
***Lake Thunderbird TMDL Monitoring Plan Implementation:
Sample Year (SY) 2018- August Report***



SY2018 Monthly Report

Lake Thunderbird TMDL Monitoring Plan Implementation:

August 2018 Monitoring Report

Oklahoma Water Resources Board
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SUMMARY OF AUGUST WATER QUALITY SAMPLING

Sampling for August 2018 occurred on the thirty-first of July and was considered a base flow collection. Water samples were collected at eight locations, with the exception of CC-1 due to inaccessibility from road construction, and LT-1 due to dry conditions. Discharge was not measured this month as a result of low water levels, where the stage measurements were at or below base flow conditions. Mesonet data shows no precipitation occurring on the thirty-first, 2.20 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 August was 6.87 inches. All water level gauges were operational for the month, with the exception of CC-1 as a result of road construction activity.

RESULTS

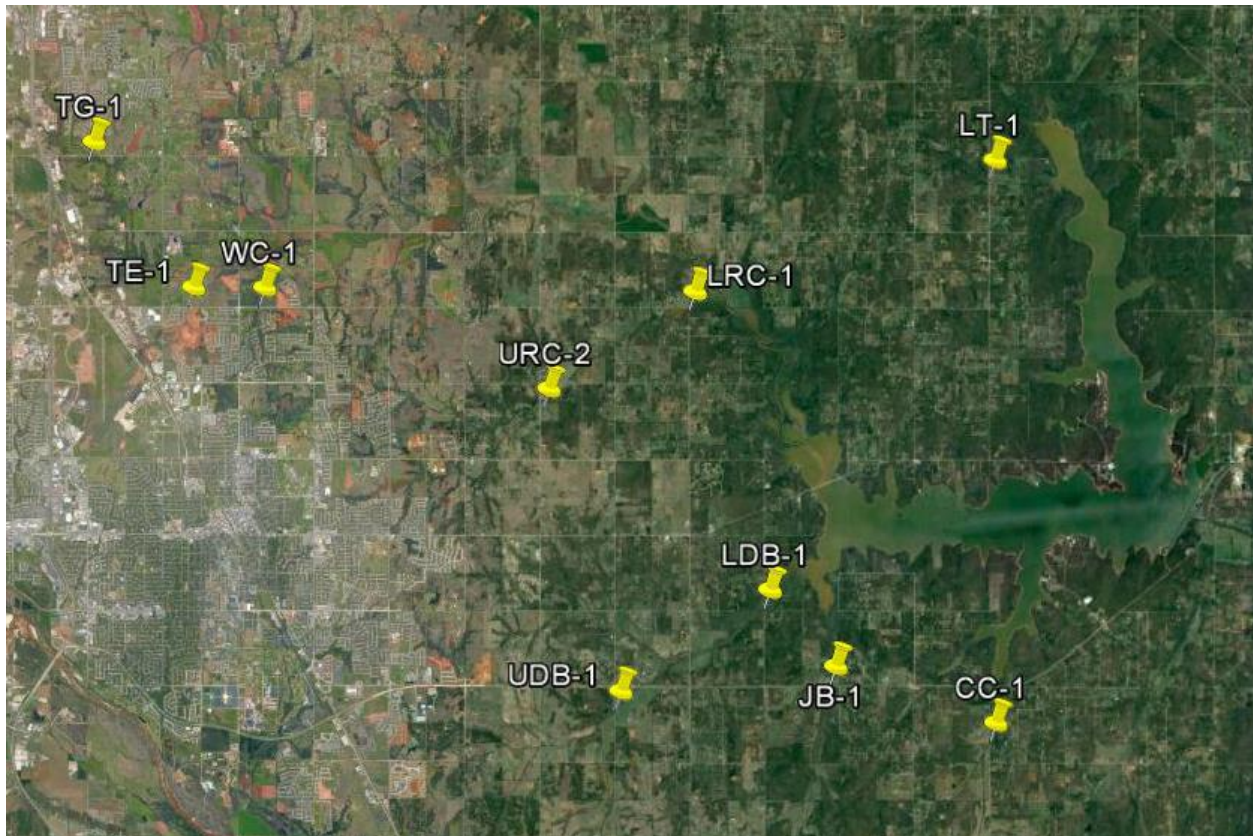


Figure 1 Monitoring Station Map

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	7/31/2018	N/A	SD	N/A	N/A	N/A	N/A	N/A	not able to access channel because of construction
lt-1	7/31/2018	N/A	SD	N/A	N/A	N/A	N/A	N/A	us completely dry, ds completely dry except for small isolated pool. Did not sample, orifice out of water
jb-1	7/31/2018	10:15	SD	22.3	2.2	528.0	7.4	27.0	
udb-1	7/31/2018	9:35	SD	22.1	6.1	308.0	7.8	67.0	construction activity resurfacing bridge. Could not access rp, appears about base flow , but more turbid
ldb-1	7/31/2018	11:00	SD	24.0	2.7	238.0	7.7	410.0	
tg-1	7/31/2018	14:20	SD	26.7	8.2	361.0	8.0	37.0	
te-1	7/31/2018	13:50	SD	27.2	7.0	289.0	7.9	69.0	
wc-1	7/31/2018	13:15	SD	25.0	6.8	320.0	7.8	37.0	
lrc-1	7/31/2018	11:55	SD	24.2	4.9	525.0	7.7	32.0	
urc-2	7/31/2018	12:20	SD	24.4	3.9	259.0	7.5	114.0	

Table 1 Field Data Form

Site Name	TKN (mg/L)	Nitrate/Nitrite (mg/L)	TP (mg/L)	TSS (mg/L)
TG-1	0.77	0.24	0.141	23.8
CC-1	N/A	N/A	N/A	N/A
JB-1	1.81	<0.05	0.255	13.0
UDB-1	0.80	0.19	0.125	37.5
LDB-1	1.28	0.39	0.330	140
LRC-1	0.55	0.20	0.094	17.0
URC-2	1.15	0.29	0.203	40.0
WC-1	1.18	0.33	0.336	22.5
TE-1	0.74	0.27	0.137	21.3
LT-1	N/A	N/A	N/A	N/A

Table 2 Laboratory Analysis Summary

Site Name	TKN	Nitrate/Nitrite	TP	TSS
Field Blank	<0.10 mg/L	<0.05 mg/L	<0.010 mg/L	<5.0 mg/L
Duplicate	0.78 mg/L	0.28 mg/L	0.137 mg/L	20.0 mg/L
Duplicate RPD	5.26%	3.64%	0%	6.30%

Table 3 QA/QC Data

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.

SITE	TG-1	CC-1	JB-1	UDB-1	LDB-1	LRC-1	URC-2	WC-1	TE-1	LT-1
STAGE (ft)	9.13	N/A	16.57	17.45	16.45	17.25	11.61	8.41	11.56	N/A
DISCHARGE (ft ³ /s)	0.74	N/A	<1	0.13	<1	<0.5	<0.5	<0.5	<0.5	0

Table 4 Station Discharge Summary

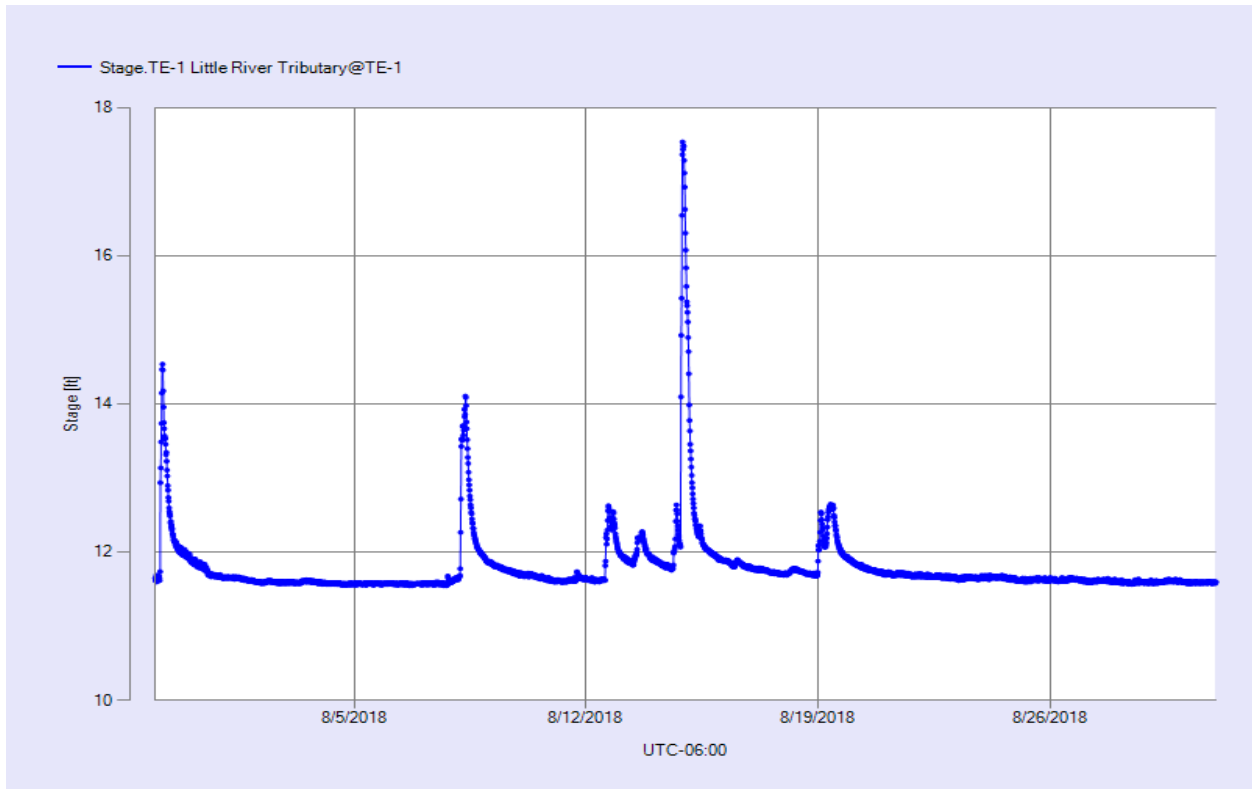


Figure 2 Monthly Hydrograph TE-1

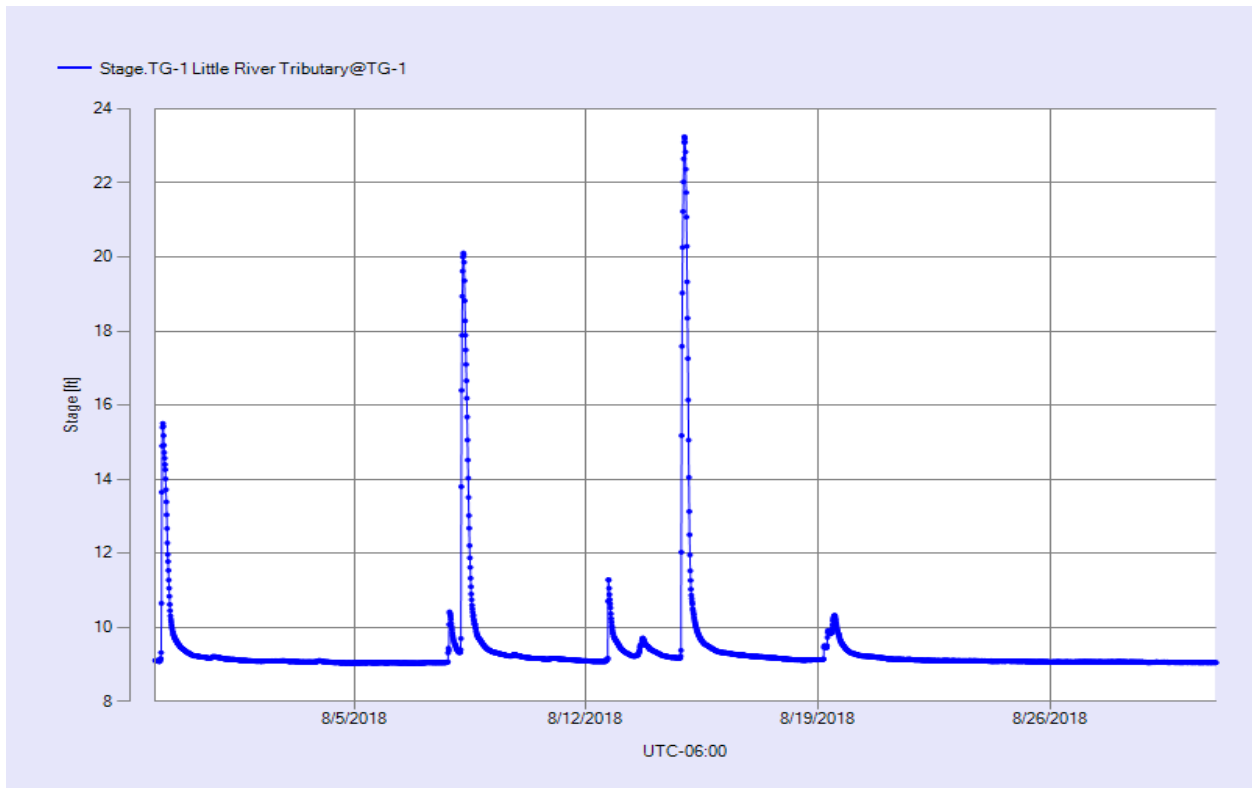


Figure 3 Monthly Hydrograph TG-1

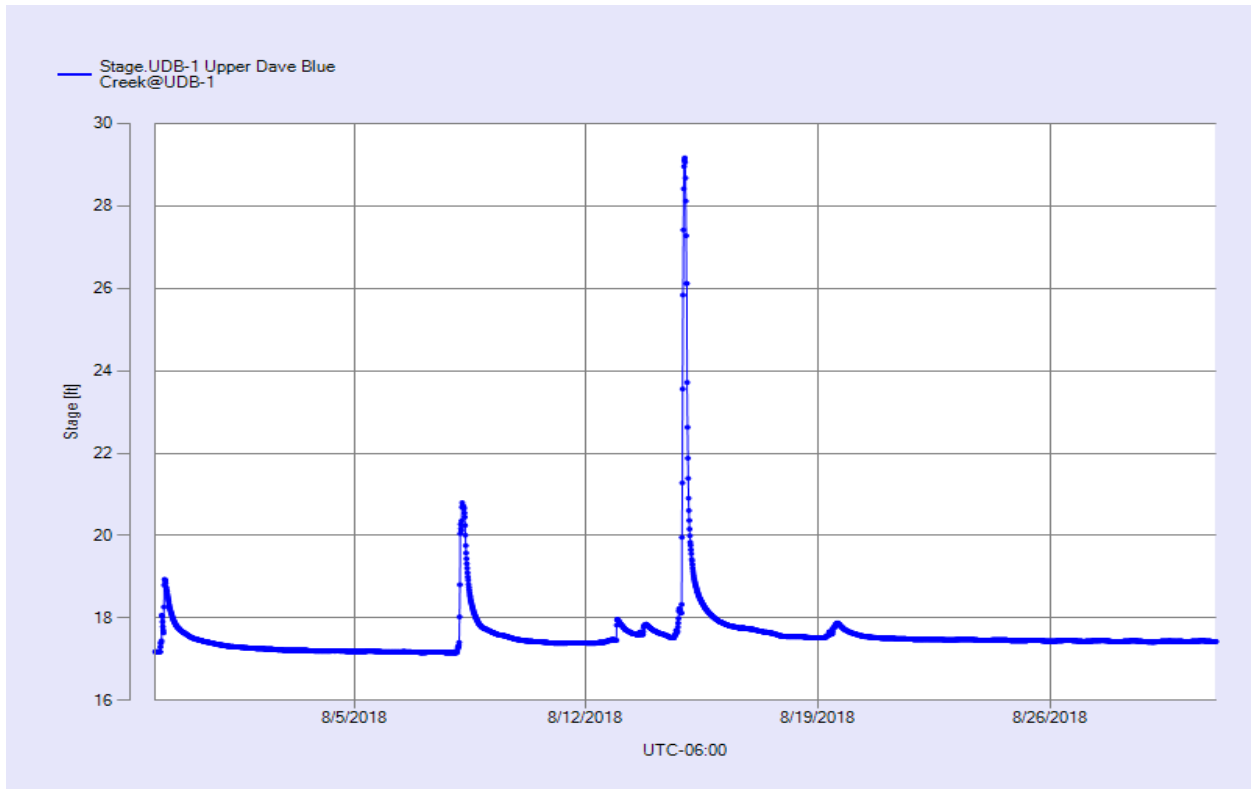


Figure 4 Monthly Hydrograph UDB-1

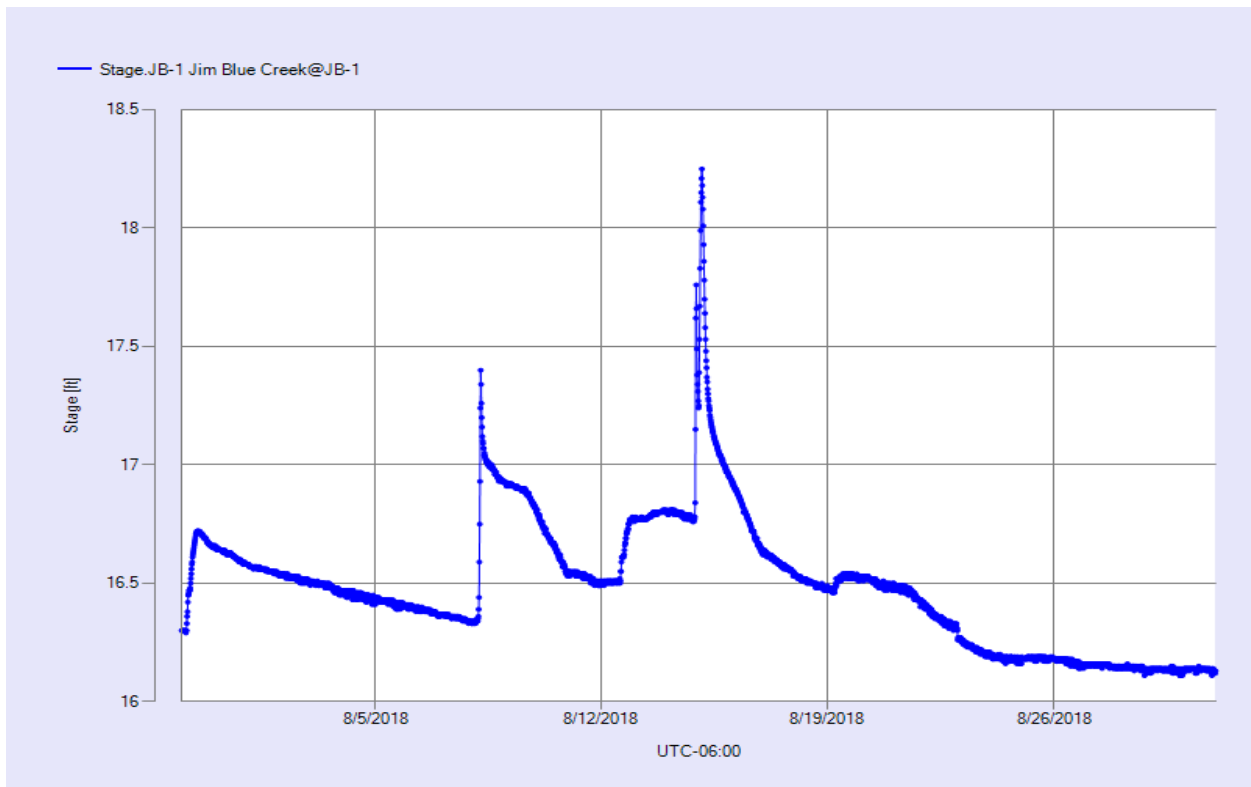


Figure 5 Monthly Hydrograph JB-1

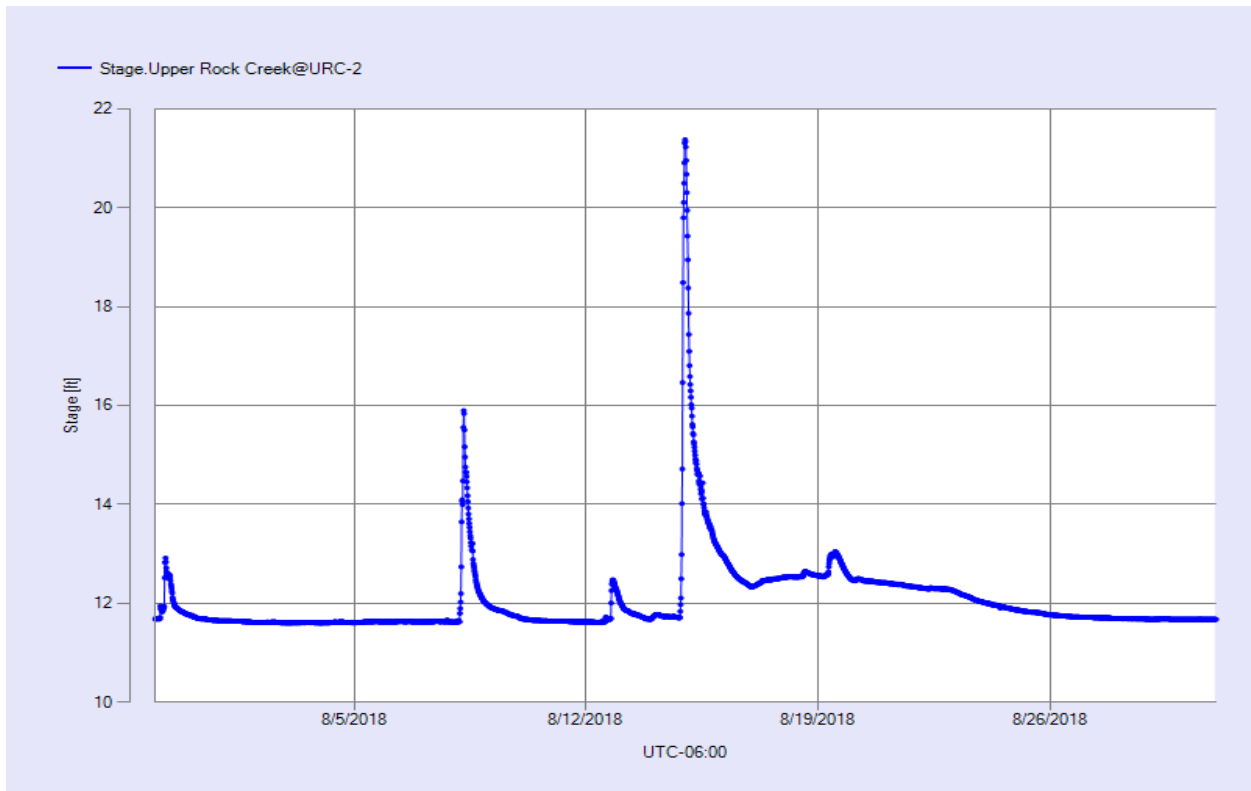


Figure 6 Monthly Hydrograph URC-2

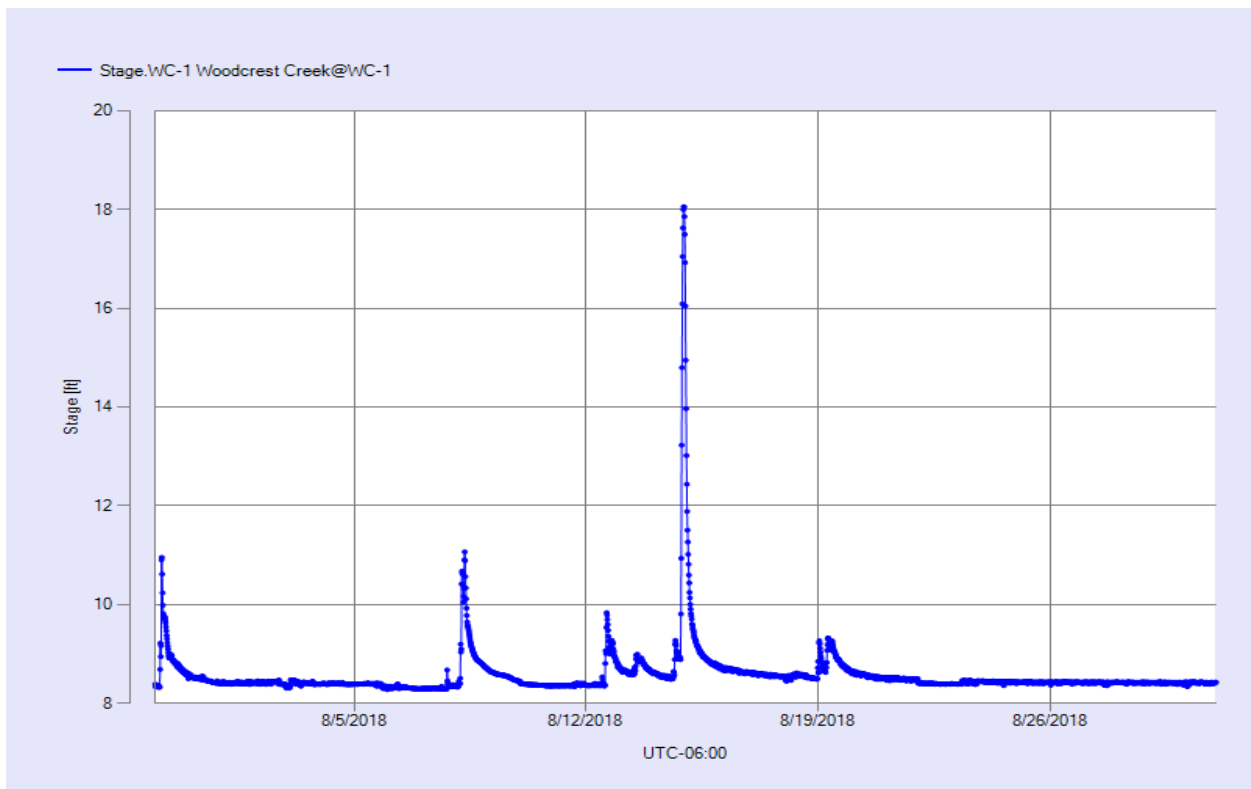


Figure 7 Monthly Hydrograph WC-1

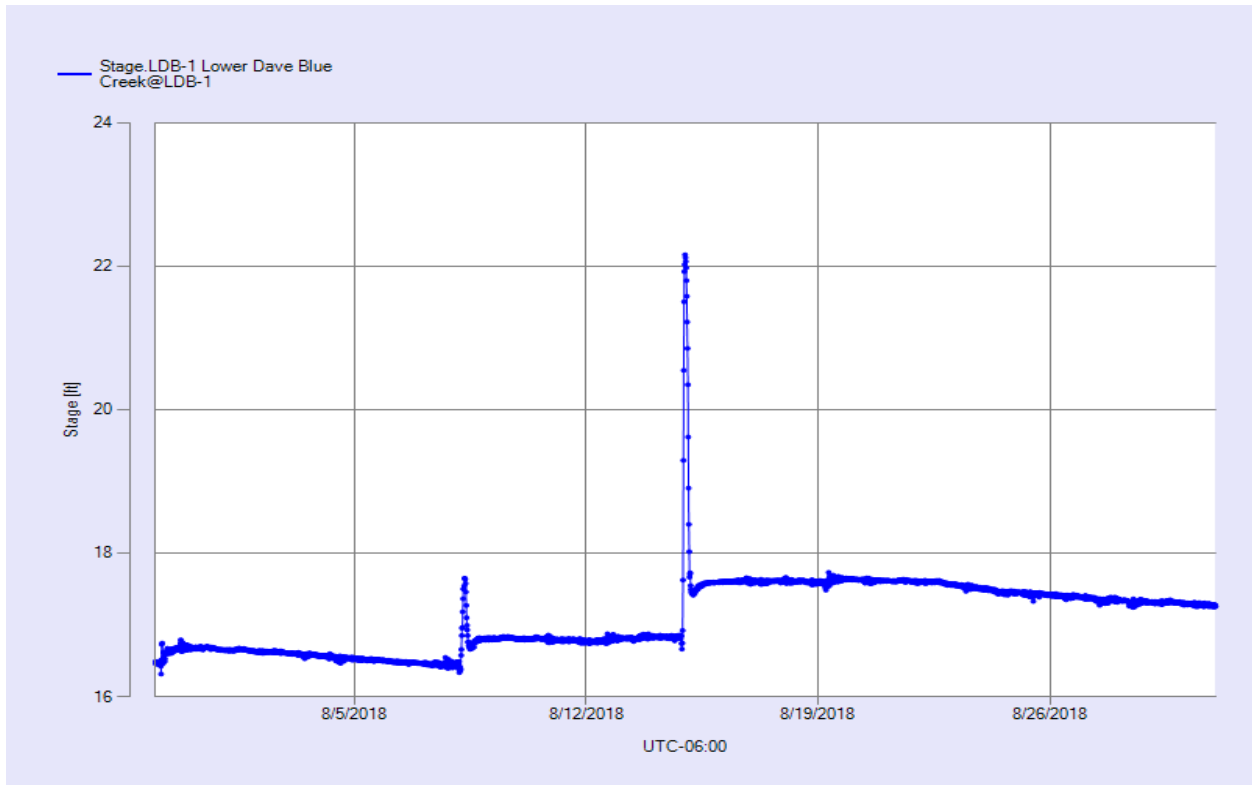


Figure 8 Monthly Hydrograph LDB-1

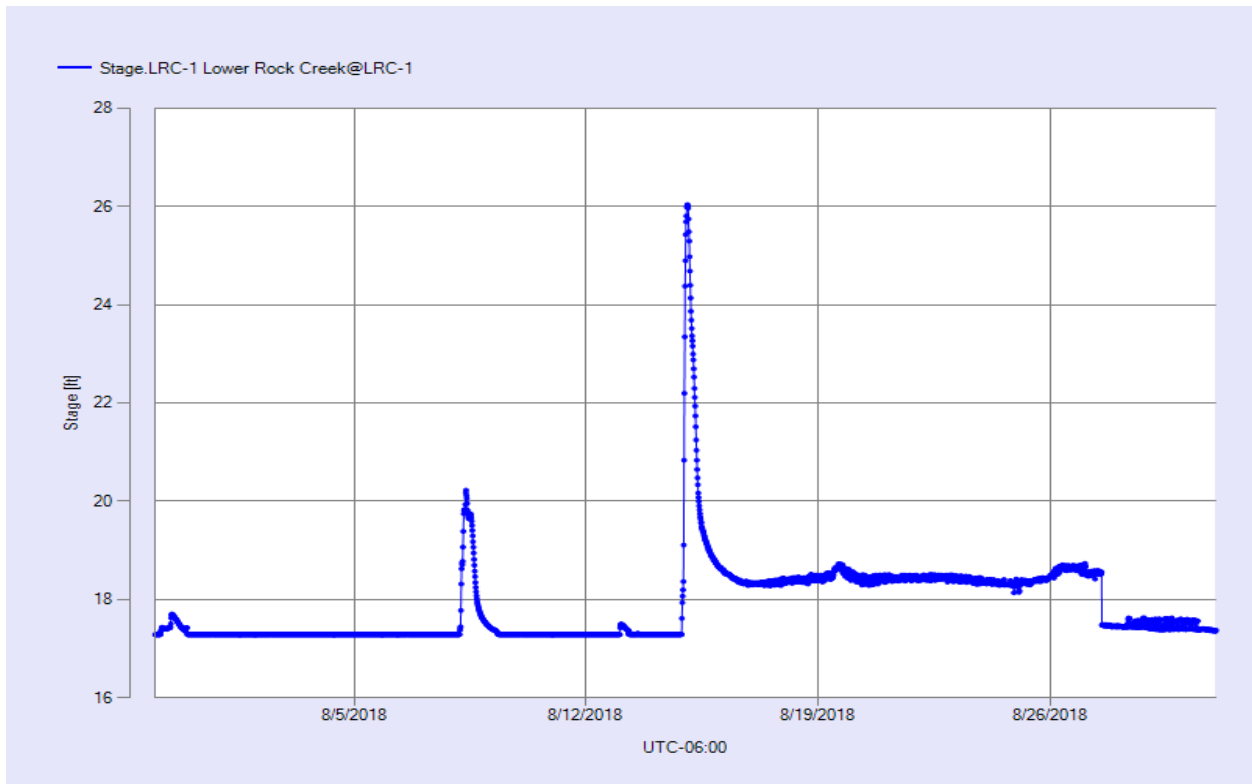


Figure 9 Monthly Hydrograph LRC-1

MESONET CLIMATOLOGICAL DATA SUMMARY										August 2018		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)				DEG DAYS		HUMIDITY (%)			RAIN (in)		PRESSURE (in)			WIND SPEED (mph)			SOLAR	4" SOIL TEMPERATURES			
	MAX	MIN	AVG	DEWPT	HDD	CDD	MAX	MIN	AVG		STN	MSL	DIR	AVG	MAX	(MJ/m ²)	SOD	BARE	MAX	MIN		
1	87	61	75.6	59.7	0	9	97	35	62	0.00	28.81	30.07	ESE	3.7	15.1	26.51	79.2	79.4	90	70		
2	91	66	79.6	60.9	0	13	82	36	54	0.00	28.79	30.04	S	6.5	15.4	26.98	80.2	82.8	92	74		
3	93	69	81.7	59.4	0	16	68	28	48	0.00	28.78	30.03	SSE	9.2	22.2	27.38	80.6	84.6	93	77		
4	93	71	82.4	60.4	0	17	64	32	49	0.00	28.75	29.99	SSE	9.6	27.0	23.50	80.5	84.9	92	78		
5	95	73	84.6	66.2	0	19	80	36	56	0.00	28.80	30.05	SSE	8.8	20.0	26.47	81.4	86.6	95	79		
6	95	74	85.4	65.1	0	20	72	38	52	0.00	28.81	30.06	SSE	8.3	20.9	26.62	82.2	88.0	95	81		
7	98	75	82.7	68.5	0	22	85	36	64	0.19	28.74	29.99	S	8.0	28.2	20.18	82.3	87.2	95	82		
8	82	67	74.1	68.8	0	9	96	67	84	1.08	28.77	30.02	ESE	7.8	36.2	12.68	79.4	79.9	83	76		
9	90	67	78.1	69.0	0	13	100	46	76	0.01	28.78	30.03	E	3.7	11.8	25.64	79.7	79.7	87	74		
10	92	68	79.7	69.6	0	15	100	40	74	0.00	28.77	30.02	SSE	3.7	22.9	24.50	80.9	81.0	88	74		
11	90	72	79.2	69.2	0	16	91	51	73	0.02	28.77	30.02	SSE	4.4	20.8	21.87	81.5	82.8	92	77		
12	79	69	73.5	70.4	0	9	96	78	90	1.02	28.79	30.05	E	5.5	18.7	9.68	79.5	78.7	82	77		
13	76	69	73.2	71.1	0	7	98	86	93	0.25	28.74	29.99	S	6.4	19.4	7.52	78.7	76.7	79	75		
14	85	68	74.2	70.7	0	11	99	71	89	3.47	28.68	29.92	SSE	6.6	27.8	12.75	78.4	76.6	81	73		
15	88	70	79.1	71.3	0	14	99	59	79	0.00	28.68	29.93	W	4.8	16.2	23.28	78.5	79.9	88	74		
16	93	74	80.3	72.8	0	18	95	56	79	0.00	28.74	29.98	S	6.5	17.7	13.25	80.2	79.9	84	77		
17	95*	75*	83.3*	73.0*	0*	20*	91*	49*	73*	0.14*	28.75*	30.00*	NE *	7.6*	21.3*	NA	NA	NA	NA	NA		
18	89	72	79.8	71.5	0	15	97	50	77	0.30	28.75	30.00	NE	4.9	14.5	21.55	81.4	81.4	87	77		
19	87	72	77.4	70.8	0	14	98	55	81	0.39	28.63	29.87	W	6.7	19.2	18.34	81.3	80.6	86	77		
20	82	66	73.9	62.8	0	9	86	50	69	0.00	28.75	30.00	NW	10.7	27.1	25.55	79.8	76.6	81	72		
21	84	62	73.8	63.9	0	8	96	47	73	0.00	28.89	30.14	E	4.6	13.5	23.99	78.3	75.6	82	69		
22	83	67	75.6	66.7	0	10	95	54	75	0.00	28.93	30.19	E	5.6	15.9	19.78	78.2	76.5	82	72		
23	93	69	81.1	69.5	0	16	92	50	69	0.00	28.75	30.00	SSE	9.4	23.3	24.43	79.2	78.9	87	72		
24	95	75	84.9	67.5	0	20	81	38	58	0.00	28.63	29.88	S	11.2	29.8	25.59	80.5	83.4	92	76		
25	94	76	84.8	68.0	0	20	76	39	58	0.00	28.73	29.97	S	9.7	24.3	25.79	80.8	85.6	94	78		
26	92	76	83.9	68.7	0	19	79	43	61	0.00	28.74	29.98	SSE	10.2	24.0	23.59	80.9	86.0	93	79		
27	93	76	84.7	67.8	0	20	78	42	58	0.00	28.64	29.89	S	11.4	29.0	25.08	80.9	86.5	94	80		
28	94	77	85.2	68.7	0	21	78	44	59	0.00	28.65	29.90	S	11.1	26.3	25.08	81.0	87.2	94	81		
29	91	72	81.7	70.0	0	16	80	57	68	0.00	28.76	30.01	E	6.8	17.8	23.12	81.0	87.6	95	82		
30	94	74	84.2	69.7	0	19	86	44	64	0.00	28.75	30.00	SSE	8.3	20.6	25.07	81.4	88.1	95	81		
31	93	73	83.4	68.0	0	18	81	43	61	0.00	28.69	29.94	SSE	8.4	25.0	21.77	81.2	87.1	93	81		
90* 71* 80.0* 67.7*										<- Monthly Averages ->		28.75* 30.00*		SSE* 7.4* 36.2*			21.92*	80.3* 82.3* 89* 77*				
Temperature - Highest: 98*					Degree Days - Total HDD: 0*					Number of Days With:												
Lowest: 61*					Total CDD: 475*					Tmax ≥ 90: 20*					Rainfall ≥ 0.01 inch: 10*							
Rainfall: Monthly Total: 6.87* in.					Humidity - Highest: 100*					Tmax ≤ 32: 0*					Rainfall ≥ 0.10 inch: 8*							
Greatest 24 Hr: 3.47* in.					Lowest: 28*					Tmin ≤ 32: 0*					Avg Wind Speed ≥ 10 mph: 5*							
										Tmin ≤ 0: 0*					Max Wind Speed ≥ 30 mph: 1*							

Figure 10 August Mesonet Data