

Payne & Dolan, Inc.
Racine Quarry - Village of Caledonia
Recorded Ground Vibration and Airblast Levels for the East Quarry CUP (New) Area
April 2024

All Ground Vibrations (PPV) were below State of Wisconsin and Village of Caledonia Maximum Limits

All Airblasts (AO) were below State of Wisconsin and Village of Caledonia Maximum Limits

Time	Activity	Location	Distance	PPV	Freq	AO
4/25/2024 12:48	5	Ellis	1,383	0.145	29.4	115
4/25/2024 12:48	5	St. Rita	1,341	0.1175	20	123
4/25/2024 12:48	5	Marquette	803	0.3125	18.5	118
4/25/2024 12:48	5	Berkeley	1,438	0.125	17.9	117
4/25/2024 10:01	4	Ellis	795	0.19	41.7	107
4/25/2024 10:01	4	St. Rita	786	0.215	27.8	110
4/25/2024 10:01	4	Marquette	1,432	0.13	27.8	110
4/25/2024 10:01	4	Berkeley	2,021	0.0525	23.8	109
4/18/2024 13:16	3	Ellis	1,017	0.13	18.5	110
4/18/2024 13:16	3	St. Rita	954	0.1725	25	111
4/18/2024 13:16	3	Marquette	1,211	0.1475	20.8	115
4/18/2024 13:16	3	Berkeley	1,791	0.0625	21.7	116
4/18/2024 10:01	2	Ellis	1,014	0.175	23.8	108
4/18/2024 10:01	2	St. Rita	828	0.24	26.3	113
4/18/2024 10:01	2	Marquette	1,317	0.09	22.7	109
4/18/2024 10:01	2	Berkeley	1,824	0.045	20.8	114
4/15/2024 10:00	1	Ellis	984	0.19	12.2	109
4/15/2024 10:00	1	St. Rita	803	0.19	18.5	111
4/15/2024 10:00	1	Marquette	1,344	0.1225	27.8	115
4/15/2024 10:00	1	Berkeley	1,855	0.0425	11.1	111

N/T - seismograph did not trigger

Ground Vibration (PPV) Limit - The Village of Caledonia explosives use ordinance states that “the ground vibration produced by such blasts does not exceed 0.65 inches per second or the limitations imposed by the Wisconsin Department of Industry, Labor and Human Relations in Section ILHR 7.64(4), Wis. Adm. Code, as amended from time to time, whichever is more stringent”.

Airblast (AO) Limit - The Village of Caledonia explosives use ordinance states that “Airblast shall not exceed the maximum limits listed in Table A-1 at the location of any dwelling, public building, place of employment, school, church or community or institutional building outside and beyond the permitted explosives use area. Notwithstanding this general requirement, an annual permit holder subject to this limitation may exceed the limitation on up to five percent (5%) of the blasts it initiates during the six (6) month period from July 1 to December 31, and during the six (6) month period from January 1 to June 30, without violating this ordinance, provided that the airblast produced by such blasts does not exceed the limitations on airblast imposed by Wisconsin Department of Industry, Labor and Human Relations in Subsection ILHR 7.64(2), Wis. Adm. Code, as amended from time to time.”

TABLE A-1 AIRBLAST

LIMITS

Lower Frequency Limit of Measuring System in Hz 2 Hz or lower -- Flat response 6 Hz or lower -- Flat response	Maximum Level in db 123 peak 129 peak
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PPV vs. Frequency

USBM Blasting Level Criteria
(RI 8507, 1980)

