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Oklahoma Water Resources Board

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8 December 2015 15-ED-422

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, 3rd Quarter 2015, for Dolese Bros. Co. Davis Quarry, Murray County, Oklahoma

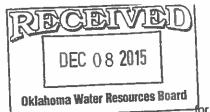
Dear Mr. Wilkins:

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:

- 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 3rd Quarter 2015.
- 2. Make quarterly and annual reports of the measured or reasonably estimated volume of groundwater and surface water, separately stated, entering the pit, and 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 <u>3rd Quarter 2015 Report</u>. 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 MEPS¹. Such demonstration may require providing to the Board a copy of the mine's

¹ Mine's Equal Proportionate Share DOLESE BROS. CO.

Mr. Kent Wilkins Oklahoma Water Resources Board 15-ED-422 Page Two



Water Monitoring Plan Report 3rd Quarter 2015 or Dolese Bros. Co. Davis Quarry

Murray County, Oklahoma

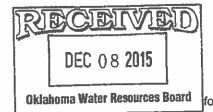
monitoring plan and all of the data collected and procedures used to support the calculations and results reported.

The Davis Quarry is currently 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. Additionally. "example calculations" used in the First Quarterly Monitoring Report for 2013 have already been submitted to the OWRB for review and analysis.

Below, in Tables 1, 2, and 3, please find the 3rd Quarter 2015 summary data collected at the Davis Quarry.

Table 1-3rd Quarter 2015 Acre-Feet **ACCUMULATION & DISPOSITION OF PIT WATER** Water entering the Mine Pit Groundwater 48.91 161.73 Surface Water 210.64 Total Water diverted from the Mine Pit into Fresh Water Lake (FWL) 143.36 Groundwater 474.03 Surface Water 617.39 Total Water removed from Fresh Water Lake (FWL) 224.89 Groundwater 873.20 Surface Water 1098.09 Total Water returned to Fresh Water Lake (FWL) 268.62 Groundwater 1043.00 Surface Water 1311.62 Water returned to Land Surface overlying Arbuckle Simpson Aquifer (ASA) basin 20.88 Groundwater 81.09 Surface Water 101.97 Total Water consumptively used 58.91 Groundwater (See Table 3 for calculations)

Mr. Kent Wilkins Oklahoma Water Resources Board 15-ED-422 Page Three



Water Monitoring Plan Report 3rd Quarter 2015 for Dolese Bros. Co. Davis Quarry Murray County, Oklahoma

Table 2-3rd Quarter 2015

Water Fluctuations in the Fresh Water Lake (FWL)

Average Size of Lake
Loss in Water Elevation
Loss in Lake Volume

32.12 acres 0.85 feet 27.30 acre-feet

Table 3
Consumptive Use Summary for 3QTR15

	Consumptive ede Cummary 10. Carrette				
	Activity or Location	Amount of Pit Water Used, Acre-Feet	Percent Ground- Water	Groundwater Component, Acre-Feet	
1	North Water Well	0.00	All	0.62	
2	South Water Well	0.00	All	1.24	
3	Material Moisture Hauled from Site	5.83	20.48% *(0.2048)	1.19	
4	Land Application for Roadway Dust Suppression	27.11	20.48% *(0.2048)	5.55	
5	Evaporation from Mine Pit	0.19	23.22% *(0.2322)	0.04	
6	Offsite Dewatering	245.37	20.48% *(0.2048)	50.25	

For 3QTR15,

Total Groundwater Consumption from ASA at Davis Quarry = 58.91 Acre-Feet

Below, in Table 4, please find the Groundwater Rights Summary for the Davis Quarry. *Table 4*

Groundwater Rights

Davis Quarry Groundwater Rights

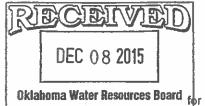
From Acreage on the Arbuckle-Simpson Aquifer And Included in the ASA Groundwater Rights:

(1,083 acres on ASA)*(0.2 ac-ft/acre) = 216.6 acre-feet on the ASA

From Acreage off the Arbuckle-Simpson Aquifer And Excluded from the ASA Groundwater Rights:

(937 acres off ASA)*(2.0 ac-ft/acre) = 1,874 acre-feet off the ASA

Mr. Kent Wilkins Oklahoma Water Resources Board 15-ED-422 Page Four



Water Monitoring Plan Report 3rd Quarter 2015 for Dolese Bros. Co. Davis Quarry Murray County, Oklahoma

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 this Third Quarterly Report for 2015, we believe that the Davis Quarry remains in full compliance with all of the regulations that allow the continuance of its preexisting exemption.

Our calculated estimates show that Davis Quarry's total groundwater consumption for Third Quarter 2015 was 58.91 acre-feet. This amount equates to 27.2% of our annual Arbuckle Simpson Aquifer (ASA) water rights. We have 216.6 acre-feet of water rights over the ASA at the Davis Quarry location; however, our total available water rights for this site could also include other significant unused water rights that we own at another large site that overlies the ASA in Murray County, if necessary.

Below is stated the measured rainfall amounts for the first three (3) quarters of 2015 at the Davis Quarry.

1st Quarter 2015: 6.3 inches of rainfall 2nd Quarter 2015: 39.1 inches of rainfall 13.4 inches of rainfall

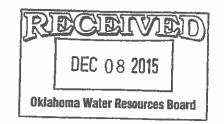
I have mentioned in many of the previous Quarterly Monitoring Reports that we can confirm that our groundwater percentages and consumptive use figures are intentionally overstated. The reasons for overstating these figures are rather simple—as explained below:

- We are unable to determine the amount of seepage from the Fresh Water Lake (FWL) that leaks back into our Mine Pit. Instead, we have chosen to count all of this seepage as if it were groundwater entering the Mine Pit from the ASA.
- At certain dry-times during the last few years, we have noticed that very little seepage
 enters the Mine Pit. This leads us to believe that the floor level of our Mine Pit is above
 the ASA water table in this area. Instead of trying to defend this belief, we have chosen
 to count all of the delayed storm water runoff that enters the Mine Pit as groundwater.

During 3QTR15, the average water elevation of the FWL was within 5 inches of an all-time high for any previous quarter. And, unique to this quarter, we began the quarter with the water near an all-time high level. Because of this timing, this high water level had the duration of the entire 92-day quarter to seep back quickly into the Mine Pit where it had just been pumped from. This pumping of water in circles causes unavoidable errors in our water balance figures, and it inflated our groundwater concentration and consumptive use figures.

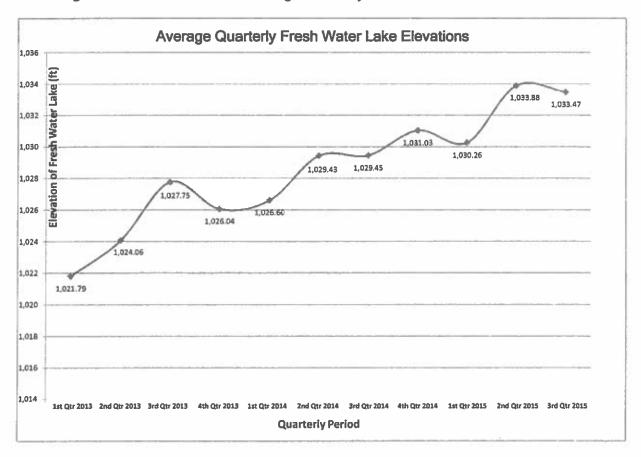
One of the factors that caused our FWL water levels to be so high, even though we had considerably less rainfall than last quarter, was that we had to continue to pump water that had accumulated last quarter from our Mine Pit into the FWL during the entire month of July 2015. The accumulated volume was roughly 400 acre-feet of water. Adding to this problem, we measured nearly 11 inches of rain during the first month of the Third Quarter 2015, in July. This transfer equated to nearly 220 acre-feet of additional water. Regardless, we did transfer all of this water, which allowed us to mine in formerly inundated areas of the Mine Pit.

Mr. Kent Wilkins Oklahoma Water Resources Board 15-ED-422 Page Five



Water Monitoring Plan Report 3rd Quarter 2015 for Dolese Bros. Co. Davis Quarry Murray County, Oklahoma

Following is a chart that tracks the Average Quarterly Fresh Water Lake Elevations over time.

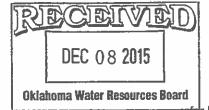


Offsite Discharge

For the second quarter in a row, we had to discharge some water offsite because the Fresh Water Lake remained nearly full throughout most of July 2015, and some of our plant equipment was in danger of being flooded again. We simply had no other place to store the water at the site.

One of our pumps (Pump #7) that was used at the concrete Sump Pit began to malfunction during 3QTR15, and eventually it ceased operation completely. You may remember, this concrete Sump Pit was constructed a few years ago solely to capture and recycle the crusher cooling waters, and the water leakages from the Wash Plant operations—so that we could use water more efficiently, especially during drought conditions. The quantity of water that was estimated to overflow this sump pit during the quarter when the pump was inoperable was also counted as "offsite discharge," and the groundwater portion of this water was counted as a consumptive use. Since then, this pump has been replaced with a new pump.

Mr. Kent Wilkins Oklahoma Water Resources Board 15-ED-422 Page Six



Water Monitoring Plan Report 3rd Quarter 2015 fdr Dolese Bros. Co. Davis Quarry Murray County, Oklahoma

We measured nearly 59 inches of rainfall at the Davis Quarry during the first three quarters of 2015. We realize that the quantity of rainfall measured this year has been extreme, and much of the offsite pumping and juggling of water at the site was done as a result of these above-average storm events. We look forward to the weather's stabilizing so that our offsite discharges can be minimized, and we hope that our site operations and water management can return more to a "normal" operation.

We will continue to manage our water resources to the best of our ability, and we will always seek to make improvements at our site that will benefit this region well into the future.

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

el E. Becker

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