



Robin Simmons
Land Manager

December 22, 2014

Oklahoma Water Resources Board
3800 N. Classen Boulevard
Oklahoma City, OK 73118
Attn: Mr. Kent Wilkins

Re: Martin Marietta/TXI Mill Creek Limestone Quarry Monitoring Report Q1 2014 Update

Dear Mr. Wilkins:

Attached please find the first quarter 2014 Quarterly Monitoring Report for Martin Marietta/TXI's Mill Creek Limestone operation. Appendix C was inadvertently omitted from the original report but is included with the attached revised report. Supporting data has also been included in accordance with OWRB's request for the 2013 annual report to provide additional supporting documentation.

Please call if you have any questions or comments.

Sincerely,

A handwritten signature in blue ink that reads "Robin L. Simmons".

Robin Simmons, EIT
Land Manager

ATTACHMENT 1 (Appendix C)
TXI Mill Creek Q1 2014

Appendix C . Consumptive use of Pitwater

Q1 2014

PIT GROUNDWATER VOLUME			
1	Total volume pumped from producing mine pit(s) (AC-FT)		395.21
2	Volume of precipitation that falls onto the surface of producing Mine Pits (AC-FT)		12.16
3	Portion of total precipitation that flows over the land surface that drains into the mine pit water (AC-FT)		2.49
4	other non pit waters pumped from the producing mining pit (AC-FT)		
5	add lines 2 through 4		14.65
6	Pit Groundwater Volume (AC-FT) (line 1 minus Line 5)		380.56
DEFINED ELEMENTS OF CONSUMPTIVE USE			
7	Vol. of pit groundwater that is driven off (by drying) the mined material transp. off of the mine site (AC-FT)		0.00
8	Vol. of pit groundwater that is carried away with the the mined material transp. off of the mine site (AC-FT)		0.39
9	Vol. of pit groundwater that evaporates from producing mine pits, process ponds and lined ponds (excluding structures used for augmentation) (AC-FT)		0.54
10	Volume of pit groundwater that is used for other beneficial uses off of the mine site (AC-FT)		0.26
11	DEFINED ELEMENTS OF CONSUMPTIVE USE of Pit groundwater (AC-FT) (add lines 7 through 10)		1.19
PIT GROUNDWATER BALANCE			
12	Lines 6 minus 11		379.37
13	Groundwater Augmentation Volume of pit groundwater returned to GW Basin or subbasin. (Troy Recharge AC-FT)	Credits	none
14	Stream Augmentation volume of pitwater discharged to a definite Stream, during flow conditions that are less than or equal to the accepted exceedance level (AC-FT)		347.96
15	PPT and Runoff Volume of Precipitation and surface runoff into a recharge pit or holding pond (AC-FT)		12.86
16	Recycled Pit Groundwater - Volume of ground water returned to the mine pit or holding basin (AC-FT)		42.64
17	Other Non-Consumptive GW Losses Including pit GW returned to the land surface from which surface runoff flows into a mine pit and other losses (AC-FT)		1.43
18	add lines 13 through 17		404.90
19	OTHER CONSUMPTIVE USE Line 12 minus Line 18		-25.53
TOTAL REPORTED CONSUMPTIVE USE (AC-FT)			
TOTAL NET CONSUMPTIVE USE (AC-FT) Line 11 plus line 19			-24.34

**FIGURE 6
RESULTS FROM RUNOFF MODELLING**

2014	PPT.	Quarry Monthly Totals		FW Pond Monthly Totals		Re-cycle Recharge (Troy) Monthly Totals		TXI-Mill Creek Totals	
		Direct ppt	Runoff	Direct ppt	Runoff	Direct ppt	Runoff	Direct ppt	Runoff
		ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft
January	0.51	0.08	0.47	0.93	0.00	1.73	0.00	2.74	0.47
February	0.60	0.10	0.78	1.09	0.00	2.03	0.00	3.22	0.78
March	1.69	0.27	13.33	3.07	0.96	5.73	3.37	9.07	17.66
Q1 Subtotal	2.80	0.45	14.57	5.09	0.96	9.49	3.37	15.03	18.90



JUNE 24, 2014

OKLAHOMA WATER RESOURCES BOARD

3800 N. CLASSEN BOULEVARD

OKLAHOMA CITY, OK 73118

ATTN: MR. KENT WILKING

RE: TXI- Mill Creek

Monitoring Report

2014 Q1

Dear Mr. Wilkins

Attached please find the Quarterly Monitoring Report for TXI's Mill Creek Operation. The attached report is summarized on Attachment 1- Appendix C of the Rules. In addition, we are providing the Augmentation Supporting data, water level graphs, runoff modelling summary and summary of moisture content shipped.

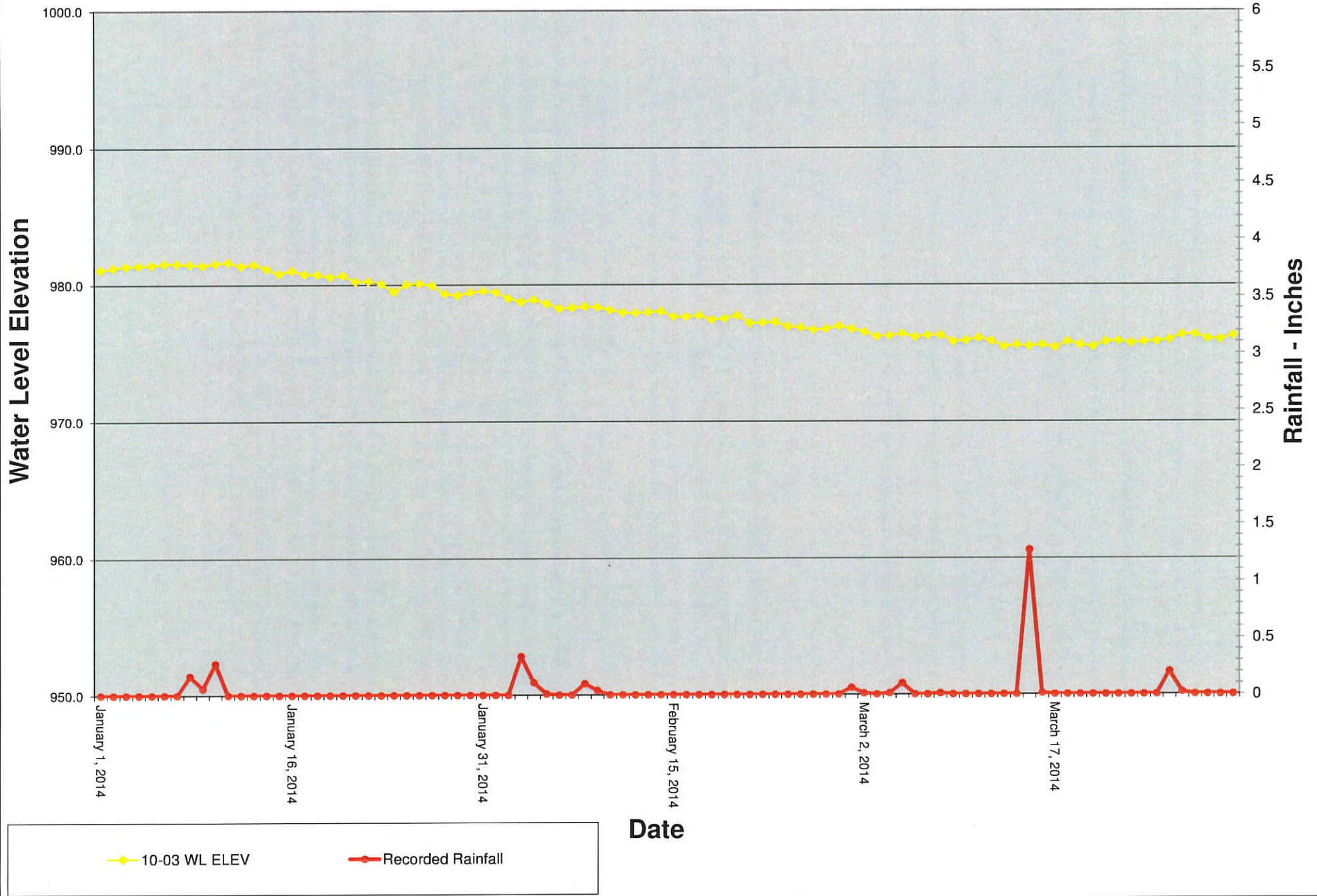
As always please call with any questions or comments.

Bill Flanigan

TXI, Sr. Manager Geology and Mine Services

972.647.6712

Mill Creek Water Levels First Quarter - CY2014



Quarter Summary	1st QTR 2014
Total Tons Shipped	
Total Acre Feet	19.48
Average Moisture %	2.47

* Other Material Dry includes 3X1, 3X5, 3X6, Rip Rap, Non-Spec Base from Old Stockpiles

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# ----- WARNING -----
# The data you have obtained from this automated U.S. Geological Survey database
# have not received Director's approval and as such are provisional and subject to
# revision. The data are released on the condition that neither the USGS nor the
# United States Government may be held liable for any damages resulting from its use.
# Additional info: http://waterdata.usgs.gov/nwis/?provisional
#
# File-format description: http://waterdata.usgs.gov/nwis/?tab_delimited_format_info
# Automated-retrieval info: http://help.waterdata.usgs.gov/faq/automated-retrievals
#
# Contact: gs-w_support_nwisweb@usgs.gov
# retrieved: 2014-06-24 11:10:18 EDT (sdww02)
#
# Data for the following 1 site(s) are contained in this file
# USGS 07331200 Mill Creek near Mill Creek, OK

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# -----
#
# Data provided for site 07331200
# DD parameter statistic Description
# 02 00060 00003 Discharge, cubic feet per second (Mean)
#
# Data-value qualification codes included in this output:
# A Approved for publication -- Processing and review completed.
# P Provisional data subject to revision.
# e Value has been estimated.

```

agency	Site	Date	Median Daily Flow	Augmentation Volume Ac-Ft
USGS	7331200	1/1/2014	6.2	6.21
USGS	7331200	1/2/2014	6.8	8.51
USGS	7331200	1/3/2014	7	5.22
USGS	7331200	1/4/2014	7.3	9.21
USGS	7331200	1/5/2014	7.4	7.67
USGS	7331200	1/6/2014	6.9	9.21
USGS	7331200	1/7/2014	6.2	10.13
USGS	7331200	1/8/2014	6	0.00
USGS	7331200	1/9/2014	6	15.65
USGS	7331200	1/10/2014	6.9	4.60
USGS	7331200	1/11/2014	5.7	4.60
USGS	7331200	1/12/2014	5.2	2.15
USGS	7331200	1/13/2014	5.2	5.83
USGS	7331200	1/14/2014	4.6	4.91
USGS	7331200	1/15/2014	5	3.99
USGS	7331200	1/16/2014	5.1	4.91

USGS	7331200	1/17/2014	5.1	2.76		
USGS	7331200	1/18/2014	5	2.76		
USGS	7331200	1/19/2014	4.3	6.14		
USGS	7331200	1/20/2014	4.1	3.38		
USGS	7331200	1/21/2014	4			
USGS	7331200	1/22/2014	3.9			
USGS	7331200	1/23/2014	3.8	3.38		
USGS	7331200	1/24/2014	3.8			
USGS	7331200	1/25/2014	3.7			
USGS	7331200	1/26/2014	3.7			
USGS	7331200	1/27/2014	3.6			
USGS	7331200	1/28/2014	3.5	12.89		
USGS	7331200	1/29/2014	3.4	0.00		
USGS	7331200	1/30/2014	3.4	1.53		
USGS	7331200	1/31/2014	3.3	3.07	138.69	23.93372
USGS	7331200	2/1/2014	3.2	2.76		
USGS	7331200	2/2/2014	3.2	4.60		
USGS	7331200	2/3/2014	3.4	0.00		
USGS	7331200	2/4/2014	3.7	6.75		
USGS	7331200	2/5/2014	3.1	5.52		
USGS	7331200	2/6/2014	3	4.30		
USGS	7331200	2/7/2014	2.9	1.23		
USGS	7331200	2/8/2014	2.9	0.00		
USGS	7331200	2/9/2014	2.8	0.00		
USGS	7331200	2/10/2014	2.7	0.00		
USGS	7331200	2/11/2014	2.7	0.00		
USGS	7331200	2/12/2014	2.8	13.50		
USGS	7331200	2/13/2014	2.9	7.67		
USGS	7331200	2/14/2014	2.7	8.59		
USGS	7331200	2/15/2014	2.5	6.75		
USGS	7331200	2/16/2014	2.5	1.53		
USGS	7331200	2/17/2014	2.5	3.07		
USGS	7331200	2/18/2014	2.3	3.38		
USGS	7331200	2/19/2014	2.5	1.84		
USGS	7331200	2/20/2014	2.6	6.44		
USGS	7331200	2/21/2014	2.2	3.38		
USGS	7331200	2/22/2014	2.2	0.00		
USGS	7331200	2/23/2014	2.1	6.44		
USGS	7331200	2/24/2014	2.1	3.68		
USGS	7331200	2/25/2014	2.1	3.99		
USGS	7331200	2/26/2014	1.9	2.76		
USGS	7331200	2/27/2014	1.9	5.22		
USGS	7331200	2/28/2014	2.1	3.07	111.08	0
USGS	7331200	3/1/2014	2.1	3.99		

USGS	7331200	3/2/2014	1.9		
USGS	7331200	3/3/2014	1.8		
USGS	7331200	3/4/2014	2		
USGS	7331200	3/5/2014	2	0.61	
USGS	7331200	3/6/2014	2.2	4.60	
USGS	7331200	3/7/2014	2	4.91	
USGS	7331200	3/8/2014	2	1.23	
USGS	7331200	3/9/2014	2	5.52	
USGS	7331200	3/10/2014	2	2.15	
USGS	7331200	3/11/2014	2	4.60	
USGS	7331200	3/12/2014	1.8	3.07	
USGS	7331200	3/13/2014	1.8	5.83	
USGS	7331200	3/14/2014	2	2.15	
USGS	7331200	3/15/2014	12	3.99	
USGS	7331200	3/16/2014	19		
USGS	7331200	3/17/2014	5.2		
USGS	7331200	3/18/2014	3.3		
USGS	7331200	3/19/2014	2.8		
USGS	7331200	3/20/2014	2.7		
USGS	7331200	3/21/2014	2.1	4.60	
USGS	7331200	3/22/2014	2	1.84	
USGS	7331200	3/23/2014	1.9	3.99	
USGS	7331200	3/24/2014	1.9	6.75	
USGS	7331200	3/25/2014	2	4.30	
USGS	7331200	3/26/2014	2.2	2.76	
USGS	7331200	3/27/2014	2.5	3.68	
USGS	7331200	3/28/2014	2.2	4.91	
USGS	7331200	3/29/2014	2	3.68	
USGS	7331200	3/30/2014	1.9	3.84	
USGS	7331200	3/31/2014	1.8	3.22	86.22 36.82111

Q1 2014 Support Data

Water Volume Movements		January	February	March
Pumped from Pit	(Ac-Ft)	165.4	121.2	108.6
Groundwater Component of Pitwater		164.9	120.4	95.2
Quarry dust suppression		0.00	0.00	0.00
Q- freshwater pond	(Ac-Ft)	23.9	0.0	23.3
To Secondary FM7	(Ac-Ft)	313.0	306.2	403.2
To sand Plant FM8	(Ac-Ft)	38.4	48.2	60.4
to loadout FM6	(Ac-Ft)	336.9	330.5	463.0
to dust control FM10	(Ac-Ft)	5.0	3.2	4.3
to Plant	(Ac-Ft)	688.2	684.9	926.7
to stream Augmentation	Ac-ft	141.45	121.20	85.30
To Troy FM4	(Ac-Ft)	656.0	654.2	910.4
From Troy to Freshwater Pond FM4	(Ac-Ft)	675.7	675.7	961.6

MESONET CLIMATOLOGICAL DATA SUMMARY January 2014 Time Zone: Midnight-Midnight CST
 (TISH) Tishomingo Nearest City: 6.0 N Tishomingo County: Johnston
 Latitude: 34-19-57 Longitude: 96-40-44 Elevation: 879 feet

DAY	TEMPERATURE (F)				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND SPEED (mph)			SOLAR (MJ/m2)	4" SOIL TEMPERATURES			
	MAX	MIN	AVG	DEWPT	HDD	CDD	MAX	MIN	AVG		STN	MSL	DIR	AVG	MAX		SOD	BARE	MAX	MIN
1	63	24	41.0	29.4	21	0	93	40	66	0.00	29.07	30.02	ESE	10.3	35.2	12.09	39.7	39.2	47	35
2	40	18	26.0	14.9	36	0	90	36	65	0.00	29.44	30.40	NNW	8.9	29.0	13.16	37.3	35.4	38	34
3	46	20	33.6	20.3	32	0	88	37	60	0.00	29.28	30.23	SSE	11.4	30.4	12.45	36.4	35.0	38	34
4	62	35	46.8	35.8	17	0	85	50	67	0.00	28.87	29.80	S	14.1	32.1	10.11	40.1	40.3	48	34
5	37	13	24.0	14.3	40	0	89	54	66	0.00	29.23	30.18	NNW	16.3	33.2	10.43	38.2	36.5	41	34
6	25	7	15.9	0.6	49	0	76	25	53	0.00	29.64	30.60	NNW	7.1	20.8	14.27	34.9	32.4	34	32
7	46	11	28.3	11.3	37	0	88	25	54	0.00	29.41	30.36	S	8.9	24.7	13.28	34.1	31.6	32	31
8	37	27	33.0	28.1	33	0	100	53	84	0.13	29.23	30.18	SE	8.9	21.3	1.38	34.0	31.9	32	32
9	37	31	34.2	34.1	31	0	100	97	100	0.03	29.19	30.13	E	5.4	12.1	2.20	34.9	32.9	35	32
10	64	33	47.9	43.7	17	0	100	56	87	0.65	28.84	29.78	SE	8.6	28.4	4.13	41.2	41.1	48	35
11	63	31	45.6	25.8	18	0	92	21	51	0.00	29.03	29.97	WNW	6.7	25.5	13.29	41.4	41.8	48	37
12	70	30	53.0	33.9	15	0	88	23	53	0.00	28.90	29.83	S	13.7	37.3	12.84	42.0	42.5	49	36
13	60	30	48.6	27.4	20	0	78	22	47	0.00	29.00	29.94	NW	9.0	26.2	13.49	44.8	45.4	50	41
14	59	27	42.2	22.9	22	0	88	27	48	0.00	29.16	30.10	NNW	10.1	32.3	8.07	41.1	40.2	45	37
15	52	27	38.6	21.8	25	0	77	30	53	0.00	29.28	30.23	NW	7.0	20.3	13.66	40.0	39.2	46	35
16	64	34	47.7	18.9	16	0	71	13	38	0.00	29.10	30.04	NW	9.9	33.6	13.30	40.9	40.5	47	36
17	49	29	40.3	12.6	26	0	68	19	34	0.00	29.29	30.24	NW	8.8	25.9	14.32	40.6	39.8	45	36
18	65	30	46.9	22.2	17	0	66	20	40	0.00	29.13	30.07	SW	9.3	28.3	13.81	40.7	40.6	49	35
19	63	27	44.8	24.4	20	0	79	22	48	0.00	29.19	30.14	SW	8.4	26.5	14.30	41.6	41.4	49	36
20	69	31	50.4	27.5	15	0	86	22	45	0.00	29.02	29.96	S	8.7	31.9	14.15	43.2	43.5	53	36
21	45	24	33.6	10.9	30	0	70	20	40	0.00	29.35	30.30	N	9.5	35.3	15.46	41.2	40.1	46	36
22	51	22	36.1	16.0	28	0	73	25	45	0.00	29.19	30.14	ENE	7.7	21.6	12.97	39.1	38.3	44	35
23	37*	17*	24.6*	2.6*	38*	0*	61*	25*	39*	0.00*	29.61*	30.57*	NNE*	15.9*	32.3*	5.25*	37.1*	34.9*	38*	34*
24	41	8	23.8	1.7	41	0	82	15	43	0.00	29.53	30.48	SW	8.3	22.9	16.11	35.0	32.5	33	32
25	68	27	46.2	23.3	17	0	83	25	43	0.00	29.09	30.04	NNW	6.3	19.4	14.17	37.1	36.6	45	32
26	70	32	50.3	29.4	14	0	87	19	51	0.00	28.84	29.77	S	5.5	23.5	13.71	41.6	42.6	52	36
27	52	20	28.3	0.1	29	0	57	19	30	0.00	29.29	30.24	NNE	20.3	47.1	11.70	38.8	37.6	43	35
28	33	10	21.2	2.2	44	0	80	22	46	0.00	29.47	30.42	NNE	9.5	25.5	15.26	35.6	33.8	35	33
29	45	8	26.8	8.9	39	0	90	21	53	0.00	29.33	30.28	S	8.2	24.3	16.82	34.8	32.7	34	32
30	54	31	40.8	25.8	23	0	87	45	56	0.00	28.95	29.89	S	15.1	37.4	13.35	36.3	35.8	41	33
31	67	38	53.0	44.9	12	0	94	49	76	0.00	28.84	29.78	SSE	9.9	23.7	10.68	43.6	45.9	53	39

53* 24* 37.9* 20.5* <- Monthly Averages -> 29.19* 30.13* S * 9.9* 47.1* 11.94* 38.9* 38.1* 43* 35*

Temperature - Highest: 70*	Degree Days - Total HDD: 823*	Number of Days With: Tmax ≥ 90: 0* Rainfall ≥ 0.01 inch: 3* Tmax ≤ 32: 1* Rainfall ≥ 0.10 inch: 2* Tmin ≤ 32: 27* Avg Wind Speed ≥ 10 mph: 9* Tmin ≤ 0: 0* Max Wind Speed ≥ 30 mph: 12*
Lowest: 7*	Total CDD: 0*	
Rainfall: Monthly Total: 0.81* in.	Humidity - Highest: 100*	
Greatest 24 Hr: 0.65* in.	Lowest: 13*	

MESONET CLIMATOLOGICAL DATA SUMMARY February 2014 Time Zone: Midnight-Midnight CST
 (TISH) Tishomingo Nearest City: 6.0 N Tishomingo County: Johnston
 Latitude: 34-19-57 Longitude: 96-40-44 Elevation: 879 feet

DAY	TEMPERATURE (F)				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND SPEED (mph)			SOLAR (MJ/m2)	4" SOIL TEMPERATURES			
	MAX	MIN	AVG	DEWPT	HDD	CDD	MAX	MIN	AVG		STN	MSL	DIR	AVG	MAX		SOD	BARE	MAX	MIN
1	41	32	35.7	31.5	29	0	97	71	85	0.00	28.96	29.90	N	10.4	28.1	3.85	42.6	42.1	45	38
2	32	22	27.5	23.3	38	0	95	73	84	0.00	29.22	30.17	N	14.3	31.7	1.96	38.3	36.0	38	35
3	37	18	27.9	21.7	37	0	94	65	78	0.30	29.23	30.18	NNE	5.3	14.2	9.36	37.2	34.7	35	34
4	35	31	33.2	31.5	32	0	100	74	94	0.28	29.01	29.95	ENE	6.2	24.4	3.11	37.0	34.5	35	34
5	31	14	20.7	13.5	42	0	80	67	73	0.00	29.49	30.44	NNW	15.3	29.6	14.27	36.4	33.8	34	33
6	19	12	15.5	7.8	49	0	76	68	71	0.00	29.54	30.50	NNE	11.0	26.2	7.20	34.8	32.3	33	32
7	28	17	22.6	17.8	42	0	98	69	82	0.00	29.34	30.29	NE	5.1	11.8	5.56	34.1	31.7	32	32
8	35	27	31.3	30.9	34	0	100	91	98	0.15	29.15	30.10	SSE	6.3	17.7	4.10	34.2	31.7	32	32
9	35	31	32.9	32.5	32	0	100	95	99	0.17	29.16	30.10	NNE	10.4	21.9	3.74	34.6	32.1	32	32
10	31	23	26.1	24.3	38	0	98	79	93	0.01	29.31	30.26	NNE*	NA	20.6*	3.46	34.8	32.6	33	32
11	31	21	26.3	19.8	39	0	85	63	76	0.00	29.34	30.29	NNE	8.6	21.1	6.24	34.2	32.6	33	32
12	50*	26*	37.0*	24.8*	27*	0*	91*	44*	63*	0.05*	29.16*	30.10*	NW*	4.9*	17.1*	16.82*	36.4*	34.1*	38*	33*
13	62	20	40.1	29.3	24	0	98	32	70	0.00	28.99	29.93	SSW	5.0	18.9	16.94	38.5	38.2	47	33
14	64	34	48.6	31.1	16	0	92	24	56	0.00	28.94	29.88	N	10.3	39.0	17.35	41.3	42.3	50	37
15	63	26	45.3	28.7	20	0	94	25	57	0.00	29.11	30.05	S	7.4	25.3	14.22	41.3	41.6	48	36
16	69	34	52.7	42.6	14	0	86	51	69	0.00	29.03	29.97	SSE	9.1	26.0	14.99	44.1	45.6	53	38
17	68	34	56.7	34.8	14	0	99	16	52	0.00	29.07	30.02	NNW	10.5	35.7	17.35	48.6	50.9	56	46
18	77	26	51.4	35.1	14	0	91	23	60	0.00	29.00	29.94	S	6.9	27.3	16.10	45.9	46.5	54	38
19	64	49	57.6	51.5	8	0	99	51	81	0.00	28.85	29.79	SSE	10.8	28.6	2.80	48.6	50.3	54	46
20	67	36	57.0	39.1	14	0	84	26	54	0.00	28.86	29.80	NW	14.8	35.5	17.44	52.4	54.6	58	46
21	63	24	46.1	19.6	21	0	84	15	40	0.00	29.10	30.04	S	8.7	25.4	18.62	46.6	45.6	53	39
22	71	37	54.2	35.6	11	0	84	31	52	0.00	28.95	29.89	S	9.1	30.9	18.46	47.6	47.8	57	40
23	58	39	47.9	37.3	17	0	99	37	69	0.00	29.05	29.99	NNE	9.5	23.5	11.85	48.0	48.2	53	44
24	47	31	41.1	30.3	26	0	75	56	65	0.00	29.18	30.12	NNE	6.8	17.1	5.00	44.8	43.0	46	39
25	50	35	43.4	27.4	22	0	95	34	56	0.00	29.18	30.12	NNE	11.0	30.3	5.69	45.2	43.9	47	41
26	38	21	29.3	12.5	35	0	72	29	50	0.00	29.29	30.24	N	12.0	37.4	21.18	42.0	40.1	47	36
27	53	14	35.6	17.3	31	0	92	24	53	0.00	29.07	30.01	SSE	6.1	19.2	20.27	41.7	40.5	50	35
28	67	37	49.3	36.4	13	0	99	33	64	0.00	28.82	29.76	SSE	10.7	27.4	17.86	45.5	45.9	56	39
	50*	28*	39.0*	28.1*	<- Monthly Averages ->						29.12*	30.07*	NNE*	9.1*	39.0*	11.28*	41.3*	40.5*	45*	37*

Temperature - Highest: 77*	Degree Days - Total HDD: 740*	Number of Days With: Tmax ≥ 90: 0* Rainfall ≥ 0.01 inch: 6* Tmax ≤ 32: 6* Rainfall ≥ 0.10 inch: 4* Tmin ≤ 32: 19* Avg Wind Speed ≥ 10 mph: 12* Tmin ≤ 0: 0* Max Wind Speed ≥ 30 mph: 7*
Lowest: 12*	Total CDD: 0*	
Rainfall: Monthly Total: 0.96* in.	Humidity - Highest: 100*	
Greatest 24 Hr: 0.30* in.	Lowest: 15*	

MESONET CLIMATOLOGICAL DATA SUMMARY March 2014 Time Zone: Midnight-Midnight CST
 (TISH) Tishomingo Nearest City: 6.0 N Tishomingo County: Johnston
 Latitude: 34-19-57 Longitude: 96-40-44 Elevation: 879 feet

DAY	TEMPERATURE (F)				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND SPEED (mph)			SOLAR (MJ/m2)	4" SOIL TEMPERATURES				
	MAX	MIN	AVG	DEWPT	HDD	CDD	MAX	MIN	AVG		STN	MSL	DIR	AVG	MAX		SOD	BARE	MAX	MIN	
1	58	36	48.3	46.5	18	0	99	72	94	0.01	29.01	29.95	ENE	9.6	29.8	5.78	48.5	49.3	54	47	
2	36	13	19.3	16.2	41	0	96	78	88	0.00	29.24	30.18	N *	NA	31.2*	2.42	41.3	38.1	48	33	
3	27	8	17.7	9.2	48	0	82	54	70	0.01	29.42	30.37	NNE*	NA	21.6*	19.75	35.7	31.6	33	31	
4	47	17	30.4	20.4	33	0	91	41	68	0.15	29.18	30.13	SSE	5.1	15.6	19.28	37.0	33.3	38	32	
5	53	27	38.2	28.6	25	0	97	36	72	0.26	29.14	30.08	NNE	6.3	19.8	13.78	40.4	38.9	47	34	
6	53	31	41.3	35.0	23	0	98	51	80	0.00	29.20	30.14	NNW	6.0	16.2	16.77	44.6	44.9	55	39	
7	65	28	47.6	36.0	19	0	100	34	69	0.01	28.96	29.90	SSE	11.6	32.2	16.44	44.3	44.2	51	38	
8	49	34	40.8	36.6	23	0	95	63	85	0.03	29.16	30.10	NNW	10.4	26.8	2.53	44.4	43.5	46	40	
9	61	35	46.0	36.3	17	0	96	43	71	0.00	29.29	30.24	N	5.7	17.9	20.28	46.5	47.2	59	40	
10	76	35	55.4	38.0	10	0	100	20	61	0.01	29.03	29.98	SW	8.9	23.5	21.60	48.9	50.0	60	41	
11	81	49	63.4	46.7	0	0	95	17	60	0.00	28.71	29.64	S	15.1	44.1	21.45	53.2	55.8	65	49	
12	59	38	48.1	24.3	17	0	65	21	42	0.00	29.23	30.17	N	15.8	44.3	23.15	50.0	52.1	60	46	
13	67	28	49.4	24.3	17	0	82	17	42	0.00	29.21	30.16	S	8.8	23.9	22.41	48.5	50.5	62	41	
14	70	44	56.5	41.2	8	0	86	39	58	0.00	29.04	29.98	S	8.4	25.7	19.81	51.0	54.3	65	46	
15	65	51	55.5	52.5	7	0	97	75	90	1.50	28.90	29.84	E	8.3	35.7	3.51	52.6	54.5	58	52	
16	54	38	42.5	36.4	19	0	97	66	79	0.00	29.01	29.95	NNW	18.9	42.1	4.45	48.9	48.4	53	44	
17	58	28	43.4	27.4	22	0	84	30	56	0.00	28.92	29.86	SSE	7.1	22.9	22.62	47.8	46.9	58	39	
18	80	45	60.2	32.3	2	0	62	14	38	0.00	28.69	29.62	S	16.4	35.5	22.81	50.6	50.5	59	44	
19	62	35	48.0	28.7	17	0	81	23	50	0.00	29.18	30.13	NNW	8.5	26.2	23.75	50.7	50.0	58	43	
20	70	29	51.0	28.8	16	0	90	19	49	0.00	29.15	30.10	SSE	7.2	21.1	24.23	50.7	50.0	60	41	
21	78	46	62.8	43.6	3	0	63	30	50	0.00	28.93	29.86	SSW	10.4	30.8	17.05	53.4	53.7	62	46	
22	62	48	52.3	34.4	10	0	73	31	52	0.07	29.11	30.05	NNE	15.0	30.4	3.86	51.8	50.7	56	48	
23	52	34	44.2	22.3	22	0	79	26	43	0.00	29.34	30.29	NNE	12.6	31.6	24.67	50.1	48.7	56	42	
24	64	31	48.0	30.4	17	0	87	29	54	0.00	29.20	30.15	NNE	7.8	29.4	23.68	50.6	49.6	60	41	
25	58	32	45.3	26.3	20	0	82	26	51	0.00	29.34	30.29	NNE	6.8	21.0	24.72	51.1	50.0	60	41	
26	55	37	45.1	35.8	19	0	88	43	71	0.21	29.10	30.04	SE	9.8	35.5	4.24	48.0	45.9	48	43	
27	81	54	63.5	53.0	0	2	98	21	74	0.04	28.79	29.72	S	14.0	34.1	13.55	53.7	54.5	62	48	
28	65	45	55.0	42.2	10	0	91	52	62	0.00	28.94	29.88	N	13.2	26.2	7.17	53.9	53.6	56	49	
29	71	38	54.2	33.5	11	0	88	18	52	0.00	29.26	30.20	N	7.0	21.3	25.42	53.6	53.3	64	44	
30	75	39	59.6	36.6	8	0	83	25	46	0.00	29.13	30.07	SSE	12.3	30.0	24.84	54.5	55.8	66	46	
31	76	53	63.5	52.4	1	0	85	48	68	0.01	28.92	29.86	S	13.1	29.0	16.02	56.9	59.2	67	54	
	62	36	48.3	34.0	←- Monthly Averages →-							29.09	30.03	S *	10.4*	44.3*	16.52	48.8	48.7	56	43

Temperature - Highest: 81 Lowest: 8	Degree Days - Total HDD: 501 Total CDD: 2	Number of Days With: Tmax ≥ 90: 0 Rainfall ≥ 0.01 inch: 12 Tmax ≤ 32: 1 Rainfall ≥ 0.10 inch: 4 Tmin ≤ 32: 11 Avg Wind Speed ≥ 10 mph: 13* Tmin ≤ 0: 0 Max Wind Speed ≥ 30 mph: 13*
Rainfall: Monthly Total: 2.31 in. Greatest 24 Hr: 1.50 in.	Humidity - Highest: 100 Lowest: 14	

 [Oklahoma Mesonet Scheduled downtime - Sept 19 at 5:30 PM CDT - read more](#)

Date	Reference ET, Short [in]	Reference ET, Tall [in]	Cool Season Grass ET [in]	Warm Season Grass ET [in]	Pan Evaporation [in]
2014-09-15	0.09	0.10	0.09	0.06	0.11
2014-09-14	0.09	0.10	0.08	0.06	0.11
2014-09-13	0.12	0.16	0.11	0.08	0.16
2014-09-12	0.06	0.08	0.06	0.04	0.08
2014-09-11	0.09	0.13	0.09	0.06	0.12
2014-09-10	0.28	0.40	0.26	0.17	0.39
2014-09-09	0.24	0.33	0.23	0.15	0.32
2014-09-08	0.15	0.17	0.14	0.09	0.17
2014-09-07	0.11	0.13	0.10	0.07	0.13
2014-09-06	0.14	0.20	0.13	0.09	0.19
2014-09-05	0.22	0.28	0.20	0.14	0.28
2014-09-04	0.28	0.38	0.26	0.17	0.38
2014-09-03	0.26	0.35	0.24	0.16	0.35
2014-09-02	0.23	0.31	0.22	0.14	0.31
2014-09-01	0.30	0.42	0.28	0.19	0.44
2014-08-31	0.25	0.33	0.23	0.15	0.33
2014-08-30	0.20	0.24	0.19	0.12	0.24
2014-08-29	0.18	0.22	0.17	0.11	0.22
2014-08-28	0.23	0.29	0.21	0.14	0.29
2014-08-27	0.21	0.25	0.19	0.13	0.26
2014-08-26	0.23	0.28	0.21	0.14	0.29
2014-08-25	0.24	0.29	0.22	0.15	0.30
2014-08-24	0.25	0.33	0.24	0.16	0.33
2014-08-23	0.28	0.37	0.26	0.17	0.37
2014-08-22	0.29	0.39	0.27	0.18	0.39
2014-08-21	0.28	0.38	0.26	0.17	0.39
2014-08-20	0.26	0.34	0.24	0.16	0.34
2014-08-19	0.23	0.28	0.22	0.14	0.29
2014-08-18	0.24	0.30	0.22	0.15	0.30
2014-08-17	0.18	0.23	0.16	0.11	0.22
2014-08-16	0.16	0.21	0.15	0.10	0.21
2014-08-15	0.24	0.30	0.22	0.15	0.31
2014-08-14	0.22	0.26	0.20	0.13	0.27
2014-08-13	0.20	0.23	0.19	0.13	0.25
2014-08-12	0.24	0.30	0.22	0.15	0.31
2014-08-11	0.23	0.27	0.21	0.14	0.29
2014-08-10	0.20	0.23	0.19	0.13	0.24
2014-08-09	0.22	0.27	0.21	0.14	0.27
2014-08-08	0.19	0.22	0.18	0.12	0.23
2014-08-07	0.20	0.24	0.18	0.12	0.24
2014-08-06	0.23	0.28	0.21	0.14	0.29
2014-08-05	0.20	0.23	0.19	0.13	0.24
2014-08-04	0.20	0.22	0.19	0.13	0.25
2014-08-03	0.21	0.23	0.19	0.13	0.25
2014-08-02	0.19	0.21	0.18	0.12	0.23
2014-08-01	0.13	0.15	0.13	0.08	0.16
2014-07-31	0.06	0.07	0.05	0.03	0.07
2014-07-30	0.06	0.07	0.05	0.04	0.07
2014-07-29	0.18	0.20	0.17	0.11	0.22
2014-07-28	0.20	0.25	0.19	0.12	0.26

2014-04-12	0.20	0.27	0.18	0.12	0.28
2014-04-11	0.15	0.19	0.14	0.09	0.20
2014-04-10	0.26	0.37	0.24	0.16	0.38
2014-04-09	0.21	0.29	0.19	0.13	0.28
2014-04-08	0.21	0.30	0.20	0.13	0.31
2014-04-07	0.12	0.15	0.11	0.07	0.14
2014-04-06	0.03	0.04	0.03	0.02	0.04
2014-04-05	0.10	0.13	0.09	0.06	0.12
2014-04-04	0.18	0.26	0.17	0.11	0.27
2014-04-03	0.15	0.21	0.14	0.10	0.22
2014-04-02	0.15	0.22	0.14	0.09	0.21
2014-04-01	0.13	0.18	0.12	0.08	0.17
2014-03-31	0.17	0.25	0.16	0.11	0.24
2014-03-30	0.22	0.32	0.20	0.13	0.32
2014-03-29	0.17	0.24	0.16	0.11	0.23
2014-03-28	0.12	0.18	0.11	0.08	0.17
2014-03-27	0.20	0.30	0.19	0.12	0.28
2014-03-26	0.08	0.11	0.07	0.05	0.10
2014-03-25	0.13	0.18	0.12	0.08	0.18
2014-03-24	0.14	0.19	0.13	0.09	0.19
2014-03-23	0.15	0.22	0.14	0.09	0.23
2014-03-22	0.16	0.26	0.15	0.10	0.25
2014-03-21	0.19	0.27	0.17	0.11	0.26
2014-03-20	0.16	0.22	0.15	0.10	0.21
2014-03-19	0.15	0.21	0.14	0.09	0.20
2014-03-18	0.30	0.46	0.28	0.18	0.48
2014-03-17	0.12	0.16	0.11	0.07	0.16
2014-03-16	0.08	0.13	0.08	0.05	0.12
2014-03-15	0.06	0.09	0.06	0.04	0.08
2014-03-14	0.15	0.21	0.14	0.09	0.20
2014-03-13	0.16	0.23	0.15	0.10	0.23
2014-03-12	0.18	0.27	0.17	0.11	0.29
2014-03-11	0.23	0.34	0.22	0.14	0.33
2014-03-10	0.17	0.24	0.16	0.10	0.22
2014-03-09	0.11	0.14	0.10	0.07	0.13
2014-03-08	0.04	0.06	0.04	0.03	0.06
2014-03-07	0.12	0.18	0.11	0.08	0.17
2014-03-06	0.08	0.09	0.07	0.05	0.09
2014-03-05	0.08	0.11	0.07	0.05	0.10
2014-03-04	0.07	0.09	0.07	0.04	0.09
2014-03-03	0.05	0.06	0.04	0.03	0.06
2014-03-02	0.05	0.07	0.04	0.03	0.06
2014-03-01	0.04	0.05	0.03	0.02	0.05
2014-02-28	0.15	0.22	0.14	0.09	0.20
2014-02-27	0.09	0.12	0.08	0.06	0.12
2014-02-26	0.08	0.12	0.08	0.05	0.12
2014-02-25	0.09	0.13	0.08	0.05	0.12
2014-02-24	0.05	0.07	0.05	0.03	0.06
2014-02-23	0.09	0.13	0.08	0.06	0.12
2014-02-22	0.15	0.22	0.14	0.09	0.20
2014-02-21	0.14	0.20	0.13	0.08	0.19
2014-02-20	0.14	0.21	0.13	0.09	0.21
2014-02-19	0.06	0.08	0.05	0.03	0.07

2014-02-18	0.14	0.22	0.13	0.09	0.19
2014-02-17	0.14	0.21	0.13	0.09	0.19
2014-02-16	0.11	0.16	0.10	0.07	0.14
2014-02-15	0.10	0.15	0.10	0.06	0.14
2014-02-14	0.13	0.19	0.12	0.08	0.18
2014-02-13	0.08	0.11	0.08	0.05	0.10
2014-02-12	0.07	0.09	0.06	0.04	0.08
2014-02-11	0.03	0.04	0.03	0.02	0.04
2014-02-10	0.02	0.03	0.02	0.01	0.03
2014-02-09	0.01	0.01	0.01	0.01	0.02
2014-02-08	0.02	0.02	0.01	0.01	0.02
2014-02-07	0.02	0.03	0.02	0.01	0.03
2014-02-06	0.03	0.04	0.02	0.02	0.04
2014-02-05	0.05	0.07	0.04	0.03	0.07
2014-02-04	0.02	0.02	0.02	0.01	0.02
2014-02-03	0.03	0.04	0.03	0.02	0.04
2014-02-02	0.02	0.03	0.02	0.01	0.03
2014-02-01	0.03	0.05	0.03	0.02	0.04
2014-01-31	0.09	0.13	0.08	0.06	0.12
2014-01-30	0.11	0.17	0.10	0.07	0.16
2014-01-29	0.07	0.11	0.06	0.04	0.09
2014-01-28	0.06	0.09	0.05	0.04	0.08
2014-01-27	0.16	0.26	0.15	0.10	0.30
2014-01-26	0.10	0.14	0.09	0.06	0.12
2014-01-25	0.11	0.17	0.10	0.07	0.14
2014-01-24	0.07	0.10	0.06	0.04	0.09
2014-01-23	0.08	0.13	0.08	0.05	0.13
2014-01-22	0.08	0.12	0.07	0.05	0.11
2014-01-21	0.08	0.13	0.08	0.05	0.12
2014-01-20	0.12	0.20	0.12	0.08	0.17
2014-01-19	0.10	0.16	0.10	0.06	0.14
2014-01-18	0.12	0.19	0.11	0.08	0.17
2014-01-17	0.09	0.14	0.08	0.06	0.13
2014-01-16	0.13	0.21	0.12	0.08	0.19
2014-01-15	0.07	0.11	0.07	0.04	0.09
2014-01-14	0.10	0.16	0.09	0.06	0.14
2014-01-13	0.09	0.15	0.09	0.06	0.13
2014-01-12	0.15	0.23	0.14	0.09	0.21
2014-01-11	0.09	0.14	0.08	0.06	0.12
2014-01-10	0.06	0.08	0.05	0.03	0.07
2014-01-09	0.01	0.01	0.01	0.01	0.02
2014-01-08	0.02	0.03	0.02	0.02	0.03
2014-01-07	0.07	0.11	0.06	0.04	0.09
2014-01-06	0.03	0.05	0.03	0.02	0.05
2014-01-05	0.06	0.09	0.05	0.03	0.08
2014-01-04	0.10	0.17	0.10	0.06	0.15
2014-01-03	0.07	0.10	0.06	0.04	0.09
2014-01-02	0.05	0.08	0.05	0.03	0.07
2014-01-01	0.11	0.17	0.10	0.07	0.14
2013-12-31	0.06	0.09	0.05	0.04	0.07
2013-12-30	0.05	0.07	0.04	0.03	0.06
2013-12-29	0.06	0.09	0.06	0.04	0.08
2013-12-28	0.06	0.09	0.06	0.04	0.08