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



SY2016 Monthly Report

Lake Thunderbird TMDL Monitoring Plan Implementation:

October 2016 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 October Water Quality Sampling 4
Results..... 4

LIST OF TABLES

TABLE 1 FIELD DATA FORM 5
TABLE 2 LABORATORY ANALYSIS SUMMARY 6

LIST OF FIGURES

FIGURE 1 MONITORING STATION MAP 4
FIGURE 2 MONTHLY HYDROGRAPH JB-1 7
FIGURE 3 MONTHLY HYDROGRAPH LDB-1 7
FIGURE 4 MONTHLY HYDROGRAPH LRC-1 7
FIGURE 5 MONTHLY HYDROGRAPH LT-1..... 8
FIGURE 6 MONTHLY HYDROGRAPH TE-1 8
FIGURE 7 MONTHLY HYDROGRAPH TG-1..... 8
FIGURE 8 MONTHLY HYDROGRAPH UDB-1 9
FIGURE 9 MONTHLY HYDROGRAPH URC-2..... 9
FIGURE 10 MONTHLY HYDROGRAPH WC-1..... 9
FIGURE 11 MESONET DATA 10

SUMMARY OF OCTOBER WATER QUALITY SAMPLING

Sampling for October 2016 occurred on the twenty-fourth and was considered a typical base flow collection. Discharge measurements were not collected this month due to low water levels. All sites were at or near stage levels where greater than five discharge measurements have been collected this year, or the streams were not flowing or disconnected. Water quality measurements were made at the ten designated monitoring stations with the exception of LT-1, which was completely dry up and downstream of the station location. All water level gages were operational for the month with the exception of CC-1 and LRC-1. CC-1 was vandalized in August and repaired on October the thirty-first. The data is currently recording, but not transmitting, as a SIM card is being ordered. LRC-1 stopped transmitting on the evening of the twenty-fifth, and was discovered stolen on the thirty-first. Replacement equipment has been ordered, with an unknown delivery date. Mesonet data for Norman shows a total of 0.27 inches of rainfall for the month of October with no precipitation in the 72 hours preceding and 0.01 inches in the 72 hours following the sampling event.

RESULTS

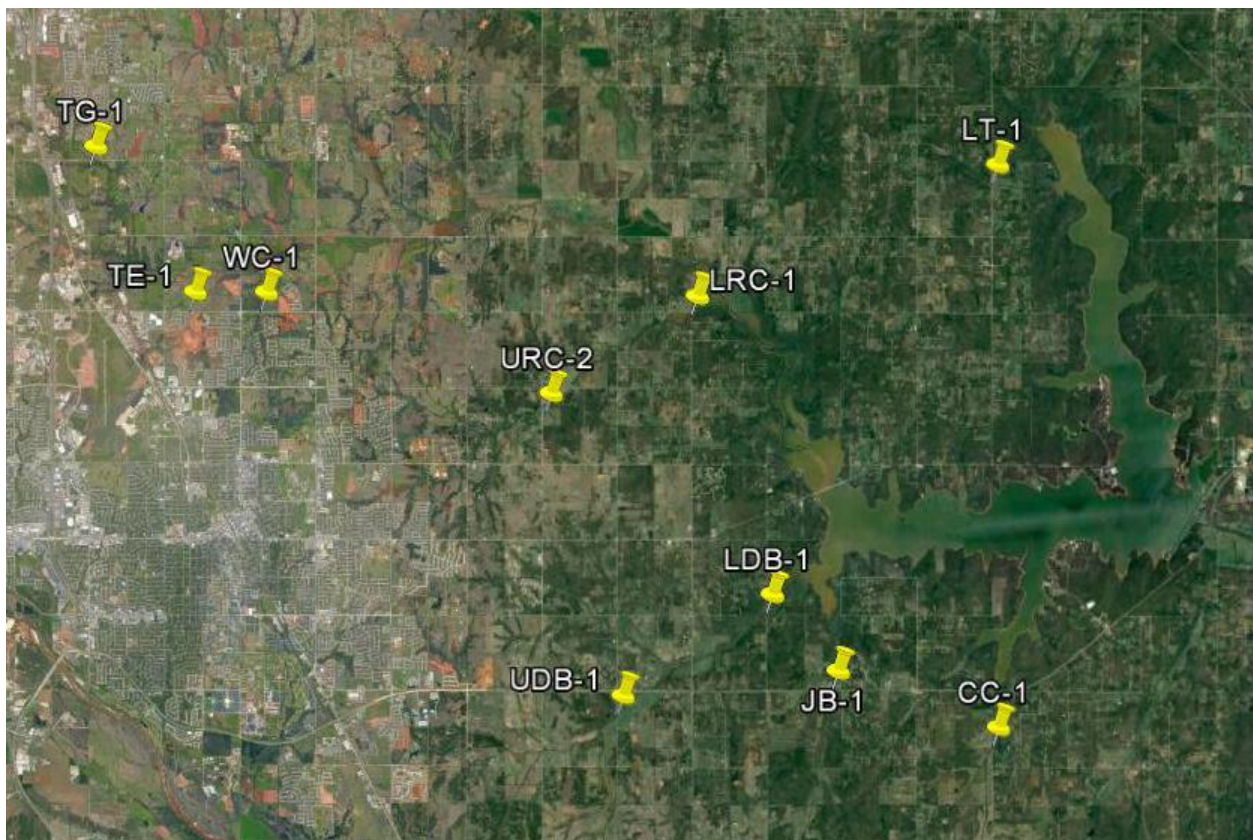


Figure 1 Monitoring Station Map

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	10/24/2016	9:49	sd	14.6	8.3	783.0	7.9	7.0	
tg-1	10/24/2016	15:20	sd	N/A	N/A	N/A	N/A	N/A	QA 33
udb-1	10/24/2016	9:06	sd	14.7	2.8	1233.0	7.6	11.0	barely flow ing through the riffle section
jb-1	10/24/2016	10:18	sd	13.7	7.2	971.0	8.1	31.0	barely connected to us pool. Sampled in us pool. Rp1 barely over water
ldb-1	10/24/2016	11:09	sd	16.5	4.0	792.0	8.1	51.0	
lrc-1	10/24/2016	12:35	sd	14.8	3.8	878.0	7.4	23.0	
urc-2	10/24/2016	13:14	sd	20.3	17.1	1211.0	7.6	5.0	barely flow ing through on us and ds
wc-1	10/24/2016	13:58	sd	17.2	7.2	978.0	7.9	8.0	ds rp not over w ater, used us rp. Dry under bridge, sampled in us pool
te-1	10/24/2016	14:32	sd	17.0	6.9	1133.0	7.9	31.0	almost disconnected ds of bridge
tg-1	10/24/2016	15:09	sd	18.2	5.9	946.0	7.7	4.0	
lt-1	10/24/2016	11:40	sd	N/A	N/A	N/A	N/A	N/A	no sample collected. Us completely dry, ds dry except for very small pool. Stagnant, scummy.

Table 1 Field Data Form

SITE NAME	QA CODE	TKN	NITRATE/NITRITE	TP	TSS
TG-1	10	<0.050	<0.050	0.078	<2.50
CC-1	12	<0.050	0.103	0.044	4.70
CC-1	22	<0.050	0.102	0.038	4.40
JB-1	10	0.562	<0.050	0.087	10.0
UDB-1	10	<0.050	<0.050	0.286	3.90
LDB-1	10	0.107	<0.050	0.051	22.8
LRC-1	10	1.33	<0.050	0.050	14.3
URC-2	10	<0.050	<0.050	0.025	17.1
WC-1	10	<0.050	<0.050	0.031	5.30
TE-1	10	<0.050	<0.050	0.034	5.80
TG-1	33	<0.050	<0.050	<0.005	<2.50
LT-1	10	N/A	N/A	N/A	N/A

Table 2 Laboratory Analysis Summary

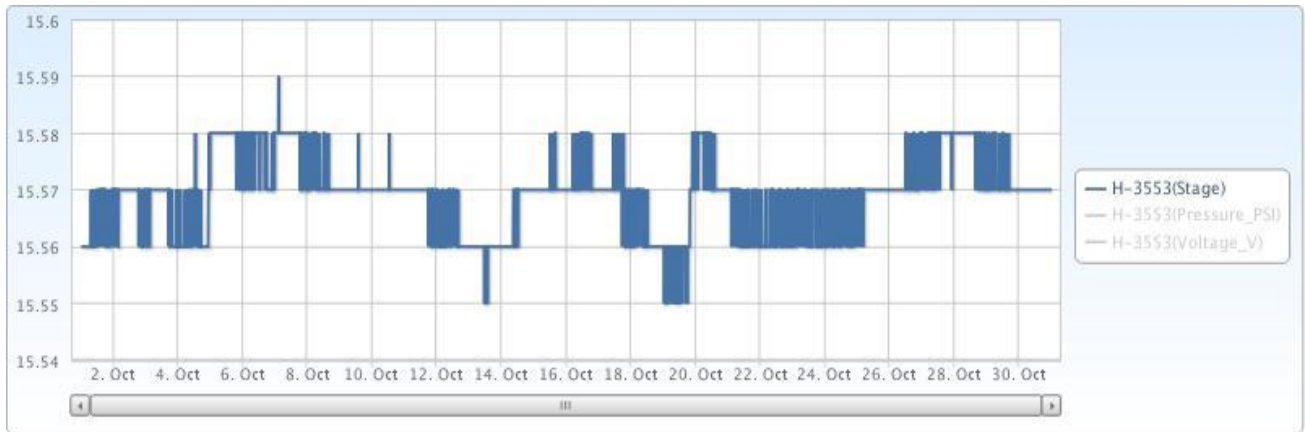


Figure 2 Monthly Hydrograph JB-1

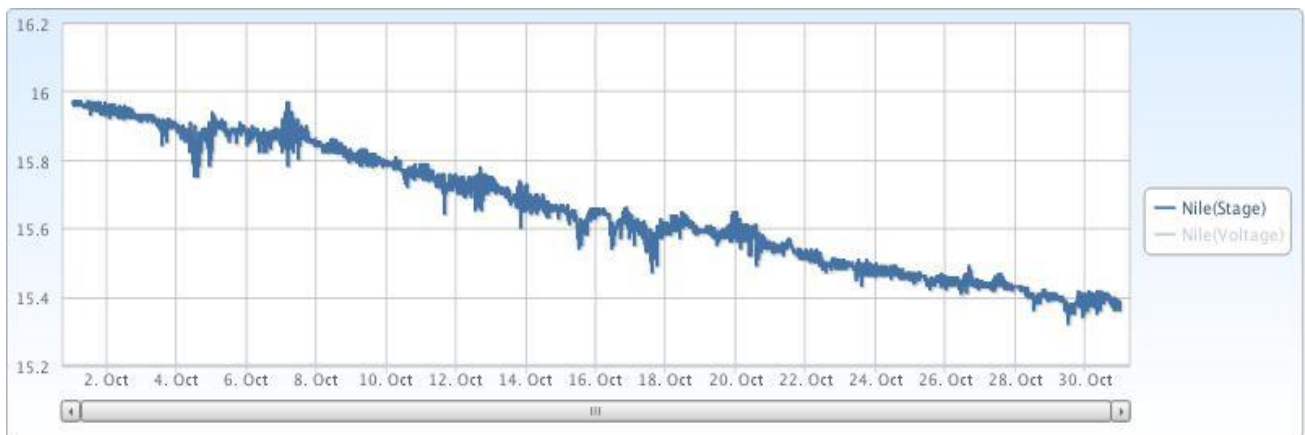


Figure 3 Monthly Hydrograph LDB-1

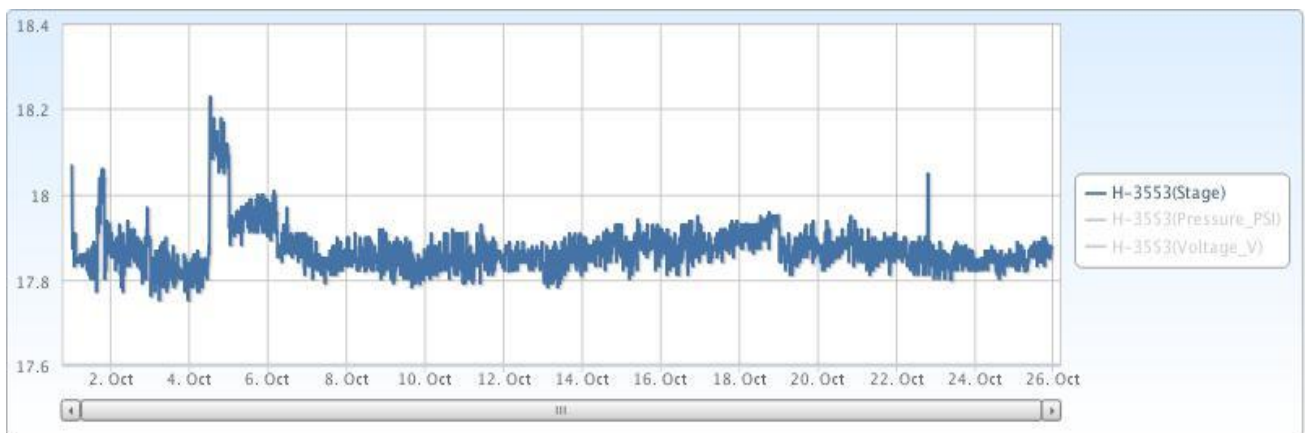


Figure 4 Monthly Hydrograph LRC-1

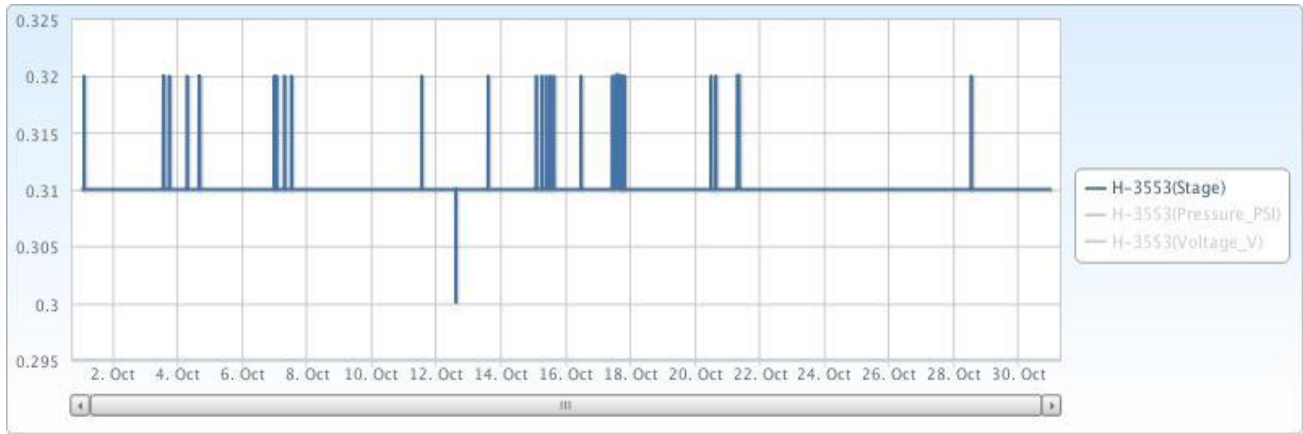


Figure 5 Monthly Hydrograph LT-1

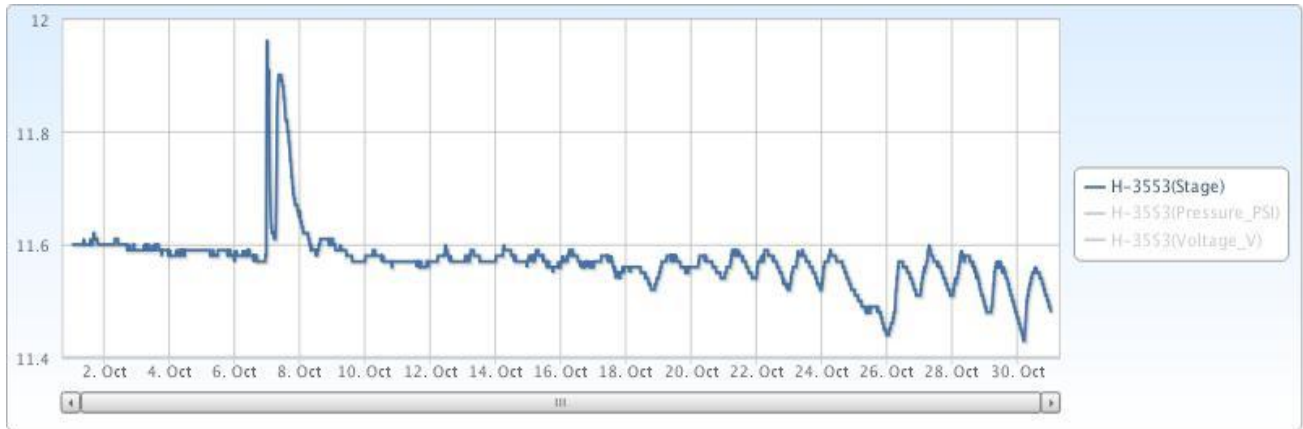


Figure 6 Monthly Hydrograph TE-1

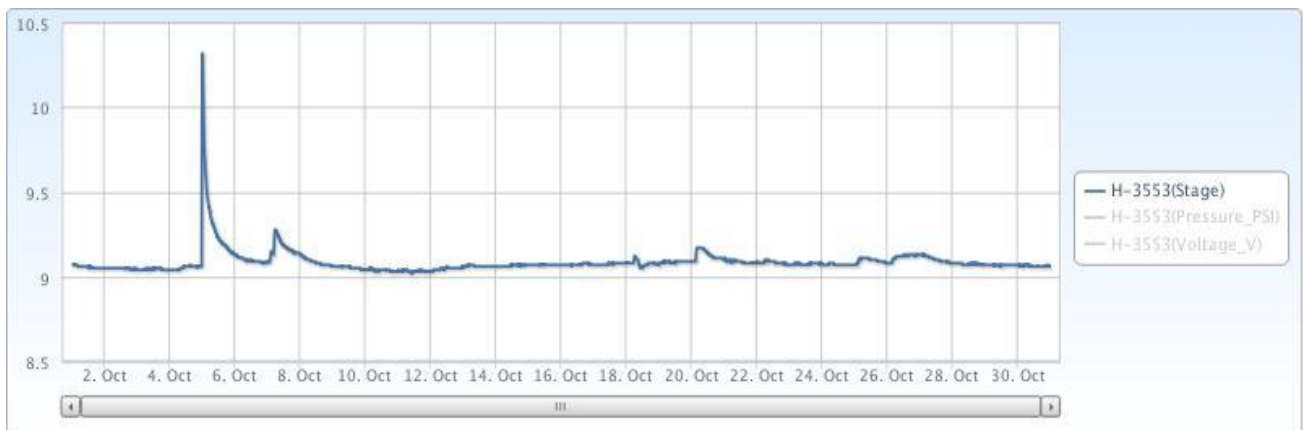


Figure 7 Monthly Hydrograph TG-1

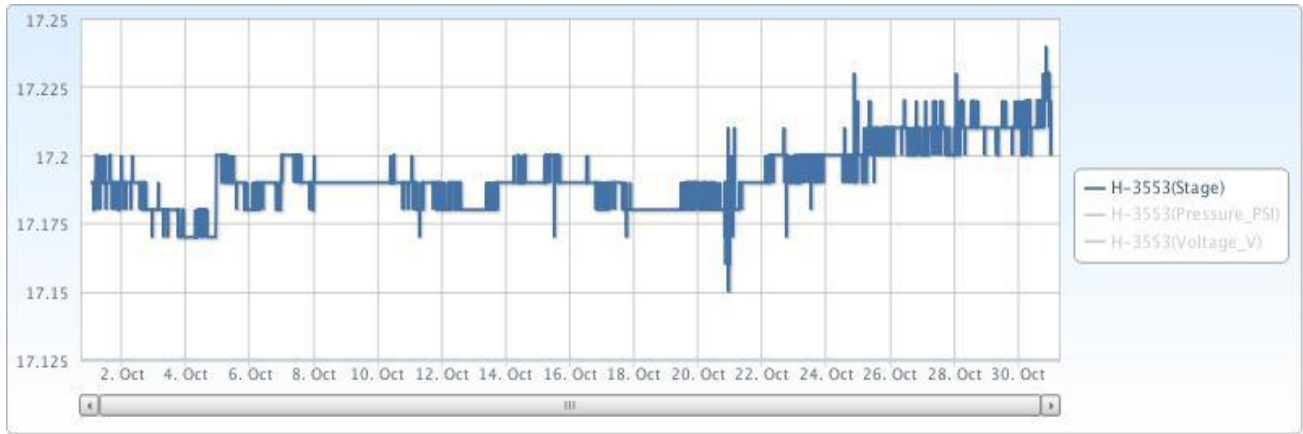


Figure 8 Monthly Hydrograph UDB-1

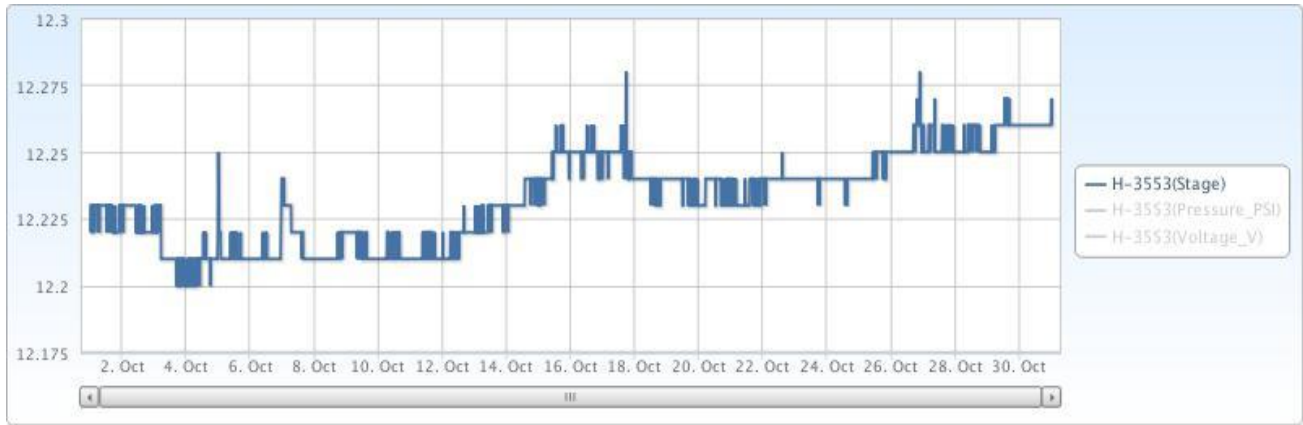


Figure 9 Monthly Hydrograph URC-2



Figure 10 Monthly Hydrograph WC-1

MESONET CLIMATOLOGICAL DATA SUMMARY				October 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 (°F)				DEG DAYS		HUMIDITY (%)			RAIN		PRESSURE (in)		WIND SPEED (mph)		SOLAR (MJ/m ²)	4" SOIL TEMPERATURES			
	MAX	MIN	AVG	DEWPT	HDD	CDD	MAX	MIN	AVG	(in)	STN	MSL	DIR	AVG	MAX		SOD	BARE	MAX	MIN
1	78	57	67.1	53.6	0	2	93	34	65	0.00	28.82	30.08	SSE	3.8	14.0	18.06	70.9	72.9	80	67
2	82	58	70.2	55.2	0	5	83	39	61	0.00	28.79	30.04	SSE	5.7	15.6	19.40	71.6	74.1	81	68
3	82	60	71.5	57.3	0	6	87	43	63	0.00	28.66	29.91	SSE	9.0	25.9	19.34	71.7	74.3	81	69
4	82	67	73.9	64.2	0	9	92	61	72	0.01	28.49	29.73	SSE	12.3	30.8	12.46	72.1	74.7	79	71
5	89	64	77.6	67.6	0	11	98	43	74	0.00	28.58	29.83	SSE	9.4	23.8	19.38	73.5	76.6	83	71
6	85	57	76.4	68.5	0	6	94	60	77	0.20	28.66	29.91	S	11.4	34.7	11.95	74.7	78.0	82	75
7	68	49	56.2	47.1	7	0	92	46	73	0.03	28.98	30.24	N	12.3	28.3	15.84	70.6	68.5	75	64
8	73	43	58.2	42.5	7	0	96	25	62	0.00	29.03	30.29	E	4.7	12.4	19.42	67.6	65.6	74	59
9	75	51	63.4	46.6	2	0	91	28	58	0.00	29.02	30.28	SSE	4.6	15.8	18.06	68.1	68.4	75	63
10	77	56	65.8	46.5	0	1	71	30	52	0.00	28.90	30.16	SSE	8.0	22.4	17.86	68.6	69.8	76	65
11	84	58	70.4	51.6	0	6	74	37	53	0.00	28.77	30.02	S	10.6	26.8	18.14	68.6	70.5	77	64
12	75	54	63.1	54.1	0	0	83	53	73	0.00	28.83	30.08	S	12.7	26.9	13.20	68.7	70.6	74	68
13	56	49	52.9	47.7	12	0	94	74	83	0.00	28.94	30.19	NNE	8.0	22.8	4.31	66.0	65.0	67	63
14	75	53	64.4	58.3	1	0	100	64	82	0.00	28.83	30.09	S	6.7	20.6	13.58	66.8	67.1	73	62
15	84	64	74.4	66.4	0	9	98	57	78	0.00	28.67	29.91	S	13.0	33.2	14.15	69.4	71.5	77	67
16	87	69	77.4	66.9	0	13	91	53	71	0.00	28.58	29.82	S	12.8	31.3	17.46	71.1	74.3	80	70
17	89	72	79.8	65.5	0	15	75	46	63	0.00	28.44	29.67	S	15.6	37.7	17.69	72.0	75.9	81	72
18	81	61	71.8	50.3	0	6	88	31	49	0.00	28.59	29.84	N	7.7	25.1	17.44	71.4	75.0	80	71
19	85	59	72.3	60.2	0	7	86	52	66	0.02	28.69	29.94	SSW	7.0	28.0	14.26	70.9	74.2	80	69
20	70	46	60.6	46.6	7	0	89	34	62	0.00	29.00	30.26	N	11.1	27.0	17.28	69.0	70.8	75	67
21	70	39	55.4	41.4	10	0	100	30	65	0.00	28.97	30.23	S	3.6	15.9	17.53	65.6	66.1	73	60
22	78	49	62.5	44.8	2	0	84	28	56	0.00	28.83	30.08	S	8.7	21.6	17.29	65.4	66.2	72	61
23	77	55	65.0	49.9	0	1	81	37	60	0.00	28.84	30.09	S	8.1	20.7	13.58	65.8	66.9	72	62
24	82	56	68.5	58.0	0	4	91	47	71	0.00	28.94	30.19	SSE	5.7	16.4	15.97	67.1	69.0	75	64
25	80*	62*	69.7*	62.2*	0*	6*	97*	56*	78*	0.00*	28.87*	30.13*	SSE*	9.0*	21.6*	NA	68.2*	70.4*	75*	67*
26	81	57	68.8	61.4	0	4	100	52	79	0.00	28.84	30.10	S	6.7	20.4	11.48	68.7	71.0	76	67
27	83	56	67.8	60.5	0	4	100	45	80	0.01	28.93	30.19	SSE	3.5	13.7	15.54	68.9	71.2	78	66
28	84	64	72.7	59.9	0	9	87	45	66	0.00	28.85	30.11	S	9.6	27.0	14.16	69.3	72.1	77	68
29	83	62	71.7	57.6	0	7	84	42	63	0.00	28.78	30.03	S	10.8	33.3	14.97	68.9	71.7	77	67
30	68	56	61.7	56.0	3	0	96	65	82	0.00	28.86	30.12	NE	6.1	16.4	12.10	67.9	69.5	73	67
31	84	53	69.6	56.0	0	3	100	36	67	0.00	28.70	29.95	S	10.1	29.8	15.08	67.1	69.0	75	64
	79*	57*	67.8*	55.6*	<- Monthly Averages ->						28.80*	30.05*	S	8.6*	37.7*	15.57*	69.2*	71.0*	77*	66*
Temperature - Highest: 89*							Degree Days - Total HDD: 51*				Number of Days With:									
Lowest: 39*							Total CDD: 137*				Tmax ≥ 90: 0*		Rainfall ≥ 0.01 inch: 5*							
Rainfall: Monthly Total: 0.27* in.							Humidity - Highest: 100*				Tmax ≤ 32: 0*		Rainfall ≥ 0.10 inch: 1*							
Greatest 24 Hr: 0.20* in.							Lowest: 25*				Tmin ≤ 32: 0*		Avg Wind Speed ≥ 10 mph: 11*							
											Tmin ≤ 0: 0*		Max Wind Speed ≥ 30 mph: 6*							

© 1993-2016 Oklahoma Climatological Survey and the Oklahoma Mesonet
 Monthly data generated at 2016-11-14 12:20:53 UTC

* Denotes incomplete record

Figure 11 Mesonet Data