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OKLAHOMA WATER RESOURCES BOARD

30 September 2024
24-HSE-052

Mr. Jason Tutkowski
Planning and Management Division
Oklahoma Water Resources Board
3800 North Classen Boulevard
Oklahoma City, OK 73118

RE: Water Monitoring Plan Report, 2nd Quarter 2024, for Dolese Bros. Co. Davis Quarry, Murray County, Oklahoma

Dear Mr. Tutkowski:

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 2nd Quarter 2024.
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 2024 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 Mine's Equal Proportionate Share (MEPS). Such demonstration may require providing to the Board a copy of the mine's monitoring plan and all 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

DOLESE BROS. CO.
8300 N. Oklahoma Ave
Oklahoma City, OK 73114
405.235.2311
dolese.com

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Below, in Tables 1, 2, and 3, are shown the 2nd Quarter 2024 summary data collected at the Davis Quarry.

Table 1: Water Fluctuations in Fresh Water Lake (FWL) During 2nd Quarter 2024

Surface Area of FWL (ac)	32.74
Gain in Water Elevation (ft)	3.1
Gain in FWL Volume (ac-ft)	101.51

Table 2: Accumulation & Disposition of Pit Water During 2nd Quarter 2024

	Groundwater (ac-ft)	Surface Water (ac-ft)	Total (ac-ft)
Water Entering the Mine Pit	53.94	237.32	291.26
Water Diverted from the Mine Pit into FWL	53.90	237.14	291.04
Water Removed from FWL	207.61	1399.84	1607.45
Water Returned to FLW	199.18	1342.97	1542.15
Water Returned to Land Surface Overlying ASA[1] Basin	46.84	315.79	362.63
Water Consumptively Used	6.67	(See Table 3 for Calculations)	

Table 3: Consumptive Use Summary for 2nd Quarter 2024

Activity or Location	Amount of Pit Water Used (ac-ft)	Groundwater Content (%)	Groundwater Component (ac-ft)
North Water Well	0		0.08
South Water Well	0		0.39
Material Moisture Hauled from Site	4.67	0.1292	0.60
Land Application for Roadway Dust Suppression	8.03	0.1292	1.04
Evaporation from Mine Pit	0.22	0.1852	0.04
Offsite Dewatering	31.97	0.1292	4.52
Total Groundwater Consumption from ASA at Davis Quarry = 6.67 Acre-Feet			

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

Table 4: Summary of Groundwater Rights for Davis Quarry

From Acreage on the Arbuckle-Simpson Aquifer and Included in the ASA Groundwater Rights **(1,186 ac. on ASA)*(0.2 ac-ft/acre) = 237.2 acre-feet on the ASA**
From Acreage off the Arbuckle-Simpson Aquifer and Excluded from the ASA Groundwater Rights **(1,630 ac. off ASA)*(2.0 ac-ft/acre) = 3,260 acre-feet off the ASA**

Based on the plan that we have adopted and implemented to monitor and report the accumulation and disposition of pit water, on our actual consumptive use of groundwater quantities, and on the timely submittal of all reports including this 2nd Quarter 2024 report, we believe the Davis Quarry is in full compliance with the regulations that allow us to maintain its preexisting exemption.

[1] Arbuckle Simpson Aquifer

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General Information

Our calculations show that Davis Quarry's total estimated groundwater consumption for 2nd Quarter 2024 was 6.67 acre-feet. This equates to about 2.8% of Davis Quarry's Equal Proportionate Share (EPS) for the year.

- The calculations show the groundwater consumption to be fairly low for a variety of reasons. Groundwater was discharged for the first time in a couple of years, but the amount of rainfall we received lowered the percentage of groundwater to a minimal amount.
- The combination of consumptive use, discharge, and evaporation from the FWL, along with precipitation, resulted in an elevation increase of 3.1 feet.
- During this quarter, the entire amount of groundwater consumed was related to the following activities: the groundwater usage from two (2) small water wells, material moisture hauled from the site, dust suppression waters, and evaporation of Mine Pit water.
- Our present belief is that the current floor of the Mine Pit is above the water table of the Arbuckle Simpson Aquifer. Most of the time, we still use a small electric pump to keep this Mine Pit (work area) dewatered. This pump is having to return any storm water that enters the pit to the FWL along with any FWL leakage or groundwater seepage. During this quarter, we continued to rent a portable diesel pump that assisted the electric pump in pumping water from our next drop cut to the FWL. We only run this pump while digging. The small electric pump is still able to keep up with normal use.
- Silt is constantly being deposited in the FWL from our operations. This is going to need to be monitored during the year to update the holding capacity of the Fresh Water Lake.

To recap, we have 237.2 acre-feet of groundwater rights per year available over the ASA at the Davis Quarry location, but our total available water rights for this site also includes other significant groundwater rights we have at another site that also overlies the ASA in Murray County. These additional groundwater rights equate to approximately 286.8 acre-feet per year from 1,434 acres of land that overlies the ASA. Both the Davis Quarry property and the other land we own are located within the western lobe of the ASA. Essentially, we have 524.0 acre-feet (237.2 + 286.8 = 524.0) of groundwater available to us at both facilities.

During the 2nd Quarter 2024, the Davis Quarry logged 20.5 inches of rainfall, as measured using a rain gauge. The effective runoff into the quarry pits and lakes from these rains was estimated to be 11.17 inches. The largest rainfall event during the quarter was 4.0 inches and it was one of nine rainfall events to meet or exceed 1 inch during the quarter.

During the second quarter, the calculated groundwater percentage in the Fresh Water Lake decreased from 58.8% for the 1st Quarter of 2024 to 12.9% during the 2nd Quarter of 2024, and storm water comprised the other 87.1%. The FWL level increased through the quarter, resulting in more leakage through the wall than the previous quarter. This leakage is pumped from the pit to the FWL and calculated as groundwater. This typically results in higher percentages of groundwater in the FWL, but the drastic increase in stormwater offset this gain. These percentages typically vary each quarter due to the fluctuations in rainfall amounts and intensities in addition to the amount of leakage from the FWL. Again, the leakage rate of the FWL into the Mine Pit is based on the water elevation in this lake, whereas a higher-level tends to leak more. Usually, the groundwater concentrations are lowest during rather wet quarters, and highest during drier quarters.

In the Annual Water Monitoring Reports for this quarry, we have always included more of the details regarding the water calculations and how they were performed than are shown in the Quarterly Reports. The Annual Reports also detail how we always try to use the least controversial methods of calculating and estimating

groundwater consumption at this facility. Since these detailed explanations were recently covered in the Annual Report for 2023, I will not outline them again in this quarterly report.

As we have stated for many quarters, water management always has been and continues to be very important to us at Dolese Bros. Co., especially at the Davis Quarry. We understand that the Arbuckle Simpson Aquifer is a unique aquifer that must be protected. Our plant personnel make daily efforts to responsibly manage the waters within our quarry boundaries so that when they return to their nearby homes and properties, these same quality waters will be available for their personal and community uses.

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

Sincerely,
Dolese Bros. Co.

Remington Butler

Remington Butler
Environmental Engineer

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cc: Mr. Chris Neel, Oklahoma Water Resources Board
Mr. Matt Cogburn, Oklahoma Water Resources Board

Email: rbutler@dolese.com
Telephone: (405) 231-0787