

**July 13, 2017**

Mr. Blake Araki  
Raging River Quarry LLC  
6101 Preston Fall City Road SE  
Fall City, WA 98024

Re: Compliance Noise Monitoring Results – July 5 and 6, 2017

Dear Blake,

As you requested, Ramboll Environ US Corporation (Ramboll Environ) measured sound levels of operations at the Raging River Quarry on July 5 and 6, 2017. This measurement captured drilling and other activities at the quarry. Details and results of the sound level measurement follow.

#### **Applicable Noise Limits**

The quarry was in operation during daytime hours (i.e., between 7 AM and 10 PM), so the hourly noise limits at the nearby rural-residential properties are an  $L_{eq}$  of 57 dBA and an  $L_{max}$  of 72 dBA.

#### **Sound Level Equipment**

Ramboll Environ deployed a Larson Davis LxT (Class 1) sound level meter at the McClain property (Location 1), a SoundPro DL (Class 1) sound level meter at the Shimmel property (Location 2), and a Brüel & Kjær 2250 (Class 1) sound level meter at the eastern Shimmel property boundary (Location 3) for the sound level measurements. All of the meters were set to record 1-second histories, and the B&K2250 meter was also set to record audio. The meters were field calibrated immediately prior to the measurement and calibrated at the factory within the previous year. The microphones were mounted on tripods at a height of approximately 5 feet above ground.

#### **Measurement Locations**

Sound levels were measured at the following three locations representing the adjacent properties to the quarry site:

- **Location 1** – on the eastern boundary of the McClain property and the Raging River Quarry property
- **Location 2** – on the northern boundary of the Shimmel property (formerly known as the Johnson property), near the log pile on the Trisko property
- **Location 3** – on the northern boundary of the Shimmel property (formerly known as the Johnson property), east of Location 2.

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**Measurement Details**

Sound level measurements were taken at all three locations between 1 and 6 PM on July 5, 2017. At the McClain property, additional measurements were taken between 8 AM and 1 PM.

The temperatures during the measurement period were in the 70s °F with no rain.

**Equipment in Operation**

During the sound level measurement period, the following equipment was in operation, with intermittent breaks for fuel or repairs):

- Furukawa hammer drill operating at 180-200 feet above the quarry floor
- Volvo 330 Excavator operating from the quarry floor up to the 80 foot elevation
- Cat 345 Excavator operating from the quarry floor to the 80 foot elevation
- Volvo 190g Wheel Loader operating on the quarry floor loading trucks
- John Deere 845 Wheel Loader operating on the quarry floor intermittently moving material
- Trucks transporting material

**Sound Level Measurement Results**

The sound level measurement results for each SLM location are presented in the following tables.

**Table 1. SLM1 – McClain Property Sound Levels (dBA)**

<b>Time</b>	<b>Leq</b>	<b>Lmax</b>
<b>July 5, 2017</b>		
1 – 2 PM	49	62
2 – 3 PM	51	66
3 – 4 PM	48	64
4 – 5 PM	43	68
5 – 6 PM	35	59
<b>July 6, 2017</b>		
8 – 9 AM	50	68
9 – 10 AM	50	65
10 – 11 AM	50	63
11 AM – 12 PM	48	69
12 – 1 PM	47	61

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**Table 2. SLM2 – Shimmel Property Sound Levels (dBA)**

Time	Leq	Lmax
1 – 2 PM	51	63
2 – 3 PM	52	66
3 – 4 PM	51	62
4 – 5 PM	48	64
5 – 6 PM	49	64

No extraneous or exempt noise sources were removed from the levels measured at SLM1 or SLM2. The measurements indicate that measured sound levels during all hours of operation complied with the applicable noise limits.

**Table 3. SLM3 – Shimmel Property (East of SLM2) Sound Levels (dBA)**

Time	Leq	Lmax
1 – 2 PM	54	65
2 – 3 PM	55	73 <sup>(a)</sup>
3 – 4 PM	54	68
4 – 5 PM	50	67
5 – 6 PM	52	66

<sup>(a)</sup> There was 1 second with an L<sub>max</sub> exceeding 72 dBA, at 72.8 dBA. Review of the audio file indicates it was likely due to some maintenance or repair activity, and was a brief ratchet noise. This L<sub>max</sub> level would be considered to be in compliance with the limit of 72 dBA given the range of error of a Class 1 sound level meter, which is +/- 1 dBA.

At SLM3, there was one hour with one second where the measured L<sub>max</sub> of 72.8 dBA exceeded 72 dBA. Review of the audio indicates this event was caused by a ratcheting noise, likely associated with repair of the drill. As noted, this L<sub>max</sub> level would be considered to be in compliance with the limit of 72 dBA given the range of error of a Class 1 sound level meter, which is +/- 1 dBA.

**Conclusion**

The measured sound levels complied with the noise limits during all hours of operation at all measurement locations on the McClain and Shimmel property boundaries.

Please call me (425-412-1807) if you have any questions regarding the above material.

Yours sincerely,



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