Mr. Kent Wilkins, Assistant Chief  
Planning and Management Division  
Oklahoma Water Resources Board  
3800 North Classen Boulevard  
Oklahoma City, OK 73118

RE: Water Monitoring Plan Report, 2nd Quarter 2016, for Dolese Bros. Co. Davis Quarry,  
Murray County, Oklahoma

Dear Mr. Wilkins:

According to the Oklahoma Water Resources Board’s Title 785, Chapter 30, Subchapter 15, Part 4,  
Mines with Preexisting Exemptions, Dolese Bros. Co. Davis Quarry qualifies as a mine with  
a preexisting exemption. As part of maintaining this exemption status, the regulations require us to do  
the following:

1. Adopt and implement a plan to monitor and report to the Board the accumulation and  
disposition of pit water during the previous calendar year;
   • The Davis Quarry has adopted and implemented such a plan, and the tables below  
serve to report to the Board the accumulation and disposition of pit water during the  
2nd Quarter 2016.

2. Make quarterly and annual reports of the measured or reasonably estimated groundwater and  
surface water volumes, separately stated, entering the pit, of the water that is diverted from the  
pit, of the disposition of the water from the pit, and of the consumptive use of the water from  
the pit on or before the deadlines provided by Title 82 of Oklahoma Statutes, § 1020.2(E)(1);
   • The Davis Quarry has continued to fulfill this obligation by compiling and submitting  
this 2nd Quarter 2016 Report. The specific information requested in this section is  
outlined in the tables shown below.

3. At any time after March 31, 2015, demonstrate to the satisfaction of the Board within the  
pertinent report or reports that the mine has not consumptively used during the previous  
twelve-month period, from the mining site, an amount of groundwater which combined with  
any amounts used from permitted groundwater wells exceeds the MEPS ¹. Such  
demonstration may require providing to the Board a copy of the mine’s monitoring plan and all  
of the data collected and procedures used to support the calculations and results reported.
   • After 31 March 2015, the Davis Quarry will be willing to demonstrate to the Board that  
the mine site has not consumptively used during the previous twelve-month period  
from the mining site, an amount of groundwater which combined with any amounts  
used from permitted groundwater wells exceeds the MEPS. Example calculations  
used in the First Quarterly Monitoring Report for 2013 have already been submitted to  
the OWRB for review and analysis.

¹ Mine’s Equal Proportionate Share

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Below, in Tables 1, 2, and 3, is shown the 2nd Quarter 2016 summary data collected at the Davis Quarry.

**Table 1**

**Accumulation & Disposition of Pit Water During 2nd Quarter 2016**

<table>
<thead>
<tr>
<th></th>
<th>Groundwater Acre-Feet</th>
<th>Surface Water Acre-Feet</th>
<th>Total Acre-Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Entering The Mine Pit</td>
<td>128.70</td>
<td>237.25</td>
<td>365.95</td>
</tr>
<tr>
<td>Water Diverted From The Mine Pit Into Fresh Water Lake</td>
<td>126.23</td>
<td>232.70</td>
<td>358.93</td>
</tr>
<tr>
<td>Water Removed From Fresh Water Lake</td>
<td>317.05</td>
<td>895.86</td>
<td>1,212.91</td>
</tr>
<tr>
<td>Water Returned To Fresh Water Lake</td>
<td>336.24</td>
<td>950.08</td>
<td>1,286.32</td>
</tr>
<tr>
<td>Water Returned To Land Surface Overlying Arbuckle Simpson Aquifer (ASA) Basin</td>
<td>14.34</td>
<td>40.53</td>
<td>54.87</td>
</tr>
<tr>
<td>Water Consumptively Used</td>
<td>81.31</td>
<td>(See Table 3 for Calculations)</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2**

**Water Fluctuations in Fresh Water Lake during 2nd Quarter 2016**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Size of Lake</td>
<td>31.36 acres</td>
</tr>
<tr>
<td>Loss in Water Elevation</td>
<td>3.96 feet</td>
</tr>
<tr>
<td>Loss in Lake Volume</td>
<td>124.19 acre-feet</td>
</tr>
</tbody>
</table>

**Table 3**

**Consumptive Use Summary for 2nd Quarter 2016**

<table>
<thead>
<tr>
<th>Activity or Location</th>
<th>Amount of Pit Water Used, Acre-Feet</th>
<th>Percent Groundwater</th>
<th>Groundwater Component, Acre-Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 North Water Well</td>
<td>0.00</td>
<td>All</td>
<td>1.66</td>
</tr>
<tr>
<td>2 South Water Well</td>
<td>0.00</td>
<td>All</td>
<td>0.98</td>
</tr>
<tr>
<td>3 Material Moisture Hauled from Site</td>
<td>4.81</td>
<td>26.14%</td>
<td>1.26</td>
</tr>
<tr>
<td>4 Land Application for Roadway Dust Suppression</td>
<td>7.41</td>
<td>26.14%</td>
<td>1.94</td>
</tr>
<tr>
<td>5 Evaporation from Mine Pit</td>
<td>4.03</td>
<td>34.99%</td>
<td>1.41</td>
</tr>
<tr>
<td>6 Offsite Dewatering</td>
<td>283.40</td>
<td>26.14%</td>
<td>74.07</td>
</tr>
</tbody>
</table>

For 2nd Quarter 2016, 
**Total Groundwater Consumption from ASA\(^2\) at Davis Quarry = 81.31 Acre-Feet**

\(^2\) Arbuckle Simpson Aquifer
Below, in Table 4, is the Groundwater Rights Summary for the Davis Quarry.

Table 4

Summary of Groundwater Rights for Davis Quarry

<table>
<thead>
<tr>
<th>Description</th>
<th>Calculation</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Acreage on the Arbuckle-Simpson Aquifer</td>
<td>(1,083 acres on ASA) * (0.2 ac-ft/acre)</td>
<td>216.6 acre-feet on the ASA</td>
</tr>
<tr>
<td>And Included in the ASA Groundwater Rights</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From Acreage off the Arbuckle-Simpson Aquifer</td>
<td>(937 acres off ASA) * (2.0 ac-ft/acre)</td>
<td>1,874 acre-feet off the ASA</td>
</tr>
<tr>
<td>And Excluded from the ASA Groundwater Rights</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the plan that we have adopted and implemented to monitor and report the accumulation and disposition of pit water, based on our actual consumptive use of groundwater quantities, and based on the timely submittal of all reports including this 2nd Quarterly Report for 2016, we believe that the Davis Quarry is in full compliance with all of the regulations that allow us to maintain its preexisting exemption.

General Information—

Our calculations show that Davis Quarry’s total groundwater consumption for 2nd Quarter 2016 was 81.31 acre-feet. This equates to about 37.5% of the Davis Quarry’s equal proportionate share for the year. Annually, we have 216.6 acre-feet of groundwater rights available over the ASA at the Davis Quarry location, but our total available water rights for this site could also include other significant underground water rights that we own at another site that overlies the ASA in Murray County.

During 1st Quarter 2016, the Davis Quarry received only 3.0 inches of rainfall, which yielded only 1.79 inches of runoff; however, much more precipitation than this fell during 2nd Quarter 2016. During 2nd Quarter 2016, we received 21.60 inches of rainfall, yielding 11.02 inches of runoff. We were forced to discharge water from our site because of these significant rains.

As we predicted, the groundwater percentage of the Fresh Water Lake decreased considerably, from 72.17% to 26.14% from the first quarter to the second quarter, because of the significant increase in rainfall. For reasons mentioned in previous monitoring reports, even the calculated 26.14% groundwater portion of the Fresh Water Lake using current calculation methods is still indicating an amount of groundwater much higher than what is likely the actual content; but this figure is much better than the higher amounts we have encountered during drought quarters. The primary culprit causing these figures to indicate that groundwater concentrations are so high continues to be the quantity of water leaking from the Fresh Water Lake, which tends to skew the calculations.

Consider the following situations that often occur at Davis Quarry: During the majority of dry quarters, we have no reason to discharge water offsite; so, the total groundwater consumptive use is based only on water uses related to our crushed stone operation. However, during quarters when we receive considerable rainfall, we are forced to discharge...
water from our site because it inundates the lower Mine Pit region so much that we cannot operate. An analysis of these situations leads us to believe that the “storm water” is the primary reason for having to conduct offsite discharge, rather than any “groundwater” infiltration. While it may be rather difficult to prove, it is unlikely that our current Mine Pit has entered the Arbuckle Simpson Aquifer (ASA). Regardless, we will still continue to count all of the Fresh Water Lake seepage and delayed storm water seepage as groundwater until we get a better handle on the situation.

Please contact me if you have any questions or comments concerning this submittal. Thank you.

Sincerely,

DOLESE BROS. CO.

Daniel E. Becker, P.E.
Environmental Engineer

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