Statement of Objection

The 46.4-acre Spelter property, Parcel ID 051/281-9171-06, is located in NE ¼, SE ¼, Section 28, Township 5 North, Range 10 East, Town of Rutland, Dane County, Wisconsin. It is situated adjacent and to the North of the 36.7-acre field that is the subject of this conditional use application.

It was purchased in 1988 fully recognizing that there was a semi active quarry between it and Center Road. Access to the property was over a 1.5-acre easement through the quarry.

In 1989 a land swap was executed granting Spelter his own fee simple 66' access in exchange for a 33' deed restricted strip as a buffer from the quarry. This upgraded the Spelter field by enabling the construction of at least one residence.

The expectation was that, when the quarry reached the end of its economic life and would be restored to its original contours (also see letter of Andrew Kessenich, appendix I for further context), it would be possible to develop the property in accordance with the Town of Rutland's Land Use Plan and in line with standards of nearby properties.

When the quarry was purchased by Nelson Excavating in 2016 and reactivated, it seemed that this expectation was finally coming closer to fruition as the remaining extractable aggregate was being removed while the exhausted portion of the pit was being refilled.

The emergence of this CUP project, should it be permitted, means quarrying with all its associated negative effects, will continue "for over 50 years" (CUP 2563, page 17). This extends indefinitely into the future the inability to develop the Spelter property to its fullest and thereby reduces the value of the property (breaches standard #3), diminishes the enjoyment of the peace and quiet the rural setting otherwise offers (breaches standard #2) and harms the health and safety of present and future owners through the generation of incessant high decibel sounds, high pitched beeps, dust, seismic waves, overpressure, and fly rock (breaches standard #1).

In short, the proposed use is a full-time industrial business operating in an otherwise quiet, mixed rural-residential neighborhood. Such a heavy-industrial land use fails the compatibility standard, imposes an excessive burden on neighbors and therefore the application, in its current form, does not merit approval.

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I. Blasting Effects

a. – Limitations on building

The map below shows two potential building sites within the Spelter property. When plans were explored in 2021 to build a home at the southeast corner, about 200 feet from the existing and proposed quarries, the contractor was unable to give assurance that the proposed structure would not sustain damage from blasting due to its location next to a working quarry. If the 38-acre field also gets converted to a quarry, the second site would fall below the 1,000-foot buffer deemed safe in the Dane County Land Use Plan (see next section).

Tim Wick <Tim.Wick@wickbuildings.com Mon, Oct 11, 2021, 1:09 PM

Henry,

Another note for you.

It is my understanding that building in such close proximity to a blasting operation there is a real chance that your drywall is going to be disturbed by the work.

We simply cannot, nor am I aware of a building company who can, guarantee that the blasting won't have some type of adverse impact on both your foundation and interior finishes.

This clearly restricts the normal and orderly development potential of this property and violates standard #3.

North

West **East**

b. Separation norms between structures and open pit mines

The Dane County Comprehensive Land Use Plan specifies two general objectives about land uses and open pit mining activity. First it states:

Prohibit new land uses that will interfere with existing mineral extraction operations[1].

Secondly however, it states in G. (1) **Develop and implement countywide standards for adequate separation between existing land uses and new mineral extractions or expansions**[2];

That sets out the principle that advantages and protections for incumbent stakeholders be maintained, whether a residence in one case or a mining operation in another.

Further, it specifically specifies a separation of 1,000' between development and open pit mines:

Allow nonfarm development within 1000 feet of identified significant mineral resources only after it has been demonstrated that the proposed land use or development would not significantly preclude or hinder future nonmetallic mineral extraction[3]**.**

This application's boundaries breach the minimum 1,000' distance stipulated in Dane County's Land Use plan for the historical stone Graves house[4] and the Eugster log home.

Further, other separations are spelled out in various town and village ordinances. In the case of the village of Windsor, a **buffer zone** of 300' feet width is required between a pit and neighboring property lines[5].

In the case of the Spelter property, a **buffer zone** of 300' from the property line is required to maintain the 1,000' separation between the proposed new quarry and the field's secondary building site.

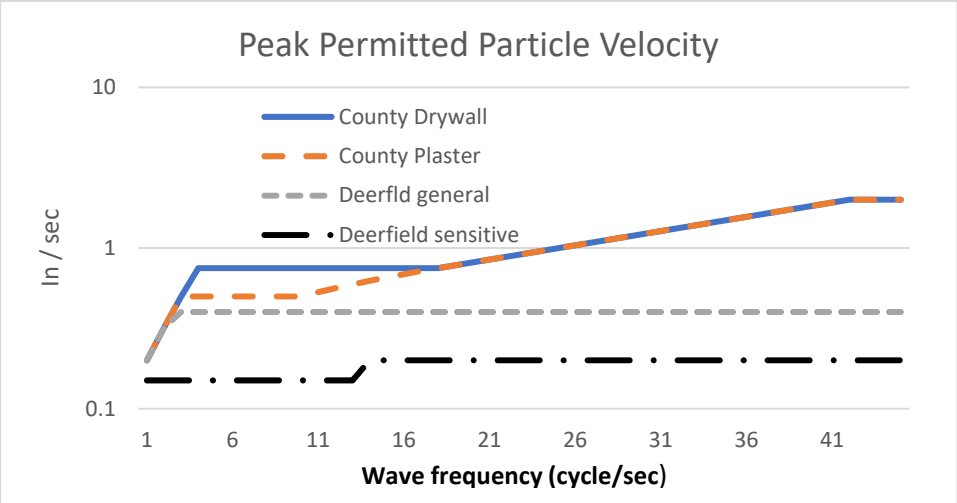
While these buffers (1,000' and 300') are not incorporated into Dane County ordinances, it is a condition that can be imposed if the decision is to grant the permit.

[1] http://www.daneplan.org/documents/pdf/draftplan/CH5_091107.pdf (page 38)
[2] https://plandev.countyofdane.com/documents/DCCP/comp-plan-Vol1-Final2016opt.pdf (page 92)
[3] Comp plan Vol1_Final2016opt.pdf (page 37) Chap 5, "Goals: 1 (D)"
[4] ttps://en.wikipedia.org/wiki/National_Register_of_Historic_Places_listings_in_Dane_County,_Wisconsin
[5] https://library.municode.com/wi/windsor/codes/code_of_ordinances?nodeId=COOR_CH55NOMIOPLI Exhibit B

c. Limits on blast wave intensity

Blast vibrations are transient, but disturbances may result in permanent damage to structures.

Limits on ground vibration velocity for Dane county have been prescribed by the Wisconsin Department of Safety and Professional Services (SPS) which sets Peak Particle Velocities (PPV) ranging from 19.0 mm/sec (0.75 in/sec) to 50 mm/sec (2.0 in/sec, see chart)[6].



Blasting intensity is a two-track variable where the key metric, the PPV velocity, is dependent on wave frequency. Frequency refers to the wave's number of vibrations per second in the medium through which it propagates.

For low frequencies (<10) the allowed velocities are reduced. That is because at the lower end of the range wave resonance frequencies overlap with those of structures which typically lie between 4 to 12 cycles/sec (Hz) for the corner or racking motions[7]. That amplifies the damage through the additive buildup of the ground and the structure's vibrations. For those lower frequencies, the allowed vibration for regular (i.e. drywall) and for sensitive (i.e. plaster) construction is 19.0 mm/sec (0.75 in/sec, blue line) and 12.5 mm/sec (0.5 in/sec, dotted orange line), respectively.

Some municipalities, however, have determined that these limits are too lax especially in situations where fragile or vulnerable historical structures are nearby. They lowered them to 10 mm/sec (0.4 in/sec, dashed grey line) generally and 5 mm/sec (0.2 in/sec, dashed black line) for special heritage sites[8].

This situation is replicated here where the proposed quarry is located next to a historical cemetery and the 175-year-old Graves stone house and barn. Rather than a one size fits all SPS standard, allowances are needed for location specific situations such as this.

[6] Figure 7.44 of §SPS 307, Wis. Admin. Code
[7] US Bureau of Mines, RI 8507
[8] https://www.town.deerfield.wi.us/wp-content/uploads/2021/02/MINING-ORDINANCE-CHAPTER-2-2021.pdf

II. Noise Pollution

a. -- Noise intensity

County regulations cap air blasts at 133 DbA at the site of any dwelling, public building, or place of employment outside the controlled blasting site area. Otherwise, there are no limits on noise emitted by crushing, grinding, truck unloading or other sources beyond limits to permitted hours of operation.

To establish a noise baseline, sound recordings were taken over several periods at the existing pit. Measurements were taken at the eastern fence line of the Spelter field and at incremental distances of 125 feet westwards up to 375 feet from the same spot using a factory calibrated BAFX X3608 type 2 decibel meter (Figure 1).

Figure 1. – Sound measuring device

Sound levels recorded on May 13, 2021 during a 4-minute interval are shown in chart 1. Sound levels ranged from 62.2 to 70.6 decibels with a mean of 65.8.

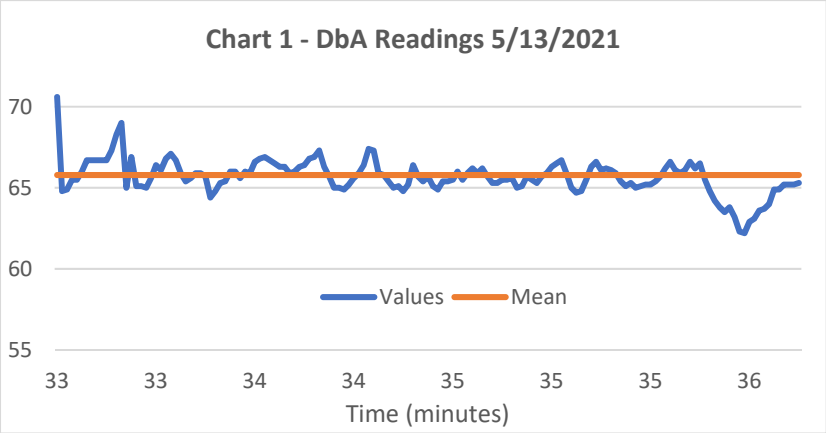
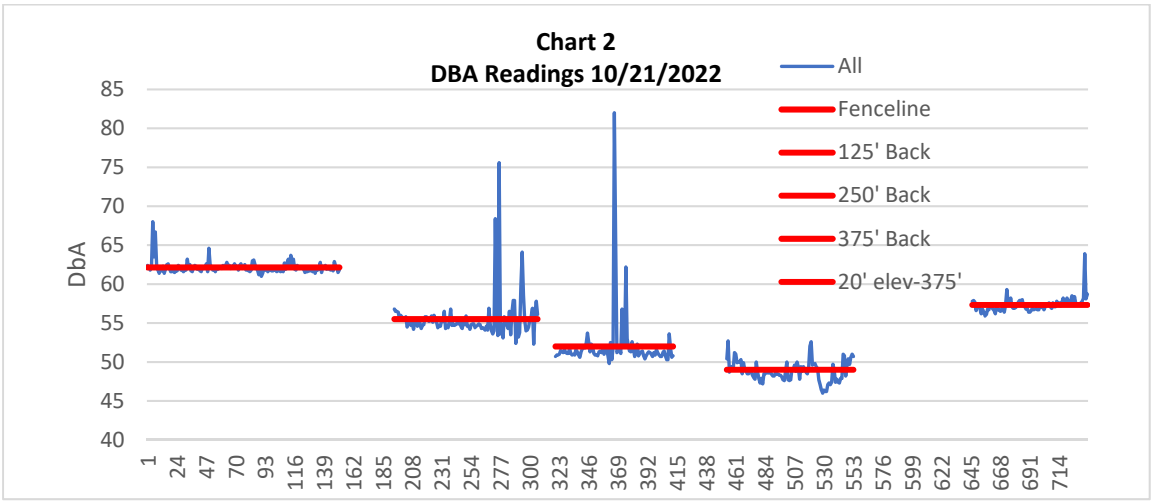


Chart 2 displays sound levels measured on October 23, 2021, over a 12-minute period at five locations. Findings are summarized in the table which show the sound intensity wanes with distance from the source and increases with elevation. The latter is a proxy for the dampening impact of berms which, if at an additional 20 feet, would result in readings similar to ground level at the same distance.



	At Fence	-125' West	-250' West	-375' West	-375 W @ 20' Elevation
High	**68.0**	**75.6**	**82.0**	**52.7**	**63.9**
Low	**61.0**	**52.3**	**49.8**	**46.0**	**55.9**
Mean	**62.1**	**55.5**	**52.0**	**49.0**	**57.3**
Difference		**-6.6**	**-3.5**	**-3.0**	**+8.3**
# Readings	**151**	**113**	**94**	**100**	**91**

A feature of the noise streaming from the Center Road quarry is its fluctuations when trucks unload. These cause spikes which aggravate the already high background growl of the crusher. Such fluctuations raise the effective decibel level above and beyond the average as compared to if only there was a steady stream of noise.

b. -- Impacts of noise on human health

Neighbors around mining operations require protection of their property and health so that they do not bear an unreasonable personal cost.

As with every irritation affecting humans with sufficiently high intensity, noise induces a subjective and a physiological reaction. The subjective reaction is characterized as annoyance while physiological reaction is denoted as noise induced stress. People adapt to the latter through the stress reaction.

An essential component of the stress reaction is changed secretion of hormones. The hormones adrenaline and noradrenaline, and glucocorticoids, particularly cortisol, are most important. These influence blood pressure, metabolism, and blood fats.

Where activation is permanent or intense, distress results which can induce pathogenic processes which lead to regulative restriction or damage. The heart and blood circulation systems, as well as the immune system are the main functions that can be affected[9].

Epidemiological studies have found cardiovascular effects over long-term exposure to noise at sound values of 61-70 Db[10]. The table below shows the relative incidence of myocardial infarction after prolonged (10-year) exposure to varying levels of noise.

Odds ratios heart attacks for men and women exposed to long-term noise[11]

Noise level Db	Men	Women
<60	1.0	1.0
61 – 65	1.17	1.04
66 – 70	1.31	1.11
>70	1.81	0.9

The association is strongest for ischemic heart disease, less so for hypertension. While the associations are generally weak due to confounding factors, such additional risks are important because over time more persons are being exposed to such noise due to urbanization[12]. Consequently, the WHO published guidelines for limits on noise (Table 4.1, page 67 from source):

[9] Maschke, C. Preventive Medical Limits for Chronic Traffic Noise Exposure. Robert Koch-Institute. Federal Institute for Infectious and Noninfectious Diseases, General-Paper. 62-66. (1999)
[10] Babisch, Wolfgang et al. Traffic Noise and Risk of Myocardial Infarction. Epidemiology: January 2005 - Volume 16 - Issue 1 - p 33-40
[11] The interpretation is if among 100 men, 10 in the low noise cohort experience an adverse effect, then 10x1.17 would likely experience the same in the 61-65 range, 10x1.31 would in the 66-70 range, etc.
[12] Berglund, Brigitte, Thomas Lindvall, Dietrich Schwela. Guidelines for Community Noise. World Health Organization, Geneva (1999)

Recommended upper bounds for noise exposure (WHO)

Specific environment	Critical health effects	LAeq (Db)
Outdoor	Serious annoyance	55
Outdoor	Moderate annoyance	50
Outside bedrooms	Sleep disturbance	45
Industrial	Hearing impairment	70

Note that these outdoor limits (50 and 55 Db) are exceeded at all five locations up to 375' away from the fence to one degree or another. This creates an unhealthy environment for potential residents in breach of Standard #1, a disturbance that breaches enjoyment of property as specified by Standard #2 and all of which manifest themselves in lowered property values than they could be if existing pit is allowed to finish up and be reclaimed (standard #3).

III. Air Pollution

a. Dust impacts

Pollution of the air through dust is a health hazard through the inhalation of micro particles that impair lungs. Dane County prescribes dust control measures, but as shown in images taken on the subject property in 2021, the practice and execution were not aligned. Dust containing fine sand and soil particles generated during periods of hot and windy weather create a haze that casts a pall over adjacent lands and create an unhealthy environment in breach of standard #1.

Image 1 – Haze generated during quarry material removal on 8/6/2021 12:49 pm

Image 2 – Dust cloud generated during quarry material removal on 8/6/2021 12:50 pm

Image 3 – Haze generated during quarry material removal on 8/6/2021 12:50 pm

IV. Property Values

a. Impact of quarry on comparative valuations of homes

"Stone quarry operation involves blasting from time to time, the presence of excavation equipment and trucks, dust and noise"

The preceding chapters and the quote above summarize facets of operating quarries that are deemed undesirable by potential buyers. The sum of these elements manifests itself in the prices they are willing to pay as compared to sites not so situated.

The impact of proximity to quarries on home prices is illustrated by the divergent transaction histories of two neighborhood properties, the first located ½ mile distant, the other next to the quarry.

510 Center Road is located ½ mile to the North of the Center Road quarry was put on the market June 1, 2021, listed at $300,000. It closed 46 days later on July 16 for $307,000, $7,000 above asking price.

By contrast, **439 Center Road** is situated to the North of and adjacent to the Center Road quarry. Its sales history is as follows:

It was put on the market July 31, 2008, listed at $649,000. After it failed to attract a single offer, it was withdrawn.

It was put up again for sale June 20, 2021, listed $750,000. It again failed to entice any offers and the sellers cut the price first to $650,000, then to $600,000. Neither reduction generated interest.

At this point the only buyer for whom proximity to a working quarry was not an issue, the quarry operator Kevin Hahn, made bids. The sellers settled for $575,000 which was $175,000 below their initial asking price and $74,000 below the asking back in 2008.

Compared to the $649,000 price the owners thought fair in 2008, the 2021 price represents an 11% drop while in the same interval (2008-2021) the median price of homes nationally rose by 52%[13]

[13] National Association of Realtors. Existing Home Sales. https://www.nar.realtor/research-and-statistics/housing-statistics/existing-home-sales

a. Impact of quarry on comparative valuations of bare land

The negative impact of quarries on adjacent land values is inarguable as illustrated by four bare land transactions, two adjacent and two ½ mile distant from and around the Center Road quarry:

Year	Acreage	Location	Purchaser	Sale Price	Per acre
1988	46.4	Next to quarry	Spelter	$32,950	$710
1992	40	½ mile SW of quarry	Eugster	$56,000	$1,400
2000	69	½ mile NW of quarry	Knutson	$220,700	$3,200
2020`	37.8	Next to quarry	Hahn	$300,000	$7,937

To put these transactions on a comparable footing, they are adjusted to 2020 values based on average bare land selling prices in Dane county compiled annually by the US Department of Agriculture[14]

Year	Ave Dane Co $/acre	Multiplier to 2020
1988	**$958**	**13.0**
1992	**$1,107**	**11.2**
2000	**$2,598**	**4.8**
2020	**$12,434**	**1.0**

Using these multipliers, the various years' prices can be brought to a common 2020 base:

Year	Acreage	Location	Purchaser	Original $/acre	2020 $/acre
1988	46.4	Next to quarry	Spelter	$710	$9,215
1992	40	½ mile SW of quarry	Eugster	$1,400	$15,725
2000	69	½ mile NW of quarry	Knutson	$3,200	$15,310
2020`	37.8	Next to quarry	Hahn	$7,937	$7,937

The average price of the two fields next to the quarry is $8,576. The average price of the two fields ½ mile removed is $15,518. The average discount due to proximity to the quarry is thus $6,942 or 45%. For the Spelter field there is a 40% discount and a value reduction of $292,000.

That property value reduction manifests in dollars the adverse effect on the quality of life and development potential of land next to a gravel pit. Granting the CUP for the new quarry depresses the property's value indefinitely as compared to just the remaining life of the current quarry.

Even if the negative impacts on the Spelter field, as bad as they are, are discounted on the grounds that it only extends its current situation, the impact on two neighboring homesteads could not be so dismissed because granting the CUP would deprive them of the current spatial

[14] https://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Land_Sales/index.php

buffers. Moreover, the property owned by Tom Eugster, a retired and disabled farmer, carries three splits with an approximate value of $750K under current conditions. The granting of the CUP would instantly create and “adverse material fact” that would devalue the splits in any future sale.

Eventually the successor owners of the Spelter field will seek to monetize it. The dolomitic bedrock formation that underlay the Center Road quarry also extends into about 10 acres of the Spelter field (attachment 1)[15]. That resource is liable to be more valuable to a future quarry operator than to a farmer or homesteader. Eventually it will likely result in the acquisition of the field for the purpose of quarrying should the present CUP extend the activity into the indefinite future.

The consequences of that would be to further extend the depressing price effect of the quarry in a chain reaction to three additional properties whose current buffers would similarly disappear and further cement this quarter of the Town as a mining center to the detriment or exclusion of other uses.

This impact on property value is essentially conceded by the applicant in a certified letter dated February 22, 2022, to Violet Spelter, in which Mr. Hahn extended a “take it or leave it” offer to buy the Spelter field for the same price he bought the subject property in September of 2020.

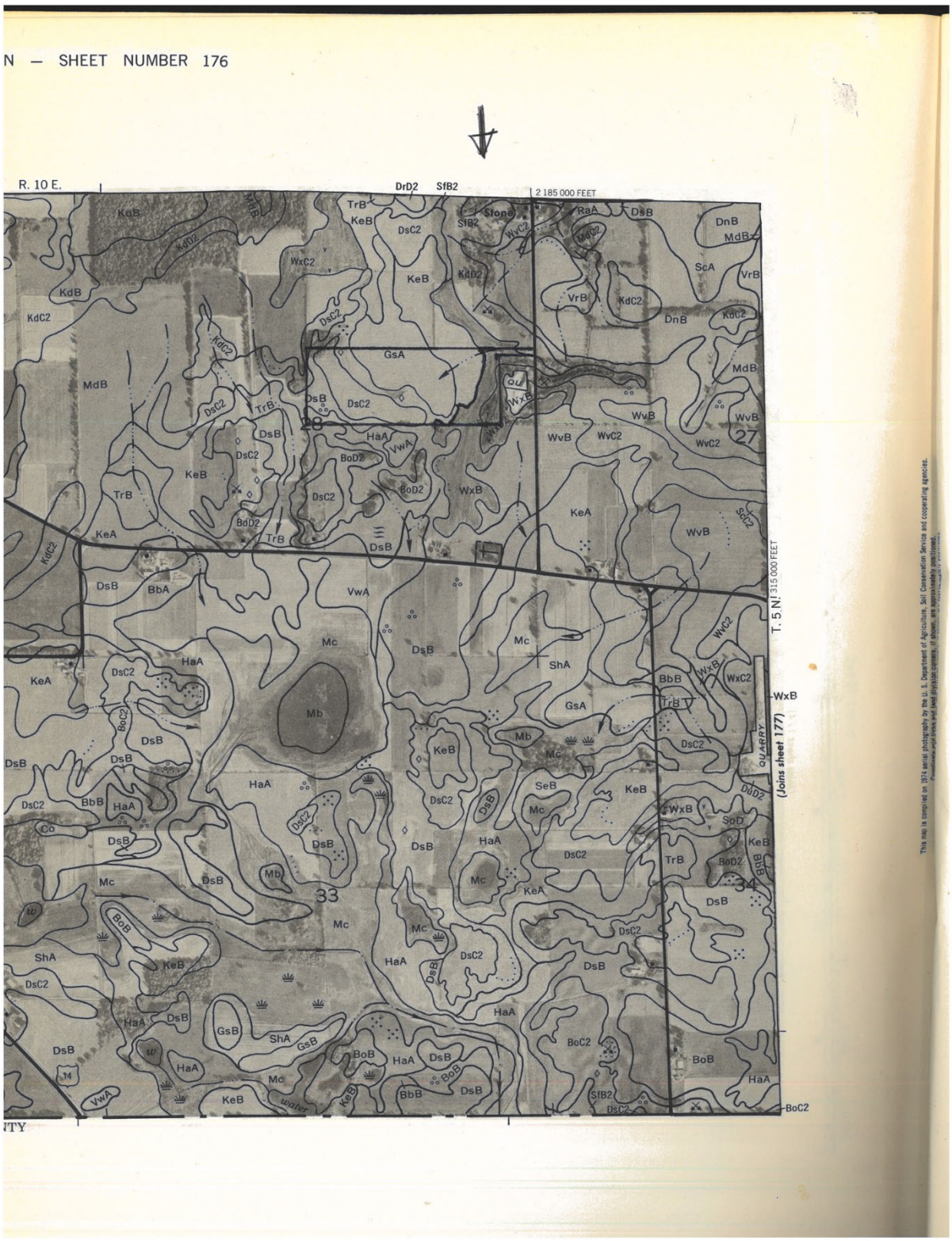
That 2020 price was negotiated over one and a half years ago, preceding a period when real estate values appreciated by some 15% in the greater Madison area in one of the most inflationary real estate markets in the past decade.[16]

The bid is not only below the estimated 2020 fair market price based on the field’s and Dane County’s land value appreciation history, as shown in the table above, but further discounts the inflation that has transpired since. This is an attempt to exploit the value suppressing effect of the anticipated CUP to buy yet another piece of real estate at a discount. The letter is displayed as attachment 2.

In a similar dispute over a new quarry in Milton in 2014, Robert Gorsuch, President of Oak Bank in Fitchburg, assessed the effect of a quarry on a neighboring property’s value and utility as collateral which he deemed to be “significant”. His letter below is attachment #3.

[15] USDA, Soil Conservation Service. 1978. Soil Survey of Dane County, Wisconsin.
[16] Redfin. Madison Housing Market. https://www.redfin.com/city/12257/WI/Madison/housing-market

Attachment 1 – Spelter Soils Map (Shaded Portion Underlain by Dolomite)



Attachment 2 – Hahn Letter

Violet Spelter

5204 Autumn Lane

McFarland, WI. 53558

Mrs. Spelter,

My name is Kevin Hahn husband of Jessica and father of Devin. I currently own the stone quarry, the 38-acre farm field to the south and the house to the north of the quarry on center road around your 46 acres of property owned with Henry. In past years, the quarry was owned by my sister and brother-in-law and now myself. I have always gotten along with Henry; I have offered to purchase your 46-acres of property on many occasions with many options stated for Henry to consider. Henry always said he would think about it and get back to me. I am not sure if Henry has ever shared with you my efforts to purchase the property, so I am writing to you at this time. I am currently willing to purchase the 46-acre property at the same price I paid per acre for the 38-acre field. Of $7895.00 per acre that equals $363,170.00 and I will pay all costs.

Again, I am not sure if Henry has shared with you all that has been going on within the Township or not. I have never met you and from what Henry has told me I never will. I will be applying for an expansion of the existing quarry into the 38-acre parcel that I currently own. Henry has been against this happening for reasons I don't understand. No one can build within 1000 feet of the existing quarry per Dane County Zoning. Please consider my offer to purchase the property currently. Not if, but when the expansion of the quarry is granted, I will no longer be interested in the property. Thank You

Kevin Hahn

439 Center Road

Oregon, WI 53575

608-333-5607

Attachment 3 – Oak Bank Letter

Oak Bank

You can't be the best, if you're only the same.

Mr. Dean Johnson

Albion, Wi

Dear Mr. Johnson:

You have asked for my opinion as to the impact of a 100 acre gravel quarry on the value of your land and how lenders would evaluate it.

Assuming your property is near the quarry site, the impact could be significant. First of all, it is hard to imagine who would want to buy your property if the quarry was planned or in existence near your property. Second, I would think any lender using your property as collateral would certainly be much more diligent in their assessment of your property value and how much a lender would consider lending.

Hopefully you find this helpful.

Sincerely,

Robert C. Gorsuch
Chairman & CEO

5951 McKee Road, Suite 100
Fitchburg, WI 53719-5114

Member FDIC

Bank

Phone: 608-441-6000
Fax: 608-441-6001
Toll Free: 877-OAK-BANK
www.oakbankonline.com

Appendix I

Statement of former quarry neighbors Andy and Joanna Kessenich

Center Road Quarry CUP 9 -12 - 2020

Outline of Comments

Andy and Joanna Kessenich

1. Identify that our home is situated immediately to the North of the gravel pit. Thus, our property is currently the Residential property most impacted by activities within the pit.
    a. We Purchased our home in 1990 and were aware of the pit operating next door. **We were informed by the Realtor selling our home that the gravel pit would be winding down its operations and concluding extraction activities within the next year.** As a condition of our offer to purchase we required to speak with the gravel pit owner, Homburg Company, to confirm their plans. We personally met with Mr. Homberg and he advised us that there was only one season of use left in the pit and they would be then shutting it down. We were told the small 10-acre pit had reached the end of its useful economic life. We relied upon this representation and purchased our home. The following year the pit was shut down. A number of years passed with the pit remaining inactive. However, at some point the pit was re-activated. Homburg had leased the pit to Wingra Stone, who operated it at a very intense level for many years. Eventually they discontinued operations and the pit was shuttered - again for a number of years. But yet again the pit was opened under new ownership, this time being Nelson Excavating. They operated for a number of years until they concluded their business completely shut down operations and vacated the property. The current operator acquired the property a few years ago and has resumed quarrying and related activities on a full-time basis.
    b. Based on the age of the pit, its small size and extent to which it had been quarried prior to 1990**, it was very reasonable to assume the pit was near the end of its useful life**, particularly considering the observations made by the owner/operator of the property in 1990. This was a commonly understood condition upon which many people relied in making the choice to locate in the immediate neighborhood.
    c. **The ever-expanding residential nature of the neighborhood is evidence of its evolution from a farming community to something much denser and more diverse**. Although the pit has the legal right to continue operating in its existing form, it's expansion is completely inconsistent with the growing residential character of the neighborhood – exemplified in part by the Town granting approval for the construction of two new residences on Center Road within a mile of the pit and on the primary roadway used by dump trucks connected to the pit operation. **These residential and heavy industrial land uses are clearly incompatible at the present time** and will become more so as the residential land use component continues to expand. Quadrupling the size of the gravel pit under these present and anticipated conditions is inconsistent with **the rural residential nature** of the area as indicated in Town of Rutland planning documents and the reasonable expectations of its residents relating thereto.

    d. In conclusion, the existing gravel pit should be allowed to continue operating until it has reached the end of its physical and economic life and then be reclaimed to a condition that complements the evolving rural residential character of its immediate environs.

2. In addition to considering the CUP application, the Town and County should take this opportunity to address the lack of regulations by which this gravel pit is required to comply. Because the pit is considered to be "grandfathered", it is not subject to any restrictions as to days and hours of operation or limitations as to the noise levels created by equipment operations. Currently the pit can operate any time day or night, including weekends and holidays. The pit is frequently open and receiving dump trucks very early in the morning. These activities **involve exceptionally loud diesel engines and blaring backup horns**. Rock crushing machines and dump truck deliveries sometimes run until sunset, which in summer months can be until 9:00 pm. The pit is busy on many weekends, including both Saturdays and Sundays. It also operates on holidays, which have included the 4th of July and Thanksgiving.
    a. Decibels from the rock crushing machines, emergency reverse horns, filling and emptying of dump trucks and blasting activities can **reach extreme levels**.
    b. The gravel pit is **a full-time commercial industrial business enterprise operating in an otherwise quiet rural residential neighborhood**. As an industrial business it should be subject to appropriate regulations relating to hours of operation and screening of nuisance noises. Hours of operation should be limited to weekdays between 7:00 am and 5:00 pm. No business activities should be permitted on weekends or any recognized holiday. To deflect the extreme noise, the operator should be required to build solid **berms to a height of 20 feet** on the two property boundaries that are shared with the current single-family residence at 439 Center Road and the soon-to-be improved single-family property owned by Henry Spelter along its west property boundary.

Appendix II

Failure of CUP 2563 Application to Meet Substantial Evidence Standard

Setbacks:

Dane County Code of Ordinances Section 10.103(15)(6)(b) specifies only a 20' setback from property boundaries.

However, Dane County Code of Ordinances Section 10.103(15)(4)(b) requires all residences within 1,000 feet of the property to be identified.

Further, Dane County Comp plan Vol1_Final2016opt.pdf (page 40) Chap 5 requires that development should not be allowed within 1,000' of potential quarries containing aggregate.

Two existing homes are within 500 feet of the CUP area and thus at most 520 feet removed from where high intensity ground blasting will take place. Further, two existing homesites have been identified in the adjoining field. The CUP boundaries will bring them nearer than the 1,000' distance, making their further development moot.

If the 1,000' separation requirement applies to new development, by symmetry it must also apply to new quarries relative to pre-existing or planned homes (Also see Section I, Blasting).

Fails to meet Standards 2 (Use and Enjoyment) & #3 (Normal & Orderly Development)

Berms: (sound mitigation)

The Town of Rutland Land Use Plan begins with "Residents value the **quiet** and the sense of community this rural character offers." Vital to that is the mitigation of excessive noise from activities that by their nature generate such disturbance.

The application states: "Besides providing topsoil and overburden storage, the berms offer an aesthetic, sound, and wind buffer to neighboring properties."

A reduction in noise through the construction of berms is not by itself sufficient if the resulting reduced noise remains above objectively tolerable levels. The amount by which berms of undefined width and height mitigate "sound" is not spelled out in terms of a meaningfully measurable target. It is merely presented as a general aspirational objective of undefined scale. This contrasts with the requirements of the statute according to which the applicant is required to present substantial evidence:

"facts and information, other than merely personal preferences or speculation, directly pertaining to the requirements and conditions an applicant must meet to obtain a conditional

use permit and that reasonable persons would accept in support of a conclusion." Wis. Stat. §59.69(5e)(a)(2).

Fails to meet Standards 2 (Use and Enjoyment) & 3 (Normal & Orderly Development)

Berms: (stabilization)

Application states: The berm will be seeded. Seeding and mulching will be conducted in alignment with the Wisconsin Department of Transportation (WisDOT) standards #630 (Seeding on Slopes).

In contrast to the above, stabilization and seeding measures on existing berms have been limited to the spreading of oats, if that, and berms are largely bare or infested with noxious weeds and invasive trees such as mulberry, Siberian elm and boxelder that aggressively spread into the neighboring field. A visual sampling is shown in the image below.

Fails to meet Standard 2 (Use and Enjoyment)

Water management

The applicant states: The (grandfathered) quarry will be utilized for runoff containment to support the remainder of the project. Stormwater will be collected in the quarry and discharged, as needed into the drainage swale located adjacent to Center Road according to the site's stormwater pollution prevention plan (SWPPP), before discharging to Badfish Creek.

However, according to Dane County Code of Ordinances Section 10.103(15)(b)(11):

11. Except for incidental removal associated with dust spraying or other routine operations under this permit, water shall not be pumped or otherwise removed from the site.

The proposed practice and requirement are not aligned. The existing pit is grandfathered while the CUP is a new quarry under a different regulatory regime. Pumping water into the town ditch breaches the ordinance cited above.

Blasting - general

The applicant states: Administrative rules are regularly reviewed to keep them consistent with current regional and national public safety and fire prevention practices and standards.

The county blasting ordinance makes no allowance for exceptional site-specific situations where less powerful blasting is needed, as is the case here with a historical house and graveyard within 500' from the proposed blast zone.

Fails to meet Standards 2 (Use and Enjoyment) & 3 (Normal & Orderly Development)

Blasting – depiction of blasting results

The applicant states: "A summary of blasting performance at the Center Road Quarry compared to safe limits for blasting vibration which is 2.0 peak particle velocity (PPV) according to Wisconsin and U.S. requirements is summarized below. **Average** PPV is recorded in inches per second based upon results obtained from calibrated seismographs."

"Average" PPV is the variable plotted in the chart whereas the Wisconsin Department of Safety and Professional Services (SPS) Chapter SPS 307 specifically calls for "Peak" Particle Velocity.

Blasting reports record three blast waves: Longitudinal, transverse and vertical. The PPV value of interest is the **highest** of the three. The "Average" values shown in the plot are by definition lower than the statutory values. By using the average value of the three waves rather than the prescribed peak value the chart is deceptive.

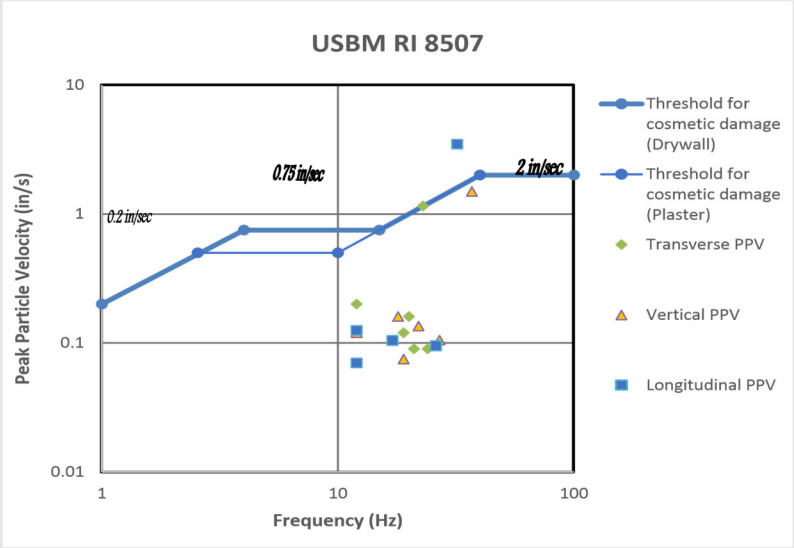
This error is further compounded by averaging in all measurements taken on the date at different locations. Particle velocities vary with distance, decreasing asymptotically to zero at distance. Their procedure assumes all points were equidistant from the blast origin, which was not the case.

Second, particle velocities vary with wave frequency. At lower frequencies the PPV limit begins at 0.2 in/sec before rising to 0.5 in/sec at 3 Hz for plaster construction and 0.75 in/sec for wallboard construction at 4 Hz in the first stage. At that point they level out until the 10 Hz level at which a second lift occurs to eventually plateau at the 2.0 in/sec that is described in the applicant's submission as the upper bound (see example of a proper blast report in the chart below). Therefore, the chart is incomplete without knowing what frequency the PPVs were measured at, and whether the PPVs were the true "Peak" velocities.

39th Avenue Greenway Vibration Monitoring

Week of October 8 to October 13, 2018

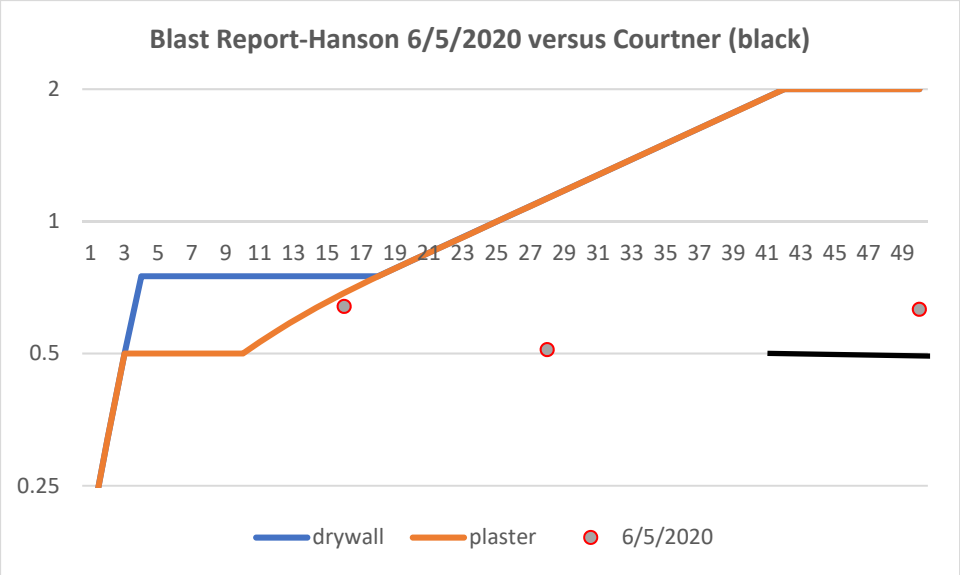
Vibration monitoring was performed near the box culvert installation. **Box Culvert (Zone 2)**



Additional information necessary to evaluate these results include the distance from the blast and the pounds of explosives used per delay. Without these, the chart, and the assertions within it, are noncompliant and should be discounted.

However, when original blast reports were finally provided, proper comparisons showed up to a factor of 2.5 higher velocities (on average 1.4 higher) than shown on the chart. This is important because if the CUP is granted and blasting near the more vulnerable stone house occurs, the blast waves will be more intense due to proximity. While they may still be within countrywide standards, the odds of causing damage to the historical stone walls and foundations of the Gates home are greatly increased. The chart below displays how the data on 6/5/2020 should have been presented versus how they were displayed.

Fails to meet Standards 2 (Use and Enjoyment) & #3 (Normal & Orderly Development)



Noise mitigation

The applicant states: equipment is similar in sound and intensity to other noises routinely generated by traffic and nearby agricultural equipment.

This characterization is vague and subjective without quantifiable outputs. Contrary to the "substantial evidence" standard which requires "facts and information", rather than "merely personal preferences or speculation", this section consists of assurances that are imprecise and not measurable. Moreover, the distinction is ignored that noise from agricultural equipment is seasonal whereas quarrying is stationary and remains constant during the day over much of the year during building season.

Without numerically defined and measurable noise emission targets these assurances do not meet the substantial evidence standard.

Furthermore, the applicant states: "The topography and existing wooded areas on the property provide a natural sound barrier to quarry operations." This also is vague as it fails to quantify the impact on the noise emissions.

Fails to meet Standards 2 (Use and Enjoyment) & 3 (Normal & Orderly Development)

Emission Control Plan

A key element in any emission control plan is to measure emissions. The applicant states as part of emission control responsibilities the need to "Evaluate Fugitive Emission and Need for Control Application" but does not indicate anywhere how and by what means that evaluation is to be executed.

Without objective, factual measurements the determination of when emission control is needed becomes subjective and, as demonstrated in prior instances, is neglected (see Spelter Statement of Objection – Dust Impacts). The plan is deficient in describing how and by what means emissions are monitored and precise measurements taken, where they are documented and to whom they are reported or made available to upon demand. These measures are integral to any effective and reliable environmental control program and is missing from this application.

Summary

The applicant failed to establish consistent, measurable standards for evaluating the by-products of his activities and the degree to which his actions will lower them to acceptable bounds. Thereby he failed to meet the substantial evidence standard and thus the basis upon which the permit should be granted is absent.