DOLESE

#169579
$500

RECEIVED
MAR 24 2025
OKLAHOMA WATER RESOURCES BOARD

CONCRETE
SAND & GRAVEL
STONE
BLOCK
MASONRY

24 March 2025
25-HSE-016

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

RE: Water Monitoring Plan Report, 4th 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 4th 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 4th 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.

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

Below, in Tables 1, 2, and 3, is shown the 4th Quarter 2024 summary data collected at the Davis Quarry.

Table 1: Water Fluctuations in Fresh Water Lake (FWL) During 4th Quarter 2024

Surface Area of FWL (ac)	*31.74*
Loss in Water Elevation (ft)	*1.26*
Loss in FWL Volume (ac-ft)	*39.99*

Table 2: Accumulation & Disposition of Pit Water During 4th Quarter 2024

	Groundwater (ac-ft)	Surface Water (ac-ft)	Total (ac-ft)
Water Entering the Mine Pit	141.86	95.41	237.27
Water Diverted from the Mine Pit into FWL	141.78	95.36	237.14
Water Removed from FWL	250.50	253.72	504.22
Water Returned to FLW	379.71	384.58	764.29
Water Returned to Land Surface Overlying ASA[1] Basin	15.38	15.58	30.96
Water Consumptively Used	**4.03**	(See Table 3 for Calculations)	

Table 3: Consumptive Use Summary for 4th Quarter 2024

Activity or Location	Amount of Pit Water Used (ac-ft)	Groundwater Content (%)	Groundwater Component (ac-ft)
North Water Well	0		0.00
South Water Well	0		0.32
Material Moisture Hauled from Site	4.86	49.68	2.41
Land Application for Roadway Dust Suppression	2.46	49.68	1.22
Evaporation from Mine Pit	0.14	59.79	0.08
Offsite Dewatering	0.00		0.00
Total Groundwater Consumption from ASA at Davis Quarry = 4.03 Acre-Feet			

The annual summary for 2024 is found in tables 4, 5, and 6 below.

Table 4: Accumulation & Disposition of Pit Water During 2024

	Groundwater (ac-ft)	Surface Water (ac-ft)	Total (ac-ft)
Water Entering the Mine Pit	814.53	446.03	1260.56
Water Diverted from the Mine Pit into FWL	814.10	445.72	1259.82
Water Removed from FWL	2577.61	2721.09	5298.70
Water Returned to FLW	2798.84	2684.09	5482.92
Water Returned to Land Surface Overlying ASA[2] Basin	432.29	546.33	978.62
Water Consumptively Used	39.91	(See consumptive use summary in Table 6)	

[1] Arbuckle Simpson Aquifer
[2] Arbuckle Simpson Aquifer

Table 5: Water Fluctuations in Fresh Water Lake (FWL) During 2024

Average Surface Area of FWL (ac)	*32.04*
Gain in Water Elevation (ft)	*1.09*
Gain in FWL Volume (ac-ft)	*36.41*

Table 6: Consumptive Use Summary for 2024

Activity or Location	Groundwater Component (ac-ft)
North Water Well	0.15
South Water Well	2.02
Material Moisture Hauled from Site	10.07
Land Application for Roadway Dust Suppression	22.73
Evaporation from Mine Pit	0.43
Offsite Dewatering	4.52
Total Groundwater Consumption from ASA at Davis Quarry = 39.91 Acre-Feet	

Below, in Table 7, please find the Groundwater Rights Summary for the Davis Quarry.

Table 7: 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 4th Quarter 2024 report, we believe the Davis Quarry is in full compliance with the regulations that allow us to maintain its preexisting exemption.

General Information

Our calculations show that Davis Quarry's total estimated groundwater consumption for 2024 was 39.91 acre-feet. Annually, the Davis Quarry site has 237.2 acre-feet of groundwater rights available over the ASA, but our total available water rights for this site could additionally include other unused groundwater rights that we have at another site (Big Canyon Quarry) that overlies the western lobe of the ASA in Murray County. These unused rights equate to approximately 266.6 acre-feet per year of groundwater from 1,333 acres of land that overlie the ASA. Both the Davis Quarry property and the other land we own are each located within the western lobe of the ASA. Essentially, we have 237.2 + 266.6 = 503.8 acre-feet of groundwater available to us.

Below are listed the groundwater consumptive use figures reported for the last few years—

- 2013: Used 36.25 acre-feet of groundwater, or 16.7% of Davis Quarry's EPS.
- 2014: Used 61.66 acre-feet of groundwater, or 28.4% of Davis Quarry's EPS.
- 2015: Used 180.33 acre-feet of groundwater, or 83% of Davis Quarry's EPS.
- 2016: Used 183.81 acre-feet of groundwater, or 84.9% of Davis Quarry's EPS.

- 2017: Used 188.83 acre-feet of groundwater, or 78.94% of Davis Quarry's EPS.
- 2018: Used 197.86 acre-feet of groundwater, or 83.41% of Davis Quarry's EPS.
- 2019: Used 165.44 acre-feet of groundwater, or 69.75% of Davis Quarry's EPS.
- 2020: Used 322.73 acre-feet of groundwater, or 64.06% of Davis Quarry's and Big Canyon Quarry's combined EPS.
- 2021: Used 94.66 acre-feet of groundwater, or 39.9% of Davis Quarry's EPS.
- 2022: Used 89.65 acre-feet of groundwater, or 37.80% of Davis Quarry's EPS.
- 2023: Used 87.26 acre-feet of groundwater, or 36.79% of Davis Quarry's EPS.
- 2024: Used 39.91 acre-feet of groundwater, or 16.83% of Davis Quarry's EPS.

The amount of groundwater shown that we consumed during 2024 equates to approximately 16.83% of our Equal Proportionate Share (EPS) available to this facility. In order to better understand the activities related to this amount of groundwater consumption, it is important to note that all of the groundwater consumed pertains to consumptive use activities which include usage from two (2) small water wells, material moisture hauled from site (stone product sales), dust suppression waters (land application and wet sprays for dust suppression), Mine Pit dewatering, and evaporation of Mine Pit water.

Rainfall for 2024 was around average for Murray County. The quarterly rainfall amounts are summarized in table 8 below. 40.21 inches of rainfall was recorded at Davis Quarry during 2024 and 40.29 inches is the average annual rainfall for Murray County according to the Oklahoma Climatological Survey.

Table 8: Summary of Quarterly Rainfall Totals for 2024

Period	Rainfall	Equivalent Runoff
First Quarter 2023	5.08	1.72
Second Quarter 2023	20.50	11.17
Third Quarter 2023	6.88	3.58
Fourth Quarter 2023	7.75	4.49
Total	40.21	20.96

The calculated groundwater content percentages of the Fresh Water Lake (FWL) during each of the quarters are as follows.

Table 9: Summary of Groundwater Concentrations in FWL for 2024

Period	Concentration (%)
First Quarter 2024	58.80
Second Quarter 2024	12.92
Third Quarter 2024	81.94
Fourth Quarter 2024	49.68

During 2024, we recorded fluctuating ground water concentrations. In the previous table, you can see the groundwater concentration of the FWL rise and fall through the quarters. It is logical that the concentration of groundwater to surface water in the FWL would fluctuate depending on precipitation. If we get a lot of rain, the

ground water in the FWL would essentially be diluted by rainwater runoff from the large watershed. During this time period, we also noticed a decline in the water coming through the wall between the FWL and mine pit. During the fourth quarter, the flow was at a minimum. This further supports our assumption that the water coming out of the wall into the mine pit is seepage from the FWL and not groundwater from the ASA. When the elevation drops to a certain point, the flow into the mine pit becomes minimum. For a review, a recap of the total rainfall is summarized in Table 10 below.

Table 10: Summary of Past Year's Rainfall Totals for Davis Quarry

Year	Total Rainfall (in)	Year	Total Rainfall (in)
2015	77.15	2020	57.10
2016	40.50	2021	59.10
2017	43.50	2022	29.45
2018	62.15	2023	42.90
2019	47.80	2024	40.21

We continue to use the least controversial methods (a very conservative approach) of calculating groundwater concentrations in the Mine Pit and the Fresh Water Lake, even though it causes our calculated groundwater consumption figures to be much higher than we believe they are. We are able to use these conservative assumptions only because we own a significant amount of land in the region and we have the necessary water rights available. The primary drawback to using these very conservative assumptions and calculation methods is that we "appear" to be consuming more groundwater than is actually being consumed at our water-efficient operation. However, we hope that our frequent documentation of our assumptions used in these calculations clarify our reported water usage and explain why our reported consumptive groundwater use is so high.

Here are some conservative assumptions that we have always used in our calculations:

In trying to keep the lower part of the Mine Pit (located in the eastern part of our Quarry Area) relatively dry so our employees can work in this area, we pump most of the rainfall runoff (and any potential groundwater seepage) from the Mine Pit into our adjacent Fresh Water Lake (FWL) for storage and reuse. If this FWL were water-tight, our water balance calculations would be rather simple and more accurate. However, this lake continually and visibly leaks back into the same Mine Pit that we just pumped it from, causing us to pump considerably more water than if the FWL didn't leak. The worst part about the uncontrollable leakage of the FWL is that every gallon that leaks into the mine pit (and has to be pumped again and again back into the FWL) is all reported as "newly infiltrating groundwater"—causing our groundwater concentration figures in the FWL to appear to increase significantly above actual levels. Every gallon that we draw from this FWL to use in our operations, or every gallon that we discharge offsite from it, reflects the higher groundwater concentration and causes our reported groundwater consumption to be artificially higher than actual.

Now, and in the past, we have never claimed any augmentation credits for the discharge of water to adjacent streams—even though we know this water benefitted downstream users and fish/wildlife during many of the dry times. We simply counted the calculated groundwater portion of the water being discharged as groundwater consumption. One reason that we are not seeking augmentation credits at this time is that the regulations became too complex for us to ensure compliance (e.g., stationing a stream gauge at outfall(s), installing monitoring wells near outfall(s), and monitoring the daily levels of the receiving streams during each discharge).

We conclude this report as we did the last few years by stating the following: Dolese Bros. Co. will continue to manage the waters of the Arbuckle Simpson Aquifer in compliance with all rules and regulations that apply to us. We will continue to analyze our water management techniques to make sure we are utilizing any waters we encounter at our operation as efficiently and appropriately as possible—both during drought periods, and during

periods of flooding. We recognize that these waters are as important to us as they are to the neighbors in our community.

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

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

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