

# MEMORANDUM

DATE: September 9, 2019

TO: John T. Fay, AICP - LaFargeHolcim

FROM: Luke J. Sherry, PE, CFM

SUBJECT: Meredith Property Quarry Expansion – Kane County, IL  
Summary of Existing Groundwater Information  
(CBBEL Project No. 190170)

The purpose of this memorandum is to summarize a review of the existing groundwater information regarding the proposed LaFargeHolcim quarry expansion onto the Meredith Property completed by Christopher B. Burke Engineering, Ltd. (CBBEL). As shown on Exhibit 1, the proposed project involves the expansion of an existing sand and gravel quarry located west of Illinois Route 47 and south of Rowe Road in Unincorporated Kane County. The purpose of the CBBEL review was to provide an opinion on the existing groundwater conditions on the project site and also on potential offsite impacts to the residential groundwater wells that surround the property.



Figure 1 – Project Location Map

As shown on Figure 1, the existing sand and gravel quarry maintains several large lakes on the property that are used as water sources in the day-to-day operations of the quarry. We

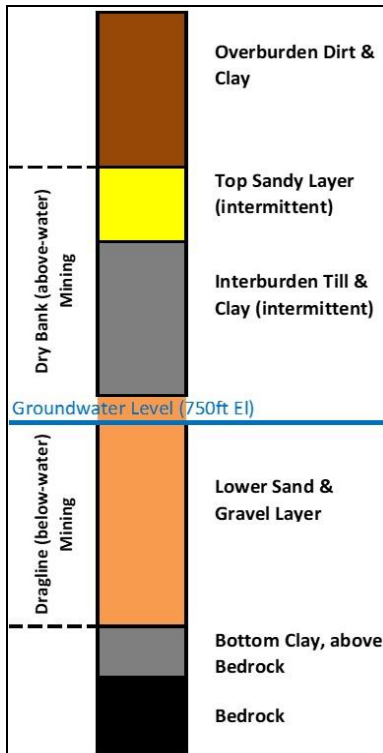


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understand that the majority of the water is recycled as part of the plant operations and that LafargeHolcim was been mining this area for over 10 years. During that time, the water level of the existing lakes has been nearly static and varies seasonally between the elevations of 748.5 ft – 751 ft, approximately. Since the lake levels vary seasonally with the groundwater level, they are usually highest in the Spring during the snow melt and historically wetter months earlier in the year.



**Figure 2 – Meredith Property Soil Profile**

We also understand that LaFargeHolcim has performed a geotechnical investigation to assess the subsurface conditions of the subject property. As part of that analysis, the groundwater level of the subject property was established at an elevation of approximately 750 ft, which is consistent with the permanent water levels of the lakes located on the existing quarry property. Based on the past operations of the existing quarry, as well as the information obtained for the proposed expansion area, we would expect groundwater levels in this location to be maintained and continue to fluctuate seasonally between the range of 748.5 – 751 ft, as they do under existing conditions.

The Illinois State Geological Survey (ISGS) provides information on existing drinking water wells that includes the approximate locations and elevations of those wells. As shown in Figure 3, the majority of the residential drinking wells located in close proximity to the proposed quarry expansion are located east and north of the subject property. Each blue dot on the figure represents a groundwater well (both active and inactive) with an approximate depth (adjacent number). As shown in the figure, the depths of the various wells typically range between 100 – 200 feet below the existing ground.

Because the residential properties to the east are located in close proximity to the waterways of Elburn Run and Blackberry Creek, the ground elevations in this vicinity are much lower than the ground elevations on the subject property. Based on the approximate well depths provided in the ISGS database, the elevation of the lowest active well translates to approximately 688 ft, which is about 60 feet lower than the groundwater level of 750 ft +/- that is expected to be maintained on the subject property.



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Figure 3 – IGS Water Well Location Map

Additionally, Kane County provides a database of the major underground aquifers throughout the County. As shown on Figure 4, the subject property is located within the Kaneville Aquifer (light purple), which is a shallow sand and gravel aquifer, while the previously identified residential groundwater wells are located within the deeper St. Charles Aquifer.

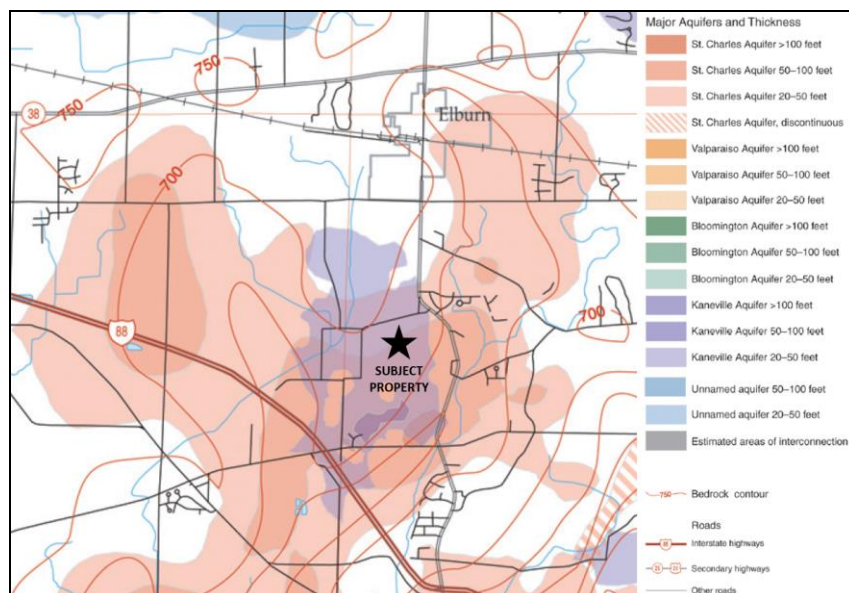


Figure 4 – Kane County Major Aquifers (Source: 2030 Land Resource Management Plan)



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The available topographic and subsurface information supports the notion that the proposed quarry expansion will not adversely impact groundwater levels as they relate to the residential groundwater wells in the area. The depths of the existing groundwater level onsite have been static over the past years of mining operations and those levels are expected to be maintained as part of the future expansion. A comparison of the available information on residential groundwater wells in the vicinity of the quarry expansion indicates that the groundwater levels on the subject property are over 60 feet higher than the elevation of the shallowest active residential well.

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