

July 27, 2020

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SUBMITTED BY ELECTRONIC MAIL

RE: Public Comment **Objecting** to the Draft (RCRA) Permit Renewal for the Hazardous Waste Storage and Treatment Permit, ATK Launch Systems – Bacchus Facility – Naval Industrial Reserve Ordnance Plant (NIROP), West Valley City, Utah EPA ID No: UT3170027277 (Comment period of June 16, 2020 through July 31, 2020)

Dear Mr. Zhu and Mr. Newland,

We are writing to **OBJECT** to the continued open air burning of hazardous and mixed wastes at the ATK Bacchus Facility based on the availability of safer advanced alternatives for treatment, the excessive risk to human health and the environment, and noncompliance with federal and state law requiring the implementation of available safer advanced treatment methods.

The State and the U.S. EPA have the opportunity and duty to impel the military and its contractors to utilize advanced treatment technologies that protect workers, communities and the environment from exposure to toxic emissions from the archaic practice of open air burning and detonation of hazardous munitions wastes.

Not only do safer advanced technologies exist, their implementation is required by federal law. The operating language on open burning/open detonation (OB/OD) of hazardous wastes which are waste explosives is contained in Title 40, Section 266.382. "Open burning of hazardous waste is prohibited except for the open burning and detonation of waste explosives. Waste explosives include waste which has the potential to detonate and bulk military propellants **which cannot safely be disposed of through other modes of treatment.**" (Emphasis added.)

By definition, open burning and detonation result in the uncontrolled release of toxic pollutants to the environment. These toxic emissions endanger public health by contaminating air, groundwater, marshes¹ (wetlands), and soils near these operations. Onsite men and women are often the most exposed to these toxic pollutants, along with nearby communities.



Utah state regulators have identified the ATK Bacchus Facility as one of 6 sites in the state that are significant sources of perchlorate contamination. Concentrations of perchlorate in groundwater at the Bacchus site have been detected as high as 19,000 ug/L – exceeding the EPA interim Drinking Water Health Advisory of only 15 ug/L.

Perchlorates are endocrine disruptors that effect the normal growth and development of infants and children.

PHOTOGRAPH: One of 17 trays for open air burning of hazardous waste at the Bacchus Hazardous Waste Facility near Salt Lake City.

References: Utah DEQ, *Perchlorate Fact Sheet*, Oct 2013 and U.S. GAO, "PERCHLORATE: A System to Track Sampling and Cleanup Results Is Needed," May 2005.

¹ SOIL MONITORING PLAN, NIROP Hazardous Waste Storage and Subpart X Treatment Permit, ATK Launch Systems Inc., June 2010, Modified September 2018, Figure 1.

According to the records submitted by the applicant, open burning will result in the uncontrolled release of persistent toxic pollutants such as perchlorate and PFAS to the surrounding environment.

Perchlorate is highly soluble in water, and relatively stable and mobile in surface and subsurface aqueous systems. As a result, perchlorate plumes in groundwater can be extensive.² Perchlorate groundwater contamination has migrated several miles beyond the 10,000-acre Bacchus property. In 2013, Utah DEQ reported that the contamination had been detected in drinking water wells.³

Moreover, perchlorate released directly to the atmosphere is expected to readily settle through wet or dry deposition.⁴



Alternative Treatment Technologies

The good news is that safer alternative non-thermal technologies are now commercially available and have been successfully deployed at other military and civilian sites across the U.S.⁵

In the past 25 years, alternatives to the incineration of hazardous waste have emerged due to the work of communities, EPA, and the Department of Defense (DOD). These technologies are being used by the DOD to destroy energetics and chemical warfare agents and could be readily applied to conventional munitions and other types of hazardous waste.

Examples of these technologies include Gas Phase Chemical Reduction which uses hydrogen and heat to break down toxic chemicals into their basic components. Because hydrogen is used for the reduction reaction and no oxygen is present, no harmful chlorinated byproducts can be formed. This technology was used to destroy PCBs and obsolete pesticides in Australia. It was specifically developed for the Assembled Chemical Weapons Destruction program.

Supercritical Water Oxidation uses the unique forces of supercritical fluids to breakdown the chemical bonds which form munitions, propellants, and energetics. Supercritical Water Oxidation uses super pressurized, heated water to tear apart the chemical bonds in toxic organic compounds, breaking them down into basic components such as water, carbon dioxide, and nitrogen gas. The lower temperature (compared to combustion) and the high pressure of the water keep harmful byproducts from being formed.

There are several types of detonation chambers that can be used to safely destroy waste munitions. These detonation chambers are much safer than open



² Interstate Technology Regulatory Council (ITRC), 2005. "Perchlorate: Overview of Issues, Status, and Remedial Options." www.itrcweb.org/GuidanceDocuments/PERC-1.pdf

³ Associated Press, *Some of Utah's water supplies contaminated by perchlorate*, Daily Herald 7 Jan 2003.

⁴ Agency for Toxic Substances and Disease Registry (ATSDR), 2008. "Toxicological Profile for Perchlorates." www.atsdr.cdc.gov/toxprofiles/tp162.pdf

⁵ Cease Fire Campaign, *Examples of Sites where Alternatives to Open Burning/ Open Detonation have been Approved and/or Deployed*, March 2017. <https://cswab.org/wp-content/uploads/2017/03/Alternative-Technologies-Approved-Deployed-Sites-2017.pdf>

burning or incineration because they hold and test the gases to ensure all the toxic components have been destroyed before releasing them. One kind of detonation chamber, the DAVINCH chamber, detonates explosives in a vacuum. Without the presence of oxygen, harmful products of incomplete combustion cannot be formed.

Over the past 20 years, the Department of Defense Explosives Safety Board has certified a number of technologies as safe for the destruction of hazardous wastes which are explosive. Those technologies are now in use by the Department of Defense and the private sector for the destruction of explosive hazardous waste.

In early 2019, the National Academies of Sciences, Engineering and Medicine published the report, *Alternatives for the Demilitarization of Conventional Munitions*⁶, which reviews the current conventional munitions demilitarization stockpile and analyzes existing and emerging disposal, treatment and reuse technologies.

In turn, EPA developed a report⁷ in December 2019 that identifies and describes alternative treatment technologies that can be used in place of OB/OD. Many of the developed technologies have been tested and demonstrated their capabilities in terms of the types of waste explosives they can safely destroy. The report also identifies the extent to which individual technologies have been developed and implemented, and the locations they have been used. EPA said that it expects its report to be used as an informative resource by permit agencies, facility owners and operators and others when identifying and evaluating potential alternative treatment options for energetic hazardous wastes.⁸

The EPA's report emphasizes that Subpart X hazardous waste management units must **“prevent and control releases into the groundwater, surface water, surface soils and subsurface environmental, wetlands and air.”**⁹

Unfortunately, Utah DEQ has reported that a formal analysis of alternative treatment technologies to open burning of hazardous wastes at ATK – Bacchus Facility – NIROP was **not** submitted as part of the current RCRA permit renewal process.¹⁰

Bacchus NIROP Site Description

ATK is allowed to treat hazardous waste by open burning at the Naval Industrial Reserve Ordnance Plant (NIROP) which is owned by the US Navy and operated by ATK Launch Systems Incorporated (ATK). ATK is the parent company of ATK Launch Systems Incorporated which operates Bacchus Facility that includes the Plant 1, Bacchus West and NIROP operations. The Permittees operate NIROP as a Government Owned Contractor Operated (GOCO) facility.¹¹

PHOTO: The Bacchus NIROP Burning Grounds consist of 17 burn pans and two burn cages where the U.S. Navy burns energetic or reactive hazardous wastes in the open air – causing an ongoing, uncontrolled release of toxic emissions to the environment.¹²



⁶ <https://www.nap.edu/catalog/25140/alternatives-for-the-demilitarization-of-conventional-munitions>

⁷ <https://www.epa.gov/hwpermitting/report-about-alternative-technologies-open-burning-and-open-detonation-energetic>

⁸ U.S. EPA, Energetic Hazardous Wastes, <https://www.epa.gov/hwpermitting/energetic-hazardous-wastes>, accessed 22 July 2020.

⁹ <https://www.epa.gov/hwpermitting/report-about-alternative-technologies-open-burning-and-open-detonation-energetic>

¹⁰ H. Zhu, Utah Division of Waste Management and Radiation Control, telephone conversation with Laura Olah, Citizens for Safe Water Around Badger/Cease Fire Campaign, 21 July 2020.

¹¹ STATE OF UTAH HAZARDOUS WASTE STORAGE and SUBPART X THERMAL TREATMENT PERMIT, Title page, September 1,2009 (Modified May 2014), PERMITTEES: Alliant Techsystems, Inc., ATK Launch Systems Inc., Bacchus Facility – NIROP, West Valley City, Utah and United States Navy, Naval Industrial Reserve Ordnance Plant (NIROP), West Valley City, Utah, EPA Identification Number UT3170027277 <https://deq.utah.gov/waste-management-and-radiation-control/naval-industrial-reserve-ordnance-plant-nirop-permit-atk-launch-systems>, accessed 21 July 2020.

The primary products produced at the Bacchus Facility are solid rocket motors cast with either nitrate ester or composite propellants. A nitrated ester propellant usually contains a liquid explosive, such as **nitroglycerin**, that is mixed with solid ingredients such as **nitrocellulose, HMX, RDX, aluminum and ammonium perchlorate**. Composite propellants manufactured at the Bacchus Facility usually contains of a non-explosive liquid binder mixed with aluminum and ammonium perchlorate.¹³

Perchlorate

According to the Utah Department of Environmental Quality (DEQ), the primary source of chlorine in the open air burning waste stream at the Bacchus facility is rocket propellants having (ammonium) perchlorate as an active ingredient.¹⁴ EPA guidelines affirm that perchlorates should be considered a target analyte at OB/OD units that treat solid fuel rocket motors or other energetics that contain ammonium perchlorate oxides.¹⁵

High levels of perchlorate exposure can interfere with iodine uptake into the thyroid gland. When iodine uptake is inhibited it disrupts the function of the thyroid gland and will potentially lead to a reduction in the production of thyroid hormones. Thyroid hormones play an important role in regulating metabolism in adults. These hormones also play an essential role in normal growth and development of fetuses, infants and young children. Thus a significant and sustained impairment of thyroid function during infant development will result in delayed development and changes in behavior leading to decreased learning capacity.¹⁶

In December 2001, ATK received notice from the State of Utah of a potential claim against ATK under Section 107(f) of the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”) for natural resource damages at Bacchus, one of the Hercules Facilities, in Magna, Utah. The notice letter, which was issued to preserve the State’s rights under CERCLA, also expressly acknowledged the State’s willingness to allow ATK to go forward with its currently-planned monitoring and remediation program. The State’s preliminary estimate of damages contained in this claim was **\$139 million**, which is based on known and alleged groundwater contamination at and near **Bacchus** and is related to Hercules’ manufacturing operations at the site, ATK has reported.¹⁷

Perchlorate is a significant contaminant of concern in groundwater at the Bacchus facility.¹⁸ Concentrations of perchlorate in groundwater have been detected as high as 19,000 ug/L¹⁹ – far above the EPA interim Drinking Water Health Advisory of only 15 ug/L.²⁰ Perchlorate groundwater contamination has migrated several miles beyond the 10,000-acre property and in 2013, Utah DEQ reported that the contamination had been detected in drinking water wells.²¹



¹² STATE OF UTAH HAZARDOUS WASTE STORAGE and SUBPART X THERMAL TREATMENT PERMIT, Module I – Standard Permit Conditions, September 1, 2009 (Modified May 2014), PERMITTEES: Alliant Techsystems, Inc., ATK Launch Systems Inc., Bacchus Facility – NIROP, West Valley City, Utah and United States Navy, Naval Industrial Reserve Ordnance Plant (NIROP), West Valley City, Utah, EPA Identification Number UT3170027277 <https://deg.utah.gov/waste-management-and-radiation-control/naval-industrial-reserve-ordnance-plant-nirop-permit-atk-launch-systems>, accessed 21 July 2020.

¹³ ATK Launch Systems Part B Operational Plan, NIROP Facility Process Information, Chapter 4, DSHW-2014-018194, Modified July 2010.

¹⁴ H. Zhu, Utah Division of Waste Management and Radiation Control, telephone conversation with Laura Olah, Citizens for Safe Water Around Badger/Cease Fire Campaign, 21 July 2020.

¹⁵ EPA Region 3, Draft Final Open Burning/Open Detonation, Permitting Guidelines, Section 2, February 2002.

¹⁶ Utah Department of Environmental Quality Division of Solid and Hazardous Waste, *Perchlorate Fact Sheet*, October 2013. https://materials.proxyvote.com/Approved/018804/20110606/AR_94866/PDF/atk-ar2011_0024.pdf

¹⁸ Utah Department of Environmental Quality Division of Solid and Hazardous Waste, *Perchlorate Fact Sheet*, October 2013.

¹⁹ GAO Report to the Chairman, Subcommittee on Environment and Hazardous Materials, Committee on Energy and Commerce, House of Representatives, *PERCHLORATE: A System to Track Sampling and Cleanup Results Is Needed*, May 2005.

²⁰ Utah Department of Environmental Quality Division of Solid and Hazardous Waste, *Perchlorate Fact Sheet*, October 2013.

Hydrochloric acid (HCl)

Hydrochloric acid (HCl) pollution from perchlorate based propellants is well known for both launch site contamination, as well as the possible ozone layer depletion effects. Hydrogen chloride is irritating and corrosive to any tissue it contacts. Brief exposure to low levels causes throat irritation. Exposure to higher levels can result in rapid breathing, narrowing of the bronchioles, blue coloring of the skin, accumulation of fluid in the lungs, and even death.²²



Open burning of waste propellants in Colfax, LA

Dioxins and Furans

EPA studies document the potential for the emission of **dioxins and furans** associated with the treatment of chlorinated propellants and munitions/wastes with certain constituents (e.g., plastics, etc.) as well as use of dunnage and/or liquid fuels.²³ However, the draft permit does not place any limit the chlorine content of treated wastes, allowing open burning of wastes with 5% chlorine **or more** (see IV.C.5.d.ii.).

The NIROP permit application affirms that dioxins are being released to the air from open burning. When released into the air, dioxins disperse and travel long distances and eventually deposit from the atmosphere onto land, surface water and vegetation.²⁴

Dioxins and dioxin-like compounds are primary examples of persistent organic pollutants that induce toxicity in both wildlife and humans. TCDD was evaluated by the World Health Organization's International Agency for Research on Cancer (IARC) in 1997 and 2012. Based on animal data and on human epidemiology data, TCDD has been classified by IARC as a "**known human carcinogen**".²⁵

In addition to munitions wastes, the Bacchus facility often includes the addition of dunnage such as wood or other organic waste and diesel fuel. Smoke is made up of a complex mixture of gases and fine, microscopic particles produced when wood and other organic matter burn. The biggest health threat from wood smoke comes from fine particles (particulate matter). They are small enough to enter the lungs where they can cause bronchitis, pneumonia, asthma, or other serious respiratory diseases. Fine particles can also aggravate chronic heart and lung diseases, and are linked to premature deaths in people with these chronic conditions. In addition to fine particles, open burning of both wood and diesel fuel may also be expected to release dioxins.

PFAS (per- and poly-fluoroalkyl substances)

The use of fluoropolymers in high energy-release pyrotechnic compositions is common in the space and Defense areas. Pyrotechnic compositions of magnesium/Teflon/Viton are widely used in **military flares and pyrogen igniters for igniting the solid propellant of a rocket motor**.²⁶ Teflon is a polymer with highly-polarized fluorine

²¹ Associated Press, *Some of Utah's water supplies contaminated by perchlorate*, Daily Herald 7 Jan 2003.

²² U.S. Agency for Toxic Substances and Disease Registry (ATSDR), *ToxFAQs for Hydrogen Chloride*, April 2002.

²³ EPA Region 3, Draft Final Open Burning/Open Detonation, Permitting Guidelines, Section 2, February 2002.

²⁴ Minnesota Division of Health, *Facts about Dioxins*, October 2006.

<https://www.health.state.mn.us/communities/environment/risk/chemhazard/dioxins.html>

²⁵ World Health Organization, *Dioxins and their effects on human health*, <https://www.who.int/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health> .

²⁶ Aerosp, J. et al, *Qualification of Magnesium/Teflon/Viton Pyrotechnic Composition Used in Rocket Motors Ignition Systems*, published in Technol. Manag., São José dos Campos, Vol.8, No 2, pp.130-136, Apr.-Jun., 2016.

atoms (fluoropolymer) and, when mixed with magnesium, a highly energetic material is formed with application in flares and propulsion systems of rocket motors. The magnesium and Teflon mixture is coated with another fluoropolymer, Viton, which acts as a binder and also protects the magnesium against oxidation from humidity during the storage period.²⁷ As proposed the draft permit allows open burning of rocket motor **initiating devices** (see IV.B.1.e.).

The range of temperatures necessary for thermal breakdown of RDX and HMX is significantly lower than temperatures required to destroy PFAS. Instead, PFAS and its transformation products are dispersed directly to the environment – including **hydrogen fluoride** which is poisonous, corrosive, and flammable.

PFAS are a large, complex, and ever-expanding class of more than 6,000 synthetic compounds characterized by fluorine atoms bonded to a carbon chain. The carbon-fluorine bond is “one of the strongest ever created by man,” making PFAS extremely persistent in the environment, and difficult to break down or remediate.²⁸ Despite some differences in chemical structure from compound to compound, PFAS share a set of “unique physical and chemical characteristics imparted by the fluorinated region of the molecule.”²⁹ Often known as “forever chemicals,” PFAS persist in the environment for “years, decades, or longer.”³⁰ Once released into the environment, PFAS are highly soluble and thus mobile through surface and groundwater.³¹

The potential for the use and management of Aqueous Film-Forming Foam containing PFAS should also be addressed in the permit as there is a reference to fire suppression of fuel-based fires.

Non-Reactive Wastes

The draft permit indicates that open air cages (photo) may be used to burn “rags, gloves, other personal protective equipment, plastics, rubber, and paper” that may have been contaminated with explosive materials during the manufacturing process. Viton is a brand name of a synthetic rubber and fluoropolymer (PFAS) elastomer commonly used in seals, chemical-resistant gloves, and other molded or extruded goods – all of which would be eligible for open air burning.

As written, the draft permit also allows the open air burning of **wastewater treatment sludge** generated from the processing of explosive ingredients and propellants (see IV.B.1.g.).

However, these and other wastes do not meet the definition of waste explosives having the potential to detonate (40 CFR 265.382) and therefore may not be treated by OB/OD. (emphasis added)



²⁷ Ang, How Ghee et al, *Energetic Polymers: Binders and Plasticizers for Enhancing Performance*, Chapter 1, March 2012.

²⁸ *Examining the Federal Response to the Risks Associated with Per- and Polyfluoroalkyl Substances (PFAS): Hearing Before the S. Comm. on Env't & Pub. Works*, 116th Cong. (Mar. 28, 2019) (Testimony of Linda S. Birnbaum, Director, Nat'l Inst. of Env'tl. Health Sci. & Nat'l Toxicology Program, Nat'l Insts. of Health), at 2, https://www.epw.senate.gov/public/index.cfm/hearings?id=918A6066-C1F1-4D81-A5A0-F08BBE06D40B&Statement_id=D2255C99-7544-42CA-B9DC-0D4F11CCB964

²⁹ Lindstrom, A.B., M.J. Strynar, and E.L. Libelo. (2011). Polyfluorinated Compounds: Past, Present, and Future. *Environmental Science & Technology*, 45(19), 7954–7961, <https://pubs.acs.org/doi/abs/10.1021/es2011622>.

³⁰ EPA, EPA-823-R1-8004, Per- and Polyfluoroalkyl Substances (PFAS) Action Plan 9 (Feb. 2019), “PFAS Action Plan”. https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf

³¹ See Wang, Z., DeWitt, J. C., Higgins, C. P., & Cousins, I. T. (2017). A Never-Ending Story of Per-and Polyfluoroalkyl Substances (PFAS)? *Environmental Science & Technology*, 51(5), 2508–2518, <https://pubs.acs.org/doi/10.1021/acs.est.6b04806>; Kotthoff, M., & Bücking, M. (2018). Four Chemical Trends Will Shape the Next Decade's Directions in Perfluoroalkyl and Polyfluoroalkyl Substances Research. *Frontiers in Chemistry*, 6, 103, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5895726/>.

Prohibited Wastes

The draft permit indicates that the Permittee shall not treat more than 160,000 pounds of reactive hazardous waste at the NIROP Burning Grounds in a calendar year. This 160,000 pound annual limit shall be established by adding the total weight of reactive hazardous waste and all donor and initiator materials. Donor material shall include all pallets, cardboard, packaging material, absorbents and diesel fuel.

The draft permit further indicates that only D003 reactive hazardous waste as defined by R315-261 of the Utah Administrative Code may be treated at the NIROP Burning Grounds. Reactive hazardous waste thermally treated at the NIROP Burning Grounds may also contain the follow EPA waste codes: D001, D005, D008, D038, F001, F002, F003, F004, F005 and K044.

Based on listed RCRA waste codes, it appears that the permit will allow open air burning of solvents. However, EPA has offered an opinion as to whether the burning of solvents which are contaminated with reactive material constitutes a violation of 40 CFR 265.382 saying: **“The open burning of solvents is strictly prohibited.** Only waste explosives that have the potential to detonate, and bulk military propellants which cannot be safely disposed of through other modes of treatment, can be open burned in a Part 264 Subpart X, or Part 265, Subpart Q, unit. If the waste solvent is a waste explosive that has the potential to detonate, then it can be open burned provided that the unit fits the appropriate criteria.”³²

If issued, the Bacchus NIROP permit should be amended to include a list of expressly prohibited wastes as a matter of clarity for the public, site workers and the applicant. Wastes routinely and expressly prohibited from treatment by OB/OD are listed in the panel to the right.

And finally, if the NIROP permit is granted, it should expire in no more than one year to allow for and to motivate the deployment of safer treatment technologies – ending decades of open air burning of hazardous waste that is no longer defensible.

About the Commenters

The Cease Fire Campaign is a national coalition of 60 social justice, environmental health, tribal, veterans service and conservation groups seeking to protect human health and the environment by calling for the immediate implementation of safer alternatives to open air burning, detonation and incineration/combustion of military munitions. These alternatives must incentivize waste prevention and recycling; prevent, to the greatest possible extent,

Routinely Prohibited OB/OD Wastes

- Ammonium perchlorates
- Ammunition that is 0.50 caliber or smaller
- Any liquids or items containing free liquids
 - Asbestos
 - Biological agents
 - Blister agents
 - Blood agents
 - Bulk Propellants
- Chemical warfare materiel
- Choking agents
- Colored smoke
- Components of liquid filled rounds or chemical warfare materiel
- Containerized gases
- Depleted uranium (DU)
- Dioxins or furans
- Dunnage
- Flechettes
- Herbicides
- Hexachloroethane (HC) smoke
- Incapacitating agents
- Municipal waste
- Munitions wastes that are a potential source of Per- and polyfluoroalkyl substances (PFAS), including Teflon, Viton, and Viton-A, and short and long chain PFAS
- Napalm
- Naturally occurring radioactive materials
- Nerve agents
- Nuclear components or devices
- Oil
- Pesticides
- Polychlorinated biphenyls (PCBs)
- Red phosphorous
- Riot control agents
- Rounds containing submunitions
- Titanium tetrachloride
- White phosphorus

REFERENCE: HAZARDOUS WASTE FACILITY PERMIT, Open Burning and Open/Buried Detonation (OB/OD) Section, Blue Grass Army Depot, KY8-213-820-105, AI: 2805 Activity: APE20040007, Section P.III.A.(3), November 2018. Online at <https://cswab.org/wp-content/uploads/2018/12/Bluegrass-Army-Depot-OBOD-Final-Permit-Nov-2018.pdf>


³²THERMAL TREATMENT UNITS, SCOPE OF SUBPART X, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, MAY 18 1988 MEMORANDUM, SUBJECT: Morton Thiokol Thermal Treatment Units, FROM: Sylvia K. Lowrance, Director Office of Solid Waste (WH-562A), TO: Robert L. Duprey, Director Hazardous Waste Management Division, Region VIII. Online at <https://cswab.org/wp-content/uploads/2017/03/EPA-Memo-Prohibiting-OB-OD-of-Solvents-1988.pdf>

the release of toxic emissions and pollutants; and advance the principles of environmental justice by assuring that all people enjoy the same degree of protection and access to the decision-making process. We pursue these goals through peaceful non-violent action and democratic organizing consistent with the Jemez Principles.

Citizens for Safe Water Around Badger (CSWAB) was organized in 1990 when rural residents learned that private drinking water wells near Wisconsin's Badger Army Ammunition Plant had been contaminated with high levels of cancer-causing chemicals for decades. Today, 30 years later, CSWAB continues its work to unify and strengthen citizens working for a healthy and sustainable future free of military and industrial toxins.

Thank you for your consideration of our comments.

Sincerely,

A handwritten signature in purple ink that reads "Laura Olah". The signature is written in a cursive, flowing style.

Laura Olah
Executive Director, Citizens for Safe Water Around Badger (CSWAB)
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