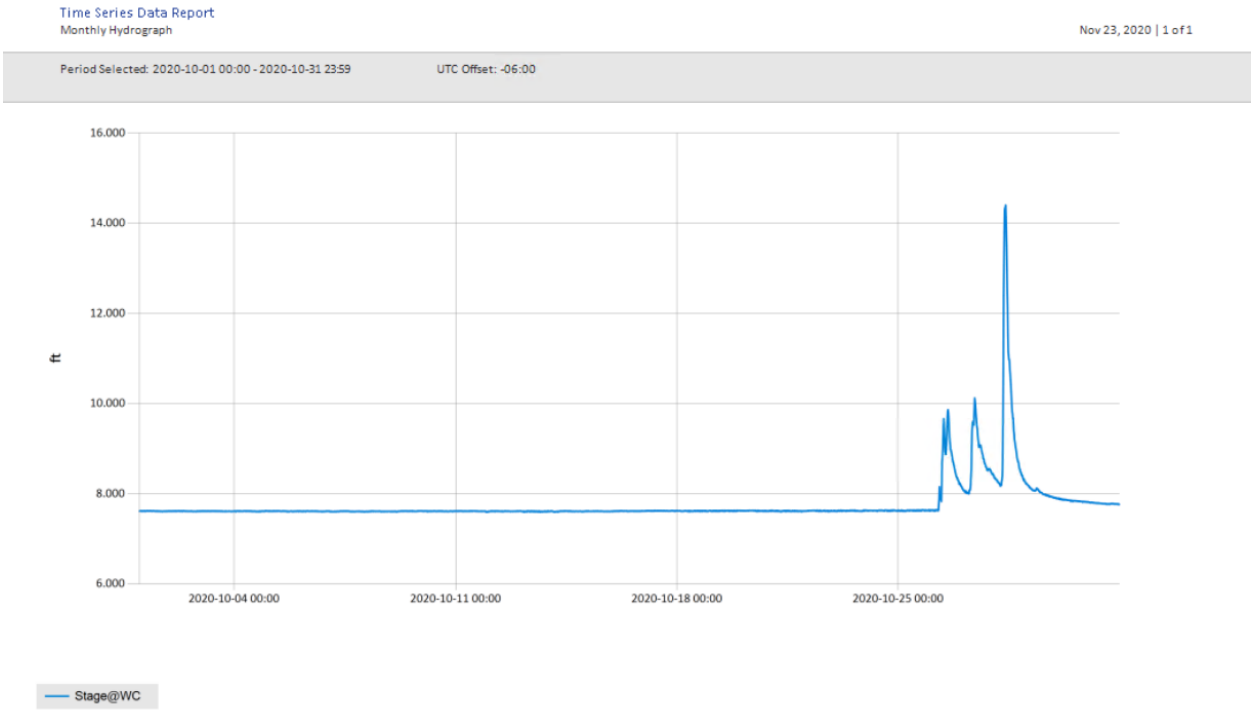

Figure 7 Monthly Hydrograph WC-1

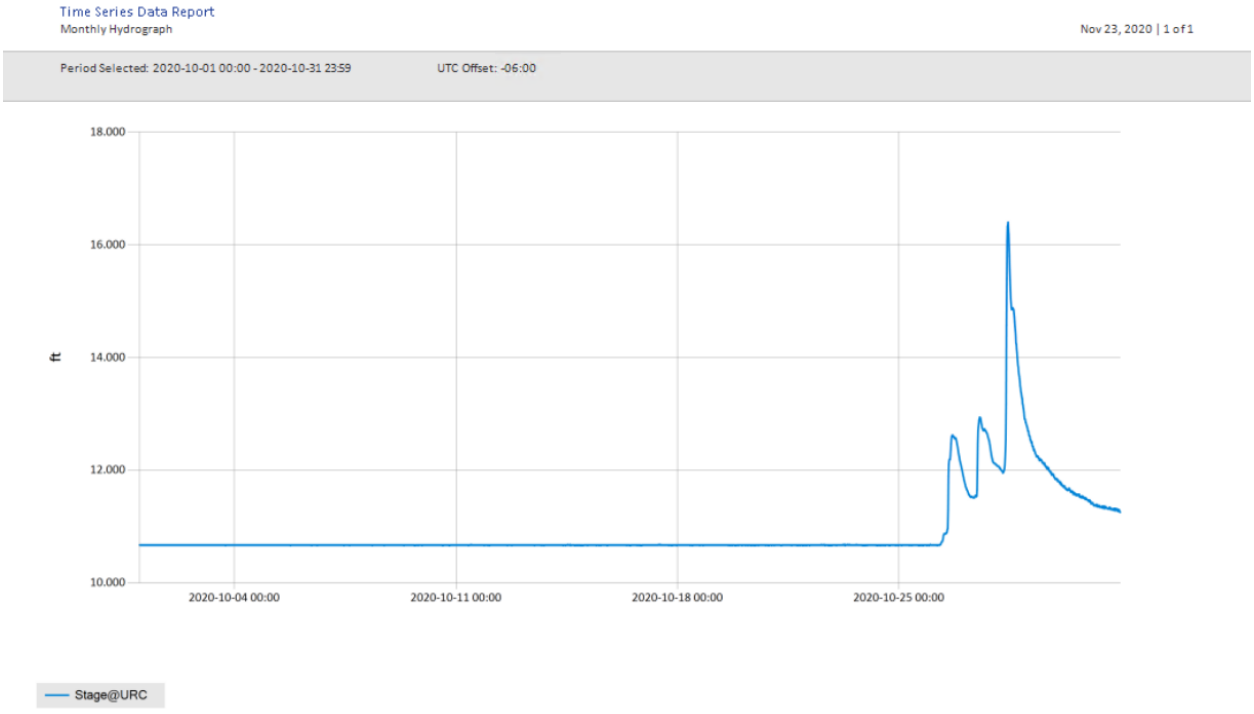

Figure 8 Monthly Hydrograph URC-2

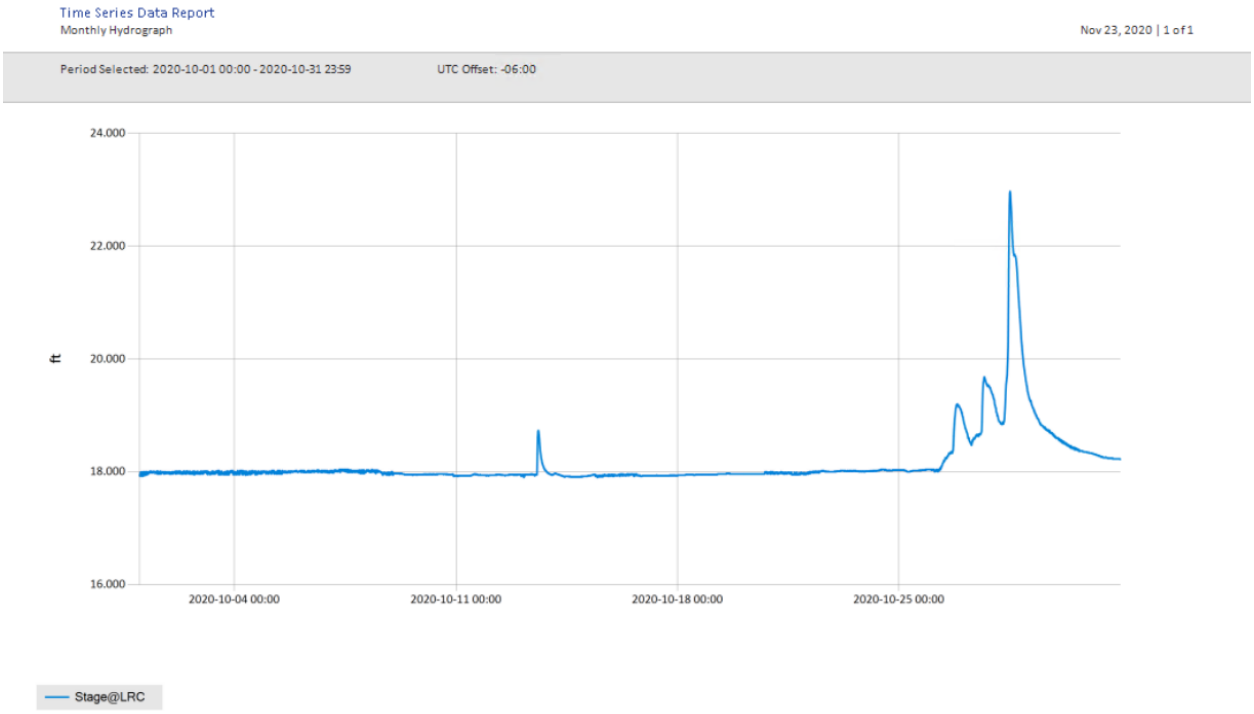

Figure 9 Monthly Hydrograph LRC-1

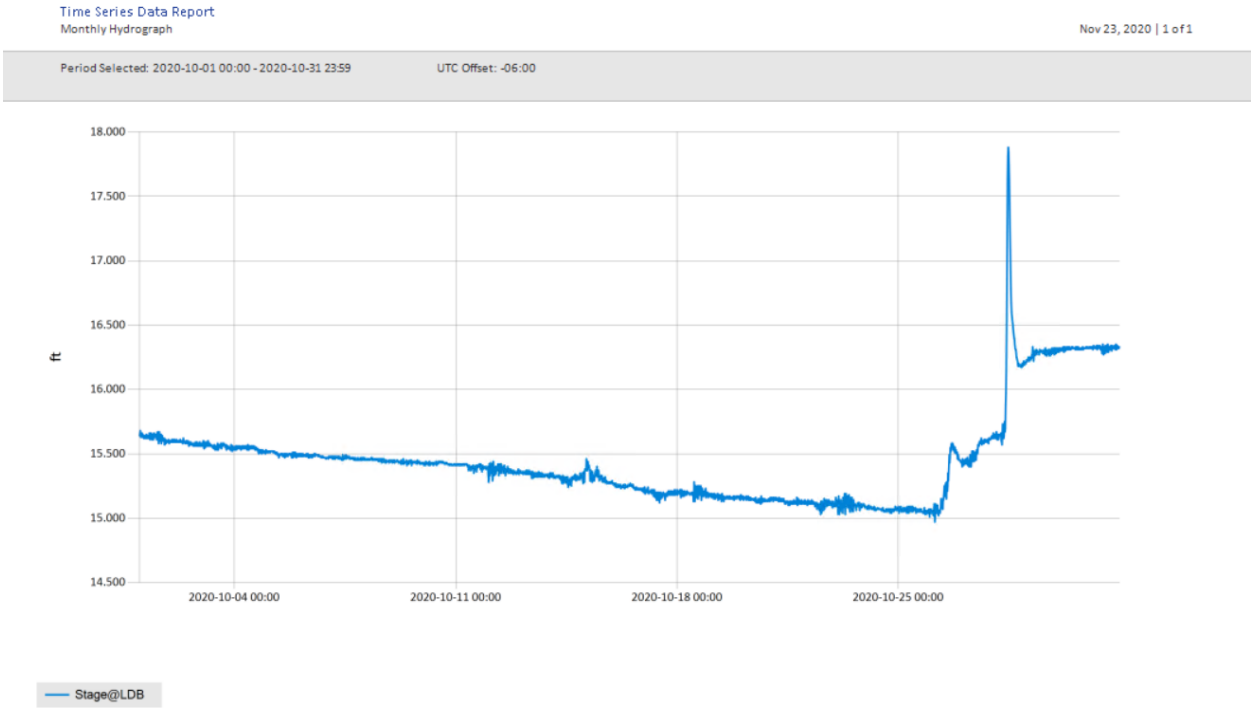

Figure 10 Monthly Hydrograph LDB-1

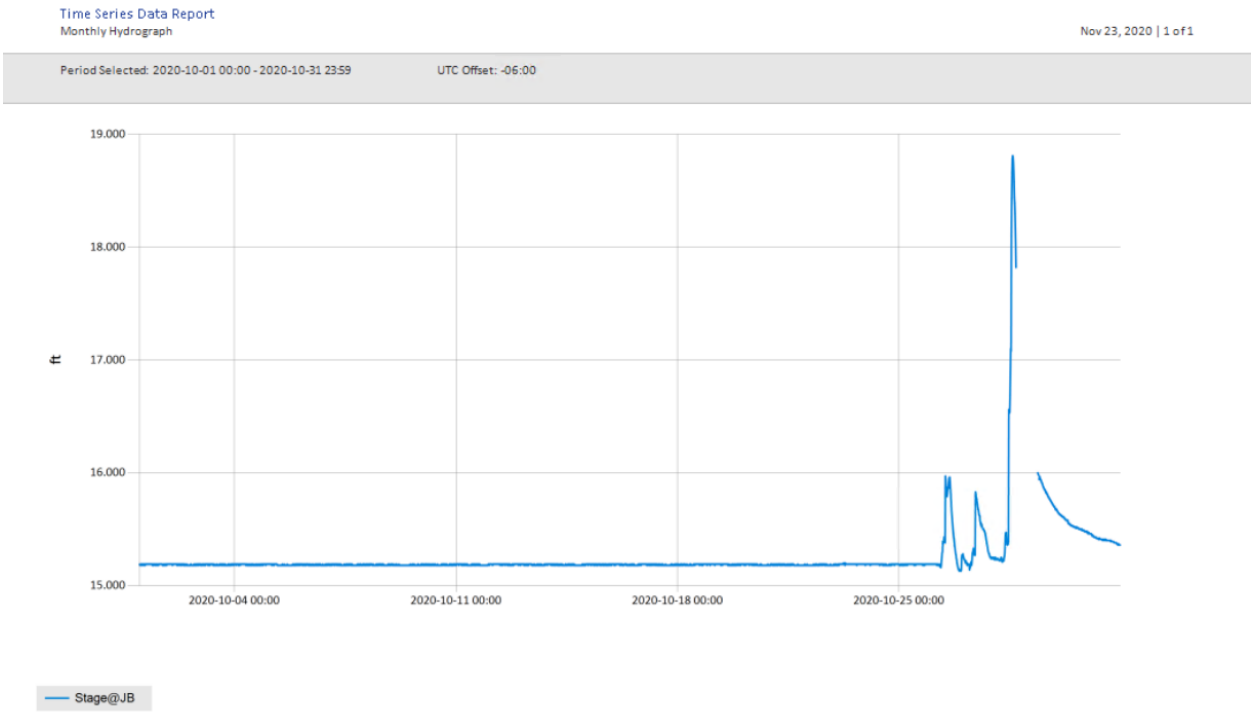

Figure 11 Monthly Hydrograph JB-1

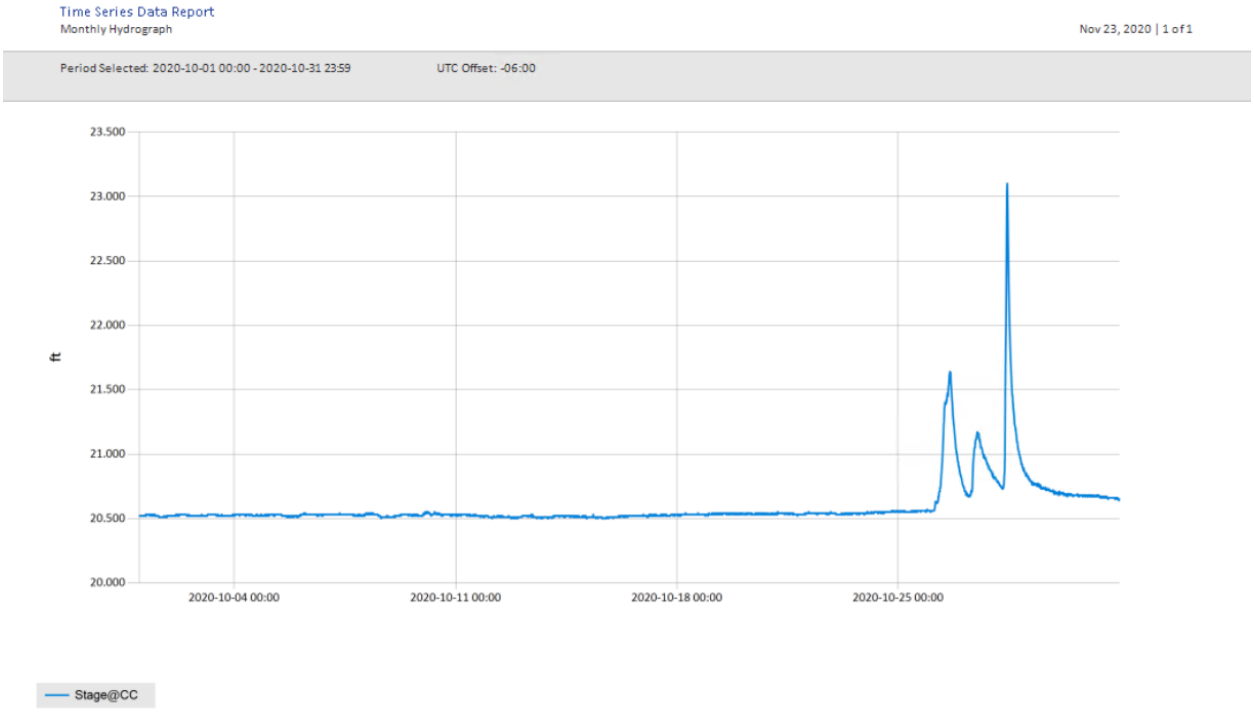

Figure 12 Monthly Hydrograph CC-1

MESONET CLIMATOLOGICAL DATA SUMMARY — October 2020 — 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 (°F) MAX	MIN	AVG	DEWPT	DEG DAYS HDD	CDD	HUMIDITY (%) MAX	MIN	AVG	RAIN (in)	PRESSURE (in) STN	MSL	WIND SPEED (mph) DIR	AVG	MAX	SOLAR (MJ/m^2)	4" SOIL TEMPERATURES SOD	BARE	MAX	MIN
1	74	46	61.8	37.2	5	0	73	20	43	0.00	29.01	30.26	NNE	8.1	22.5	19.14	67.3	70.4	76	65
2	71	41	57.3	40.2	9	0	93	31	57	0.00	28.94	30.19	SSE	5.5	20.2	17.69	64.9	67.2	73	61
3	75	53	61.7	46.5	1	0	76	34	59	0.00	28.83	30.08	SSE	7.4	20.1	16.48	65.7	68.0	74	63
4	72	45	58.4	44.4	6	0	90	37	62	0.00	28.98	30.24	NE	5.6	19.7	19.90	65.2	67.7	75	61
5	76	51	62.4	48.2	2	0	84	39	61	0.00	28.86	30.12	SSE	8.7	21.2	19.01	65.1	67.6	74	62
6	81	55	66.8	55.6	0	3	88	46	69	0.00	28.80	30.05	SSE	4.9	13.2	18.17	66.6	69.9	77	64
7	87	60	72.5	62.0	0	9	97	40	73	0.00	28.78	30.03	SSE	6.5	16.7	18.55	68.5	72.3	79	66
8	86	60	72.9	57.3	0	8	86	37	61	0.00	28.77	30.02	SSE	7.3	18.3	17.83	69.6	73.6	80	68
9	84	64	71.8	64.7	0	9	99	46	80	0.00	28.67	29.92	SSE	7.4	18.1	12.12	70.0	73.3	78	70
10	83	62	69.7	63.7	0	7	100	54	83	0.00	28.62	29.86	ESE	3.8	10.0	15.03	70.5	73.9	80	70
11	91	65	76.9	62.3	0	13	87	34	64	0.00	28.51	29.75	SSE	9.7	25.9	18.15	70.9	74.5	80	69
12	78	49	64.8	38.5	1	0	77	17	41	0.00	28.79	30.04	N	10.8	41.7	19.29	68.8	73.4	78	69
13	81*	46*	63.5*	40.0*	2*	0*	80*	22*	46*	0.00*	28.86*	30.11*	SSE*	6.1*	18.7*	NA	65.9*	69.2*	76*	63*
14	89	56	72.6	53.4	0	7	71	31	53	0.00	28.58	29.83	S	10.6	30.6	17.79	67.2	70.6	77	65
15	72	52	65.0	35.2	3	0	76	24	34	0.00	28.83	30.08	NNE	15.6	42.3	13.67	67.1	71.1	75	68
16	67	40	54.8	30.4	12	0	80	22	43	0.00	29.04	30.30	SSE	4.3	18.1	17.72	63.8	66.7	73	61
17	76	47	62.1	45.1	3	0	88	38	56	0.00	28.71	29.96	S	11.3	32.7	17.57	63.3	65.8	71	60
18	73	45	56.9	53.3	6	0	95	73	88	0.00	28.73	29.98	NNE	12.1	29.0	3.62	64.4	65.9	69	62
19	60	43	49.8	43.2	14	0	98	53	80	0.01	28.83	30.08	N	6.4	15.9	10.07	61.9	62.1	66	59
20	77	48	60.1	54.8	2	0	98	64	83	0.00	28.74	29.99	NE	6.2	17.2	10.10	63.2	64.0	69	61
21	85	54	69.7	60.1	0	5	97	48	74	0.00	28.74	29.99	S	8.3	24.3	14.91	66.2	68.2	74	62
22	85	67	74.5	63.7	0	11	90	47	71	0.00	28.64	29.88	S	12.2	30.4	15.92	68.4	71.1	76	67
23	73	39	46.5	37.5	9	0	84	59	71	0.00	28.94	30.19	N	17.3	36.2	5.78	62.9	64.9	71	59
24	56	39	45.6	33.4	17	0	86	42	64	0.00	28.85	30.11	NNE	6.2	15.9	14.86	60.1	60.7	67	57
25	47	39	43.5	41.0	22	0	96	81	91	0.05	28.79	30.04	NNE	10.6	25.0	3.20	58.4	57.0	59	55
26	39	29	32.5	31.1	31	0	97	93	95	1.78	28.97	30.22	N *	NA	29.4*	0.70	51.6	47.8	55	43
27	32	29	31.2	30.2	34	0	98	94	96	0.95	28.94	30.20	NA	NA	NA	1.82	47.7	42.7	44	41
28	38	32	34.2	33.4	30	0	99	94	97	2.05	28.67	29.91	WSW*	NA	18.1*	2.33	46.3	44.2	45	43
29	55	34	44.1	37.4	20	0	99	47	79	0.16	28.81	30.06	NNW	12.5	34.1	13.87	48.9	48.5	55	45
30	67	32	49.0	35.1	15	0	99	30	64	0.00	28.99	30.24	SSE	3.6	12.6	16.12	50.2	50.4	58	44
31	71	44	54.2	40.6	8	0	88	35	63	0.00	28.88	30.14	S	7.6	23.6	12.18	52.3	50.9	56	46
	71*	47*	58.3*	45.8*	<- Monthly Averages ->						28.81*	30.06*	SSE*	8.4*	42.3*	13.45*	62.7*	64.3*	70*	60*

Temperature - Highest: 91*
Lowest: 29*

Degree Days - Total HDD: 253*
Total CDD: 72*

Rainfall: Monthly Total: 5.00* in.
Greatest 24 Hr: 2.05* in.

Humidity - Highest: 100*
Lowest: 17*

Number of Days With:

Tmax ≥ 90:	1*	Rainfall ≥ 0.01 inch:	6*
Tmax ≤ 32:	1*	Rainfall ≥ 0.10 inch:	4*
Tmin ≤ 32:	4*	Avg Wind Speed ≥ 10 mph:	9*
Tmin ≤ 0:	0*	Max Wind Speed ≥ 30 mph:	7*

* Denotes incomplete record

Figure 13 October Mesonet Data