



Parsons Creek Aggregates

a joint venture between Graymont Western Canada Inc. & Lehigh Hanson Materials Limited

January 2, 2013

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Dear Madam/Sir:

**Re: Parsons Creek Aggregates Limestone Quarry Project
Supplemental Information Request 4 Responses**

Parsons Creek Aggregates (PCA), a joint venture of Graymont Western Canada Inc. (Graymont) and Lehigh Hanson Materials Limited (Lehigh Hanson), has completed and attached the responses to the questions forwarded in your January 2, 2013 email for the proposed Parsons Creek Aggregates Limestone Quarry Project. The application was filed with the Natural Resources Conservation Board (NRCB) (Application No. 1001) and Alberta Environment (EPEA Application No. 002-32302 and Water Act File No. 00269043) on June 8, 2010.

The Project is located on 390 ha of Crown land located 800 m north of the Fort McMurray Urban Service Boundary, south of Northlands Forest Products, east of HWY 63 and along the Athabasca River. The legal land description for the Project is Sections 7, 8, 18, 19, 30, and 31 of Township 90, Range 9 West of the 4th Meridian, and a portion NE¼ Section 36, Township 90, Range 10, West of the 4th Meridian.

Correspondence respecting these applications should be directed to:

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Sincerely,



Rob Beleutz
Environmental / Safety Manager
Graymont Western Canada Inc.

Parsons Creek Aggregates Limestone Quarry Project
Supplemental Information Request 4
EPEA Application No. 002-32302
Water Act File No. 00269043
NRCB Application No.1001

Health

1. SIR 4a, Table 4-1, Page 1. Response b, Page 2.

Parsons Creek states: A comparison of dispersion modeling results to health based guidelines was provided in response to SIR3 #3. Overall, the predicted concentrations of NO₂, SO₂, and PM_{2.5} for the Application Case were identical to those predicted in the Baseline Case, indicating that the Project emissions are expected to have a negligible impact on predicted health risks.

Not all the results in Table 4-1 are identical to the data provided in SIR3 #3. For example, the predicted concentrations for PM_{2.5} increased.

- a. Compare the results of any new or additional dispersion modelling results to health based Toxicity Reference Values (TRVs) and discuss the potential health impact.

Response:

There are no new air dispersion modelling results, only the revised results that were provided in Supplemental Information Request Round 2 Part A. The PM_{2.5} values in Table 4-1 (PCA 2012) were provided as clarification in SIR Round 3 and are based on the modelling that was provided in SIR Round 2. The values presented in Table 4-1 are not identical to the values presented in SIR3 #3 because a different averaging period was used for comparison to the health based toxicity reference value. Table 4-1 presented the maximum hourly and maximum daily PM_{2.5} concentrations at the LSA, whereas, SIR3 #3 presented the 98th percentile or 8th highest daily highest daily value within a year.

The project only concentration predicted for PM_{2.5} 24-hr at the LSA Maximum is 27 µg/m³ which is 90% of the TRV (30 µg/m³) and 63% of the predicted Baseline Case concentration (43 µg/m³).

- b. Explain how a predicted concentration so close the selected TRV and more than one half of the predicted Baseline Case concentration, can be defined as negligible.

Response

The determination of the incremental project contribution to $PM_{2.5}$ was made by comparing the Application and Baseline predictions at the LSA MPOI. Comparison of the predicted 24-hr $PM_{2.5}$ concentration in Table 4-1 for the Application Case (*i.e.*, $43 \mu\text{g}/\text{m}^3$) to the Baseline Case (*i.e.*, $43 \mu\text{g}/\text{m}^3$) indicates that that Project contribution is negligible. In addition, the location of the Project LSA MPOI is different than the LSA MPOI location used in SIR3 #3. The Project LSA MPOI is located very close to the proposed facility, whereas, the Baseline LSA MPOI used in SIR3 #3 is located north of the Project Area (see Figure 9.8 in SIR2 Response Part 2 Air). The Baseline LSA MPOI is located near current aggregate operations on the PCA lease. The predicted value in Figure 9.8 is $39 \mu\text{g}/\text{m}^3$. In addition, the Application Case LSA MPOI (Figure 9.9) is located near the proposed Project and the predicted value is $40 \mu\text{g}/\text{m}^3$. Comparison shows how negligible the addition of the Project is to predicted LSA MPOI $PM_{2.5}$ concentrations.

The maximum predicted $PM_{2.5}$ concentration presented in Figure 9.8 is different than the value used in SIR3 #3. The value used in SIR3 #3 is based on the 98th percentile or 8th highest daily value within a year, whereas Figure 9.8 presented the daily 2nd highest as required by ESRD for an air quality assessment. Different averaging periods were used in SIR3 #3 for comparison to health based toxicity reference values. These averaging periods are different than the averaging periods required by ESRD for an air quality assessment.

In summary, the $PM_{2.5}$ concentrations were defined as negligible based on the following:

- The predicted $PM_{2.5}$ concentrations for the Application Case at the LSA MPOI were identical to those predicted in the Baseline Case, indicating that the Project emissions are expected to have a negligible impact on predicted health risks.
- The predicted chronic $PM_{2.5}$ concentrations at the LSA MPOI, Aboriginal Group, Resident Group and Commercial Group are all below the annual toxicity reference value of $12 \mu\text{g}/\text{m}^3$ (CARB 2005, 2002).
- Conservatism in predicted air quality concentrations based on emission estimates.
- Further details are provided in SIR3 #3.

References

CARB (California Air Resources Board). 2002. Staff Report: Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates. California Environmental Protection Agency, Air Resources Board. May, 2002.

CARB (California Air Resources Board). 2005. Particulate Matter - Overview. Available at: <http://www.arb.ca.gov/research/aaqs/caaqs/pm/pm.htm>. Webpage updated April, 2005.

Parsons Creek Aggregates (PCA). 2012. Parsons Creek Aggregates Limestone Quarry Project Clarification Questions of Supplemental Information Request 3 Responses. November 19 2012.