

Payne & Dolan, Inc.
Racine Quarry - Village of Caledonia
Recorded Ground Vibration and Airblast Levels for the East Quarry CUP (New) Area
August 2023

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
8/31/2023 11:42	EAST 43	Ellis	902	0.188	26.3	110
8/31/2023 11:42	EAST 43	St. Rita	851	0.175	45.5	116
8/31/2023 11:42	EAST 43	Marquette	1,334	0.09	38.5	116
8/31/2023 11:42	EAST 43	Berkeley	1,912	0.038	21.7	111
8/31/2023 9:22	EAST 42	Ellis	941	0.248	29.4	111
8/31/2023 9:22	EAST 42	St. Rita	951	0.195	29.4	118
8/31/2023 9:22	EAST 42	Marquette	1,248	0.125	27.8	117
8/31/2023 9:22	EAST 42	Berkeley	1,865	0.043	31.3	112
8/28/2023 13:00	EAST 41	Ellis	1,350	0.2	31.3	115
8/28/2023 13:00	EAST 41	St. Rita	1,363	0.168	35.7	118
8/28/2023 13:00	EAST 41	Marquette	799	0.203	21.7	117
8/28/2023 13:00	EAST 41	Berkeley	1,489	0.1	31.3	116
8/28/2023 9:59	EAST 40	Ellis	1,311	0.09	11.9	110
8/28/2023 9:59	EAST 40	St. Rita	1,194	0.07	17.9	115
8/28/2023 9:59	EAST 40	Marquette	946	0.213	16.7	119
8/28/2023 9:59	EAST 40	Berkeley	1,496	0.07	29.4	117
8/21/2023 11:30	EAST 39	Ellis	906	0.223	29.4	110
8/21/2023 11:30	EAST 39	St. Rita	738	0.218	29.4	117
8/21/2023 11:30	EAST 39	Marquette	1,421	0.125	22.7	119
8/21/2023 11:30	EAST 39	Berkeley	1,941	0.07	18.5	118
8/8/2023 12:30	EAST 38	Ellis	1,466	0.113	35.7	112
8/8/2023 12:30	EAST 38	St. Rita	1,433	0.143	33.3	113
8/8/2023 12:30	EAST 38	Marquette	711	0.273	35.7	118
8/8/2023 12:30	EAST 38	Berkeley	1,367	0.128	21.7	112
8/8/2023 11:28	EAST 37	Ellis	1,915	0.028	26.3	108
8/8/2023 11:28	EAST 37	St. Rita	1,765	0.035	26.3	110
8/8/2023 11:28	EAST 37	Marquette	486	0.848	27.8	119
8/8/2023 11:28	EAST 37	Berkeley	912	0.248	27.8	112
8/3/2023 11:03	EAST 36	Ellis	1,923	0.025	50	110
8/3/2023 11:03	EAST 36	St. Rita	1,767	N/T	N/T	N/A
8/3/2023 11:03	EAST 36	Marquette	493	0.448	50	119
8/3/2023 11:03	EAST 36	Berkeley	902	0.255	26.3	116
8/3/2023 10:02	EAST 35	Ellis	1,681	0.028	41.7	107
8/3/2023 10:02	EAST 35	St. Rita	1,577	0.05	26.3	107
8/3/2023 10:02	EAST 35	Marquette	580	0.225	45.5	117
8/3/2023 10:02	EAST 35	Berkeley	1,145	0.085	25	106

N/T - seismograph did not trigger

Ground Vibration (PPV) Limit - The Village of Caledonia explosives use ordinance states that "The maximum ground vibration at the location of any dwelling, public building, place of employment, school, church or community or institutional building outside or beyond the permitted explosives use area shall have a maximum peak-particle-velocity limit as provided by the Department, the scaled-distance equation of paragraph (ii), or the blasting level chart of paragraph (iii), whichever is applicable hereunder. Notwithstanding this general requirement, an annual permit holder who is subject to the limitations of paragraph (iii)a (Figure A, incorporated by herein reference), below, may exceed the limitation of Figure A 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 Section, provided 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	Maximum Level in db
2 Hz or lower -- Flat response	123 peak
6 Hz or lower -- Flat response	129 peak

