

From: James Delay
 To: Richard Alexander (DFWO); EFSEC (EFSEC); EFSEC ml Comments
 Subject: Industrial Lithium battery facility's fire causes 3 Miles of Fishkill downstream from contaminated run-off
 Date: Monday, November 25, 2024 1:33:59 PM
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Good afternoon Alexander,

I hope you made it through the power outages as well as can be hoped!

I was given your email address as someone involved with the EFSEC's process for Lithium battery facilities.

The Lithium battery fire burned for 14 days in Fredericktown, MO at the Critical Mineral Recovery lithium battery facility.

There is significant risk with fire-water the run-off from the defensive fire water spray at lithium battery facilities fires- here's proof:

Critical Mineral Recovery Response Fredericktown, Missouri Frequently Asked Questions



1. **What is EPA doing in Fredericktown, Missouri?**
 - EPA is supporting the efforts of the Fredericktown Fire Department and the Missouri Department of Natural Resources (MODNR) by performing air monitoring and air sampling in the community.
2. **What is air monitoring?**
 - Air monitoring is a method to collect real-time information about potential chemical compounds in the air.
3. **What is air sampling?**
 - Air sampling collects samples for laboratory analysis.
4. **What tools are EPA using?**
 - In Fredericktown, EPA is using AreaRaes for fixed air monitoring stations and MultiRaes for mobile (often called *roving*) air monitoring.
 - EPA is also using DustTraks to take particulate matter readings and SPM Flex gas detectors for hydrogen fluoride monitoring.
5. **What does EPA do with this information?**
 - EPA reports air monitoring data directly to the Fredericktown Fire Department for decision-making purposes.
 - EPA is working to make air monitoring data easy-to-understand in a visual format for posting on EPA's response page: <https://response.epa.gov/cmrfire>.
6. **What has EPA's air monitoring efforts seen?**
 - EPA continues to have occasional detections of hydrogen fluoride and elevated particulate matter (PM2.5). These detections are below action levels and are typically associated with flare-ups during the continued hotspot suppression activities at the Critical Mineral Recovery facility.
7. **What about water?**
 - MoDNR and contractors hired by the Critical Mineral Recovery facility are working to collect surface water samples and are planning to collect groundwater samples.
8. **What about my drinking water? Or drinking water for my pets/livestock?**
 - Fredericktown's public drinking water supply is pulled from City Lake, which is northwest of the facility fire and smoke plume.
 - The responding agencies don't believe the drinking water supply to be impacted by runoff, but MoDNR and contractors hired by the Critical Mineral Recovery facility are working to collect samples to confirm.
 - The facility has hired a contractor to provide alternate drinking water for livestock located near the facility.
9. **Was there a fishkill?**
 - Yes, there was a fishkill. Per reports, the fishkill starts from where an unnamed tributary and Village Creek meet and continues two miles downstream to the Little St. Francis River.
 - MoDNR and the U.S. Fish and Wildlife Service are working to coordinate and investigate the fishkill further.

<https://response.epa.gov/sites/16725/files/CMR%20Fire%20Response%20FAQs.pdf>

Please note #9:

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With the proposed Mattson Middle School lithium Battery Energy Storage System (BESS) in Covington next to little Soos Creek- and before you say you've been told Tenaska is not still being seeking permit approval for their BESS next to Mattson Middle School, look at Tenaska's response when asked by Q13 a couple months ago:

FOX 13 also reached out to the Nebraska-based company to see if Tenaska still has plans to move forward in the future. They did not give a yes or no answer, but Alex Martin with Tenaska answered it this way:

"Kingfisher's location is dictated by the interconnection into the Berrydale Substation, a much larger high-voltage electrical facility that currently coexists with the community. The team is committed to developing a safe BESS project at the best available site for delivering needed energy storage benefits. The team values stakeholder engagement and will continue incorporating local feedback throughout the process."

If Covington's and King County's claims about Tenaska no longer seeking permitting approval was true- don't you think Tenaska would have responded differently to Q13?

If they weren't seeking permit approval next to Mattson Middle School in Covington, they would have said something like, "due to public opposition, we have cancelled seeking a BESS at the site next to Mattson Middle school."

But, they DID NOT say anything remotely like that...

In addition, King County permitting told to Tenaska to withdraw their initial Conditional Use permit application and re-apply as a "utility" as it is most likely they would not get their permit approved via a Conditional Use Permit due to public opposition and other CUP reasons...

Tenaska is now bypassing King County's permitting process and is seeking approval from Inslee or the next Governor- and is currently wrapping up checking all the boxes on all the required info for their Mattson Middle School BESS EFSEC application and, waiting to see how the Sedro Woolley EFSEC process goes...

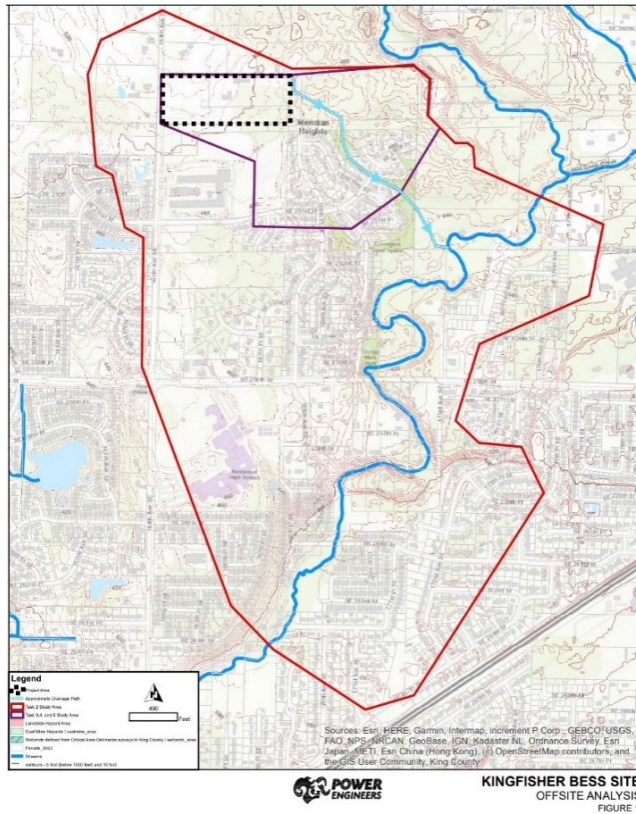
As you, know the EFSEC is reviewing the Sedro Woolley BESS application and there has been extensive opposition by residents, city and county officials due to the potential catastrophic and disastrous fire millions of lithium batteries could have on the whole area around Sedro Woolley...

Tenaska and many other lithium BESS developers are switching all their BESS applications to the EFSEC process to bypass local and county permitting challenges.

Back to the fish kill in Missouri- since the EPA's "FAQ" they have found that all fish were killed downstream within 3 miles of the lithium battery facility fire.

3 MILES!!!! Every living creature in the water was killed by the toxic run-off!

Tenaska has a run-off plan that shows the toxic run-off leaving the Mattson Middle School BESS site and going into the neighbors' yards and then into Little Soos Creek and into Big Soos Creek and then eventually into the Green River:



Interestingly, they don't show how water may flow downhill onto Mattson Middle School's campus...

As seen in the recent Otay Mesa BESS fire- there could be 20 Million gallons of toxic water run-off contaminating the streams...

Here's the 3-mile update:

LOCAL NEWS

Nearly 3 miles of dead fish found in Fredericktown after battery plant fire, official says

Officials are monitoring the nearby Little St. Francis River to see if fish kills are happening further downstream, the Missouri Department of Conservation said.



Credit: KSDK

<https://www.ksdk.com/article/news/local/fredericktown-mo-battery-plant-fire-dead-fish-kill-updates-investigation-firefighting-foam-lithium-battery-fire/63-02253d7c-de87-450d-a324-c78b5d404b88>

All fish and other living creatures have died almost 3 miles down stream from the lithium battery fire...

LOCAL NEWS

'Thousands' of dead fish in Missouri town under investigation after nearby battery plant fire

The washed-up carcasses are triggering resident worries about potential chemical contamination.



Credit: KSDK

Author: Hunter Bassler

Published: 5:17 PM CDT November 1, 2024



<https://www.ksdk.com/article/news/local/fredericktown-dead-fish-kill-under-investigation-lithium-battery-plant-fire-missouri/63-d801710d-4de6-42e5-ac5e-61a1f36309d4>



'Thousands' of dead fish in Missouri town under investigation after nearby battery plant fire

The washed-up carcasses are triggering resident worries about potential chemical contamination.

www.ksdk.com

These BESS do not belong anywhere near people's homes, schools, hospitals, and creeks and streams or any other body of water.

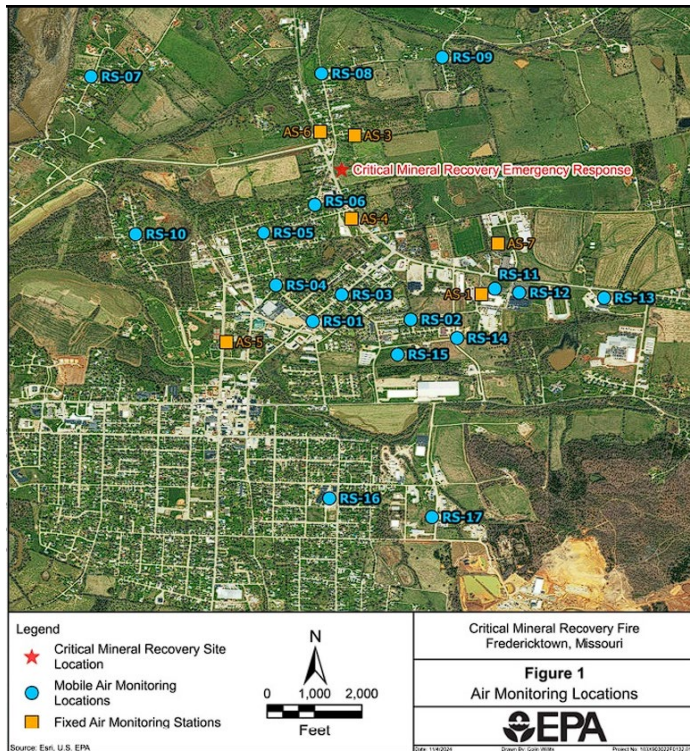
They should be required to have a 20-million-gallon retention water containment system with an impervious liner under the whole facility and all the gravel/concrete to enable all (100%) of the toxic run-off water to be totally contained until toxic waste removal teams can safely remove all the toxic water...

But, that still doesn't account for all the toxic ash, gas, and smoke...

Here's the EPA's reports on air quality:

https://response.epa.gov/site/doc_list.aspx?site_id=16725

Please note, while Hydrogen fluoride is listed in the table- HF detection results/data were NOT included until Nov 2nd (4 days after the fire started- where they reported, "nothing to see here!")



Here's a quick summary of the air quality reports from their 24 air quality testing sites (7 stationary sites and 17 mobile sites):

For Oct 31st- in the first report, they only provided data from two of the 7 stationary air testing sites shown on the map- and both were upwind and didn't have any smoke blowing towards them due to up to 17mph winds blowing the toxic smoke away from town

For Nov 1st- the same thing, only 2 of 7 sites data were shared and both were upwind and reported nothing to be concerned about...

For Nov 2nd- they showed data for 5 of 7 sites (and dropped air testing data for Site #2 off the list)- and finally include data from two sites downwind and those sites show dangerous levels of PM2.5 and PM10 but only provided hydrogen fluoride data for ONE of the downwind sites- which was **after the fire had been burning for 4 days** (and after heavy rains "cleaned" the air- and sent all the contaminants to the ground and rivers- where thousands of fish were killed). That sensor showed minimal levels of HF remaining- so nothing to see here

The ONE downwind site (AS-6) that they showed data for was the site that was NOT the highest impacted by toxic smoke site- the site directly in the line of the smoke/plume was AS-3, at which they did NOT test for hydrogen fluoride until 8 days after the fire started...

For Nov 3rd- they showed 6 of the 7 sites' data but only two sites tested for hydrogen fluoride- and the results said nothing to worry about...

For Nov 4th- the same: nothing to see here

For Nov 5th- the same: nothing to see here

For Nov 6th- added two more Hydrogen Fluoride sensors (4 total hydrogen fluoride sensors now): nothing to see here

For Nov 7th- the same: nothing to see here

For Nov 8th- added one more Hydrogen Fluoride sensor to the site that was initially in the direct line of the plume (5 total): nothing to see here

For Nov 9th- the same nothing to see here

For Nov 10th- the same nothing to see here

For Nov 11th- the same nothing to see here

For Nov 12th- the same nothing to see here

The EPA air quality testers were on site and testing the air quality for 14 days in all...

Basically, TRUST US, nothing to see here!

Yet, they had 22 air quality sensors sites and kept the shelter-in-place and evacuation orders in place for several days- and only showed results for 6 sites...

Why not share all the data? Why did they only share two sites' data until the 4th day when they showed the locations of the other sites on the map starting on their first day (Oct 31st)?

Yes, they tested for Hydrogen Fluoride-

Hydrogen fluoride, HF Fatal if swallowed, is fatal if inhaled and causes severe skin burns and eye damage.

The immediate dangerous to life or health (IDLH) level for HF is 0.025 g/m³ (30 ppm) and the lethal 10 minutes HF toxicity value (AEL-3) is 0.0139 g/m³ (170 ppm). The release of hydrogen fluoride from a Li-ion battery therefore can be a severe risk.

Sensor #6 showed Hydrogen Fluoride levels at .17ppm on the 4th day of the fire- and the first day they tested for it.... Which was also after the rain and strong winds...

But, where are the tests of other known toxins release by burning lithium batteries:

Hydrogen chloride, HCl Severe skin burns and eye damage, is toxic if inhaled, may damage fertility or the unborn child, causes serious eye damage, may cause damage to organs through prolonged or repeated exposure, may be corrosive to metals, may cause respiratory irritation and contains gas under pressure and may explode if heated.28

Hydrogen cyanide, HCN Fatal if swallowed, is fatal if inhaled, causes damage to organs through prolonged or repeated exposure, is very toxic to aquatic life (with long lasting effects) and is an extremely flammable liquid and vapour.15

Nitrogen dioxide, NO₂ Fatal if inhaled, causes severe skin burns and eye damage; and may cause or intensify fire (oxidiser).0.961.91

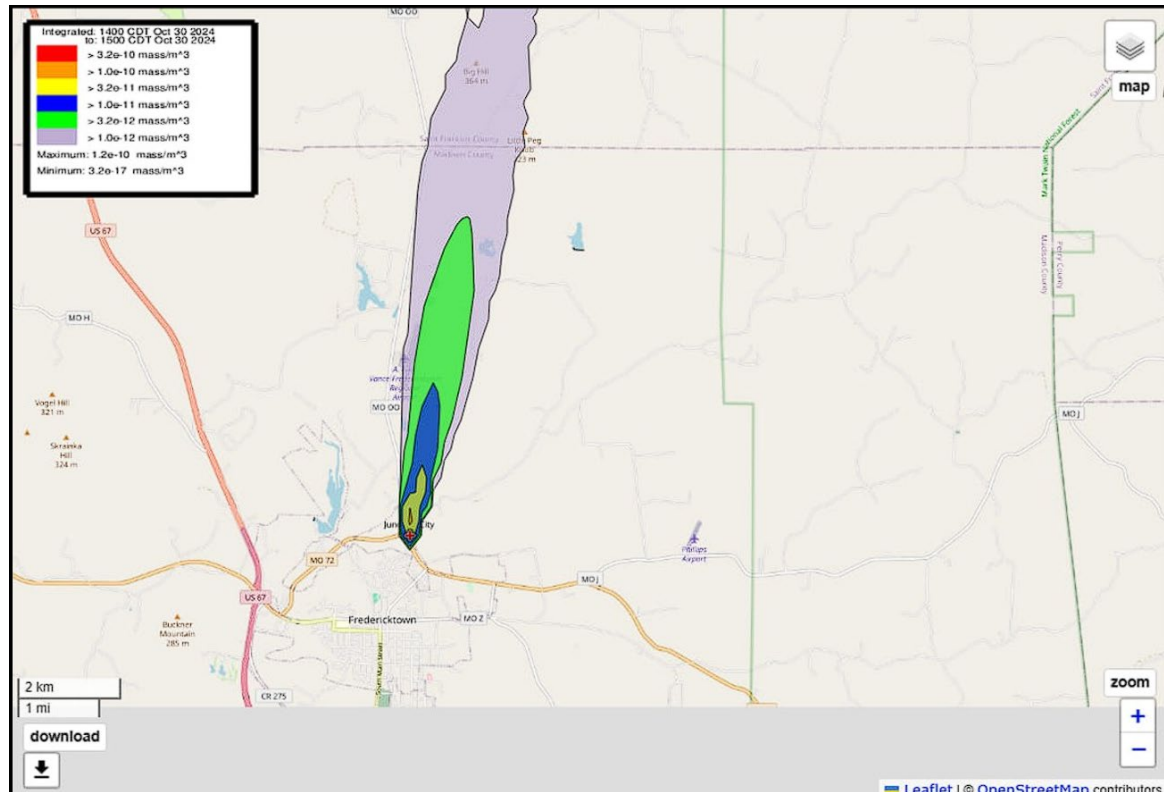
Sulphur dioxide, SO₂ Severe skin burns and eye damage and is toxic if inhaled.1.32.7

Solvents Highly flammable liquid and vapour [53]. Very irritating to eyes, skin and airways [44].DEC 700, PC 8.5cDEC 1000, PC 8.5c

Shouldn't they be testing for all toxins released by burning lithium batteries?

I also find it interesting that they don't provide results from all 22 air quality testing sites- and don't even include all 7 stationary sites shown on their map but include results from three sites that were up-wind from the fire and didn't get any dangerous readings thanks to up to 17mph winds blowing the smoke away from town....

They got so lucky that the wind was blowing away from town- if the wind had been blowing into town, this might have been a mass casualty event...



There are lithium BESS being proposed all over WA state- some are stand-alone and others are mentioned as an accessory to wind and solar generation projects... Almost all of them are NOT being proposed in heavy industrial zoned areas- but, instead in residential zoned areas or near people's homes, near lakes, creeks/streams/rivers...

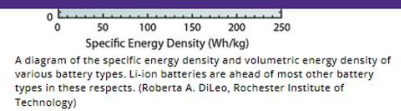
Lithium BESS are the wrong "solution" for grid scale energy storage- even UW's study came away with that Conclusion:

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do not contain toxic lead or cadmium.

High energy densities and long lifespans have made Li-ion batteries the market leader in portable electronic devices and electrified transportation, including electric vehicles (EVs) like the Nissan Leaf and the Tesla Model S as well as the hybrid-electric Boeing 787. In terms of decarbonizing our economy's energy use, Li-ion technology has its greatest potential in EVs and electrified aviation.



What are some disadvantages of Li-ion batteries?

Despite their transformative effect on technology, Li-ion batteries still have a number of shortcomings, particularly with regards to safety. Li-ion batteries have a tendency to overheat, and can be damaged at high voltages. Most Li-ion electrolytes are highly flammable, so damaged batteries can experience thermal runaway and combustion. Because of the risks associated with these batteries, a number of shipping companies **refuse to perform bulk shipments of batteries by plane**. Li-ion batteries require safety mechanisms to limit voltage and internal pressures, which can increase weight and limit performance in some cases. Li-ion batteries are also subject to aging, meaning that they can lose capacity and frequently fail after a number of years. **Degradation, cost, and safety make Li-ion batteries a poor fit for grid-scale energy storage.** And despite the high energy density of Li-ion compared to other kinds of batteries, they are still around a hundred times less energy-dense than gasoline, which contains 12,700 Wh/kg by mass or 8760 Wh/L by volume.

CEI Research Highlights

A major focus of CEI energy storage research is the development of novel materials to improve battery performance. Some CEI researchers develop

Ideally, we would make a law to stop all 1MW+ Lithium BESS and move toward safe long duration energy storage alternatives that don't carry any of the risks.

Thank you,

James

PS, Just so you know, BESS would have been worthless during our recent power outage as the power would have been stuck in the batteries due to the downed lines...