

April 14, 2018

To the Respected Members of the Council on Environmental Quality,

As a concerned Connecticut citizen, it is my hope that state environmental experts may answer some of the questions regarding future water quality and quantity raised by the Lenard study:

**A. WATER QUALITY AND INFRASTRUCTURE: Will New Britain's water quality be degraded, and will there be unsustainable water cleaning and infrastructure costs for New Britain?** This is a very real concern, as New Britain is a low income city, and additional burdensome costs may have a long-term harmful impact on public health, as occurred in Flint, Michigan. Concerning findings from the Lenard study include:

1. Floodwater is typically more turbulent than normal flow, carrying greater total suspended solids (TSS). High TSS can impact treatment (Adobe Acrobat Reader page 302; Lenard report Chapter 8: Tighe & Bond, page 4). This is a concern since the source of quarry water will be flood-skimming of Copper Mine Brook.
2. The proposed reservoir will be significantly deeper than typical, with a depth over 100 feet when full, causing stratification of water. Low dissolved oxygen at greater depths may cause mobilization of iron and manganese, increasing effort and cost of treatment. (Adobe page 304-305; Lenard report Chapter 8 page 6-7)
3. There will be a 5 to 10 foot rubble zone at bottom of quarry that cannot be removed, with permeability and porosity higher than basalt. (Adobe page 176; Chapter 6, Leggette, Brashears, and Graham, page 19)
4. Only one sample of Ticon quarry water was reportedly collected and tested during this 2017 study (sample name: "blasting-impacted surface water").
  - The 2017 sample contained 1,2,4-trichlorobenzene at 1.45 microgram/L (with 70 microgram/L being the cutoff for drinking water) (Adobe page 304). They recommend continue monitoring for volatile organic compounds in the future.
  - The one sample of quarry water was positive for the heavy metals aluminum and molybdenum. (Adobe page 320 chart):

### Detection Summary

Client: Tighe & Bond

Project/Site: Blasting Impacted Surface Water

TestAmerica Job ID: 160-22601-

Client Sample ID: SW-1

Lab Sample ID: 160-22601-

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prop Type
Nitrate - DL	4.2		0.40	0.14	mg/L			20	305.0	Total/NA
Boron	310		100	25	ug/L			1	6010C	Total/NA
Sulfur	7400		5000	1500	ug/L			1	6010C	Total/NA
Aluminum	860		50	20	ug/L			2	6020A	Total/NA
Molybdenum	3.6		5.0	2.0	ug/L			2	6020A	Total/NA
pH	8.1	HF	0.1	0.1	SU			1	150.1	Total/NA
Total Suspended Solids	14		4.0	4.0	mg/L			1	160.2	Total/NA
Alkalinity	82		5.0	0.54	mg/L			1	310.1	Total/NA
Nitrogen, Kjeldahl	0.22	JF1	0.50	0.22	mg/L			1	351.2	Total/NA
Total Ammonia Nitrogen	0.20		5.0	0.70	mg/L			1	445.4	Total/NA

Based on 2 quarry water samples (one each from 2011 and 2017), Tighe & Bond concluded that quarry reservoir water would be equal in quality to Shuttle Meadow Reservoir's current water (Adobe page 28, point #25). Is this a valid conclusion from this limited sampling?

5. **Tilcon reportedly has a history of spills/ongoing DEEP violations, and may further contaminate the site in the future:** (Source: <https://m.facebook.com/ProtectOurWatershedsCT/photos/a.223708274646667.1073741830.221448081539353/459167257767433/?type=3& rdr>)

*Will the factors listed above (turbulence of flood water, atypical depth of reservoir, rubble zone, contamination) increase the cost of cleaning New Britain's drinking water indefinitely, maybe forever, and pose a public health risk as the city struggles economically?*

6. **Additional infrastructure costs are reported in the Lenard study: During the years of quarrying, Lenard suggests:**
- inspecting/repairing/replacing the extensive water pipes between White Bridge Pumping Station and New Britain's West Canal, currently 35,000 feet, and
  - upgrades to West Canal to accommodate increased flows. (Adobe page 51, Lenard Page 3-14).
- The Treatment Plant Intake Capacity of Shuttle Meadow Reservoir would also need to be upgraded for an increased system safe yield (Adobe page 79; Table 4-6 on page 4-24 ). Model runs were performed with and without this upgrade. If New Britain does not do this upgrade, it sounds like this project may decrease safe yield. Hopefully state water experts can address this (item #3 below).

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**B. Water Quantity Concerns: Will this project decrease New Britain's water supply?**

1. The Lenard study states 126,720 gallons will be needed daily (88 gallons per minute), from either a well or a reservoir pump, to augment lost runoff to West Canal and Shuttle Meadow Reservoir from land destruction by quarrying. (Adobe page 181; Chapter 6 page 24) Where will this water come from? Lenard predicts it will take up to 28 months in drought times and 6 months in average rainfall years to fill the theoretical quarry reservoir (Adobe page 76; Lenard 4-21, section 3-d).
2. **Can it be predicted whether there will be enough water to flood-skim for a reservoir in 50 years, without knowing what changes the municipalities of Burlington and Bristol anticipate to the Copper Mine Brook watershed area in coming years? Were the significant stakeholders consulted about this proposed project?**
  - A 2007 case study on the *Coppermine Brook Emergency Watershed Protection Project of 1999* describes the different stakeholders involved in the watershed, including the City of Bristol and Burlington: <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17805.wba> Vegetation, land use, and flood storage changes all have affected the Copper Mine Brook in recent decades. Is further building in this watershed anticipated?
  - Bristol has 4 diversion permits in Coppermine Brook Watershed (Adobe page 63; page 4-8 of Lenard study)

--Bristol has been actively working to mitigate the effects of flooding of Coppermine Brook. Some recent Copper Mine Brook flood mitigation efforts by Bristol in 2017:

<http://www.bristolct.gov/AgendaCenter/ViewFile/Item/4491?fileID=3330>

--Surprisingly, Lenard was not able to obtain any detailed information from the Bristol Water Department on Bristol's water system for this study, even though Bristol is certainly a stakeholder in this project. "Records of historic water demands and water demand projections were not available from the Bristol water department; thus, LEI used publically available information from the Bristol Water Department website for this study." (Page 138 of Adobe; Page 5-14, section 3-e of Lenard report).

3. Will theoretical safe yield actually go down with this Tilcon project, if New Britain cannot upgrade the Treatment Plant Intake Capacity?

Table 4 - 6 below summarizes the five model runs conducted for this study

TABLE 4-6  
SAFE YIELD MODELING RUN SUMMARY

Model Run #	Assumptions	Results (mgd)	Comments
1	Existing Conditions	18.23	Utilizes pumped sources earlier than past models.
2	Temporary Safe Yield during Quarry Construction	18.16	Assumes no water is re-pumped to West Canal during Quarry construction.
3	Add 2.31 billion gallon Quarry Res.	19.68	Safe yield limited by existing treatment plant intake capacity
4	Maximize Water Capture from Coppermine, Nepaug	23.16	Maximum theoretical safe yield, increasing intake capacity
5	Apply DEEP Min. Streamflow Req. at White Bridge Surface Supply	20.20	Same as Run 4, but imposes DEEP minimum streamflows at White Bridge Surface Supply

(chart from Adobe page 79; Lenard study page 4-24)

Safe Yield goes down by 2.96 mgd in run 5 compared to run 4 (after DEEP Minimum Streamflow requirements are put in place). What would the Safe Yield be if New Britain CANNOT upgrade the Treatment Plant Intake Capacity and also uses DEEP minimum stream flow requirements (using run 3 data, i.e., not upgrading intake capacity + applying the DEEP requirements used for run 5 on chart above). Would the Safe Yield be  $19.68 - 2.96 = 16.72$  mgd, which is less than the current Safe Yield? Or would it be some other number?

4. The 5 theoretical test runs reported by Lenard use data from the years 1964-1968, which is about a century before the quarry reservoir is planned. (Adobe beginning on page 97; Lenard appendices 4-3.1 to 4-3.5). The study also uses data from Bunnell Brook, 6.6 miles northwest of "project site," since data from Copper Mine Brook was not available (Adobe page 65; Lenard page 4-10). This seems like a lot of extrapolation for such a large public health project, but is this kind of extrapolation standard for the field of hydrology? Also of concern is that the original Lenard proposal indicated that Tilcon would be consulted before the final data was published.

This language was removed from this final version of the Lenard study, but it raises the question of how objective these model runs are.

5. As reported by Lenard, Tilcon has 2 large wells with diversion permits for their quarry and cement plant, as well as several smaller wells not requiring permits. (As of 2016, their diversion permits totaled 0.349 mgd (0.240 mgd for quarry, 0.109 mgd for concrete plant). Was Tilcon's well water withdrawal for an additional 40 years factored into the regional water calculations for those decades of quarrying?

## MAPS

During their public testimony for Act 16-61, Tilcon presented misleading and inaccurate maps and numerical information regarding the proposed "deal." Again in the Lenard study, the map which is purported to show the land they will donate to Plainville, New Britain, and Southington (figure 3-7, Adobe page 45) does not appear to show what land is to be donated to each town. It appears to be a general map showing who owns each parcel of land.

**On the maps, it should be noted that once Tilcon mines New Britain's protected watershed land, they will then have access to their land just south of the parcel, and will likely petition to mine that as well. Currently, their access to that land is blocked off by the New Britain parcel.**

Additionally, this final version of the Lenard study now states that Tilcon will NOT mine the western 44 acres of the parcel, in order to preserve natural habitats. This is unlikely to be true. Tilcon has spent the last decade and untold resources lobbying to change state environmental law to get onto this land. They have spent more than a decade and innumerable resources in court weakening the DEEP's oversight of mining and effects on surrounding environment. [http://www.ct.gov/ceq/lib/ceq/Stormwater\\_and\\_Earthmoving\\_Report\\_-\\_Discussion\\_Draft\\_12-02-15.pdf](http://www.ct.gov/ceq/lib/ceq/Stormwater_and_Earthmoving_Report_-_Discussion_Draft_12-02-15.pdf) (page 10, State Regulation of Mining). It is really impossible to believe that they won't come back and mine as much of this land as they can in the future, perhaps when this study has long been forgotten, and a new generation of citizens and leaders have replaced us.

**The overarching concern is that this reservoir is a pretense for a private company to make massive profit by open-pit mining protected class I and class II watershed land.**

Will this project result in an increased and more secure water supply for New Britain and the region, or a decreased and more contaminated supply?

Will the resulting infrastructure and water treatment costs be affordable and sustainable for a low-income city like New Britain, or will unforeseen costs and contamination result in New Britain following the path of Flint, Michigan?

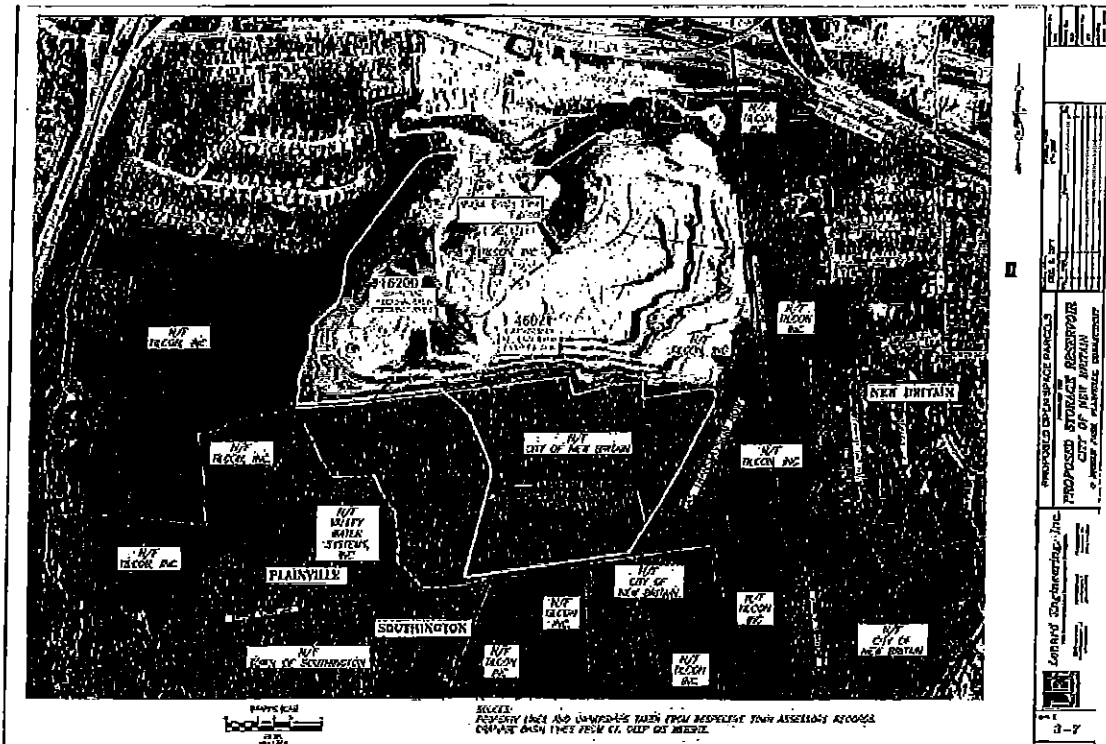
Is even considering this deal--a multinational corporation paying a city and changing state law, in order to bypass environmental laws--a violation of environmental justice standards?

One question Act 16-61 and this study did not address was the "No Build Alternative": What would the impact be of NOT doing this project, and what alternatives exist? It appears that Tilcon CT owns another quarry they can mine right off of North Mountain Road in Plainville. The company exports rock and products from Connecticut to Long Island and New York City. There really is no justification on their part, or the State of Connecticut's part, for this deal to go forward.

Thank you so much for your time and hard work on behalf of our beautiful state, our environment, and all of our children's futures. It is greatly appreciated!

Sincerely,

Helena Dinep  
West Hartford, CT



The land south of the New Britain parcel belongs to Tilcon, and will likely be mined in future years if this deal goes through. Figure 3-7 (Adobe page 48)