

## **Presentation to Wellesley Wetlands Protection Committee**

**August 10, 2023, via Zoom**

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Thank you for the opportunity to present this evening. I want to follow up on some of the ideas I discussed last month with regard to the risks inherent in blasting with chemical explosives in wetland areas.

Since last month, I have been in close contact with Alice Peisch's office and have collected extensive information from other states. Tonight, I will share some information on three chemicals used in blasting which are classified as Hazardous Substances by the DEP, EPA, and NIOSH and cause significant long-term damage to the wetland ecosystem:

### **1. Hexahydro 1, 3, 5 (Cyclonite)**

- When you work with hexahydro, you need to wear neoprene gloves and Tyvek coveralls in addition to a face shield and respirator.
- Exposure to hexahydro 1, 3, 5 can cause liver damage, kidney damage, as well as harm to the nervous system.
- The state of New Jersey requires anyone who works with hexahydro 1, 3, 5 to have an annual liver and kidney function test.
- According to the Right to Know Hazardous Substance List, hexahydro 1, 3, 5 "This substance is harmful to aquatic organisms."
- Hexahydro is insoluble, meaning it does not dissolve and will stick around at the detonation site.

<https://www.nj.gov/health/eoh/rtkweb/documents/fs/0579.pdf>

### **2. Trinitrotoluene**

- To work with trinitrotoluene, you need to wear butyl gloves and a tychem suit.
- This is a substance that causes bladder cancer in animals and is believed to be a possible carcinogen to humans. It can also cause damage to the liver and nervous system.
- According to the Right to Know Hazardous Substance List, trinitrotoluene is "toxic to aquatic organisms and may cause long term effects."

<https://www.nj.gov/health/eoh/rtkweb/documents/fs/1948.pdf>

### **3. Perchlorates, with an emphasis on potassium perchlorate**

- The Commonwealth has issued warnings about perchlorates and they have been found in areas where chemical blasting agents have been used. Perchlorates are soluble and highly mobile in water – they persist, according to Massachusetts data, for decades under typical ground and surface water conditions.
- Perchlorates are a forever chemical, and have been detected in local produce and human breast milk. Perchlorates affect thyroid function in humans and human fetuses.
- When contractors are blasting with chemical explosives, not all the explosive load is consumed by detonation. Even when 99.9% of the load is consumed, “substantial amounts of high explosives remain as UXO” or can get deposited in the area as particles following detonation. These chemicals stick around and are known as forever chemicals like PFAS.

<https://www.nj.gov/health/eoh/rtkweb/documents/fs/1577.pdf>

[Won J, Borden RC. Impact of glycerin and lignosulfonate on biodegradation of high explosives in soil. J Contam Hydrol. 2016 Nov;194:1-9. doi: 10.1016/j.jconhyd.2016.08.008. Epub 2016 Sep 7. PMID: 27669376.](#)

Thank you again for your time and your continued focus on the protection of our wetlands.