
**Lake Thunderbird TMDL Monitoring
Plan Implementation: Sample Year
(SY) 2024- April Report**



OKLAHOMA
Water Resources Board

Lake Thunderbird TMDL Monitoring Plan Implementation: April 2024 Monitoring Report

Oklahoma Water Resources Board
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SUMMARY OF APRIL SAMPLING

Sampling for April 2024 occurred during base flow conditions on the seventeenth. Water samples were collected at nine locations and discharge was measured at two locations. Two samples were collected at JB-1, one on the upstream side of the bridge and the other on the downstream side of the bridge. Mesonet shows no precipitation on the seventeenth or in the 72 hours prior to sampling, and 0.07 inches of precipitation in the 72 hours after sampling occurred. The total rainfall amount in Norman for the month of April was 3.03 inches. Samples were not collected at LT-1 since this station will be relocated.

RESULTS

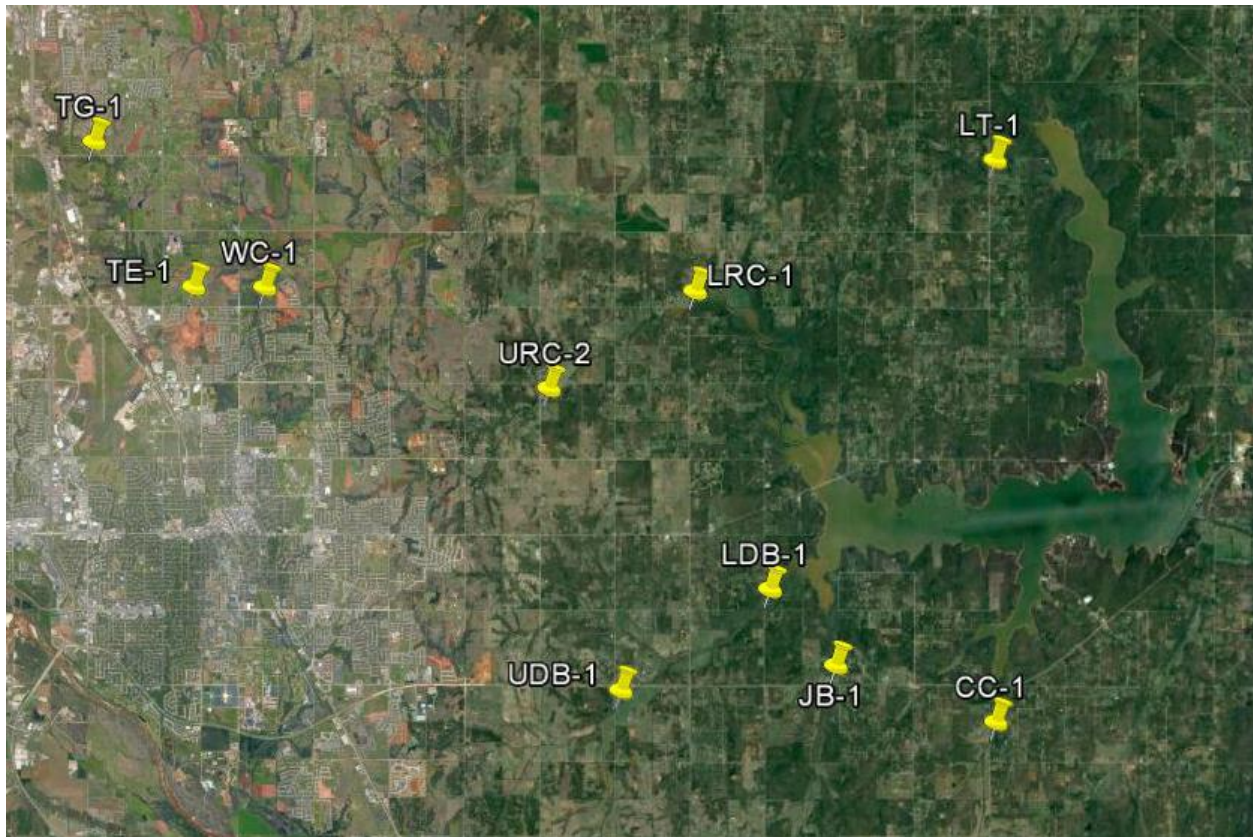


Figure 1 Monitoring Station Map

Monitoring Location ID	Monitoring Location Name	Date	Time	Field Crew	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Specific Conductance (µS/cm)	Turbidity (NTU)	Notes
CC-1	Clear Creek	4/17/2024	10:25	NH	18.7	6.12	7.86	700	6	Heavy filamentous algae, unclogged orifice; beaver dam still present upstream of bridge; changed DCP
JB-1	Jim Blue Creek	4/17/2024	9:40	NH	16.6	5.35	7.65	969	18	Upstream sample, lots of filamentous algae, moderate scum upstream of rock section; large tarp in water near radar
JB-1	Jim Blue Creek	4/17/2024	9:50	NH	17.1	5.85	7.83	956	9	Downstream sample; water clearer than upstream of bridge; took flow further downstream of sample
LDB-1	Lower Dave Blue Creek	4/17/2024	10:50	NH	20.1	6.76	8.08	899	19	Water brown, some minimal visual flow
LRC-1	Lower Rock Creek	4/17/2024	11:20	NH	20.2	8.87	8.15	711	9	Seemed lower than normal
TE-1	Little River Tributary	4/17/2024	14:00	NH	25.5	7.17	7.87	867	16	Beaver dam upstream of bridge; sand in rain gauge
TG-1	Little River	4/17/2024	14:30	NH	23.7	12.45	8.21	1104	3	
UDB-1	Upper Dave Blue Creek	4/17/2024	8:25	NH	17.8	6.20	7.85	923	14	Looks to be up slightly, no periphyton line, small amount of floating debris; can't connect to DCP
URC-2	Upper Rock Creek	4/17/2024	12:10	NH	21.9	7.29	8.01	873	12	Cows in channel upstream of sampling site
WC-1	Woodcrest Creek	4/17/2024	13:34	NH	22.1	14.02	8.16	974	4	Lots of filamentous algae; orifice very close to being out of water

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	0.27	0.042	<5.0
JB-1	Jim Blue Creek (us)	<0.05	0.34	0.042	29.0
JB-1	Jim Blue Creek (ds)	<0.05	0.29	0.029	8.0
LDB-1	Lower Dave Blue Creek	<0.05	0.39	0.036	19.0
LRC-1	Lower Rock Creek	<0.05	0.34	0.032	10.0
TE-1	Little River Tributary	<0.05	0.72	0.058	10.0
TG-1	Little River	0.05	0.39	0.036	6.0
UDB-1	Upper Dave Blue Creek	<0.05	0.27	0.030	13.0
URC-2	Upper Rock Creek	<0.05	0.54	0.050	9.0
WC-1	Woodcrest Creek	<0.05	0.52	0.068	<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	<0.05	0.25	0.041	<5.0
Duplicate RPD	0%	7.69%	2.41%	0%

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.

Monitoring Location ID	Monitoring Location Name	Discharge (cfs)	Stream Stage (ft)
CC-1	Clear Creek	0.17	20.25
JB-1	Jim Blue Creek	0.21	7.40
LDB-1	Lower Dave Blue Creek	8.41	16.75
LRC-1	Lower Rock Creek	0.35	3.40
TE-1	Little River Tributary	0.20	10.72
TG-1	Little River	0.40	8.86
UDB-1	Upper Dave Blue Creek	0.08	17.21
URC-2	Upper Rock Creek	0.24	10.95
WC-1	Woodcrest Creek	0.01	7.28

Table 4 Station Discharge Summary

All rated stream discharges are provisional and subject to change.

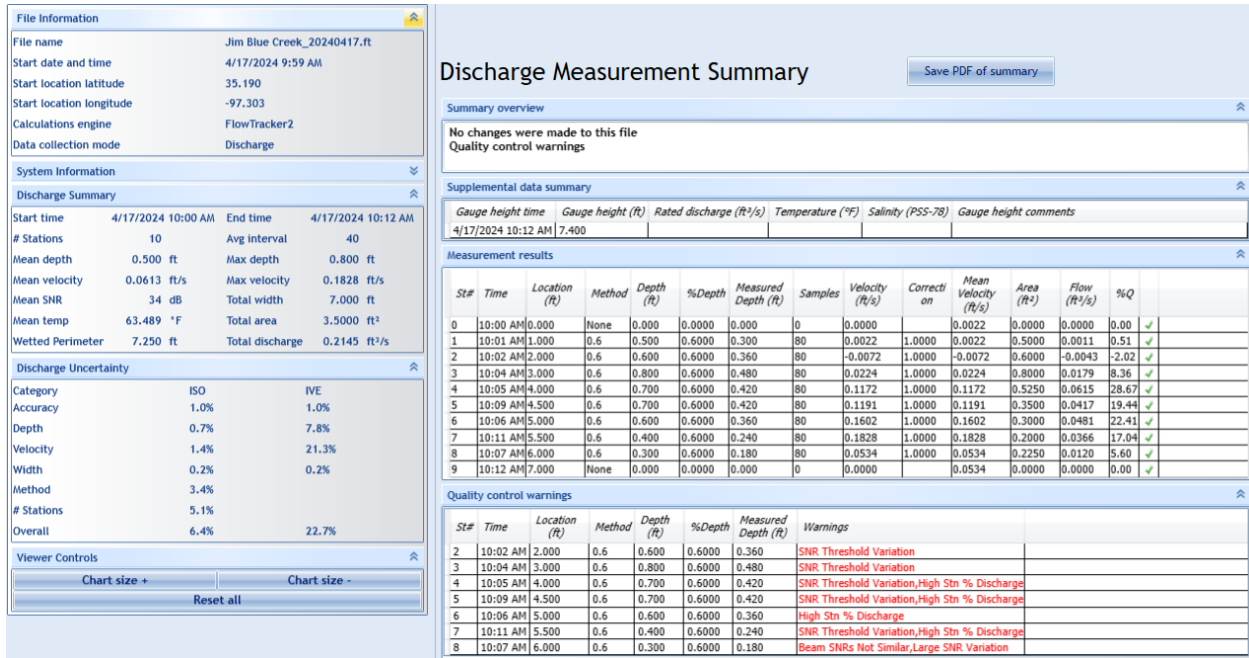


Figure 2 Discharge Measurement Summary JB-1

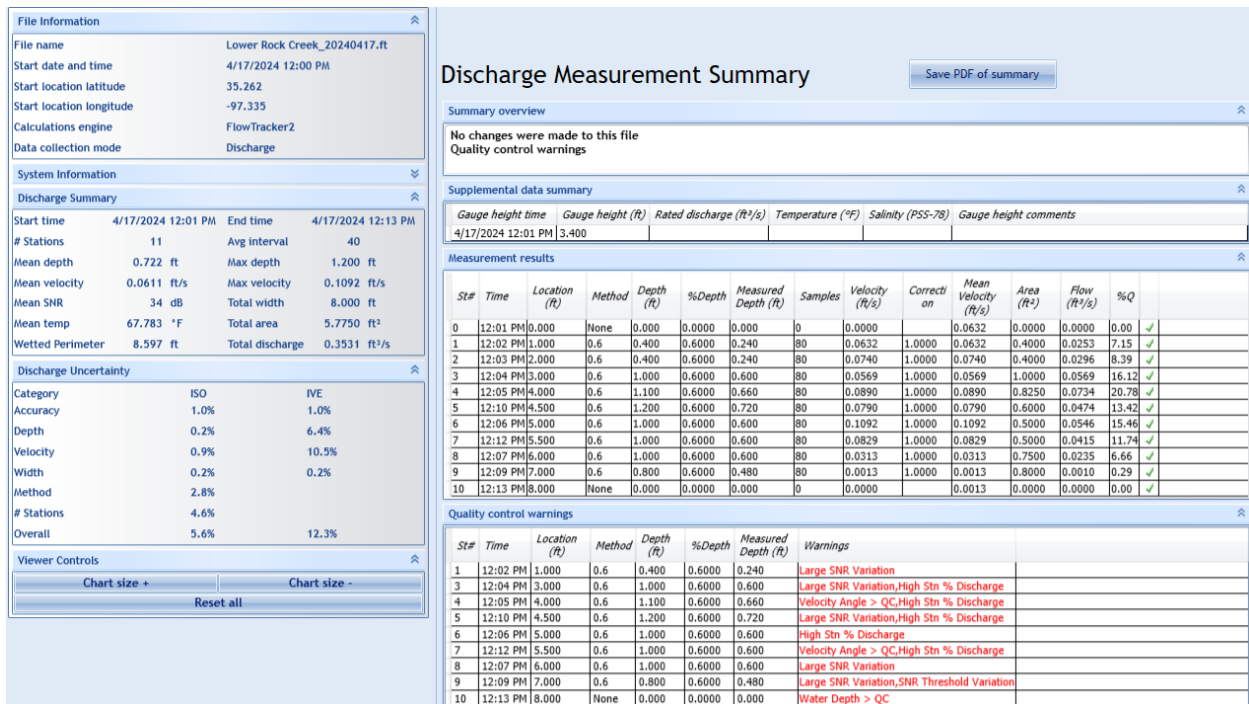
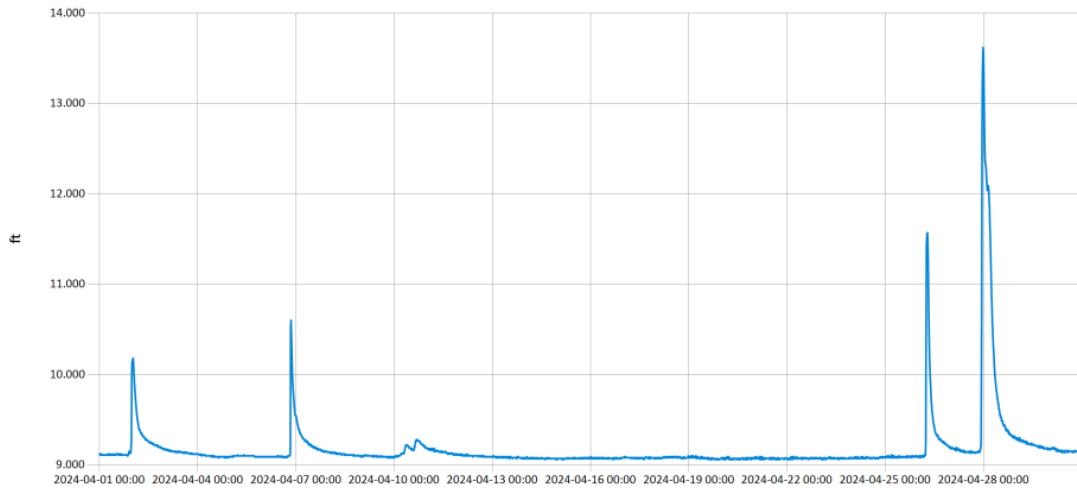


Figure 3 Discharge Measurement Summary LRC-1

Period Selected: 2024-04-01 00:00 - 2024-04-30 23:59

UTC Offset: -06:00

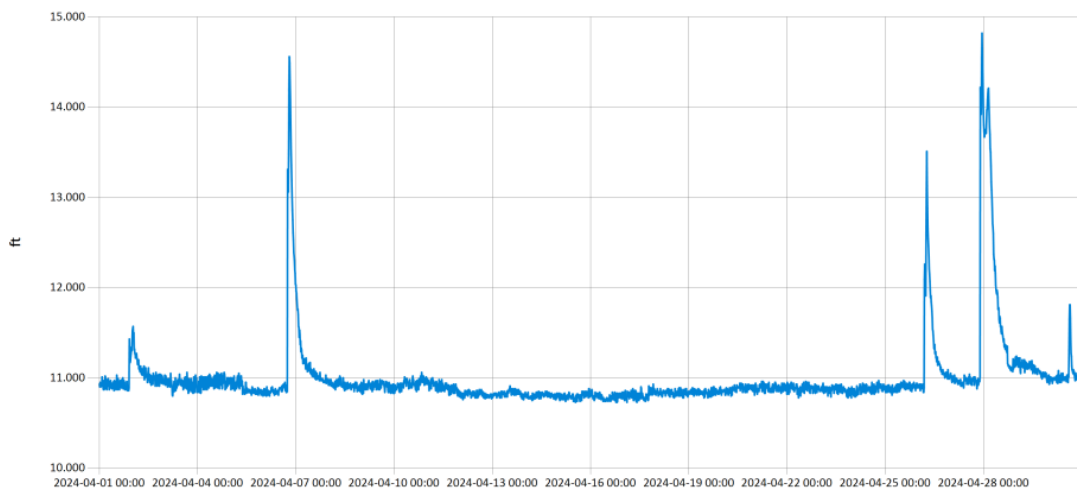


— Stage@TG

Figure 4 Monthly Hydrograph TG-1

Period Selected: 2024-04-01 00:00 - 2024-04-30 23:59

UTC Offset: -06:00

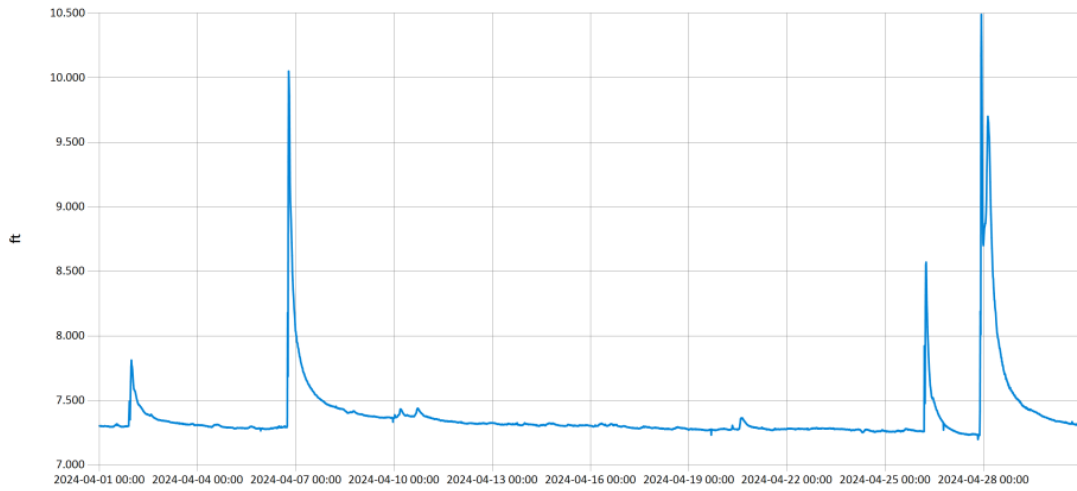


— Stage@TE

Figure 5 Monthly Hydrograph TE-1

Period Selected: 2024-04-01 00:00 - 2024-04-30 23:59

UTC Offset: -06:00

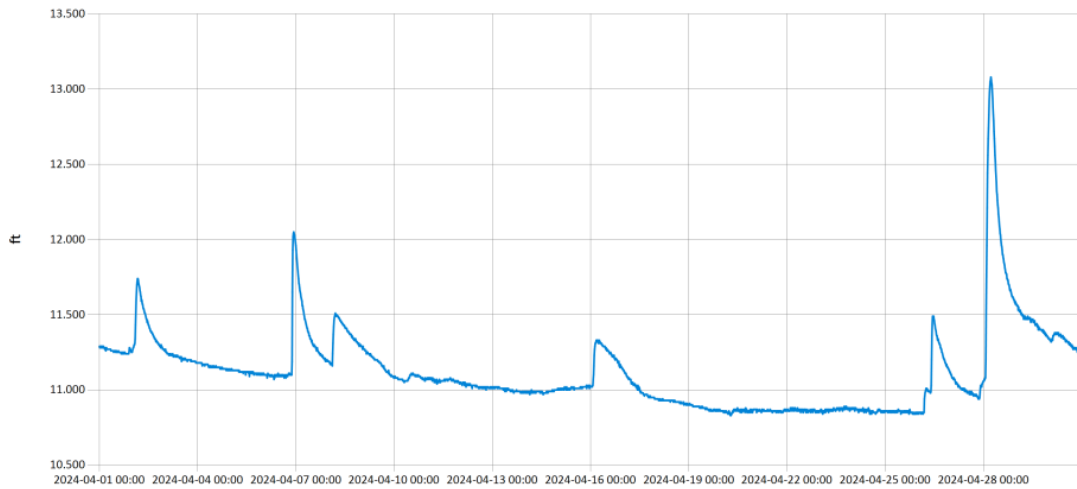


— Stage@WC

Figure 6 Monthly Hydrograph WC-1

Period Selected: 2024-04-01 00:00 - 2024-04-30 23:59

UTC Offset: -06:00

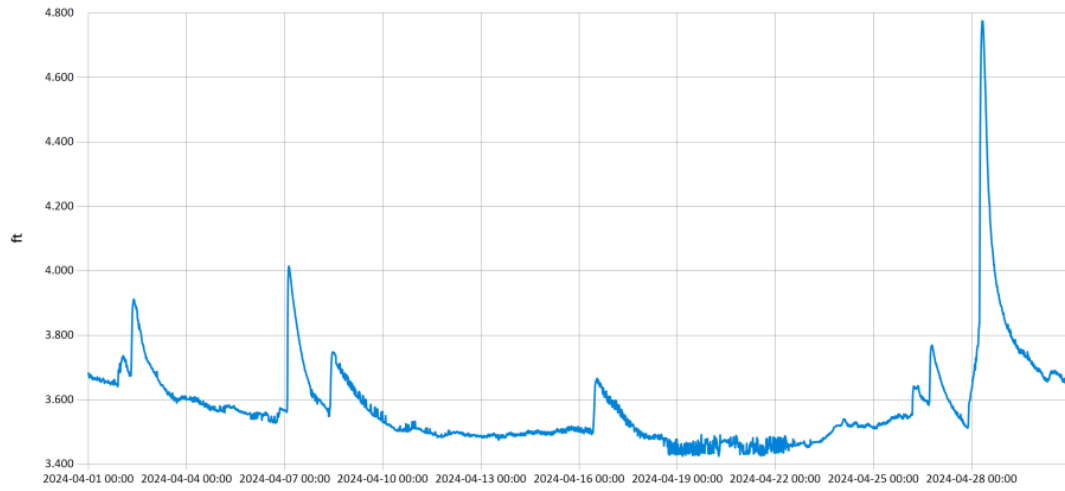


— Stage@URC

Figure 7 Monthly Hydrograph URC-2

Period Selected: 2024-04-01 00:00 - 2024-04-30 23:59

UTC Offset: -06:00

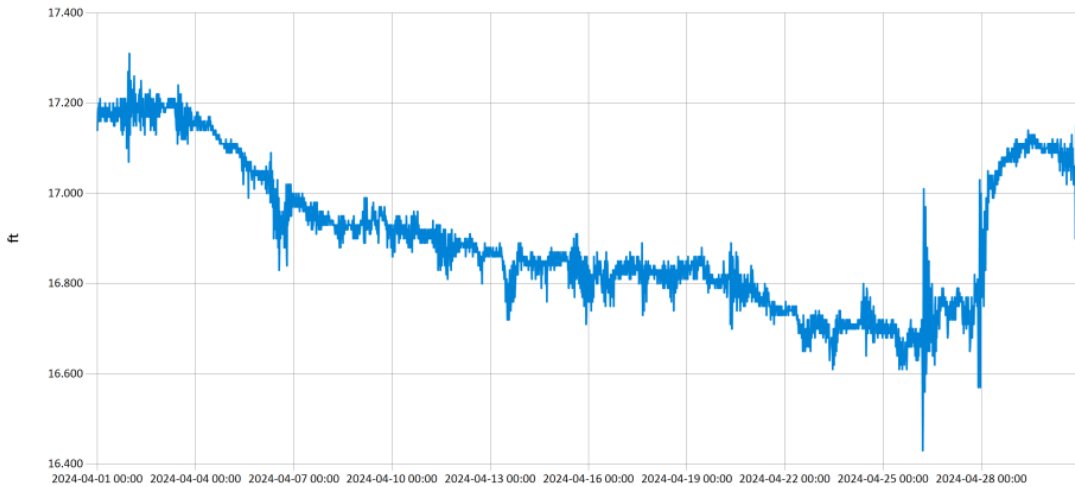


— Stage@LRC

Figure 8 Monthly Hydrograph LRC-1

Period Selected: 2024-04-01 00:00 - 2024-04-30 23:59

UTC Offset: -06:00

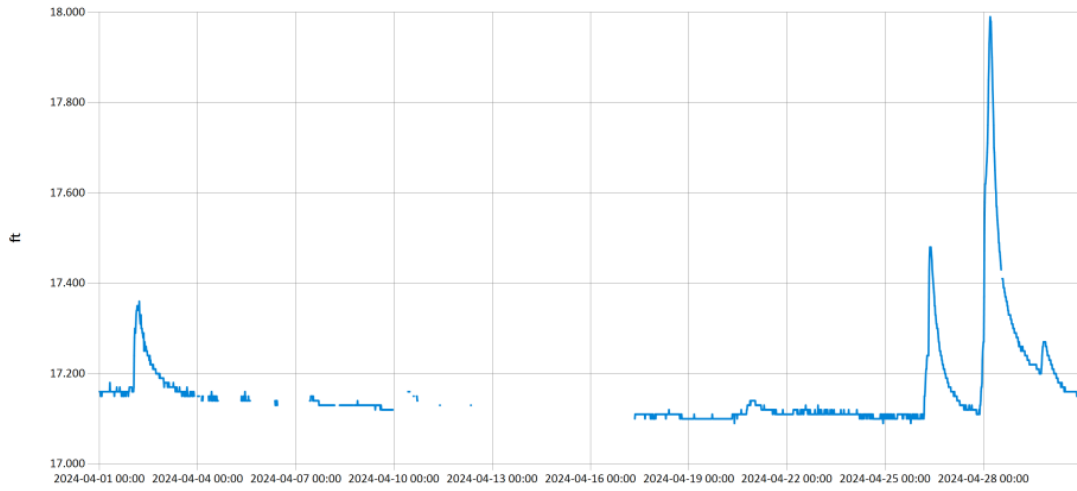


— Stage@LDB

Figure 9 Monthly Hydrograph LDB-1

Period Selected: 2024-04-01 00:00 - 2024-04-30 23:59

UTC Offset: -06:00

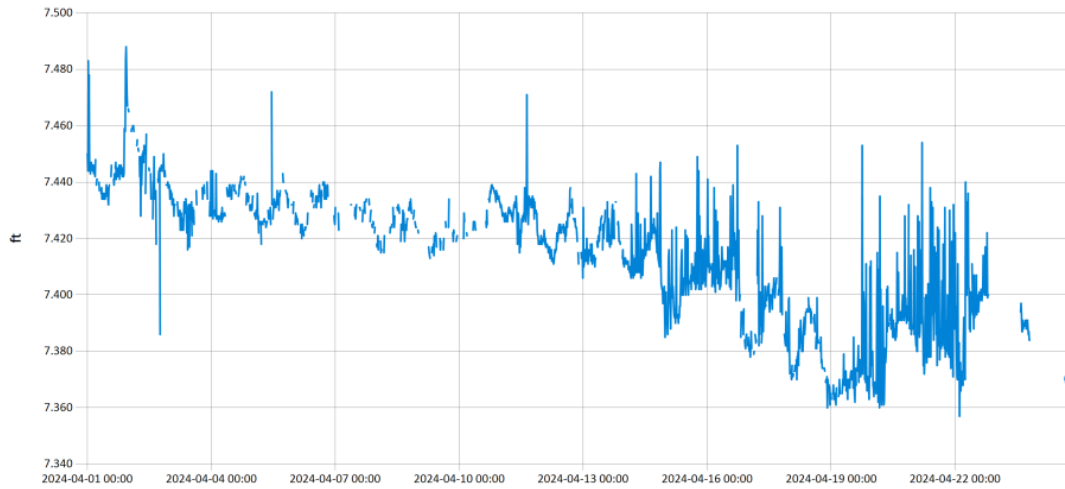


— Stage@UDB

Figure 10 Monthly Hydrograph UDB-1

Period Selected: 2024-04-01 00:00 - 2024-04-30 23:59

UTC Offset: -06:00

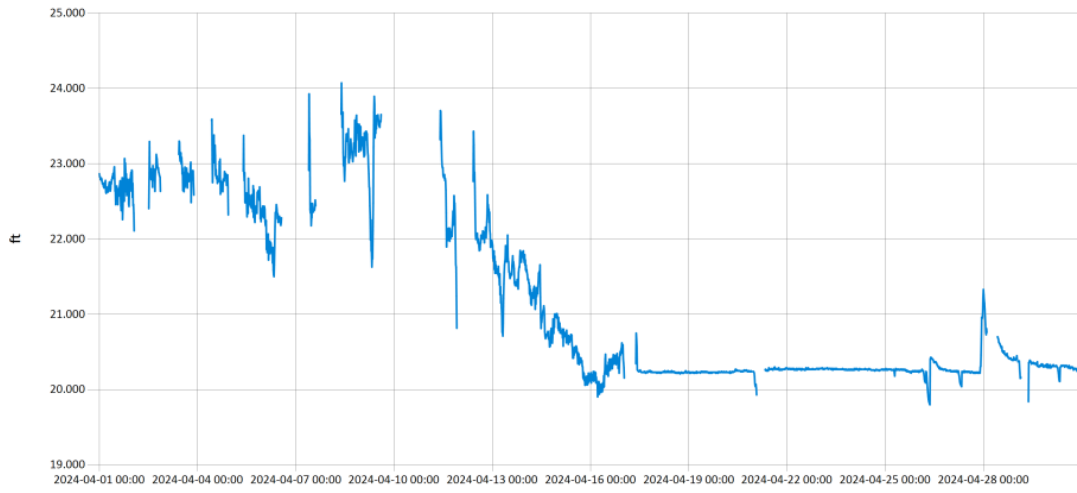


— Stage@JB

Figure 11 Monthly Hydrograph JB-1

Period Selected: 2024-04-01 00:00 - 2024-04-30 23:59

UTC Offset: -06:00



— Stage@CC

Figure 12 Monthly Hydrograph CC-1

MESONET CLIMATOLOGICAL DATA SUMMARY				April 2024				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	(in)	STN	MSL	DIR	AVG	MAX	(MJ/m ²)	SOD	BARE	MAX	MIN		
1	76*	52*	68.0*	63.1*	1*	0*	95*	73*	85*	0.14*	28.40*	29.64*	S	10.4*	30.7*	NA	60.9*	63.5*	66*	61*		
2	59	42	49.2	39.2	15	0	95	40	70	0.00	28.64	29.88	NNW	14.4	31.6	16.18	57.1	55.7	61	51		
3	64	39	51.7	29.5	14	0	80	20	47	0.00	28.70	29.94	NNW	10.6	30.6	24.30	54.3	51.7	57	47		
4	73	38	56.9	34.1	9	0	81	25	47	0.00	28.71	29.96	ENE	4.3	14.6	24.15	54.7	53.6	62	45		
5	81	48	65.2	40.9	0	0	57	28	42	0.00	28.71	29.95	SE	10.2	22.0	23.95	56.9	58.7	68	50		
6	76	57	65.8	53.1	0	2	96	41	65	0.78	28.53	29.77	SSE	12.9	39.9	17.96	58.6	62.9	70	58		
7	71	50	60.4	29.8	5	0	50	19	33	0.00	28.55	29.79	SW	9.7	24.2	25.32	56.7	59.1	65	53		
8	72	50	61.4	39.4	4	0	65	31	45	0.00	28.61	29.85	N	7.6	16.6	19.41	56.9	57.2	63	51		
9	71	54	62.4	46.3	2	0	74	45	56	0.05	28.61	29.86	ENE	10.8	34.9	11.22	57.7	57.2	60	54		
10	65	44	54.5	46.3	11	0	91	37	75	0.09	28.59	29.83	N	9.2	27.9	4.91	56.7	55.3	57	53		
11	68	43	55.6	33.9	9	0	95	21	49	0.00	28.81	30.05	NNW	12.0	38.4	25.24	54.9	53.5	58	49		
12	78	40	61.7	42.7	6	0	87	32	53	0.00	28.90	30.15	S	6.5	24.6	24.65	56.1	55.4	63	47		
13	81	59	70.1	51.0	0	5	75	31	53	0.00	28.78	30.03	S	13.6	37.9	24.77	59.3	60.7	68	55		
14	88	63	73.7	60.8	0	10	86	40	66	0.00	28.63	29.87	S	12.1	26.6	24.37	62.4	66.8	76	59		
15	72	65	69.2	65.1	0	3	95	80	87	0.00	28.53	29.77	SSE	13.1	39.8	6.46	63.8	66.7	69	65		
16	81	58	72.4	50.0	0	5	89	23	51	0.00	28.49	29.73	SW	12.7	30.3	26.05	64.6	69.7	76	65		
17	86	52	71.4	59.5	0	4	97	40	68	0.00	28.65	29.89	SSE	8.4	27.3	22.97	64.8	70.0	78	62		
18	78	54	64.7	56.4	0	1	90	60	75	0.00	28.71	29.95	S	15.4	33.5	16.93	65.8	70.4	74	66		
19	65	46	55.9	38.1	9	0	83	34	54	0.00	28.91	30.16	NE	12.3	32.7	19.56	62.0	64.7	70	60		
20	58	49	54.9	34.9	11	0	71	39	47	0.07	28.98	30.24	NE	10.4	26.5	7.72	59.7	60.8	64	58		
21	63	42	52.3	33.0	12	0	81	34	49	0.00	29.07	30.33	N	7.7	22.0	24.77	58.8	61.1	69	54		
22	70	39	56.7	41.0	11	0	93	39	58	0.00	28.86	30.11	S	9.8	30.2	25.89	58.6	61.5	69	53		
23	78	54	66.2	54.4	0	1	88	51	67	0.00	28.68	29.92	SSW	10.3	29.1	22.42	61.0	65.9	74	59		
24	78	57	67.6	56.1	0	2	88	48	68	0.00	28.83	30.08	SE	8.4	24.8	15.98	63.1	67.7	73	63		
25	80	66	72.9	65.1	0	8	90	57	77	0.00	28.62	29.86	S	12.0	30.5	15.69	65.2	70.5	75	67		
26	83	60	72.7	60.0	0	7	98	25	70	0.49	28.41	29.65	S	13.4	50.3	22.61	66.2	69.5	72	66		
27	78	62	71.7	66.0	0	5	98	70	83	1.00	28.48	29.72	SSE	13.2	58.7	9.89	67.0	69.3	71	67		
28	75	58	64.9	60.1	0	2	97	64	85	0.41	28.56	29.80	S	8.0	29.9	13.62	65.8	67.6	73	64		
29	80	54	67.5	52.5	0	2	97	33	63	0.00	28.65	29.90	SE	5.3	16.7	26.75	66.5	67.9	75	61		
30	84	63	73.5	63.1	0	8	91	33	71	0.00	28.58	29.83	S	11.1	37.7	21.96	68.1	68.8	75	64		
74* 52* 63.7* 48.8*				<- Monthly Averages ->				28.67* 29.92*		S * 10.5* 58.7*			19.51*	60.8* 62.8* 68* 58*								
Temperature - Highest: 88*				Degree Days - Total HDD: 120*				Number of Days With:				Tmax ≥ 90: 0*				Rainfall ≥ 0.01 inch: 8*						
Lowest: 38*				Total CDD: 65*				Tmax ≤ 32: 0*				Rainfall ≥ 0.10 inch: 5*										
Rainfall: Monthly Total: 3.03* in.				Humidity - Highest: 98*				Tmin ≤ 32: 0*				Avg Wind Speed ≥ 10 mph: 19*										
Greatest 24 Hr: 1.00* in.				Lowest: 19*				Tmin ≤ 0: 0*				Max Wind Speed ≥ 30 mph: 16*										

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* Denotes incomplete record

Figure 13 April Mesonet Data