Joslyn Hoeffert

From: Jim Dobbs
Sent: Monday, July 09, 2018 1:48 PM
To: Joslyn Hoeffert
Subject: FW: No to the Quarry Expansion

From: Ryan Brooks [ryan.brooks@outlook.com]
Sent: Sunday, June 24, 2018 5:44 PM
To: Jim Dobbs; Jay Benkowski; Dale Stillman; Kevin Wanggaard; Fran Martin; Dave Prott; Lee Wishau
Subject: No to the Quarry Expansion

Hello Committee,

This email is to put on record that I am against expansion of the quarry owned by Payne & Dolan in Racine, WI. The quarry is a financial burden on the community of Caledonia. They pay estimated 12,500$ taxes on a property valued at 3.5 million dollars, which means every resident of Caledonia is paying more per acre into the community than Payne & Dolan. They're not bringing anything but dust to the area, what is the benefit to Caledonia. The entire region suffers economically because of this mine. Their corporate financial concerns of transporting gravel are not the responsibility of the Caledonia residents to shoulder. To burden the residents with the dust, the property value loss, the constant large truck traffic for the needs of a business seems strange. I'll be honest it seems very slanted that we're even considering this proposal. How unfair is it when two homes parallel the quarry pay as much in taxes as P&D and this is what we're proposing to do to improve the community. I know I'll be making sure I vote this coming term based just on this coming to head alone. Again, please make sure this email is on record and that Ryan Brooks - 4642 Carter Drive 53402 – is wholeheartedly against the expansion and against any further extension of the quarry contracts to mine in the Racine WI area. Get your rock somewhere else.

Ryan Brooks

Joslyn Hoeffert

From: Jim Dobbs
Sent: Monday, July 09, 2018 1:47 PM
To: Joslyn Hoeffert
Subject: FW: Phone call follow up
Attachments: image003.jpg

From: Margaret Gesner [MGesner@crchd.com]
Sent: Monday, June 25, 2018 2:39 PM
To: Jim Dobbs
Cc: CRCHD- Keith Hendricks
Subject: Phone call follow up

Hi Jim,
Regarding your question, it appears we do not have any records of complaints regarding the quarry in Caledonia. Please let me know if you have any further questions.
Margaret

Margaret Gesner, Health Officer

Central Racine County Health Department
10005 Northwestern Avenue
(2nd floor US Bank Building)
Franksville, WI 53126

Phone: 262-898-4463 (direct)
Phone: 262-898-4460 (main number)
Fax: 262-898-4490
Mgesner@crchd.com<mailto:Mgesner@crchd.com>

[cid:image003.jpg@01D40C92.54942320]

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Joslyn Hoeffert

From: Jim Dobbs
Sent: Monday, July 09, 2018 1:44 PM
To: Joslyn Hoeffert
Subject: FW: Proposed Quarry Expansion

From: Dave Sandgren [dksandgren@gmail.com]
Sent: Sunday, July 08, 2018 11:59 PM
To: Jim Dobbs; Jay Benkowski; Dale Stillman; Kevin Wanggaard; Fran Martin; Dave Prott; Lee Wishau
Subject: Proposed Quarry Expansion

To the members of the Caledonia Village Board:

My name is Dave Sandgren, and I am writing on behalf of my wife, Mary, and other family members (and neighbors) to express our concern with the proposal to expand the Payne and Dolan quarry to the east and north of the existing operations. To be perfectly clear from the beginning, this is a proposal which we cannot support, and which we hope does not receive your approval. There are two perspectives that I would like to express in explaining why we do not support this.

First, from a very personal standpoint, we live at 4609 Carter Drive, so we are only a few blocks north of the proposed expansion. Having been at this location for over 30 years, we have a long time understanding of the negative impacts of this type of operation. The dust, noise, and blasting operations are very disruptive to the quality of life in this area. We have had wall cracks, endless dust and dirt on windows and cars, and disruptive noise during normal life. While I realize there are limits to size and frequency of blasting operations, and attempts by the quarry operators to manage dust, it is naive to think that those measures are practical in fully addressing the problems that a quarry brings to a residential neighborhood. Having lived here long enough to experience operations east of Douglas before primary quarrying moved west (which for us helped, but did not eliminate the issues), the thought of bringing this even closer to our home is frankly very disturbing.

Second, I would like to address this from a long term planning and leadership perspective. The Caledonia land use plan and current zoning has this area designated for residential use because frankly - that makes sense. The area in question is surrounded by residential neighborhoods on the East, North, and South. Charles Street is built to support this, as a main north/south traffic corridor. To abandon this plan for a proposal that provides no benefit to the residents of the village in favor of a short term benefit for one company would not be the type of leadership that the people of Caledonia deserve. When I saw a statement in the Journal Times article that this proposal "positions Caledonia for growth" I was very disappointed, because (and I don't mean this to be offensive in any way) to be honest, this does nothing of the sort. The truth is that this reduces Caledonia's opportunity for growth. In this time of increasing demand for housing, this would remove a prime area from residential use, and eliminate an opportunity to increase the Caledonia tax base. In its place we would have a huge dust pit and dump truck traffic which would reduce the attractiveness of this area for potential residents and developers. Re-routing Charles Street into what can only be described as a crazy horseshoe would hurt traffic efficiency and funnel traffic into neighborhood streets not intended for that volume. While this proposal may provide some benefit to Payne and Dolan, that benefit ends after about 25 years. During those 25 years, the loss of attractiveness in Caledonia means that we would have been positioned to be the supplier for development that takes place somewhere else. And after those 25 years, we are stuck with a pit, and crazy street flows for generations - frankly forever. This is not the type of long term vision that we expect from our Village

leadership. It would be a shame if the legacy of this board was a short term focused decision with such negative immediate and generational implications.

Thank you for your consideration of this input, we respectfully ask you to deny this request.

Dave and Mary Sandgren
4609 Carter Dr.
262-498-9609

Joslyn Hoeffert

From: Jim Dobbs
Sent: Monday, July 09, 2018 1:46 PM
To: Joslyn Hoeffert
Subject: FW: Revised Update : Quarry Expansion 3 Mile Road & Charles St - History Lesson
Attachments: Quarry '96 Public TestimonyRev.docx

From: Rick and Barb Nyklewicz [ricknbarbn@yahoo.com]
Sent: Friday, June 29, 2018 1:35 PM
To: Jim Dobbs; Dave Prott; Kevin Wanggaard; L Wishau; Jay Benkowski; Fran Martin; Dale Stillman; Karie Torkilsen
Cc: Cory Mason; janet.bernberg@racinecounty.com; pete.wicklund@journaltimes.com; stephanie.jones@journaltimes.com
Subject: Revised Update : Quarry Expansion 3 Mile Road & Charles St - History Lesson

Dear Trustees, & Village President
Attached is a RETYPED copy of a statement obtained from The Caledonia Planning Commission minutes of 11/27/96 The Statement Delivered by Mr Ed Scheuber whom according to period dated The Journal Times news articles - Mr & Mrs Scheuber with help of an Attorney friend John Bjelajac organized neighbors and community support against the proposed 3 mile & Charles quarry expansion - then owned by Vulcan. Now owned by Payne & Dolan with actual quarry expansion and rezoning requests now being reviewed by the current Caledonia Planning Commission and Village Board. How profound and prophetic!

The current land values and points made in their statement including current Property tax revenues being generated and projected tax base revenues as outlined need only be updated for today's numbers to understand the unfair and unfavorable impacts to our community for many more years to come — but only if the changes requested by Payne and Dolan are approved!!

" Those who ignore history are condemned to repeat it " ??

Respectfully
Richard & Barbara Nyklewicz
4601 Kenrich Dr

NOTE: The following is retyped from minutes of the Caledonia Planning Commission minutes 11/27/ 96

"Ladies and Gentlemen of the Board:

Thank you for the opportunity to address the issue presented this evening by the Vulcan Materials Company.

A community needs to develop in a planned and orderly manner – controlled by proper zoning. Lose control of zoning and you lose control of the plan. The property in question has been zoned R-4 for a decade – A DECADE.

The people before you are not just names on a mailing list. Their homes are not just squares on a map. These people put their trust in you; when they built their homes, this entire area was zoned R-4 for residential single family homes – this proposed plan jeopardizes the credibility of the zoning system. Proper planning by the Town avoids future problems. By Vulcan's latent planning for their future – they are destroying our future – our life's investment. Thousands of people are affected, The effects of this proposed zoning change and expansion cross the boundaries of Caledonia into neighboring areas. This expansion is a life-altering event to these people. For most, all of their material wealth is involved. A life's worth of saving. A retirement nest egg. A future for themselves and their children – security.

What would you have us do if we were in your position – and you in ours? Investigate the statements of Vulcan Materials Co. Are their statements accurate? Measurable? Attainable? Guaranteed? Call the "X" homeowners on Goley's Lane. Call the homeowners near Vulcan's West Rawson Avenue quarry – their opposition group is called "Rescue II." Ask how they feel about Vulcan's statements. We have.

Now consider Vulcan Materials Co., as a corporate citizen. According to the statements made by Vulcan during its presentation to Racine County on November 4th – 80% of their stone is shipped by rail. These rail cars are not going to Nicholson Road – or Highway K – or Highway G – Four Mile – Five Mile – or 6 Mile Road – it goes out of the Town and out of the County. How does this benefit us? In the November 13, 1996 issue of the Journal Times, Mr., Gagliano of Vulcan Materials Co., stated that the installation of perimeter berms and bike trails and the relocation into the pit of crushing equipment and stockpiling will enhance property values in the area. In Vulcan Materials Co.'s "Application for a Non-Metallic Mining Permit" dated March 9,1989, under the section "Economic Advantages and Disadvantages" it states – and I quote – "In the short term...Property values in the immediate area may be negatively affected, However, given the long term plans for the site, values should be unaffected or enhanced by the presence of the restored quarry site." End quote. In a sand and gravel operation, restoration is on-going – but because this is a quarrying operation – this restoration won't be complete until quarrying is completely stopped. 70 years from now – 70 years! Since the quarry site won't be completely restored for 70 years – our property for the next 70 years will be negatively impacted – along with a reduced property tax base for the Town of Caledonia.

According to the information available at the Racine County Treasurer's office: In 1995, Vulcan Materials Co. only paid to the Town of Caledonia $27,684.78 for its present 176.25 acres in taxes. The six homes on Ellis Avenue which will be most affected by the relocation of Charles Street pay a total of $16,676.53 per year. SIX HOMES PAID ALMOST AS MUCH IN TAXES AS VULCAN MATERIALS DID ON 176.25 ACRES!! The net tax rate for Vulcan is $157.08 per acre while a homeowner with R-4 zoning pays $9,926.50 per acre. Please tell us, who would benefit with expansion of the quarry? Not the people of Caledonia – not the Town of Caledonia – and not the County of Racine. After 70 years – Vulcan will abandon this site – they will no longer pay any Taxes!

If this 60 acre tract of land were developed with a minimum of 188 homes (as previously planned by the Town), these homes would generate an estimated $522,530.96 in taxes per year. If Vulcan Material's plan to rezone this 60 acre tract is passed by the Caledonia Town Board, they will only pay $9,424.80 on this same tract of land per year. We are talking generations and generations of taxes. If Vulcan successfully purchases and rezones the 60 acres to M-4 – they will own 230.25 acres, Then, for the next 70 years at $37,109.50 per year, Vulcan Materials will contribute $2,597,665.00 in taxes for that time. If the Town keeps the R-4 zoning for this 60 acre area, and single family homes are built, those homes will generate $365,577,167.00 in taxes for the same 70 year time period!! Is there a question? – Which plan is better for the Town of Caledonia? (As soon as the word gets out that Vulcan is finished in this area, developers will be all over that land to subdivide for new homes.)

Look at these faces – these are the faces of your neighbors –the faces of people that place their trust in you – our leaders. Tour our neighborhoods – see the proposed quarry site – not on a map – under foot
--walk the streets. St. Clair, Charles, Thunderbird, Erie, Ellis, LaSalle, Wilshire, Monterey, Manhattan, Mayfair, Monticello, Sydney, Imperial, Berkley, Bur-Wil, Sara, Johnson, Kramer and Carter. Then sit in the park at Three Mile and Charles – walk – no you better drive – Three Mile Road to Goley's Lane and down to St. Rita's Road. There is an undisputed difference in this neighborhood, because of a quarry expansion 13 years ago. These people are still patiently waiting for their property values to be "enhanced".

Accidents and disasters happen in life – unplanned. This is planning for a catastrophe. All of us know what the outcome will be. There is proof at the West pit. We are the good neighbors – patient with the existing quarry – waiting for them to leave – the silent majority – we are the good corporate citizens.

What would retaining R-4 zoning do? A subdivision will develop. Creating construction jobs for years to build the infrastructure to support 188 homes. Sewer lines – water mains – streets – gas and electric service – telephone and cable. Home construction crews – excavators – masons – carpenters – roofers – painters – drywallers – cabinet makers – plumbers – sheet metal workers – plus stir local retail stores with the purchases of furniture and appliances. A new tax base for the Town and County for generations and generations – not just 70 years. New subdivisions are developing even as we speak, just north of the proposed expansion area. Will this construction stop if there's a zoning change? If I

was a developer, I wouldn't build if I couldn't make a profit – If I couldn't sell my development because of the quarry moving so much closer. It may be some time before Vulcan Materials Co. to applies for rezoning – whatever the timetable – the credibility and "Security Net" of the zoning system is under attack.

There are 50 acres for sale north of Four Mile Road, just East of K-Mart and Kohl's – are the neighbors in that area secure, knowing that 50 acres is zoned R-4? Maybe they shouldn't be. This expansion by Vulcan is an evasion into a long-standing neighborhood. This is about the preservation of our way of life.

We humbly request your help and protection.

This is one of the few public gathering places that says the "Pledge of Allegiance" to the flag. The last three words of the pledge are – Justice for All!!

Thank you, Mr. Chairman

"Mr Ed Schueber presented the commission with a five page memo outlining his (and other citizens) concerns regarding the Vulcan Proposal. Mr Schueber read the memo to the commission and the audience. The reading of the memo was followed by generous applause from most of the audience."

Joslyn Hoeffert

From: Jim Dobbs
Sent: Monday, July 09, 2018 1:45 PM
To: Joslyn Hoeffert
Subject: FW: Payne & Dolan Quarry Expansion Affect on Property Value Assessment Question

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From: Military Veteran [gah3900@yahoo.com] Jerry
Sent: Saturday, July 07, 2018 12:41 PM
To: Bill.Bowers@cityofracine.org
Cc: Melissa.Lemke@cityofracine.org; CLT Firm 2; Thomas J. Christensen; Jim Dobbs; Jay Benkowski; Dale Stillman; Kevin Wanggaard; Fran Martin; Dave Prott; Lee Wishau; Karie Torkilsen; monte.osterman@racinecounty.com; Janet.Bernberg@racinecounty.com; David.Cooke@racinecounty.com; Rep.Weatherston@legis.wisconsin.gov; Cory Mason
Subject: Re: Payne & Dolan Quarry Expansion Affect on Property Value Assessment Question

I am resending this as I have not yet received a response to the below.

You may also want to provide copies, of your response, to all of the persons copied also in case they have not, as elected officials, had the time to research the reduction of property values of current businesses, and residential properties, and the loss of property tax revenue that approval of the zoning changes will affect government tax revenue. And, of course, the noise, dust, damage to properties walls, glass, foundations, etc. that any rezoning/mining would cause.

Payne & Dolan's property tax is negligible in comparison to the property tax revenue of current residences/businesses (and, of course, the residences, etc. that would be build in approximately five (5) years when the quarry would run out of gravel to mine).

But, of course, the property values/tax revenue of properties in a specific geographic area around any expansion/zoning change would be greatly reduced if any rezoning was to take place. And, I would guess that citizens would contest any assessments, and property tax bills that did not show a substantial reduction in property taxes if the rezoning would be approved. I would guess that some citizens would promote that.

I would have to presume that, in the past, Caledonia was aware of that, and also Vulcan Quarry did not go through with an attempt to zoning changes back in the nineties because of all of the negative effects back then that have only been enhanced today because of the increased residential construction, etc.

Since, based on education, research, and experience, I would presume that an answer to the below should be fairly easy (plus based on the information in the links below).

Since I am a citizen, and a taxpayer in the City of Racine I would appreciate it if you could provide answers to my questions by Monday morning, July 9, 2018 at the latest (and copies to the others also) as there is a meeting on July 9, 2018 at 6:00 PM that the below requested information would be beneficial to all parties involved, or affected, by any changes to the present zoning.

And, yes, I am a military veteran who served the United States in a combat zone. And, I proudly notate that in my email. I fought, and served, and made sacrifices, so that ALL citizens have equal rights in our democracy.

Thank you in advance for any, and all, information provided by Monday morning. And, if you are a military veteran too...THANK YOU FOR YOUR SERVICE!!!

CHARACTER: What a person does when no one is looking.

Review the FACTS, not opinions. Then VOTE!!

On Saturday, June 30, 2018, 8:15:01 AM CDT, Military Veteran <gah3900@yahoo.com> wrote:

If I could have an answer by JULY 6, 2018, or sooner, I would appreciate it as there is a meeting on the Payne & Dolan Quarry Expansion on July 9, 2018 in Caledonia.

SORRY for not including this in the previous email.

Thanks.

CHARACTER: What a person does when no one is looking.

Review the FACTS, not opinions. Then VOTE!!

On Saturday, June 30, 2018, 7:54:10 AM CDT, Military Veteran <gah3900@yahoo.com> wrote:

Payne & Dolan Quarry has been in discussion with Caledonia regarding rezoning property, expanding their present quarry which, per my understanding, will increase the amount of blasting, noise, potential damage to properties, decrease in residential property values, increased truck traffic (potential road damage), dust, quality of life, etc.

If the quarry expansion is approved I am asking what PERCENTAGE does the City of Racine expect to reduce the property values/assessments of the City of Racine properties close to, and around the expanded quarry site?

Based on some research I have done the property value declines would be thirty percent (30%), or more. What would be your plan as City of Racine City Assessor: percentage reduction in property values, by location/distance, etc. IF Caledonia would approve said expansion.

Per my understanding, if approved, Payne & Dolan would begin "construction" on the expanded site this year. So, property values would be affected beginning in 2018.

I look forward to receiving your response.

https://stopthequarrycascadetownship.wordpress.com/2014/11/25/property-values-decrease-around-a-quarry/

http://www.lansinkappraisals.com/downloads/Lansink%27s%20Case%20Study%20Pit%20or%20Quarry%20Jan%202014.pdf

I would presume that the Caledonia elected officials are also reviewing the impact on their tax revenue any expansion would mean.

CHARACTER: What a person does when no one is looking.

Review the FACTS, not opinions. Then VOTE!!

From: Jim Dobbs
To: Karie Torkilsen
Subject: FW: Federal Funding question
Date: Wednesday, July 25, 2018 2:58:25 PM
Attachments: image001.png

Karie - For the web page of quarry related information.

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From: Tom Lazcano
Sent: Thursday, July 19, 2018 2:20 PM
To: Timothy J. Pruitt; Elaine Sutton Ekes; Jim Dobbs; Karie Torkilsen; Tony Bunkelman; Toni Muise
Cc: Thomas J. Christensen
Subject: FW: Federal Funding question

Hi All,

Here is the response that I received from Dave Platz at the Federal Highway Administration about realigning Charles St.

Let me know if you have any questions.

Thank you,

Tom Lazcano, PE
Public Works Director

[cid:image001.png@01D41850.4390F250]
5043 Chester Lane
Racine, WI 53402
262-835-6475
TLazcano@Caledoniawi.com<mailto:TLazcano@Caledoniawi.com>

From: Platz, Dave (FHWA) [mailto:dave.platz@dot.gov]
Sent: Tuesday, July 10, 2018 1:54 PM
To: Tom Lazcano <tlazcano@caledoniawi.com>
Subject: RE: Federal Funding question

Tom,
Great question. I don't think there is anything to worry about with relocation of the road previously paid for with federal aid. Considering how long it has been in service, you are reaching the end of any useful life anyway. Thanks for asking, but I think you are good. I'm not aware of anything to prevent you from moving the road or require repayment.
Best regards,
Dave

Sent with Good (www.good.com<http://www.good.com>)

_____

From: Tom Lazcano <tlazcano@caledoniawi.com<mailto:tlazcano@caledoniawi.com>>
Sent: Tuesday, July 10, 2018 1:29:19 PM

To: Platz, Dave (FHWA)
Subject: Federal Funding question

Hi Dave,

I have a federal funding question I'm hoping you can help me with or point me to someone who can. There is a local road here in the Village of Caledonia that was reconstructed using Federal Aid to Urban Highway funds in the 1980's, The road is Charles Street, from 3 Mile Rd to 5 ½ Mile Rd.
Would there be any issues with rerouting a ~3,000' section of Charles St.? I have attached a pdf showing possible realignment options. The road would be reconstructed in kind to the east of its existing location, to allow for a possible quarry expansion. The proposed quarry expansion has not been approved as of yet and this question was raised by someone from the County who remembered this road had federal funding.

Let me know if you have any questions or if I need to go to someone else.

Thank you,

Tom Lazcano, PE
Public Works Director

[cid:image001.png@01D41850.4390F250]
5043 Chester Lane
Racine, WI 53402
262-835-6475
TLazcano@Caledoniawi.com<mailto:TLazcano@Caledoniawi.com>

From: Jim Dobbs
To: Karie Torkilsen
Subject: FW: quarry issue
Date: Wednesday, July 25, 2018 2:48:09 PM

Karie - For the web page of quarry related information.

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From: Bill Gabbey [wgabbey@gmail.com]
Sent: Sunday, July 22, 2018 3:42 PM
To: Jim Dobbs
Subject: quarry issue

Jim,
I hope that this message finds you safe and well.
I'm writing today regarding the Quarry issue (Payne & Dolan, 3 Mile & Douglas).
I hope that you are planning to support approval of the proposed expansion of the quarry operation as generally outlined in the journal times.
The small but LOUD group opposed to the expansion are just another example like the people who move in next to a farm or a zoo and then complain about the noise and smell from the animals. NIMBY! Not In My Back Yard!

Please keep in mind not only the hundreds of people who are directly affected by the jobs that extend beyond the quarry itself, but also the tens of thousands of taxpayers in the whole area who get to pay less for virtually every construction project, both public and private, because the quarry materials are available locally.

The quarry has been there longer than any of these NIMBY complainers has been alive, let alone owned property there.

The village board has to take into account the thousands of residents who ARE in favor of the expansion but who don't have time to show up at a meeting.

Thank God that we are NOT a democracy where only those who can attend the meeting get to vote; we do not make decisions based on a small, vocal group of NIMBY's who want to pack your meetings and try to bully our representatives.

We elect representatives to represent the best interests of the whole village, not just a small BUT LOUD group protesting this expansion.

I hope that you are on the right side of this.

I also hope that you are well and happy.

Remember to Enjoy this Glorious Time in Life!

Bill Gabbey
4616 Marcia Drive
'Racine' mailing address in Caledonia
WGabbey@GMail.com<mailto:WGabbey@GMail.com>
Non-published number for your use only: 262-639-4419

From: Jim Dobbs
To: Karie Torkilsen
Subject: FW: Research
Date: Wednesday, July 25, 2018 2:48:50 PM

Karie - For the web page of quarry related information.

_____
From: IES MEL [iesmel0518@gmail.com]
Sent: Sunday, July 22, 2018 12:50 PM
To: Jim Dobbs
Subject: Research

Jim,

Did some research for you. Mary & I are against the quarry expansion.

Ed

Schools (e.g. St. Rita's) and residential communities do and will have harmful potential exposure. Not worth the risk. Just because they are mining and creating dust now does not make it ok. As I said, you have to put yourself in their shoes, does not matter if the home value is $40,000 or $400,000.

"Mining and mineral-processing facilities generate more toxic and hazardous waste than any other industrial sector, according to the Environmental Protection Agency<https://www.epa.gov/enforcement/national-enforcement-initiative-reducing-pollution-mineral-processing-operations> (EPA). The federal agency says mining waste contaminates drinking water, rivers and streams."

"The health risk posed by lung exposure to fine particulate matter such as crystalline silica is serious; and when the pollution source is nearby, the health risks increase. Children and people with asthma and chronic obstructive pulmonary disease are more vulnerable to the risk of being sickened by particles".

"Often referred to as “stone dust” by mining interests, silica dust, like asbestos dust, scars and damages lungs. It can’t simply be wiped away with Pledge."
https://www.ecori.org/public-safety/2017/4/15/quarry-dust-coats-westerly-in-concern

http://www.airbench.com/health-risks-associated-stone-dust-exposure/

https://www.lni.wa.gov/safety/hazardalerts/hazmay98.asp

Chromium, lead and other health hazards.

https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.contams&id=0701753&sort=OU

https://www.stuff.co.nz/environment/98016049/downer-digs-itself-into-a-compliance-hole-at-gravel-extraction-site-near-nelson

"The pollution index indicates severe Cd, Pb and Zn contamination in the mine soils, as well as high Cr and Ni and moderate Co contamination in the serpentinite quarry soils."

http://agris.fao.org/agris-search/search.do?recordID=US201700212524

These recommendations should be in place now, even before vote takes place.

1. Environmental management systems, which include a dust management plan, should be employed at the quarries in order to mitigate dust generation.

2. Regular environmental audit and monitoring of quarrying activities should be enforced in order to ensure adherence to the standards and limits of the concentrations of the dust generated from the different stages of their operations.

3. The quarry workers should be adequately sensitized on adverse health effects of exposure to quarry dust and the importance of using personal protective equipment while at work.

4. A medical study should be carried out on the quarry workers and surrounding community in order to establish whether the workers and residents suffer from silicosis or any other respiratory diseases due to silica inhalation.

5. Another medical study should be carried out to find out the health effects of chromium and lead on the quarry workers.

Sent from Mail<https://go.microsoft.com/fwlink/?LinkId=550986> for Windows 10

From: Jim Dobbs
To: Karie Torkilsen
Subject: FW: Quarry Expansion
Date: Wednesday, July 25, 2018 2:50:43 PM

Karie - For the web page of quarry related information.

_____
From: kerlandsson@wi.rr.com [kerlandsson@wi.rr.com]
Sent: Tuesday, July 17, 2018 5:21 PM
To: Jim Dobbs
Cc: kerlandsson@wi.rr.com
Subject: Quarry Expansion

Dear Village President Dobbs:

I am writing you as one of your constituents to appeal to you for a vote against changing the zoning to accommodate the expansion of Payne and Dolan's quarry at 3 Mile and Charles St when that issue comes before the board.

I am aware of "Wisconsin, Open for Business" and that the present political winds are all pro-business. But this is a case, where the village trustees need to be pro-citizen; that will take courage, but it will be appreciated by the citizens and voters of the village.

I base my appeal to you on the following:

1. Rezoning is an extreme measure and Wisconsin Act 67 then in effect relinquishes land use control by the village to the zoning laws.
2. The citizens of Caledonia overwhelmingly oppose the rezoning. Ultimately, the board of trustees represents its citizens, and represents business interests only to the extent it benefits the citizens.
3. The village board is responsible for protecting the quality of life and health of the residents. An expanded quarry will have a negative impact on the quality of life and have adverse effects on the health of the neighboring residents.
4. The simple fact that Payne and Dolan will notify the neighbors of blasting activities strongly suggests blasting indeed is a significant issue.
5. From a financial standpoint, the expansion will at best provide minimal, if any, contribution to the tax base. In fact, the adjacent quarry—which has three times the acreage of the proposed site—as of 2017 pays less tax than the proposed site, and there is a reasonable possibility that if it is re-zoned, the proposed site will pay less property tax as a result of its new use.
6. The impact on employment in Caledonia is minimal.
7. The prevailing wind is from the west, and if the expansion is approved, a large number of residences will be immediately downwind of the quarry and suffer added exposure to dust. The table below shows wind data for Milwaukee, which would approximate that of Caledonia.
8. The air quality in the region is already under stress. There is ozone coming in from the south, particulates and other contaminants from the coal pant to the north, coal dust coming from the railroad to the west, and future industrial emissions and traffic pollution from the Foxconn project. We don't need to further box in the residents in the area with dust and inherent silicosis risk from the west. Although these contaminants are different, the combination and accumulative effects exacerbates the health risks.
9. Changing the zoning will result in taking from the property owners to the east, who bought their homes protected by the residentially zoned buffer area around the quarry. With a quarry across the street, and the re-located, busy street now closer to their homes, the market demand and value of their homes are diminished, and that loss becomes theirs.
10. A pilot spoke at the public hearing on July 8 about turbulence created by the quarry, which sits in the landing path for the airport. The turbulence issue is indeed real. The turbulence is technically referred to as Van Karmann Vortices, which are induced in the surface winds by significant, irregular landscape features.

11. Payne and Dolan has attractive plans for the restoration of the site. Those plans make effective PR, but reality tells us that they will no longer be the owners 20-30 years from now when restoration would take place. Payne and Dolan acquired the quarry from Vulcan five years ago, and there is a good chance the quarry will change hands again before it is depleted. In addition, detailed plans for 30 years out involve so many uncertainties that they become purely academic.

12. Caledonia needs to look at the long-term land use for the village. The fact that the current quarry has a Iimited life expectancy makes this a good time to re-evaluate the long-term use of land in the area in question and start winding down the quarry activities.

13. With expected upward pressure on property values brought about from the influx expected by the Foxconn project, a quarry is no longer the best or most economical use of the property in question.

Respectfully,

Kjell Erlandsson

Month

Average

Prevailing

Calm

Peak

Record

Year of Record Gust

Speed

Wind

Gust

Gust

Jan

12.5

WNW-12.8

1.3

47

SW-66

1975

Feb

12.3

WNW-12.4

1.8

43.7

W-67

1971

Mar

12.8

WNW-12.7

2

48.4

SW-77

1991

Apr

12.7

NNE-13.9

2.1

49.8

W-67

1979

May

11.5

NNE-13.2

2.4

47.8

SW-74

1974

Jun

10.4

NNE-11.3

2.2

50.1

W-76

1971

Jul

9.7

SW-10.8

3.2

49.2

NW-81

1984

Aug

9.4

SW-10.4

3.2

45.2

NW-64

1989

Sep

10.4

SSW-11.0

2.8

44.6

NW-62

1980

Oct

11.4

SSW-12.1

2.5

43.4

NW-53

1990

Nov

12.3

WNW-13.1

1.8

46.6

SW-56

1988

NW-56

1989

Dec

12.3

WNW-12.4

1.4

47.3

N-61

1979

Annual

11.4

WNW-10.9

2.2

63

NW-81

Jul-84

Source: http://www.aos.wisc.edu/~sco/clim-history/stations/mke/milwind.html

[cid:image001.jpg@01D41DF2.8CCBE1D0]

From:	Jim Dobbs
To:	Karie Torkilsen
Subject:	FW: Racine Quarry Project
Date:	Wednesday, July 25, 2018 2:52:37 PM
Attachments:	image003.png Scan-07132018-110926.pdf

Karie - For the web page of quarry related information.

_____

From: Brian Endres [bendres@payneanddolan.com]
Sent: Friday, July 13, 2018 11:16 AM
To: Jim Dobbs
Subject: Racine Quarry Project

Good morning Jim,

I hope you are doing well and I thank you in advance for your time. I have attached a letter that summarizes the factual evidence that we have submitted and discussed publically regarding our Racine quarry project. Please review and distribute to the Plan Commission. The letter contains no new information, but simply summarizes the evidence that has been submitted through various methods.

Sincerely

[cid:image003.png@01D41A9A.F2BB6480]

Brian Endres

Vice President

262.524.1778 office

www.walbecgroup.com<http://www.walbecgroup.com/>

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From: Jim Dobbs
To: Karie Torkilsen
Subject: FW: Quarry Expansion
Date: Wednesday, July 25, 2018 2:49:30 PM

Karie - For the web page of quarry related information.

From: Kathleen Stull [kstull22@att.net]
Sent: Sunday, July 22, 2018 11:31 AM
To: Jim Dobbs
Subject: Quarry Expansion

We tried to attend the public hearing on July 9 but there were too many people so many of us were chased away by police.

We wanted you to know that my husband and I have lived near the quarry (west) for nearly 40 years and have had no issues. We support their expansion as this will be good for our local economy. We also spoke with other couples wishing to attend the meeting that supported our view as well.
We just want you to know that some neighbors find the quarry an asset. The quarry company are good neighbors, keep the dust down, limit the noise and are friendly. The landscaping is beautiful.
Not all neighbors are negative to the expansion. We feel somewhat fearful of speaking out as those opposed would retaliate so we prefer to be anonymous.

In God we trust

Joslyn Hoeffert

To: Karie Torkilsen
Subject: RE: Planning Commission Meeting Comments July 30, 2018

-----Original Message-----
From: gkbuege74@wi.rr.com [mailto:gkbuege74@wi.rr.com]
Sent: Monday, July 30, 2018 7:17 PM
To: Jim Dobbs
Cc: Karie Torkilsen
Subject: Planning Commission Meeting Comments July 30, 2018

To: Jim Dobbs,
President, Village of Caledonia

This correspondence is in fullow-up to the Planning Commission meeting of today, July 30, 2018.

We are long time residents of Caledonia (41 years), and live at 4550 Carter Drive, which is under 500 feet (lot line to lot line) from the proposed expansion area. Our street is perpendicular to Ellis Avenue, which borders the proposed expansion land. We know first hand from the current quarry how bad it is to live this close to the blasting.

As we stated at the meeting,

We are Opposed to rezoning the land in question for Payne and Dolan quarry expansion; and We are Opposed to any quarry expansion of the Payne and Dolan quarry

Forty-one years of blasting has caused considerable damage to our home's foundation, and further expansion will not only cause more damage, but would cause siginificant decrease in our property value. This is not something that we believe should even be a consideration in this residential/school area! Further, due to major surgery, we were not available when the earlier petition was signed/presented. Please know our names would definitely be on that list to oppose rezoning for quarry expansion, and to oppose quarry expansion.

Sincerely,

Gregory L. Buege
Karen L. Buege
4550 Carter Drive
Racine, WI 53402

From:	Jim Dobbs
To:	Joslyn Hoeffert
Cc:	Karie Torkilsen
Subject:	FW: Answers to Questions Regarding Quarry
Date:	Wednesday, August 01, 2018 3:23:10 PM

Joslyn - please add this email to the web site for the quarry information.

_____

From: Lemke, Melissa [Melissa.Lemke@cityofracine.org]
Sent: Tuesday, July 31, 2018 7:54 PM
To: Toni Muise; Jim Dobbs
Subject: Answers to Questions Regarding Quarry

Good Afternoon Ms. Muise and President Dobbs,

I hope you are both well. In addition to the health information I recently shared, I wanted to follow-up to provide a bit of data from the Racine City Assessors Re: Taxes and Payne and Dolan.

In the City of Racine Payne & Dolan owns properties with 1,434,000 value and paid 42,476 in taxes.

Residents between thunderbird (north), three mile (south), erie (east) and la salle (west) would be in the area of the property impacted by an expansion. Residents in this area have assessed property values of 17,886,000 and paid 529,796.14 in taxes.

I hope this is helpful.

Warmly,

Melissa

Melissa Lemke

District 15, Alderman

Board of Public Works and Services

Melissa.Lemke@cityofracine.org<mailto:Melissa.Lemke@cityofracine.org>

262-994-8943

From: Jim Dobbs
To: Karie Torkilsen; Joslyn Hoeffert
Subject: Fwd: 'No Quarry Fight' Wins the Rock Quarry Battle In Pleasant Garden | wfmynews2.com
Date: Sunday, August 12, 2018 9:09:35 PM

For web page

Sent from my iPad

Begin forwarded message:

From: Rick and Barb Nyklewicz <ricknbarbn@yahoo.com>
Date: August 12, 2018 at 5:29:02 PM CDT
To: Jim Dobbs <jdobbs@caledonia-wi.gov>, Kevin Wanggaard <KWanggaard@caledonia-wi.gov>, Lee Wishau <LWishau@caledonia-wi.gov>, Dave Prott <dprott@caledonia-wi.gov>, Dale Stillman <dstillman@caledonia-wi.gov>, Fran Martin <fmartin@caledonia-wi.gov>, Jay Benkowski <JBenkowski@caledonia-wi.gov>, Karie Torkilsen <KTorkilsen@caledonia-wi.gov>
Cc: "Janet.Bernberg@racinecounty.com" <Janet.Bernberg@racinecounty.com>, "cory.mason@cityofracine.org" <cory.mason@cityofracine.org>, "Melissa.Lemke@cityofracine.org" <Melissa.Lemke@cityofracine.org>, "Rep.Weatherston@legis.wisconsin.gov" <Rep.Weatherston@legis.wisconsin.gov>
Subject: 'No Quarry Fight' Wins the Rock Quarry Battle In Pleasant Garden | wfmynews2.com

Dear Caledonia WI Elected Officials -
How did other elected officials recently respond with similar situation?
Hopefully our elected representatives will be as committed to protecting the interests of our community and residents current and future!?
Best Wishes !
Richard Nyklewicz Jr
https://www.wfmynews2.com/mobile/article/news/community/no-quarry-fight-wins-the-rock-quarry-battle-in-pleasant-garden/83-488649996

'No Quarry Fight' Wins the Rock Quarry Battle In Pleasant Garden

Guilford County commissioners have voted against a Rock Quarry coming to Pleasant

Garden.

PLEASANT GARDEN, N.C. – Guilford County commissioners have voted against a granite quarry coming to Pleasant Garden.

Commissioners voted Thursday night, 8-0, all against the rock quarry, because it was not consistent with conditional use zoning, incompatible with the surrounding area and usages, and not in the public's interest.

"People were concerned about a lot of different issues like water, traffic and those types of things," said Commissioner Alan Perdue, "And I'm certainly grateful that a majority of the commissioners - in fact, all of them - supported denying this request."

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For months, many people living in the town of Pleasant Garden have been fighting against the proposal, even creating the "No Quarry Here" to band together in opposition.Tonight, they were relieved to know this is how it ends.

"It's amazing, it's been a really long few months and we've worked really really hard on this," said Robyn Holder, "And just to know that these people listened is amazing. we didn't even expect to win unanimously."

The company hoping to build the granite quarry, Lehigh Hanson, told neighbors it would not be a disruption to their everyday lives, claiming other neighborhoods and towns with rock quarries in them saw the mines as a positive. But after three hours of discussion and questions - the overwhelming answer was no.

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"Of course we're disappointed," said Lehigh Hanson's lawyer Tom Terrell, "But this is how the process works. We put on our best case, we hired excellent experts, we went to the board and I think the board listened. They decided in a way I wish they had not, but again this the way the process works."

As for that 300-plus acre property, it is still Lehigh Hanson's. They cannot build a quarry there, but Terrell says the company does not know if or what they will build.

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Sent from my iPhone

From:	Jim Dobbs
To:	Karie Torkilsen; Joslyn Hoeffert
Subject:	Fwd: Safety and Health Topics | Respirable Crystalline Silica | Occupational Safety and Health Administration
Date:	Sunday, August 12, 2018 9:10:14 PM

For web page

Sent from my iPad

Begin forwarded message:

> **From:** Rick and Barb Nyklewicz <ricknbarbn@yahoo.com>
> **Date:** August 12, 2018 at 5:20:12 PM CDT
> **To:** Jim Dobbs <jdobbs@caledonia-wi.gov>, Kevin Wanggaard <KWanggaard@caledonia-wi.gov>, Jay Benkowski <JBenkowski@caledonia-wi.gov>, Dave Prott <dprott@caledonia-wi.gov>, Dale Stillman <dstillman@caledonia-wi.gov>, "jarmen.czuta@racinecounty.com" <jarmen.czuta@racinecounty.com>, "julie.anderson@racinecounty.com" <julie.anderson@racinecounty.com>, Lee Wishau <LWishau@caledonia-wi.gov>, Fran Martin <fmartin@caledonia-wi.gov>
> **Cc:** "janetbernberg@wi.rr.com" <janetbernberg@wi.rr.com>, "Rep.Weatherston@legis.wisconsin.gov" <Rep.Weatherston@legis.wisconsin.gov>
> **Subject: Fwd: Safety and Health Topics | Respirable Crystalline Silica | Occupational Safety and Health Administration**
>
> Village of Caledonia WI Elected officials:
> Another Possible independent source to help evaluate Dust from quarry?
> Likely much more objective than asking the people operating a quarry for such information? (Not unlike asking tobacco companies for info on effects of smoking!)
> Best wishes!
> Richard Nyklewicz Jr
>
> > **Subject: Safety and Health Topics | Respirable Crystalline Silica | Occupational Safety and Health Administration**
> >
> > https://www.osha.gov/dsg/topics/silicacrystalline/
> >
> > # Highlights
> >
> > ## Overview

Crystalline silica is a common mineral found in the earth's crust. Materials like sand, stone, concrete, and mortar contain crystalline silica. It is also used to make products such as glass, pottery, ceramics, bricks, and artificial stone.

Respirable crystalline silica – very small particles at least 100 times smaller than ordinary sand you might find on beaches and playgrounds – is created when cutting, sawing, grinding, drilling, and crushing stone, rock, concrete, brick, block, and mortar. Activities such as abrasive blasting with sand; sawing brick or concrete; sanding or drilling into concrete walls; grinding mortar; manufacturing brick, concrete blocks, stone countertops, or ceramic products; and cutting or crushing stone result in worker exposures to respirable crystalline silica dust. Industrial sand used in certain operations, such as foundry work and hydraulic fracturing (fracking), is also a source of respirable crystalline silica exposure. About 2.3 million people in the U.S. are exposed to silica at work.

Workers who inhale these very small crystalline silica particles are at increased risk of developing serious silica-related diseases, including:

- Silicosis, an incurable lung disease that can lead to disability and death;
- Lung cancer;
- Chronic obstructive pulmonary disease (COPD); and
- Kidney disease.

To better protect workers exposed to respirable crystalline silica, OSHA has issued two new respirable crystalline

silica standards: one for construction, and the other for general industry and maritime. OSHA will begin enforcing most provisions of the standard for construction on September 23, 2017, and will begin enforcing most provisions of the standard for general industry and maritime on June 23, 2018.

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.
- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For additional information, see OSHA's Workers page.

How to Contact OSHA

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

Sent from my iPhone

From:	Jim Dobbs
To:	Karie Torkilsen; Joslyn Hoeffert
Subject:	Fwd: Silicosis - Wikipedia Quarry Dust related?
Date:	Sunday, August 12, 2018 9:09:06 PM

For web page

Sent from my iPad

Begin forwarded message:

> **From:** Rick and Barb Nyklewicz <ricknbarbn@yahoo.com>
> **Date:** August 12, 2018 at 6:30:28 PM CDT
> **To:** Jim Dobbs <jdobbs@caledonia-wi.gov>, Jay Benkowski <JBenkowski@caledonia-wi.gov>, Kevin Wanggaard <KWanggaard@caledonia-wi.gov>, Dave Prott <dprott@caledonia-wi.gov>, Dale Stillman <dstillman@caledonia-wi.gov>, Fran Martin <fmartin@caledonia-wi.gov>, Lee Wishau <LWishau@caledonia-wi.gov>, Karie Torkilsen <KTorkilsen@caledonia-wi.gov>
> **Cc:** "Melissa.Lemke@cityofracine.org" <Melissa.Lemke@cityofracine.org>, "gah3900@yahoo.com" <gah3900@yahoo.com>, Barb Nyklewicz <bnyklewicz@yahoo.com>, "janetbernberg@wi.rr.com" <janetbernberg@wi.rr.com>, "Rep.Weatherston@legis.wisconsin.gov" <Rep.Weatherston@legis.wisconsin.gov>, "cory.mason@cityofracine.org" <cory.mason@cityofracine.org>
> **Subject: Silicosis - Wikipedia Quarry Dust related?**
>
> Dear Elected Representatives of the Village of Caledonia WI Residents -
> Rather than asking quarry operators about " what they have on Dust" how about an thorough independent assessment using experts -???
> Not industry insiders....
> Quarry Dust?
> Has any independent village analysis been done on Quarry Road Dust visible on 3 mile Road?? Previously provided photos clearly show the white reflective dust on the road in-spite of water wash of truck wheels...and limited street sweep by quarry operators.
>
> GOOD Reading! &
> Best Wishes!
> Richard Nyklewicz. Jr
> And Yes I would request a written reply!
> Additional info related to possible issues to public Health !
>
> https://en.m.wikipedia.org/wiki/Silicosis
>
> # Silicosis

Silicosis (also known as **miner's phthisis**, **grinder's asthma**, **potter's rot** and other occupation-related names[1], or by the invented name **pneumonoultramicroscopicsilicovolcanoconiosis**[2][3]) is a form of occupational lung disease caused by inhalation of crystalline silica dust, and is marked by inflammation and scarring in the form of nodular lesions in the upper lobes of the lungs. It is a type of pneumoconiosis.[4]

Silicosis (particularly the acute form) is characterized by shortness of breath, cough, fever, and cyanosis (bluish skin). It may often be misdiagnosed as pulmonary edema (fluid in the lungs), pneumonia, or tuberculosis.

Silicosis resulted in 46,000 deaths globally in 2013 down from 55,000 deaths in 1990.[5]

The name *silicosis* (from the Latin *silex*, or flint) was originally used in 1870 by Achille Visconti (1836–1911), prosector in the Ospedale Maggiore of Milan.[6] The recognition of respiratory problems from breathing in dust dates to ancient Greeks and Romans.[7] Agricola, in the mid-16th century, wrote about lung problems from dust inhalation in miners. In 1713, Bernardino Ramazzini noted asthmatic symptoms and sand-like substances in the lungs of stone cutters. With industrialization, as opposed to hand tools, came increased production of dust. The pneumatic hammer drill was introduced in 1897 and sandblasting was introduced in about 1904,[8] both significantly contributing to the increased prevalence of silicosis.

Signs and symptoms

Because chronic silicosis is slow to develop, signs and symptoms may not appear until years after exposure.[9] Signs and symptoms include:

In advanced cases, the following may also occur:

Patients with silicosis are particularly susceptible to tuberculosis (TB) infection—known as silicotuberculosis. The reason for the increased risk—3 fold increased incidence—is not well understood. It is thought that silica damages pulmonary macrophages, inhibiting their ability to kill mycobacteria. Even workers with prolonged silica exposure, but without silicosis, are at a similarly increased risk for TB.[10]

Pulmonary complications of silicosis also include chronic bronchitis and airflow limitation (indistinguishable from that caused by smoking), non-tuberculous Mycobacterium infection, fungal lung infection, compensatory emphysema, and pneumothorax. There are some data revealing an association between silicosis and certain autoimmune diseases, including nephritis, scleroderma, and systemic lupus erythematosus, especially in acute or accelerated silicosis.

In 1996, the International Agency for Research on Cancer (IARC) reviewed the medical data and classified crystalline silica as "carcinogenic to humans." The risk was best seen in cases with underlying silicosis, with relative risks for lung cancer of 2–4. Numerous subsequent studies have been published confirming this risk. In 2006, Pelucchi et al. concluded, "The silicosis-cancer association is now established, in agreement with other studies and meta-analysis."[11]

Pathophysiology

When small silica dust particles are inhaled, they can embed themselves deeply into the tiny alveolar sacs and ducts in the lungs, where oxygen and carbon dioxide gases are exchanged. There, the lungs cannot clear out the dust by mucous or coughing.

When fine particles of crystalline silica dust are deposited in the lungs, macrophages that ingest the dust particles will set off an inflammation response by releasing tumor necrosis factors, interleukin-1, leukotriene B4 and other cytokines. In turn, these stimulate fibroblasts to proliferate and produce collagen around the silica particle, thus resulting in fibrosis and the formation of the nodular lesions. The inflammatory effects of crystalline silica are apparently mediated by the NALP3 inflammasome.[12]

Characteristic lung tissue pathology in nodular silicosis consists of fibrotic nodules with concentric "onion-skinned" arrangement of collagen fibers, central hyalinization, and a cellular peripheral zone, with lightly birefringent particles seen under polarized light. The silicotic nodule represents a specific tissue response to crystalline silica.[8] In acute silicosis, microscopic pathology shows a periodic acid-Schiff positive alveolar exudate (alveolar lipoproteinosis) and a cellular infiltrate of the alveolar walls.[13]

SilicaEdit

Main article: Silicon dioxide

Silicon (Si) is the second most common element in the Earth's crust (oxygen is the most common). The compound silica, also known as silicon dioxide (SiO_2), is formed from silicon and oxygen atoms. Since oxygen and silicon make up about 75% of the Earth's crust, the compound silica is quite common. It is found in many rocks, such as granite, sandstone, gneiss and slate, and in some metallic ores. Silica can be a main component of sand. It can also be in soil, mortar, plaster, and shingles. The cutting, breaking, crushing, drilling, grinding, or abrasive blasting of these materials may produce fine to ultra fine airborne silica dust.

Silica occurs in 3 forms: crystalline, microcrystalline (or cryptocrystalline) and amorphous (non-crystalline). "Free" silica is composed of pure silicon dioxide, not combined with other elements, whereas silicates (e.g., talc, asbestos, and mica) are SiO_2 combined with an appreciable portion of cations.

Silica flour is nearly pure SiO_2 finely ground. Silica flour has been used as a polisher or buffer, as well as paint extender, abrasive, and filler for cosmetics. Silica flour has been associated with all types of silicosis, including acute silicosis.

Silicosis is due to deposition of fine respirable dust (less than 10 micrometers in diameter) containing crystalline silicon dioxide in the form of alpha-quartz, cristobalite, or tridymite.

Diagnosis

There are three key elements to the diagnosis of silicosis. First, the patient history should reveal exposure to sufficient silica dust to cause this illness. Second, chest imaging (usually chest x-ray) that reveals findings consistent with silicosis. Third, there are no underlying illnesses that are more likely to be causing the abnormalities. Physical examination is usually unremarkable unless there is complicated disease. Also, the examination findings are not specific for silicosis. Pulmonary function testing may reveal airflow limitation, restrictive defects, reduced diffusion capacity, mixed defects, or may be normal (especially without complicated disease). Most cases of silicosis do not require tissue biopsy for diagnosis, but this may be necessary in some cases, primarily to exclude other conditions.

For uncomplicated silicosis, chest x-ray will confirm the presence of small (< 10 mm) nodules in the lungs, especially in the upper lung zones. Using the ILO classification system, these are of profusion 1/0

or greater and shape/size "p", "q", or "r". Lung zone involvement and profusion increases with disease progression. In advanced cases of silicosis, large opacity (> 1 cm) occurs from coalescence of small opacities, particularly in the upper lung zones. With retraction of the lung tissue, there is compensatory emphysema. Enlargement of the hilum is common with chronic and accelerated silicosis. In about 5–10% of cases, the nodes will calcify circumferentially, producing so-called "eggshell" calcification. This finding is not pathognomonic (diagnostic) of silicosis. In some cases, the pulmonary nodules may also become calcified.

A computed tomography or CT scan can also provide a mode detailed analysis of the lungs, and can reveal cavitation due to concomitant mycobacterial infection.

ClassificationEdit

Classification of silicosis is made according to the disease's severity (including radiographic pattern), onset, and rapidity of progression.[15] These include:

Chronic simple silicosis

Usually resulting from long-term exposure (10 years or more) to relatively low concentrations of silica dust and usually appearing 10–30 years after first exposure.[16] This is the most common type of silicosis. Patients with this type of silicosis, especially early on, may not have obvious signs or symptoms of disease, but abnormalities may be detected by x-ray. Chronic cough and exertional dyspnea (shortness of breath) are common findings. Radiographically, chronic simple silicosis reveals a profusion of small (<10 mm in diameter) opacities, typically rounded, and predominating in the upper lung zones.

Accelerated silicosis

Silicosis that develops 5–10 years after first exposure to higher concentrations of silica dust. Symptoms and x-ray findings are similar to chronic simple silicosis, but occur earlier and tend to progress more rapidly. Patients with accelerated silicosis are at greater risk for complicated disease, including progressive massive fibrosis (PMF).

Complicated silicosis

Silicosis can become "complicated" by the development of severe scarring (progressive massive fibrosis, or also known as conglomerate silicosis), where the small nodules gradually become confluent, reaching a size of 1 cm or greater. PMF is associated with more severe symptoms and respiratory impairment than simple disease. Silicosis can also be complicated by other lung disease, such as tuberculosis, non-tuberculous mycobacterial infection, and fungal infection, certain autoimmune diseases, and lung cancer. Complicated silicosis is more common with accelerated silicosis than with the chronic variety.

Acute silicosis

Silicosis that develops a few weeks to 5 years after exposure to high concentrations of respirable silica dust. This is also known as silicoproteinosis. Symptoms of acute silicosis include more rapid onset of severe disabling shortness of breath, cough, weakness, and weight loss, often leading to death. The x-ray usually reveals a diffuse alveolar filling with air bronchograms, described as a ground-glass appearance, and similar to pneumonia, pulmonary edema, alveolar hemorrhage, and alveolar cell lung cancer.

Prevention

Play media

A video discussing a field-based approach to silica monitoring.

Monitoring could help reduce exposure to silica.

The best way to prevent silicosis is to identify work-place activities that produce respirable crystalline silica dust and then to eliminate or control the dust ("primary prevention"). Water spray is often used where dust emanates. Dust can also be controlled through dry air filtering.[17]

Following observations on industry workers in Lucknow (India), experiments on rats found that jaggery (a traditional sugar) had a preventive action against silicosis.[18]

Treatment

Silicosis is a permanent disease with no cure.[13] Treatment options currently available focus on alleviating the symptoms and preventing any further progress of the condition. These include:

Experimental treatments include:

Epidemiology

Silicosis resulted in 46,000 deaths in 2013 down from 55,000 deaths in 1990.[5]

Occupational silicosisEdit

Silicosis is the most common occupational lung disease worldwide; it occurs everywhere, but is especially common in developing countries.[21] From 1991 to 1995, China reported more than 24,000 deaths due to silicosis each year.[9] In the United States, it is estimated that between one and two million[22] workers have had occupational exposure to crystalline silica dust and 59,000 of these workers will develop silicosis sometime in the course of their

[9]

lives.

According to CDC data,[23] silicosis in the United States is relatively rare. The incidence of deaths due to silicosis declined by 84% between 1968 and 1999, and only 187 deaths in 1999 had silicosis as the underlying or contributing cause.[24] Additionally, cases of silicosis in Michigan, New Jersey, and Ohio are highly correlated to industry and occupation.[25]

Although silicosis has been known for centuries, the industrialization of mining has led to an increase in silicosis cases. Pneumatic drilling in mines and less commonly, mining using explosives, would raise fine-ultra fine crystalline silica dust(rock dust). In the United States, a 1930 epidemic of silicosis due to the construction of the Hawk's Nest Tunnel near Gauley Bridge, West Virginia caused the death of at least 400 workers. Other accounts place the mortality figure at well over 1000 workers, primarily African American transient workers from the southern United States.[26] Workers who became ill were fired and left the region, making an exact mortality account difficult.[27] The Hawks Nest Tunnel Disaster is known as "America's worst industrial disaster.[28] The prevalence of silicosis led some men to grow what is called a miner's mustache, in an attempt to intercept as much dust as possible.

Chronic simple silicosis has been reported to occur from environmental exposures to silica in regions with high silica soil content and frequent dust storms.[29]

Also, the mining establishment of Delamar Ghost Town, Nevada was ruined by a dry-mining process that produced a silicosis-causing dust. After hundreds of deaths from silicosis, the town was nicknamed *The Widowmaker*. The problem in those days was somewhat resolved with an addition of a nozzle to the drill which sprayed a mist of water, turning dust raised by drilling into mud, but

this inhibited mining work.

Because of work-exposure to silica dust, silicosis is an occupational hazard to mining, sandblasting, quarry, ceramics and foundry workers, as well as grinders, stone cutters, stone countertops, refractory brick workers, tombstone workers, workers in the oil and gas industry[30], pottery workers, fiberglass manufacturing, glass manufacturing, flint knappers and others. Brief or casual exposure to low levels of crystalline silica dust are said to not produce clinically significant lung disease.[31]

Protective measures such as respirators have brought a steady decline in death rates due to silicosis in Western countries. However, this is not true of less developed countries where work conditions are poor and respiratory equipment is seldom used. For instance, life expectancy for silver miners in Potosí, Bolivia is around 40 years due to silicosis.

Recently, silicosis in Turkish denim sandblasters was detected as a new cause of silicosis due to recurring, poor working conditions.[32]

Silicosis is seen in horses associated with inhalation of dust from certain cristobalite-containing soils in California.

Social realist artist Noel Counihan depicted men who worked in industrial mines in Australia in the 1940s dying of silicosis in his series of six prints, 'The miners' (1947 linocuts).[33]

Desert lung disease Edit

Main article: Dust pneumonia

A non-occupational form of silicosis has been described that is caused by long-term exposure to sand dust in desert areas, with cases [34]

reported from the Sahara, Libyan desert and the Negev. The disease is caused by deposition of this dust in the lung.[35] Desert lung disease may be related to Al Eskan disease, a lung disorder thought to be caused by exposure to sand dust containing organic antigens, which was first diagnosed after the 1990 Gulf war.[36] The relative importance of the silica particles themselves and the microorganisms that they carry in these health effects remains unclear.[37]

Regulation

In March 2016, OSHA officially mandated that companies must provide certain safety measures for employees who work with or around silica, in order to prevent silicosis, lung cancer, and other silica-related diseases.[38]

Key ProvisionsEdit

Compliance ScheduleEdit

Both standards contained in the final rule take effect on June 23, 2016, after which industries have one to five years to comply with most requirements, based on the following schedule:

See also

References

External links

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