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MAR 29 2021

Oklahoma Water Resources Board

Robin L. Simmons  
Regional Land Manager

March 29, 2021

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

Re: Martin Marietta/TXI Mill Creek Limestone Quarry Monitoring Report Q4 and Annual 2020

Dear Mr. Cogburn:

Attached please find the Q4 2020 Quarterly Monitoring Report for Martin Marietta/TXI's Mill Creek Limestone quarry. The report is summarized on the table labeled Appendix C. Supporting data is also included.

Please call if you have any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads 'Robin L. Simmons'.

Robin L. Simmons  
Regional Land Manager

North Texas/Oklahoma District  
1503 LBJ Parkway Suite 400, Dallas, Texas 75234  
t. (972) 350-8228 m. (214) 213-6024 e. Robin.Simmons@martinmarietta.com  
www.martinmarietta.com

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ATTACHMENT 1 (Appendix C)  
Martin Marietta (TXI) Mill Creek 2020

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Appendix C . Consumptive use of Pitwater

Q1 2020 Q2 2020 Q3 2020 Q4 2020 2020 Total

PIT GROUNDWATER VOLUME		Q1 2020	Q2 2020	Q3 2020	Q4 2020	2020 Total
1	Total volume pumped from producing mine pit(s) (AC-FT)	612.46	598.96	598.34	607.55	2417.31
2	Volume of precipitation that falls onto the surface of producing Mine Pits (AC-FT)	30.70	24.98	25.45	12.99	94.12
3	Portion of total precipitation that flows over the land surface that drains into the mine pit water (AC-FT)	136.16	90.10	90.75	27.93	344.93
4	(WATER HELD IN PIT FROM PREVIOUS MONTHS) other non pit waters pumped from the producing mining pit (AC-FT)					
5	add lines 2 through 4	166.85	115.07	116.20	40.92	439.05
6	Pit Groundwater Volume (AC-FT) (line 1 minus Line 5)	445.61	483.88	482.14	566.63	1978.26
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	0.00	0.00	0.00	0.00
8	Vol of pit groundwater that is carried away with the the mined material transp off of the mine site (AC-FT)	4.04	5.38	3.31	4.51	17.23
9	Vol of pit groundwater that evaporates from producing mine pits, process ponds and lined ponds (excluding structures used for augmentation) (AC-FT)	1.92	3.87	3.59	2.22	11.60
10	Volume of pit groundwater that is used for other beneficial uses off of the mine site (AC-FT) (includes on-site dust control)	9.39	28.24	23.48	18.45	79.56
11	DEFINED ELEMENTS OF CONSUMPTIVE USE of Pit groundwater (AC-FT) (add lines 7 through 10)	15.35	37.49	30.37	25.18	108.38
PIT GROUNDWATER BALANCE						
12	Lines 6 minus 11	430.25	446.40	451.77	541.45	1869.9
13	Groundwater Augmentation Volume of pit water returned to GW Basin or subbasin. (Troy Recharge AC-FT)	477.14	745.52	644.76	459.54	2326.97
14	Stream Augmentation volume of pit water discharged to a definite Stream, during flow conditions that are less than or equal to the accepted exceedance level (AC-FT)	0.00	0.00	0.00	0.00	0.00
15	PPT and Runoff Volume of Precipitation and surface runoff into a recharge pit or holding pond (AC-FT)	60.58	45.03	49.16	19.51	174.28
16	Recycled Pit Groundwater - Volume of ground water returned to the mine pit or holding basin (AC-FT)	383.25	419.41	296.92	371.92	1471.50
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)	60.2	16.5	35.5	32.7	144.93
18	add lines 13 through 17	981.13	1226.46	1026.38	883.71	4117.68
19	OTHER CONSUMPTIVE USE Line 12 minus Line 18	-550.87	-780.06	-574.61	-342.26	-2247.8
TOTAL REPORTED CONSUMPTIVE USE (AC-FT)						
TOTAL NET CONSUMPTIVE USE (AC-FT) Line 11 plus line 19		-535.52	-742.58	-544.24	-317.08	-2139.4

## RESULTS FROM RUNOFF MODELLING

2020	PPT.  Inches	Quarry Monthly Totals				FW Pond Monthly Totals		Re-cycle Recharge (Troy) Monthly Totals		TXI-Mill Creek Totals	
		Sump Direct ppt	In-Quarry Runoff	Runoff from beyond Quarry	Quarry Totals	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	ac-ft	ac-ft
January	5.64	13.442	42.798	16.111	72.35	8.79	9.88	18.57	7.09	40.80	75.88
February	2.24	5.339	12.582	3.347	21.27	3.49	1.30	7.37	1.39	16.20	18.62
March	5.00	11.917	40.625	20.693	73.23	7.79	17.87	16.46	9.69	36.17	88.88
<b>Q1 Subtotal</b>	<b>12.88</b>	<b>30.70</b>	<b>96.00</b>	<b>40.15</b>	<b>166.85</b>	<b>20.07</b>	<b>29.05</b>	<b>42.40</b>	<b>18.18</b>	<b>93.17</b>	<b>183.38</b>
April	4.60	10.963	40.029	19.249	70.24	7.17	17.45	15.14	9.00	33.27	85.72
May	4.13	9.843	18.931	3.296	32.07	6.44	0.14	13.59	1.20	29.87	23.56
June	1.75	4.171	7.660	7.704	19.53	2.73	0.01	5.76	0.31	12.66	15.68
<b>Q2 Subtotal</b>	<b>10.48</b>	<b>24.98</b>	<b>66.62</b>	<b>30.25</b>	<b>121.85</b>	<b>16.33</b>	<b>17.59</b>	<b>34.50</b>	<b>10.51</b>	<b>75.81</b>	<b>124.96</b>
July	2.26	5.39	6.99	0.95	13.33	3.52	0.02	7.44	0.34	16.35	8.31
August	1.92	4.58	10.51	2.48	17.56	2.99	0.46	6.32	0.98	13.89	14.43
September	6.50	15.49	55.76	27.04	98.30	10.13	25.13	21.40	12.69	47.02	120.62
<b>Q3 Subtotal</b>	<b>10.68</b>	<b>25.45</b>	<b>73.26</b>	<b>30.47</b>	<b>129.19</b>	<b>16.64</b>	<b>25.61</b>	<b>35.16</b>	<b>14.01</b>	<b>77.25</b>	<b>143.36</b>
October	1.54	3.67	3.97	4.09	11.73	2.40	0.00	5.07	0.04	11.14	8.10
November	1.10	2.62	2.02	2.06	6.70	1.71	0.00	3.62	0.01	7.96	4.09
December	2.81	6.70	19.11	25.87	51.68	4.38	3.72	9.25	2.96	20.33	51.66
<b>Q4 Subtotal</b>	<b>5.45</b>	<b>12.99</b>	<b>25.11</b>	<b>32.02</b>	<b>70.12</b>	<b>8.49</b>	<b>3.72</b>	<b>17.94</b>	<b>3.01</b>	<b>39.42</b>	<b>63.86</b>
<b>ANNUAL TOTALS</b>	<b>39.49</b>	<b>94.12</b>	<b>260.99</b>	<b>132.89</b>	<b>488.01</b>	<b>61.54</b>	<b>75.97</b>	<b>129.99</b>	<b>45.71</b>	<b>285.64</b>	<b>515.57</b>

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Water Volume Movements	January	February	March	April	May	June	July	August	September	October	November	December
Pumped from Pit	202.2	190.5	219.7	178.0	217.2	203.7	214.8	199.4	184.1	209.6	192.7	205.3
Groundwater Component of Pitwater	151.3	177.7	194.7	200.1	197.5	167.9	178.4	158.8	62.8	178.8	165.0	149.7
Quarry dust suppression	3.5	3.7	5.1	7.5	9.1	16.0	11.3	11.7	6.2	8.3	7.1	4.4
Q- freshwater pond	198.7	186.8	214.6	170.5	208.2	187.7	203.5	187.7	177.9	201.3	185.6	200.9
To Secondary FM7	600.8	492.8	603.3	603.6	532.1	458.4	484.8	433.9	323.7	445.8	390.0	362.4
To sand Plant FM8	132.9	108.9	143.6	159.3	149.7	127.3	133.8	128.6	96.3	134.7	117.5	117.5
to loadout FM6	321.6	272.8	331.7	383.2	368.2	276.8	437.3	330.2	263.0	357.2	302.2	301.9
to dust control FM9	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
to Plant FM7+FM8+FM6	1055.2	874.5	1078.6	1146.1	1050.0	862.5	1055.8	892.6	683.0	937.7	809.8	781.8
to stream Augmentation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bypass discharge	0.47	0.47	0.47	0.47	0	0.47	0	0	0	0	0	0
To Troy FM3	1062.4	765.1	1116.7							757.0	844.4	787.7
To Booster FM2	1088.8	897.7	1150.8	1218.0	1096.0	976.2	1020.6	942.0	697.8	968.1	850.0	798.7
From Troy to Freshwater Pond FM4	854.6	803.3	689.2	965.9	835.5	781.8	803.3	715.6	522.9	776.6	648.1	570.4

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Quarter Summary	4th Quarter
Total Tons Shipped	1,120,000
Total Acre Feet	23.90
Average Moisture %	2.90%

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 # may not have received Director's approval. Any such data values are qualified  
 # as provisional and are subject to revision. Provisional 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: <https://help.waterdata.usgs.gov/policies/provisional-data-statement>  
 #  
 # File-format description: <https://help.waterdata.usgs.gov/faq/about-tab-delimited-output>  
 # Automated-retrieval info: <https://help.waterdata.usgs.gov/faq/automated-retrievals>  
 #  
 # Contact: [gs-w\\_support\\_nwisweb@usgs.gov](mailto:gs-w_support_nwisweb@usgs.gov)  
 # retrieved: 2021-03-29 13:38:56 EDT (caww01)  
 #

# Data for the following 1 site(s) are contained in this file  
 # USGS 07331200 Mill Creek near Mill Creek, OK  
 # -----

# Data provided for site 07331200  
 # TS parameter statistic Description  
 # 111780 00060 00003 Discharge, cubic feet per second (Mean)  
 #

# Data-value qualification codes included in this output:  
 # A Approved for publication -- Processing and review completed.  
 #

agency_cd	site_no	datetime	111780_00060_00003	111780_00060_00003_cd
5s	15s	20d	14n	10s
USGS	07331200	2020-10-01	8.05	A
USGS	07331200	2020-10-02	5.17	A
USGS	07331200	2020-10-03	4.00	A
USGS	07331200	2020-10-04	3.54	A
USGS	07331200	2020-10-05	3.34	A
USGS	07331200	2020-10-06	3.26	A
USGS	07331200	2020-10-07	3.28	A
USGS	07331200	2020-10-08	3.40	A
USGS	07331200	2020-10-09	3.53	A
USGS	07331200	2020-10-10	5.98	A
USGS	07331200	2020-10-11	7.99	A
USGS	07331200	2020-10-12	9.38	A
USGS	07331200	2020-10-13	9.78	A
USGS	07331200	2020-10-14	7.95	A
USGS	07331200	2020-10-15	5.54	A
USGS	07331200	2020-10-16	3.93	A
USGS	07331200	2020-10-17	3.11	A
USGS	07331200	2020-10-18	2.77	A
USGS	07331200	2020-10-19	2.82	A
USGS	07331200	2020-10-20	2.50	A
USGS	07331200	2020-10-21	2.42	A
USGS	07331200	2020-10-22	2.80	A
USGS	07331200	2020-10-23	7.23	A
USGS	07331200	2020-10-24	7.19	A
USGS	07331200	2020-10-25	4.77	A
USGS	07331200	2020-10-26	4.61	A
USGS	07331200	2020-10-27	6.16	A
USGS	07331200	2020-10-28	3.95	A
USGS	07331200	2020-10-29	3.53	A
USGS	07331200	2020-10-30	2.75	A
USGS	07331200	2020-10-31	3.05	A

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#
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# Automated-retrieval info: https://help.waterdata.usgs.gov/faq/automated-retrievals
#
# Contact: gs-w_support_nwisweb@usgs.gov
# retrieved: 2021-03-29 13:40:07 EDT (caww01)
#

```

```

# Data for the following 1 site(s) are contained in this file
# USGS 07331200 Mill Creek near Mill Creek, OK
# -----
#

```

```

# Data provided for site 07331200
# TS parameter statistic Description
# 111780 00060 00003 Discharge, cubic feet per second (Mean)
#

```

```

# Data-value qualification codes included in this output:
# A Approved for publication -- Processing and review completed.
#

```

agency_cd	site_no	datetime	111780_00060_00003	111780_00060_00003_cd
5s	15s	20d	14n	10s
USGS	07331200	2020-11-01	3.44	A
USGS	07331200	2020-11-02	3.38	A
USGS	07331200	2020-11-03	3.50	A
USGS	07331200	2020-11-04	3.87	A
USGS	07331200	2020-11-05	7.62	A
USGS	07331200	2020-11-06	9.66	A
USGS	07331200	2020-11-07	8.20	A
USGS	07331200	2020-11-08	6.45	A
USGS	07331200	2020-11-09	5.26	A
USGS	07331200	2020-11-10	4.47	A
USGS	07331200	2020-11-11	4.10	A
USGS	07331200	2020-11-12	3.94	A
USGS	07331200	2020-11-13	4.12	A
USGS	07331200	2020-11-14	3.85	A
USGS	07331200	2020-11-15	3.93	A
USGS	07331200	2020-11-16	3.82	A
USGS	07331200	2020-11-17	6.08	A
USGS	07331200	2020-11-18	10.6	A
USGS	07331200	2020-11-19	10.5	A
USGS	07331200	2020-11-20	9.41	A
USGS	07331200	2020-11-21	9.20	A
USGS	07331200	2020-11-22	7.99	A
USGS	07331200	2020-11-23	6.24	A
USGS	07331200	2020-11-24	6.27	A
USGS	07331200	2020-11-25	6.11	A
USGS	07331200	2020-11-26	3.81	A
USGS	07331200	2020-11-27	2.96	A
USGS	07331200	2020-11-28	2.60	A
USGS	07331200	2020-11-29	2.84	A
USGS	07331200	2020-11-30	2.92	A

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# File-format description: <https://help.waterdata.usgs.gov/faq/about-tab-delimited-output>

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# Contact: [gs-w\\_support\\_nwisweb@usgs.gov](mailto:gs-w_support_nwisweb@usgs.gov)  
# retrieved: 2021-03-29 13:40:44 EDT (caww01)

# Data for the following 1 site(s) are contained in this file  
# USGS 07331200 Mill Creek near Mill Creek, OK

# Data provided for site 07331200  
# TS parameter statistic Description  
# 111780 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_cd	site_no	datetime	111780_00060_00003	111780_00060_00003_cd
5s	15s	20d	14n	10s
USGS	07331200	2020-12-01	2.30	A
USGS	07331200	2020-12-02	2.34	A
USGS	07331200	2020-12-03	2.19	A
USGS	07331200	2020-12-04	2.17	A
USGS	07331200	2020-12-05	3.53	A
USGS	07331200	2020-12-06	3.33	A
USGS	07331200	2020-12-07	2.63	P
USGS	07331200	2020-12-08	2.10	P
USGS	07331200	2020-12-09	2.19	P
USGS	07331200	2020-12-10	3.73	P
USGS	07331200	2020-12-11	4.00	P
USGS	07331200	2020-12-12	2.95	P
USGS	07331200	2020-12-13	3.40	P
USGS	07331200	2020-12-14	3.25	P
USGS	07331200	2020-12-15	1.90	P
USGS	07331200	2020-12-16	1.74	P
USGS	07331200	2020-12-17	1.66	P
USGS	07331200	2020-12-18	2.25	P
USGS	07331200	2020-12-19	5.81	P
USGS	07331200	2020-12-20	3.85	P
USGS	07331200	2020-12-21	2.47	P
USGS	07331200	2020-12-22	1.81	P:e
USGS	07331200	2020-12-23	1.65	P:e
USGS	07331200	2020-12-24	1.05	P
USGS	07331200	2020-12-25	1.16	P
USGS	07331200	2020-12-26	1.12	P
USGS	07331200	2020-12-27	1.47	P
USGS	07331200	2020-12-28	1.87	P
USGS	07331200	2020-12-29	1.52	P
USGS	07331200	2020-12-30	2.40	P
USGS	07331200	2020-12-31	9.34	P



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Date	Daily Rainfall Total	Total Daily Evaporation
10/1/2020	gauge failed	0.074
10/2/2020		0.023
10/3/2020		0.045
10/4/2020		0.063
10/5/2020		0.051
10/6/2020		0.04
10/7/2020		0.049
10/8/2020		0.045
10/9/2020		0.042
10/10/2020		0.02
10/11/2020		0.066
10/12/2020		0.129
10/13/2020		0.046
10/14/2020		0.09
10/15/2020		0.136
10/16/2020		0.032
10/17/2020		0.063
10/18/2020		0.018
10/19/2020		0.007
10/20/2020		0.008
10/21/2020		0.075
10/22/2020		0.071
10/23/2020		0.039
10/24/2020		0.06
10/25/2020		0.026
10/26/2020		0.025
10/27/2020		0.002
10/28/2020		0.017
10/29/2020		0.054
10/30/2020		0.108
10/31/2020		0.1

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Date	Daily Rainfall Total	Total Daily Evaporation
11/1/2020	0	0.128
11/2/2020	0	0.136
11/3/2020	0	0.141
11/4/2020	0	0.03
11/5/2020	0	0
11/6/2020	0	0
11/7/2020	0	0
11/8/2020	0	0
11/9/2020	0	0
11/10/2020	0	0
11/11/2020	0	0
11/12/2020	0	0
11/13/2020	0	0
11/14/2020	0	0.527
11/15/2020	0	0
11/16/2020	0	0
11/17/2020	0	0
11/18/2020	0	0.57
11/19/2020	0	0.167
11/20/2020	0	1.581
11/21/2020	0	0.067
11/22/2020	0.02	0.133
11/23/2020	0	0
11/24/2020	0.01	0.098
11/25/2020	0	0
11/26/2020	0	0
11/27/2020	0	0
11/28/2020	0	0
11/29/2020	0.01	0
11/30/2020	0.07	0

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Date	Daily Rainfall Total	Total Daily Evaporation
12/1/2020	0	0.495
12/2/2020	0.07	0
12/3/2020	0	0
12/4/2020	0	0.369
12/5/2020	0	0
12/6/2020	0	0
12/7/2020	0	0
12/8/2020	0	0
12/9/2020	0	0
12/10/2020	0	0
12/11/2020	0.08	0.18
12/12/2020	0	0.137
12/13/2020	0.46	0
12/14/2020	0	0
12/15/2020	1	0.393
12/16/2020	0.01	0
12/17/2020	0	0
12/18/2020	0	0
12/19/2020	0.02	0.192
12/20/2020	0	0
12/21/2020	0	0
12/22/2020	0	0
12/23/2020	0	0
12/24/2020	0	0
12/25/2020	0	0
12/26/2020	0	0
12/27/2020	0	0
12/28/2020	0	0
12/29/2020	0	0
12/30/2020	0.5	0.163
12/31/2020	0.67	0

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MESONET CLIMATOLOGICAL DATA SUMMARY										October 2020		Time Zone: Midnight-Midnight West										
(TISH) Tishomingo										Nearest City: 6.0 N		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	DIR	SPEED	STN	MSL	DIR	SPEED	SOD	BASE	MAX	MIN
1	76	51	64.5	42.5	78	25	47	0.00	29.27	30.21	NNE	9.7	25.7	18.40	68.9	69.3	79					
2	71	42	57.9	41.4	95	31	58	0.00	29.25	30.20	ESE	5.2	17.0	18.81	66.6	66.3	77					
3	79	50	63.5	51.2	89	45	66	0.00	29.12	30.06	ESE	7.3	21.1	18.33	67.3	67.9	79					
4	72	44	60.8	45.9	96	35	61	0.00	29.26	30.21	NNE	9.2	30.3	20.92	67.8	69.3	79					
5	74	43	58.8	49.1	99	45	73	0.00	29.20	30.14	ESE	6.5	23.2	20.14	65.9	66.9	78					
6	81	52	65.6	57.3	96	54	76	0.00	29.12	30.06	ESE	5.4	15.1	18.81	67.7	69.8	81					
7	84	56	69.5	61.2	100	49	77	0.00	29.10	30.04	SSE	5.4	16.3	18.32	69.6	72.4	83					
8	83	57	70.2	58.5	99	38	70	0.00	29.09	30.03	ESE	4.6	15.8	19.02	70.7	74.0	84					
9	82	61	70.6	66.3	100	62	88	0.00	28.98	29.92	ESE	5.1	19.4	15.06	71.7	75.2	85					
10	84	57	68.1	62.7	100	48	86	0.00	28.91	29.84	E	3.1	12.5	16.48	71.9	75.2	86					
11	90	56	73.4	64.2	100	45	76	0.01	28.84	29.78	SSE	7.9	25.3	18.79	71.6	75.3	85					
12	78	43	65.9	43.5	93	21	49	0.00	29.05	29.99	N	10.5	31.3	19.95	70.6	73.8	82					
13	80	39	59.1	43.2	98	26	63	0.00	29.17	30.12	SSE	4.6	16.0	20.03	67.2	68.8	80					
14	87	46	68.3	57.2	100	45	71	0.00	28.93	29.87	SSE	9.2	28.8	18.30	67.9	70.3	81					
15	76	53	65.8	44.6	100	25	51	0.00	29.07	30.01	NNE	14.9	41.4	15.87	69.2	71.7	78					
16	69	42	55.7	33.2	85	22	47	0.00	29.35	30.29	NNE	5.6	16.0	18.05	66.3	67.0	76					
17	73	43	59.9	48.7	92	43	68	0.00	29.07	30.01	SSE	11.9	31.9	16.95	65.1	65.3	73					
18	79	49	65.4	60.2	99	64	84	0.00	29.00	29.94	SE	9.2	25.8	4.94	67.8	68.5	74					
19	60	47	52.9	48.5	100	69	86	0.00	29.11	30.05	NE	6.0	15.1	5.90	65.6	64.1	68					
20	85	50	65.3	59.1	100	53	82	0.00	29.04	29.98	SSE	7.7	24.9	11.36	66.9	67.4	76					
21	84	64	72.3	65.1	100	52	80	0.00	29.07	30.01	SSE	9.0	24.9	14.50	69.9	72.4	81					
22	82	63	71.9	64.6	100	56	80	0.00	28.98	29.92	SSE	10.6	30.6	NA	70.3	72.5	80					
23	72	44	52.0	44.3	90	62	75	0.14	29.17	30.12	N	14.7	34.5	7.01	66.1	63.0	71					
24	58	39	47.3	37.3	87	45	70	0.00	29.15	30.09	N	5.9	19.3	15.28	61.8	58.9	69					
25	52	45	49.3	47.5	97	87	94	0.05	29.06	30.00	ENE	9.5	23.6	2.33	60.8	57.5	59					
26	46	34	38.7	37.1	96	91	94	0.49	29.19	30.14	N	15.7	28.3	1.81	56.9	50.2	55					
27	37	33	34.7	33.5	97	92	95	0.43	29.19	30.13	N	13.6	27.2	2.02	51.3	44.0	45					
28	43	36	38.8	37.4	98	85	95	0.41	28.95	29.89	W	8.6	20.9	2.68	51.5	45.5	48					
29	58	34	45.0	38.4	98	53	79	0.01	29.08	30.02	NNW	10.2	35.8	13.31	52.8	48.4	56					
30	68	31	48.3	36.1	97	31	68	0.00	29.30	30.25	S	3.4	10.1	16.83	54.0	50.9	62					
31	69	37	51.5	41.7	98	38	73	0.00	29.22	30.16	SSE	6.5	22.5	16.13	55.1	52.2	60					
	72	46	59.1	49.1					29.11	30.05	SSE	8.3	41.4	14.21	65.1	65.0	73					
																						58

Temperature - Highest: 90\*  
Lowest: 31\*

Rainfall: Monthly Total: 1.54\* in.  
Greatest 24 Hr: 0.49\* in.

Number of Days With:  
Tmax > 90: 1\*  
Tmax < 32: 0\*  
Tmin < 32: 1\*  
Tmin < 0: 0\*

Rainfall > 0.01 inch: 7\*  
Rainfall > 0.10 inch: 4\*  
Avg Wind Speed > 10 mph: 8\*  
Max Wind Speed > 30 mph: 7\*

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Partly-daily generated on 5-day, Derivative of 2021 at 18 56 -T  
\* Denotes incomplete record

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KIAHOMA WATER

MAY 20 2021

MESONET CLIMATOLOGICAL DATA SUMMARY  
 (TISH) Tishomingo  
 Latitude: 34-19-57

November 2020  
 Nearest City: 6.0 N Tishomingo  
 Longitude: 96-40-44

Time Zone: Midnight -  
 County: Johnston  
 Elevation: 879 feet

DAY	TEMPERATURE ( F )		DEWPT	DEG DAYS	HUMIDITY (%)		RAIN (in)	PRESSURE (in)		WIND DIR	WIND SPEED (mph)		SOLAR (MJ/m2)		4" SOD		WIND SPEED (mph)		SOLAR (MJ/m2)		4" SOD		
	MAX	MIN			AVG	HDD		CDD	MAX		MIN	AVG	STN	MSL	DIR	AVG	MAX	STN	MSL	DIR	AVG	MAX	STN
1	68	37	53.7	12	0	96	26	57	29.48	30.43	NNE	8.5	22.2	16.83	56.0	52.9	66	22.2	16.83	56.0	52.9	66	
2	68	31	48.5	16	0	93	24	60	29.47	30.42	SSW	5.6	18.6	16.58	54.7	50.7	55	18.6	16.58	54.7	50.7	55	
3	77	35	55.7	9	0	98	19	60	29.28	30.23	SSE	6.8	20.5	16.54	55.2	53.1	66	20.5	16.54	55.2	53.1	66	
4	75	41	58.8	7	0	96	33	60	29.23	30.17	SSE	8.1	25.1	14.93	56.3	55.5	65	25.1	14.93	56.3	55.5	65	
5	74	51	61.9	2	0	98	54	78	29.21	30.15	E	6.2	19.2	13.98	59.1	59.9	69	19.2	13.98	59.1	59.9	69	
6	76	54	62.5	0	0	99	54	81	29.18	30.12	ESE	6.3	20.8	12.93	60.9	62.0	70	20.8	12.93	60.9	62.0	70	
7	75	48	61.3	4	0	98	41	72	29.11	30.05	ESE	5.9	18.8	15.16	60.7	61.2	70	18.8	15.16	60.7	61.2	70	
8	74	60	64.9	0	2	97	62	86	29.03	29.97	SSE	10.4	27.6	6.86	61.7	62.5	68	27.6	6.86	61.7	62.5	68	
9	78	66	69.7	0	7	93	52	77	28.96	29.90	SSE	9.7	24.1	7.90	63.8	65.7	71	24.1	7.90	63.8	65.7	71	
10	69	40	60.1	10	0	95	30	67	28.95	29.88	S	9.7	24.1	11.26	63.6	64.7	70	24.1	11.26	63.6	64.7	70	
11	70	38	52.1	11	0	86	23	57	29.06	30.00	NE	5.3	14.5	15.36	58.6	57.3	68	14.5	15.36	58.6	57.3	68	
12	75	46	59.0	4	0	79	45	61	29.07	30.01	SE	8.6	27.6	12.28	58.8	59.5	68	27.6	12.28	58.8	59.5	68	
13	62	42	53.1	13	0	95	48	69	29.17	30.12	NNE	8.3	27.6	7.42	58.6	58.3	63	27.6	7.42	58.6	58.3	63	
14	81	55	67.8	0	3	94	28	73	28.85	29.79	SSW	14.0	39.2	6.40	60.8	61.8	68	39.2	6.40	60.8	61.8	68	
15	64	32	51.2	17	0	82	14	35	29.27	30.21	NNW	8.4	28.9	15.31	58.5	58.5	66	28.9	15.31	58.5	58.5	66	
16	70	29	46.9	16	0	91	15	57	29.36	30.31	SSW	3.6	17.0	14.90	55.2	54.4	65	17.0	14.90	55.2	54.4	65	
17	72	34	53.0	12	0	87	20	50	29.47	30.42	SE	5.5	18.1	14.50	55.2	55.4	66	18.1	14.50	55.2	55.4	66	
18	72	42	57.1	8	0	76	25	48	29.36	30.31	SSE	10.9	26.2	14.40	55.7	56.5	65	26.2	14.40	55.7	56.5	65	
19	72	51	61.6	4	0	83	44	62	29.22	30.16	S	13.7	32.3	13.66	57.2	59.0	67	32.3	13.66	57.2	59.0	67	
20	75	56	63.9	0	0	97	58	80	29.28	30.23	S	9.3	28.2	12.15	59.8	62.2	70	28.2	12.15	59.8	62.2	70	
21	73	54	63.6	2	0	97	64	86	29.29	30.24	SSW	5.9	17.6	4.15	61.5	63.3	67	17.6	4.15	61.5	63.3	67	
22	54	36	47.2	20	0	99	73	89	29.35	30.30	N	9.8	24.8	3.30	58.4	55.6	61	24.8	3.30	58.4	55.6	61	
23	59	32	47.1	20	0	99	56	78	29.27	30.21	SE	7.4	21.9	9.94	54.3	50.0	56	21.9	9.94	54.3	50.0	56	
24	65	49	53.7	8	0	99	73	91	28.92	29.86	SE	7.5	31.4	0.85	55.7	53.4	57	31.4	0.85	55.7	53.4	57	
25	60	32	46.2	19	0	93	29	65	29.05	29.99	WNW	7.1	23.8	13.85	54.6	51.3	58	23.8	13.85	54.6	51.3	58	
26	68	31	49.9	16	0	96	36	69	29.04	29.98	SSE	7.1	24.9	12.59	52.6	49.0	56	24.9	12.59	52.6	49.0	56	
27	62	43	51.4	13	0	86	46	63	29.17	30.11	NNE	11.2	26.1	10.47	53.9	50.8	55	26.1	10.47	53.9	50.8	55	
28	59	39	47.4	16	0	92	43	64	29.21	30.16	NNE	8.2	17.6	9.68	52.8	48.8	56	17.6	9.68	52.8	48.8	56	
29	55	37	44.6	19	0	97	49	76	29.21	30.15	NNW	10.3	41.7	6.73	52.6	48.7	53	41.7	6.73	52.6	48.7	53	
30	49	23	35.8	29	0	89	24	50	29.38	30.33	NNW	8.4	30.2	13.97	48.6	42.2	49	30.2	13.97	48.6	42.2	49	
	68	42	55.0	42.7			Monthly Averages ->		29.20	30.14	SSE	8.4	41.7	11.50	57.2	56.1	63	41.7	11.50	57.2	56.1	63	50

Temperature - Highest: 81 Lowest: 23	Degree Days - Total HDD: 307 Total CDD: 12	Humidity - Highest: 99 Lowest: 14	Number of Days With: Tmax >= 90: 0 Tmax <= 32: 0 Tmin <= 32: 7 Tmin <= 0: 0	Rainfall >= 0.01 inch: 6 Rainfall >= 0.10 inch: 3 Avg Wind Speed >= 10 mph: 7 Max Wind Speed >= 30 mph: 5
Rainfall: Monthly Total: 1.10 in. Greatest 24 Hr: 0.45 in.				

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 Monthly data generated on Mon, 07 December 2020 at 14:53 UTC  
 \* Denotes incomplete record

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MA 29

Klahoma Water Resources

Time Zone: Midnight-Midnight CDT  
 County: Johnston  
 Elevation: 879 feet

December 2020  
 Nearest City: 6.0 N Tishomingo  
 Longitude: 96-40-44

MESONET CLIMATOLOGICAL DATA SUMMARY  
 (TISH) Tishomingo  
 Latitude: 34-19-57

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/m2)	4" SOIL TEMPERATURE SOD BARE %	PRECIPITATION MAX MIN
1	58 19 38.9 21.0	26 0	94 23 55	0.00	29.12 30.06	SSE 7.6 27.8	12.82	46.1 40.6	47.3
2	45 38 42.8 37.8	23 0	99 45 84	0.06	29.14 30.09	ESE 7.4 19.2	0.98	47.5 42.9	45.4
3	44 36 38.7 36.0	25 0	94 85 90	0.00	29.24 30.19	NW 6.9 18.2	2.38	48.1 43.9	46.4
4	57 24 38.5 27.2	25 0	98 26 70	0.00	29.25 30.20	WSW 4.7 15.7	13.13	46.9 43.0	51.3
5	63 29 45.7 29.4	19 0	91 27 57	0.00	29.23 30.18	NW 5.6 13.2	12.46	47.3 44.4	53.3
6	61 36 47.1 32.1	16 0	85 31 58	0.00	29.15 30.09	NNW 7.2 19.2	12.64	48.8 47.2	55.4
7	63 30 44.8 31.0	19 0	95 27 63	0.00	29.23 30.18	WNW 5.5 13.9	12.81	48.4 46.5	55.3
8	69 32 50.1 27.1	15 0	85 17 46	0.00	29.22 30.16	NW 6.1 14.3	13.24	48.5 47.5	57.4
9	75 29 48.3 28.6	13 0	89 16 54	0.00	29.11 30.05	WSW 4.2 14.8	13.32	48.3 47.7	58.4
10	75 30 52.4 33.1	12 0	91 20 55	0.00	28.96 29.89	SSE 7.0 21.9	12.93	48.9 49.2	59.4
11	59 37 51.8 46.7	17 0	96 61 83	0.18	28.91 29.85	S 6.1 16.2	3.42	51.6 51.9	55.4
12	50 31 39.5 31.2	25 0	92 49 73	0.00	29.09 30.03	WNW 5.6 22.2	12.52	48.6 45.3	53.4
13	38 33 35.4 32.7	30 0	97 79 90	0.79	29.17 30.11	N 11.8 27.7	1.06	46.1 41.2	43.3
14	45 24 33.1 27.9	31 0	99 47 83	0.01	29.30 30.24	ENE 6.0 15.6	11.86	44.5 40.2	47.3
15	32 30 31.5 30.4	34 0	99 89 96	0.03	29.08 30.02	E 7.0 19.2	1.45	43.7 37.9	39.3
16	40 22 31.7 27.3	34 0	96 62 84	0.00	29.17 30.12	NW 4.6 17.2	7.29	43.5 38.7	43.3
17	57 20 37.5 27.0	26 0	96 35 70	0.01	29.24 30.19	WSW 4.4 12.9	12.61	42.5 39.5	48.3
18	58 33 47.4 37.0	20 0	91 35 69	0.00	29.18 30.12	SSE 10.1 34.6	10.41	44.5 42.5	48.3
19	55 30 47.2 37.7	22 0	98 42 72	0.00	29.15 30.09	N 5.9 20.0	9.57	48.0 48.0	53.4
20	61 26 41.2 29.3	22 0	95 32 68	0.00	29.12 30.07	WNW 5.9 19.8	12.58	45.8 43.3	51.3
21	67 27 45.5 29.1	18 0	94 22 60	0.00	29.16 30.10	WSW 4.0 14.4	12.54	45.7 44.1	53.3
22	69 33 52.2 39.9	14 0	88 42 65	0.00	29.09 30.04	SSE 10.8 29.7	11.24	47.1 46.3	53.3
23	62 31 51.7 35.8	19 0	88 29 58	0.00	28.98 29.92	NNW 17.4 38.0	12.14	50.4 50.4	55.4
24	51 23 35.3 12.9	28 0	69 19 42	0.00	29.27 30.21	WNW 8.8 32.2	12.72	45.0 39.7	45.3
25	55 22 37.6 21.3	26 0	83 29 54	0.00	29.26 30.20	SSW 4.8 12.2	12.53	43.8 40.0	48.3
26	69 25 46.9 26.6	18 0	94 18 52	0.00	29.06 30.00	S 8.2 27.9	12.77	44.4 42.0	50.3
27	66 43 54.3 35.6	10 0	81 21 53	0.00	28.96 29.90	S 11.6 29.2	12.24	47.1 47.0	54.4
28	55 40 47.6 32.4	18 0	78 37 57	0.01	29.29 30.23	NE 11.0 21.6	9.13	47.1 46.0	51.4
29	62 47 53.4 46.9	11 0	97 69 79	0.08	29.09 30.03	ESE 9.3 21.8	2.06	48.8 48.8	52.4
30	58 36 41.8 38.4	18 0	96 65 88	0.40	29.10 30.04	N 16.1 32.9	2.01	49.3 47.1	53.4
31	36 33 34.0 28.9	31 0	96 65 82	1.33	28.94 29.88	NNE 17.2 40.0	1.12	44.3 38.6	41.3
	57 31 43.4 31.5	<- Monthly Averages ->			29.14 30.08	WNW 8.0 40.0	9.35	46.8 44.2	50.3
Temperature - Highest: 75 Lowest: 19		Degree Days - Total HDD: 663 Total CDD: 0	Number of Days With: Tmax > 90: 0 Tmax < 32: 1 Tmin < 32: 19 Tmin < 0: 0						
Rainfall: Monthly Total: 2.90 in. Greatest 24 Hr: 1.33 in.		Humidity - Highest: 99 Lowest: 16	* Denotes incomplete record						

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Monthly data generated on Thursday, January 07, 2021 at 14:50 CDT

Date	Reference ET, Short [in]	Reference ET, Tall [in]	Cool Season Grass ET [in]	Warm Season Grass ET [in]	Pan Evaporation [in]
2021-01-06	0.04	0.06	0.04	0.03	0.05
2021-01-05	0.07	0.11	0.07	0.05	0.09
2021-01-04	0.08	0.12	0.07	0.05	0.10
2021-01-03	0.06	0.09	0.06	0.05	0.07
2021-01-02	0.04	0.06	0.04	0.03	0.05
2021-01-01	0.02	0.03	0.02	0.01	0.03
2020-12-31	0.04	0.05	0.03	0.02	0.05
2020-12-30	0.08	0.13	0.07	0.05	0.11
2020-12-29	0.06	0.09	0.06	0.04	0.08
2020-12-28	0.09	0.14	0.08	0.06	0.13
2020-12-27	0.13	0.20	0.12	0.08	0.18
2020-12-26	0.11	0.17	0.10	0.07	0.14
2020-12-25	0.04	0.06	0.04	0.03	0.05
2020-12-24	0.09	0.14	0.08	0.05	0.12
2020-12-23	0.11	0.17	0.10	0.07	0.16
2020-12-22	0.11	0.17	0.10	0.07	0.14
2020-12-21	0.06	0.09	0.06	0.04	0.07
2020-12-20	0.07	0.10	0.06	0.04	0.08
2020-12-19	0.04	0.06	0.04	0.03	0.05
2020-12-18	0.07	0.10	0.06	0.04	0.09
2020-12-17	0.05	0.07	0.04	0.03	0.06
2020-12-16	0.03	0.03	0.02	0.02	0.03
2020-12-15	0.01	0.01	0.01	0.01	0.02
2020-12-14	0.04	0.05	0.04	0.02	0.05
2020-12-13	0.02	0.03	0.02	0.01	0.03
2020-12-12	0.05	0.06	0.04	0.03	0.06
2020-12-11	0.03	0.04	0.03	0.02	0.04
2020-12-10	0.10	0.17	0.10	0.06	0.13
2020-12-09	0.08	0.12	0.07	0.05	0.10
2020-12-08	0.09	0.15	0.09	0.06	0.13
2020-12-07	0.07	0.10	0.06	0.04	0.08
2020-12-06	0.08	0.13	0.08	0.05	0.11
2020-12-05	0.07	0.11	0.07	0.04	0.09
2020-12-04	0.05	0.07	0.04	0.03	0.06
2020-12-03	0.03	0.04	0.03	0.02	0.03
2020-12-02	0.03	0.04	0.03	0.02	0.03
2020-12-01	0.09	0.13	0.08	0.05	0.11
2020-11-30	0.07	0.12	0.07	0.05	0.10
2020-11-29	0.07	0.10	0.06	0.04	0.09
2020-11-28	0.08	0.12	0.08	0.05	0.11
2020-11-27	0.10	0.15	0.09	0.06	0.13
2020-11-26	0.08	0.13	0.08	0.05	0.11
2020-11-25	0.08	0.12	0.07	0.05	0.10
2020-11-24	0.05	0.07	0.04	0.03	0.06
2020-11-23	0.05	0.08	0.05	0.03	0.07
2020-11-22	0.03	0.04	0.03	0.02	0.04
2020-11-21	0.05	0.06	0.04	0.03	0.06
2020-11-20	0.09	0.13	0.09	0.06	0.12
2020-11-19	0.13	0.21	0.12	0.08	0.19
2020-11-18	0.15	0.23	0.14	0.09	0.21
2020-11-17	0.09	0.14	0.09	0.06	0.12

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MAR 29 2021

Oklahoma Water Resources Res

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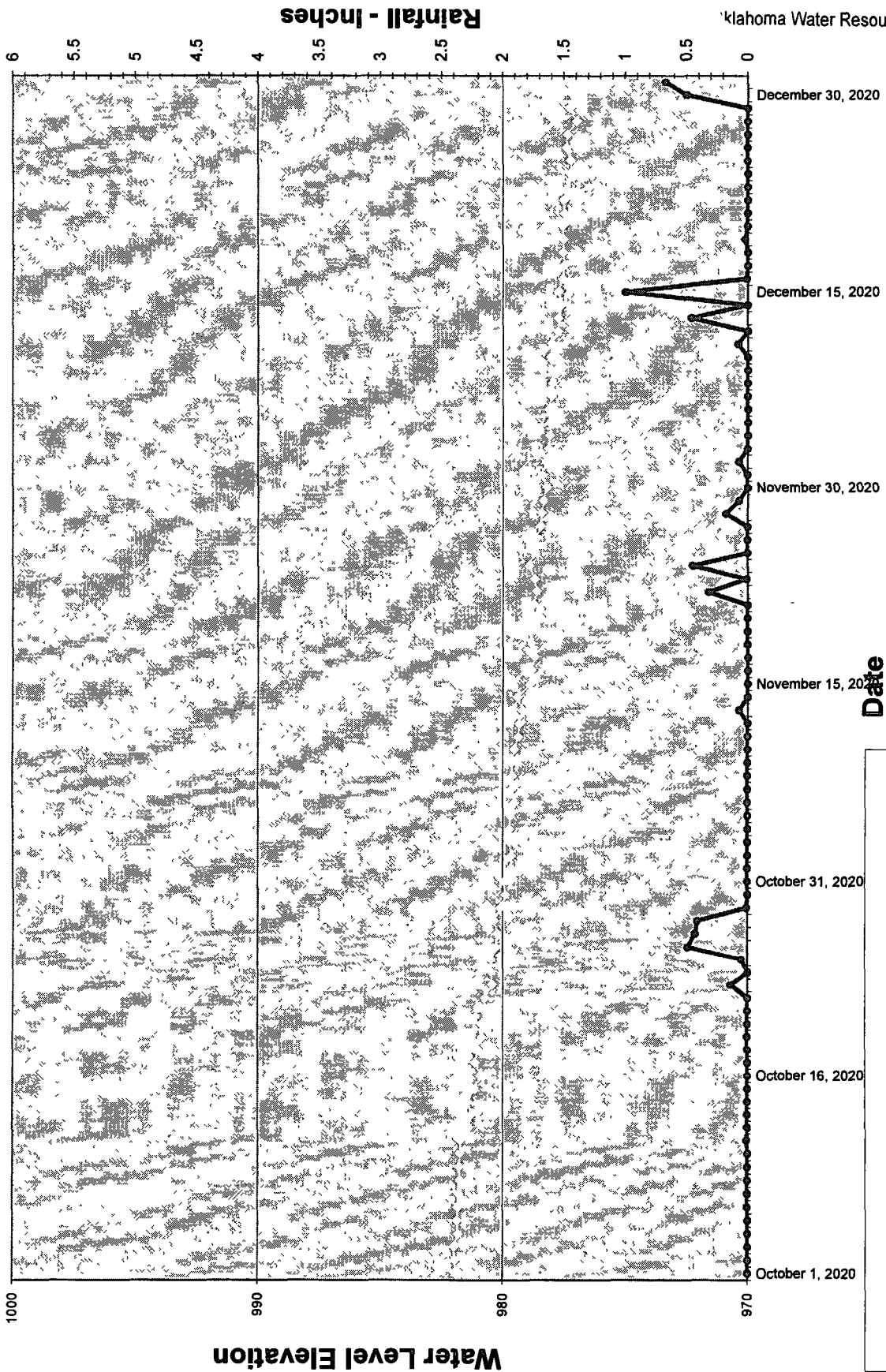
				MAR 29 2021	
2020-11-16	0.07	0.10	0.07	0.08	0.09
2020-11-15	0.13	0.20	0.12	0.08	0.19
2020-11-14	0.13	0.21	0.12	0.08	0.18
2020-11-13	0.07	0.11	0.07	0.05	0.09
2020-11-12	0.12	0.19	0.12	0.08	0.16
2020-11-11	0.10	0.14	0.09	0.06	0.12
2020-11-10	0.09	0.12	0.08	0.05	0.11
2020-11-09	0.12	0.18	0.11	0.08	0.17
2020-11-08	0.08	0.12	0.08	0.05	0.11
2020-11-07	0.10	0.13	0.09	0.06	0.12
2020-11-06	0.09	0.12	0.08	0.06	0.11
2020-11-05	0.09	0.12	0.08	0.06	0.11
2020-11-04	0.12	0.18	0.11	0.08	0.16
2020-11-03	0.12	0.17	0.11	0.07	0.15
2020-11-02	0.09	0.13	0.08	0.06	0.11
2020-11-01	0.12	0.18	0.11	0.07	0.16
2020-10-31	0.10	0.14	0.09	0.06	0.12
2020-10-30	0.08	0.10	0.07	0.05	0.10
2020-10-29	0.08	0.12	0.08	0.05	0.10
2020-10-28	0.02	0.03	0.02	0.01	0.03
2020-10-27	0.02	0.02	0.02	0.01	0.02
2020-10-26	0.03	0.04	0.03	0.02	0.04
2020-10-25	0.02	0.03	0.02	0.01	0.03
2020-10-24	0.08	0.11	0.08	0.05	0.10
2020-10-23	0.14	0.22	0.13	0.09	0.20
2020-10-22	0.13	0.18	0.12	0.08	0.17
2020-10-21	0.13	0.18	0.12	0.08	0.17
2020-10-20	0.13	0.18	0.12	0.08	0.16
2020-10-19	0.05	0.07	0.05	0.03	0.06
2020-10-18	0.08	0.11	0.07	0.05	0.10
2020-10-17	0.14	0.20	0.13	0.09	0.19
2020-10-16	0.13	0.18	0.12	0.08	0.17
2020-10-15	0.20	0.31	0.19	0.13	0.30
2020-10-14	0.17	0.24	0.16	0.10	0.22
2020-10-13	0.13	0.17	0.12	0.08	0.16
2020-10-12	0.18	0.27	0.17	0.11	0.26
2020-10-11	0.16	0.21	0.15	0.10	0.20
2020-10-10	0.11	0.12	0.10	0.07	0.13
2020-10-09	0.11	0.13	0.10	0.07	0.13
2020-10-08	0.14	0.17	0.13	0.09	0.17
2020-10-07	0.13	0.16	0.12	0.08	0.16
2020-10-06	0.13	0.17	0.12	0.08	0.16
2020-10-05	0.13	0.16	0.12	0.08	0.16
2020-10-04	0.15	0.21	0.14	0.09	0.21
2020-10-03	0.15	0.20	0.14	0.09	0.19
2020-10-02	0.12	0.16	0.11	0.08	0.15
2020-10-01	0.18	0.27	0.17	0.11	0.26
2020-09-30	0.16	0.20	0.14	0.10	0.19
2020-09-29	0.17	0.24	0.16	0.11	0.22
2020-09-28	0.18	0.26	0.17	0.11	0.26
2020-09-27	0.11	0.14	0.10	0.07	0.14

Klahoma Water Resources Bnc



MAR 29 2021

Mill Creek Water Levels 4th Quarter 2020



10-03 WL ELEV  
Recorded Rainfall

Oklahoma Water Resources Board