UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Comments of Asbestos Disease Awareness Organization on Draft EPA Scoping Document for Part 2 Risk Evaluation for Asbestos Under the Toxic Substances Control Act

EPA-HQ-OPPT- EPA-HQ-OPPT-2021-0254; 86 Federal Register 74088 (December 29, 2021)

EXECUTIVE SUMMARY

The Asbestos Disease Awareness Organization ("ADAO") is pleased to comment on the draft scoping document for the Part 2 risk evaluation on asbestos under the Toxic Substances Control Act ("TSCA") made available by the Environmental Protection Agency ("EPA") on December 29, 2021.[1] The Part 2 evaluation will examine the risks to health of the continuing use and disposal of "legacy" asbestos materials which remain embedded in building structures, infrastructure and products throughout the US.

Who is ADAO

Launched in 2004, ADAO is now the largest independent non-profit organization in the U.S. dedicated to eliminating asbestos-caused diseases. ADAO is far more than an asbestos victims' organization; our cutting-edge research, ongoing product testing, and educational efforts have enabled us to be a leading stakeholder in prevention policy. We have been a strong and outspoken advocate for a comprehensive US ban on asbestos, championing enactment of the Alan Reinstein Ban Asbestos Now Act ("ARBAN"), which would expeditiously eliminate the importation and use of raw asbestos and asbestos-containing products.

ADAO's Science and Prevention Advisory Boards are comprised of world class experts in asbestos-related disease, exposure and abatement. Many Board members contributed their insights to the development of these comments and several are commenting separately. ADAO's extensive network of asbestos experts is a powerful resource that can provide EPA with high-quality scientific and technical input as it tackles the Part 2 evaluation.

Since enactment of the Lautenberg Chemical Safety Act in 2016, ADAO has expressed its views at every stage of TSCA implementation relating to asbestos, starting with the selection of the first 10 risk evaluation chemicals and continuing through the Parts 1 and 2 risk evaluations. This has included submitting extensive information to EPA, filing comments and position statements on key milestones, meeting often with EPA leadership and staff, and challenging unlawful EPA actions in court.

The Unique Threat of Asbestos to Public Health

[1] EPA, Draft Scope of the Risk Evaluation for *Asbestos Part 2: Supplemental Evaluation Including Legacy Uses and Associated Disposals of Asbestos* December 2021, https://www.epa.gov/system/files/documents/2021-12/asbestos_part2_draftscope_epa-hq-oppt-2021-0254.pdf. (Draft Scoping Document).

Asbestos is the most hazardous substance in commercial use since the industrial revolution and is responsible for millions of deaths worldwide. For over a century, asbestos has been known to cause widespread disease and death. In a monograph on asbestos published in 2012, the International Agency for Research on Cancer ("IARC") found the following cancers in humans to be causally related to asbestos exposure: lung cancer, malignant mesothelioma, ovarian cancer, and cancer of the larynx.[2] There is considerable evidence in the scientific literature of causal associations with gastrointestinal cancers and kidney cancer. Non-malignant diseases are also caused by asbestos. These include asbestosis and asbestos-related pleural thickening. "There is general agreement among scientists and health agencies . . . [e]xposure to any asbestos type (i.e., serpentine [chrysotile] or amphibole) can increase the likelihood of lung cancer, mesothelioma, and nonmalignant lung and pleural disorders."[3] Accordingly, all fiber types in commercial use have been regulated with equal stringency by government agencies.

Asbestos is universally recognized to have no safe level of exposure. From 1991 to 2017, more than one million Americans died from preventable asbestos-caused diseases.[4] US deaths linked to asbestos total nearly 40,000 per year despite large reductions in current asbestos use.[5]

Origins of the Part 2 Evaluation

After selecting asbestos for one of its first 10 risk evaluations under TSCA, EPA initially refused to address legacy asbestos. However, legal challenges by ADAO and other groups resulted in a 2019 decision by the Ninth Circuit Court of Appeals that use and disposal of legacy asbestos are "conditions of use" that must be assessed in TSCA risk evaluations. After delays in implementing the Ninth Circuit decision, ADAO filed suit again to require an enforceable schedule to complete the Part 2 evaluation and assure that it remedies the deficiencies in EPA's limited and flawed Part 1 evaluation. These suits were resolved in settlements between EPA and ADAO in the fall of 2021 which led to development of the Part 2 scoping document and an enforceable deadline of December 1, 2024 to complete the Part 2 evaluation.

Pervasiveness of Legacy Asbestos in the US

For most of the last 120 years, use of asbestos has been massive in scale. More than 31 million metric tons of asbestos have been mined or imported by the US. This asbestos was used in numerous products manufactured in the US and, increasingly, imported from other countries. These products —including attic and wall insulation, pipes and boilers, floor tiles, gaskets, roofing, shingles and siding—were widely used in constructing homes, schools, apartments, public buildings, offices, stores, and factories. This asbestos remains in place in millions of structures across the country, in public infrastructure and in previously manufactured products that remain in use. Much of the asbestos is in friable form and can be released into the air when disturbed during routine building maintenance and upkeep or repairs and renovations. Large

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[2] IARC. Monograph 1OOC: Asbestos (Chrysotile, Amosite, Crocidolite, Actinolite· and· Anthophyllite), Lyon: International Agency for Research on Cancer (2012)

[3] U.S. Public· Health Service, U.S. Department of Health & Human Services. Toxicological Profile for asbestos. Atlanta: Agency for Toxic Substances and Disease Registry; (2001) (ToxProfile). .

[4] http://ghdx.healthdata.org/gbd-results-tool?params=gbd-api-2017 permalink/535c35ab1fc10471f721c9b58eecd3c2

[5] S. Furuya, O. Chimed-Ochir, K. Takahashi, A. David, and J. Takala, "Global Asbestos Disaster," *International Journal of Environmental Research and Public Health,* vol. 15, no. 5, p. 15, 2018.

numbers of workers and consumers are exposed to legacy asbestos during the ongoing use and disposal of asbestos containing products. This exposure is a major contributor to the continuing toll of death and disease imposed by asbestos on the US population.

Strengths and Weaknesses of the Draft Scoping Document

ADAO is pleased that EPA is now moving ahead with the Part 2 asbestos risk evaluation after extended delays and is encouraged by elements of the draft scoping document that implement our settlement agreements with EPA. However, the task ahead of EPA is challenging. Based on the scoping document, we are concerned that EPA does not have a full understanding of the broad range of legacy asbestos uses and related pathways of exposure and may lack the analytical tools and necessary data to effectively assess legacy asbestos risks. Our goal in these comments is to help EPA strengthen the foundation for Part 2 and deliver a robust and health-protective risk evaluation.

The draft scoping document confirms that, consistent with the ADAO-EPA settlement agreement, the Part 2 evaluation will include several key components lacking in Part 1:

- The scoping document properly adopts the definition of asbestos in the Asbestos Hazard Emergency Response Act ("AHERA").
- EPA has properly included Libby Amphibole asbestos in the scope of the Part 2 evaluation.
- Part 2 will address asbestos contamination in consumer and industrial talc products subject to TSCA.
- While Part 1 was limited to chrysotile asbestos, Part 2 will properly address all six recognized asbestos fibers.
- Unlike Part 1, Part 2 will base risk determinations on the full range of carcinogenic and non-cancer diseases linked to asbestos.

We are concerned, however, that the draft scoping document does not recognize the impact of the upcoming asbestos TSCA Section 8(a) reporting and recordkeeping rule on the Part 2 evaluation. EPA is required to promulgate this rule under an settlement agreement with ADAO. The final scoping document should clarify how EPA will use the reports it receives under the rule in conducting Part 2.

The draft scoping document identifies many of the legacy conditions of use that are sources of current asbestos exposure, but provides virtually no information on the nature and extent of this exposure and the magnitude of the health risk it may pose. The final scoping document must provide a richer picture of the prevalence of legacy asbestos throughout the economy and the many ways in which people may be at risk. EPA should recognize that:

- The continued presence of asbestos building materials in homes, schools, apartments, public buildings, offices, stores, factories, and abandoned buildings is a major ongoing source of exposure and risk.
- Asbestos is also contained in public infrastructure, including water distribution systems, pipelines and electric power generation and transmission facilities.

- Release of asbestos fibers when asbestos-containing material ("ACM") is disturbed or damaged contributes to elevated exposure and health risk.
- Fires, extreme weather events and other disasters result in substantial elevated exposure to legacy asbestos.
- Asbestos risks to teachers, students, and staff in schools and colleges are widespread and significant.
- Environmental releases from disposal of asbestos-containing debris from construction projects, abandoned buildings, public infrastructure and disaster sites are a significant source of exposure

Limitations of Current EPA and OSHA Regulations

Two federal agencies – EPA and the Occupational Safety and Health Administration (OSHA) – have put in place regulations and standards to protect human health during activities that could disturb ACM and release asbestos fibers in buildings and at construction sites. However, gaps in coverage and limited compliance and enforcement weaken the effectiveness of these regulations.

Key concerns include:

- Except for school buildings subject to AHERA, EPA and OSHA regulations do *not* create an affirmative obligation to inspect buildings or construction sites for the presence of asbestos and determine whether hazardous conditions exist.
- Unless there is evidence of damage to asbestos-containing building components and the release of asbestos fibers, federal regulations impose no obligation to remove or repair ACM.
- If inspections are not conducted, employers, building owners and operators and construction firms will be unaware of damage to ACM and resulting asbestos exposures -- and thus will not implement worker protections and safe handling practices required by federal regulations once the presence of friable asbestos is known.
- Compliance with EPA and OSHA requirements is limited because of the pervasiveness of asbestos in buildings, the large and diverse exposed population, the complexity of the regulations and inadequate government resources for enforcement.
- Violations of EPA and OSHA regulations are common in public and private buildings and many regulated entities are simply unaware of or disregarding their responsibilities.

Consistent with recent announced changes in EPA policy, the Part 2 evaluation should make determinations of unreasonable risk on the assumption that neither EPA nor OSHA regulations are adequately preventing unsafe exposure to asbestos. Accordingly, legacy risks should be assessed without unsupportable assumptions of regulatory compliance.

I. THE SCOPING DOCUMENT CARRIES OUT THE SETTLEMENT AGREEMENTS BETWEEN EPA AND ADAO AND INCLUDES KEY ELEMENTS LACKING IN THE PART 1 EVALUATION

The Part 2 draft scoping document is a critical, if long overdue, step in meeting EPA's responsibility to conduct a comprehensive risk evaluation for asbestos under the 2016 TSCA amendments.

EPA banned most uses of asbestos in 1989 but its rule was overturned by a court decision in 1991.[6] During the TSCA reform process in 2016, there was bipartisan agreement that asbestos was a poster child for TSCA's failure to protect public health, and that any new law needed to ensure that EPA could finally ban asbestos. Following numerous discussions with ADAO and others, EPA selected asbestos for one of its 10 initial TSCA risk evaluations in late 2016.[7] At the outset of the evaluation, it took the position that, under the statute and its July 2017 risk evaluation framework rule, it lacked authority to address the use and disposal of "legacy" asbestos – i.e., asbestos-containing materials no longer distributed in commerce but previously installed in buildings and products and remaining in use.[8] ADAO and other groups challenged EPA's framework rule in the Court of Appeals for the Ninth Circuit and argued that the exclusion of legacy use and disposal was unlawful under TSCA.

In its November 14, 2019 decision, the Court held "that EPA's exclusion of legacy uses and associated disposals contradicts TSCA's plain language." *Safer Chemicals, Healthy Families v USEPA*, 943 F.3d 397, 421 (9th Cir. 2019). The Court was well aware that its conclusion applied to asbestos, noting that "[f]or example, although asbestos is now infrequently used in making new insulation, it remains in place in previously installed insulation" (id. at 421) and that "future disposal of asbestos insulation . . . unambiguously falls within TSCA's definition of 'conditions of use'" (id. at 424).

EPA issued its final risk evaluation ("FRE") for asbestos on December 30, 2020, over a year after the Ninth Circuit decision,[9] Described by EPA as "Part 1," the FRE did not address the health impacts of legacy asbestos uses and associated disposal. The Agency expressed its general intent to conduct a future "Part 2" evaluation focused on legacy asbestos but provided no specifics about its scope, how it would be conducted, and the schedule for completing it.

The Part 1 evaluation was also incomplete and overlooked numerous sources of asbestos exposure and risk. Among its many flaws, the evaluation:

- Only addresses chrysotile asbestos, ignoring the 5 other asbestos fiber types;
- Fails to consider known asbestos health effects, such as asbestosis and ovarian cancer;
- Does not address environmental pathways of exposure or risks from dermal and ingestion routes of exposure;
- Makes no effort to assess asbestos contamination of widely used consumer and industrial products containing talc; and
- Is based on incomplete information about current asbestos exposure and use.

These are all omissions that were emphasized by EPA's Science Advisory Committee on Chemicals ("SACC"), which concluded in its August, 2020 report that the draft evaluation "was not considered adequate and resulted in low confidence in the conclusions."[10]

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[6] *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir. 1991).
[7] 81 Fed. Reg. 91927 (December 19, 2016).
[8] 82 Fed. Reg. 33726, 33730 (July 20, 2017).
[9]. 86 Fed. Reg. 89 (January 4,. 2021).
[10] *TSCA SACC Asbestos Meeting Minutes and Final Report 202008,* Aug 28, 2020 https://www.regulations.gov/document/EPA-HQ-OPPT-2019-0501-0113

Following legal challenges by ADAO, other public health organizations and leading asbestos scientists, EPA agreed to two important legal settlements in October 2021 laying the foundation for the Part 2 evaluation.

In one settlement, EPA and ADAO entered into a consent decree to resolve ADAO's May 18, 2021 suit in the U.S. District Court for the Northern District of California to require the Agency to carry out its obligation under TSCA to evaluate the risks of legacy asbestos. Signed by the Court on October 13, 2021, the consent decree requires EPA to complete this Part 2 evaluation by December 1, 2024.

The second settlement resolves ADAO's January 26, 2021 challenge in the Ninth Circuit Court of Appeals to the Agency's Part I Asbestos Risk Evaluation. ADAO and leading public health groups and scientists filed this case to remedy the serious gaps and omissions in the Part 1 evaluation which resulted in an incomplete picture of asbestos' risks to public health.

In its October 12, 2021 settlement agreement with ADAO, EPA agreed to expand the Part 2 evaluation to address the deficiencies in Part 1. The Agency committed to:

- include all of the six asbestos fiber types rather than only chrysotile asbestos;
- examine all the cancer and non-cancer diseases linked to asbestos exposure;
- assess risks to human health from all environmental pathways of exposure and from inhalation, ingestion and dermal contact with asbestos;
- evaluate the association between exposure to asbestos in talc and talc-containing commercial and industrial products and human health hazard endpoints;
- assess health risks to potentially exposed or susceptible subpopulations, including individuals who may be more susceptible to the hazards of asbestos; and
- address any known, intended, or reasonably foreseen conditions of use of asbestos that were omitted from the Part 1 evaluation.

ADAO is pleased that the draft Part 2 scope document embodies virtually all these commitments. Together with the two settlements, these commitments – if fully carried out in the evaluation itself -- will ensure are EPA's Part 2 asbestos risk evaluation is comprehensive under TSCA, addresses all hazards and pathways of exposure, and is completed without further delay.

A. The Scoping Document Properly Adopts the AHERA Definition Of Asbestos For The Part 2 Evaluation

The EPA-ADAO settlement agreement incorporates the definition of asbestos in the 1986 AHERA. This definition is in turn adopted in the draft scoping document for purposes of the Part 2 evaluation. Under the definition, the evaluation will address the six fiber types identified TSCA Title II, Section 202: the asbestiform varieties of chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonite-grunerite), anthophyllite, tremolite and actinolite.

ADAO supports EPA's reliance on the AHERA definition for purposes of Part 2. This definition has been incorporated in a wide range of EPA regulations on asbestos, including its Asbestos-Containing Materials in Schools Rule (40 CFR Part 763, Subpart E), its Asbestos Ban and

Phaseout Rule, the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) and its significant new use rule under TSCA requiring notification of resumption of discontinued asbestos uses.

EPA's Part 1 risk evaluation was also based on the AHERA definition of asbestos:

> "For the purposes of the Risk Evaluation for asbestos under TSCA Section 6(a), EPA is using the TSCA Title II (added to TSCA in 1986), Section 202 definition; which is - "asbestiform varieties of six fiber types – chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonite- grunerite), anthophyllite, tremolite or actinolite." The latter five fiber types are amphibole varieties. This definition was previously defined in the scope document and has consistently been applied in this risk evaluation process."

Some commenters asked EPA to expand the definition to include non-asbestiform varieties of the six fiber types but EPA's Response to Comments Document (p.248) rejected this request:

> "For the purposes of the asbestos risk evaluation, EPA adopted the TSCA Title II definition of asbestos which is the "asbestiform varieties of six fiber types – chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonite-grunerite), anthophyllite, tremolite or actinolite." *As such, EPA is only evaluating the asbestiform varieties of these mineral fibers. EPA added a preamble to the chrysotile risk evaluation document that further explains the asbestos fibers being evaluated in Part 1 and Part 2 of the asbestos risk evaluation. In Part 1 of the Risk Evaluation for Asbestos, EPA has further clarified that non-asbestiform mineral varieties are not included in the added Preamble* (emphasis added)".

Since EPA's upcoming asbestos risk management rule is based on the Part 1 evaluation, it will necessarily incorporate the AHERA asbestos definition. It would create confusion and unnecessary complexity to shift to a different definition for Part 2.

The NIOSH 2011 Current Intelligence Bulletin 62: *Asbestos Fibers and Other Elongate Mineral Particles: State of the Science and Roadmap for Research* ("Roadmap") recommends limiting the asbestos definition to the asbestiform varieties of the six recognized fiber types until further research is conducted (as outlined in the Roadmap). In addition, the Roadmap confirms that, from a health perspective, "[t]he minerals of primary concern are the asbestiform minerals that have been regulated as asbestos (chrysotile, amosite, crocidolite, tremolite asbestos, actinolite asbestos, and anthophyllite asbestos) (p. 8)." NIOSH then explains why it does not define asbestos to include non-asbestiform EMPs:

> "As described in the preceding sections, uncertainty remains concerning the adverse health effects that may be caused by nonasbestiform EMPs encompassed by NIOSH since 1990 in the REL for asbestos. Also as described in a preceding section, current analytical methods still cannot reliably differentiate between asbestos fibers and other EMPs in mixed-dust environments. NIOSH recognizes that its descriptions of the REL since 1990 have created confusion and caused many to infer that the additional covered minerals were included by NIOSH in its definition of "asbestos." NIOSH wishes to make clear that such nonasbestiform minerals are not "asbestos" or "asbestos minerals."

> NIOSH "also wishes to minimize any potential future confusion by no longer referring to particles from the nonasbestiform analogs of the asbestos minerals as "asbestos fibers" (p. 33)."

In sum, deviating from the longstanding AHERA definition in Part 2 would be unnecessary, contrary to the consistent regulatory approach of EPA and other agencies, and further complicate and delay the Part 2 evaluation.

B. EPA Has Properly Included Libby Amphibole Asbestos in the Scope of the Part 2 Evaluation

Consistent with the settlement agreement, the draft scoping document provides that the asbestos definition in Part 2 will include "richterite-asbestos and winchite-asbestos fiber types." These forms of asbestos comprise "Libby amphibole," which caused widespread harm to the environment and human health as a result of the now-discontinued WR Grace mining operations in Libby, Montana and processing sites throughout the nation. ADAO strongly supports their inclusion in Part 2 because they are responsible for significant ongoing legacy asbestos exposure.

The Libby mine was the source of over 70 percent of all vermiculite sold in the United States from 1919 to 1990. There was also a deposit of asbestos at that mine, so the vermiculite from Libby was contaminated with asbestos. According to EPA, vermiculite "is a naturally-occurring mineral composed of shiny flakes, resembling mica. When heated to a high temperature, flakes of vermiculite expand as much as 8-30 times their original size. The expanded vermiculite is a light-weight, fire-resistant, and odorless material and has been used in numerous products, including insulation for attics and walls."

For decades, vermiculite mined in Libby was used throughout the U.S. to produce Zonolite attic insulation, which is estimated by the United States Geological Service (USGS) to be in as many as 35 million US homes, buildings, and offices.[11] During its investigations at the Libby mine, EPA obtained over 80,000 vermiculite concentrate shipping invoices from W.R. Grace for the period that the company owned the mine (1964–1990). An analysis of EPA's summary of these invoices indicated that a total of approximately 6,109,000 tons of vermiculite concentrate were shipped to 245 sites across the country where they were used to produce Zonolite.[12]

Zonolite (or "ZAI") is potentially harmful to residents because it is considered "friable", i.e, easily disturbed and distributed into the air. EPA advises homeowners that:

> "Any disturbance could potentially release asbestos fibers into the air. If you absolutely have to go in your attic and it contains vermiculite insulation, you should limit the number of trips you make and shorten the length of those trips in order to help limit your potential exposure."

EPA emphasizes that "you ***should never*** attempt to remove the insulation yourself. Hire professionals trained and certified to safety remove the material."

[11] https://www.usgs.gov/news/usgs-scientists-develop-new-tool-determine-if-vermiculite-insulation-contains-asbestos,
[12] https://www.atsdr.cdc.gov/asbestos/sites/national_map/Summary_Report_102908.pdf.

Pursuant to a legal settlement, W.R. Grace, which operated the Zonolite company from 1963-1990, has funded an independent Zonolite Attic Insulation Trust ("ZAIT") and claims facility from which eligible claimants may receive partial reimbursement of their cost to remove or contain ZAI in their homes. The Trust will operate for a minimum of 20 years educating the public about the existence of the Trust and the potential health effects associated with asbestos-containing Vermiculite/ZAI.

Clearly, the risks of Zonolite attic insulation – which contain the hazardous Libby amphibole asbestos on which EPA has conducted a comprehensive health assessment – must be addressed in Part 2.

C. All Asbestos Fibers Should Be Included in Part 2

Consistent with the ADAO-EPA settlement agreement, the scoping document (at. 9) indicates that "given that Part 2 of the risk evaluation will focus on legacy asbestos uses and associated disposals," it will address chrysotile plus the five recognized amphibole fiber types.

Any other approach would underestimate risks from the asbestos exposures that will be addressed in Part 2. Legacy asbestos products contain a mix of fibers, not just chrysotile, and there is widespread ongoing exposure to multiple fibers due the presence of these products in millions of buildings. For example, several types of building materials now installed in homes and other structures were made with amphibole, including shingles, roofing materials, insulation around pipes and boilers. Amphibole fibers can thus be released when these building components are disrupted, such as during repairs, maintenance and demolition work. Asbestos fibers are also known to be released during fires in buildings and these fibers (which include amphiboles) pose a well-documented risk to firefighters and other emergency responders, as discussed below. In addition, chrysotile, tremolite and anthophyllite fibers are currently found as contaminants in talc-based consumer products and in industrial talc used in tire manufacturing and other industries.

In the Part 1 evaluation, EPA limited its analysis of the literature on asbestos health effects to studies of chrysotile since this was the only fiber type currently in active commercial use in the US. As EPA expands its focus in Part 2, however, it must access and evaluate the health effects data for all six fiber types. Consistent with other analyses of asbestos risks, the 1988 peer reviewed IRIS assessment for asbestos, which was the basis for the EPA TSCA regulations in 1989 banning most asbestos uses, established a single Inhalation unit risk ("IUR") value for the six fiber types based on a comprehensive evaluation of studies of exposure to multiple fiber types.[13] EPA should follow this approach in Part 2.

D. Part 2 Should Include All Demonstrated Asbestos Cancer and Non-Cancer Health Effects

The Part 1 risk evaluation was based solely on the carcinogenicity endpoints of lung cancer and mesothelioma. It did not address other types of tumors or serious non-cancer lung diseases known to be caused by asbestos. The SACC raised concerns about the limited subset of

[13] https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0371_summary.pdf#nameddest=rfc.

endpoints addressed in the evaluation and the resulting underestimation of risk. In Its October 12, 2021 settlement agreement with ADAO, EPA agreed to follow a comprehensive approach in Part 2, under which it would address "any evidence of associations between exposure to asbestos and cancer, including cancers of the larynx and ovaries in addition to lung cancer and mesothelioma" and "any evidence of non-cancer human health hazard endpoints related to exposure to asbestos."

The draft scoping document (p. 26) confirms that Part 2 will address all the "[b]road human health hazard effects indicated in previous assessments," such as the development of cancers including "mesothelioma and lung, ovarian, and laryngeal cancer and non-cancer effects, notably asbestosis." ADAO supports this approach.

E. Asbestos Contamination of Talc Should Be Addressed in Part 2

EPA's Part I risk evaluation also failed to address the documented presence of asbestos contamination in TSCA-regulated talc-based based products and raw materials. The SACC report on the Part 1 evaluation was critical of its failure to consider the health risks of asbestos from talc-related pathways of exposure.

The October 12, 2021 settlement of ADAO's challenge to the Part 1 risk evaluation closes this gap by committing that the Part 2 evaluation will address "[a]ny reasonably available information concerning the association between exposure to asbestos in talc and talc-containing products and human health hazard endpoints." The draft scoping document confirms that Part 2 will address asbestos contamination of talc:

> "Talc is a hydrous magnesium silicate mineral that is of commercial interest because of several properties including its chemical inertness, high dielectric strength, high thermal conductivity, and low electrical conductivity. Some talc deposits and articles containing talc have been shown to contain impurities that pose potential health risk, including asbestos. Thus, it is recognized that certain uses of talc may present the potential for asbestos exposure. Where EPA identifies reasonably available information demonstrating the presence of asbestos for talc COUs that fall under TSCA authority, these will be evaluated in Part 2 of the Risk Evaluation for asbestos." (p. 31)

The scoping document properly recognizes that, while studies by the Food and Drug Administration ("FDA") and others have documented the presence of asbestos in a variety of talc-based personal care products and cosmetics such as baby powder and certain brands of makeup, these products are within the jurisdiction of FDA and therefore exempt from TSCA.

However, there are several talc-based consumer products subject to TSCA and there is considerable data documenting the presence of amphiboles and other asbestos fibers in a number of these products:

- In 2000, the Seattle Post Intelligencer confirmed that asbestos had been found in crayons.[14]

[14] https://www.cpsc.gov/PageFiles/108033/crayons.pdf

- In 2007, the ADAO's product testing confirmed asbestos in five consumer products, including a child's toy.[15]
- In 2015, the Environmental Working Group's ("EWG") product testing confirmed four brands of crayons contained asbestos, all of them manufactured in China: Amscan Crayons, Disney Mickey Mouse Clubhouse 10 Jumbo Crayons, Nickelodeon Teenage Mutant Ninja Turtle Crayons, and Saban's Power Rangers Super Megaforce 10 Jumbo Crayons.[16]
- In 2018, U.S. Public Interest Research Group tested six kinds of crayons from various brands. Green Playskool crayons were found to contain tremolite asbestos fibers.[17]

The presence of asbestos in these products is of particular concern because of their use by children.

Talc also has extensive commercial and industrial uses which are subject to TSCA. According to Geology.com,[18] these uses include:

- **Plastics** -- In 2011, about 26% of the talc consumed in the United States was used in the manufacturing of plastics. It is mainly used as a filler.
- **Ceramics –** In the United States in 2011, about 17% of the talc consumed was used in the manufacturing of ceramics products such as bathroom fixtures, ceramic tile, pottery, and dinnerware.
- **Paint --** Most paints are suspensions of mineral particles in a liquid. The liquid portion of the paint facilitates application, but after the liquid evaporates, the mineral particles remain on the wall. Talc is used as an extender and filler in paints.
- **Paper --** Most papers are made from a pulp of organic fibers. This pulp is made from wood, rags, and other organic materials. Finely ground mineral matter is added to the pulp to serve as a filler. Talc as a mineral filler can improve the opacity, brightness, and whiteness of the paper. Talc also can also improve the paper's ability to absorb ink. In 2011, the paper industry consumed about 16% of the talc used in the United States.
- **Roofing Materials --** Talc is added to the asphaltic materials used to make roofing materials to improve their weather resistance. It is also dusted onto the surface of roll roofing and shingles to prevent sticking. In 2011, about 6% of the talc consumed in the United States was used to manufacture roofing materials.
- **Other Uses --** Ground talc is used as a lubricant in applications where high temperatures are involved. It has also been used in the rubber industry to prevent rubber products from sticking. Talc powder is used as a carrier for insecticides and fungicides. It can easily be blown through a nozzle and readily sticks to the leaves and stems of plants. Its softness reduces wear on application equipment.

These industrial uses likely expose thousands of workers to talc powder by inhalation and dermal contact. The extent to which this talc contains asbestos is not known, but typically industrial-grade talc undergoes less extensive processing than talc used in personal care products and is

[15] https:/www.asbestosdiseaseawareness.org/archives/364
[16] https://www.ewg.org/release/alert-tests-find-high-levels-asbestos-children-s-makeup-kit
[17] https://uspirg.org/blogs/blog/usp/back-school-asbestos-crayons
[18] https://geology.com/minerals/talc.shtml.

more likely to contain impurities. Given the link between talc-based baby powder and mesothelioma and ovarian cancer in women, industrial talc exposure may well be a cause of asbestos-related death and disease. We strongly agree that this risk should be addressed by EPA in Part 2.

F. EPA'S Scoping Document Must Recognize The Impact of the Upcoming Asbestos TSCA Reporting Rule on the Part 2 Evaluation

On September 26, 2018, ADAO petitioned EPA under section 21 of TSCA to require reporting under the Chemical Data Reporting ("CDR") rule by companies importing and using asbestos. The CDR rule requires manufacturers (including importers) to provide EPA with information on the production and use of chemicals in commerce. However, in 2017, EPA exempted asbestos from those requirements, finding that "reporting is not required for 'naturally occurring chemical substances.'"

After EPA denied the petition on December 21, 2018, ADAO and its partners filed suit to compel EPA to grant the petition.[19] On December 22, 2020, Judge Edward Chen issued a sweeping decision which determined that EPA's petition denial was contrary to law, arbitrary and capricious. Judge Chen's opinion recognized that a lack of reporting had deprived EPA of the basic use and exposure information necessary to perform a sound TSCA risk evaluation on asbestos. He ordered EPA to initiate rulemaking under TSCA's section 8(a) reporting authorities to fill these information gaps.

On June 7, 2021, EPA entered into a settlement agreement committing to propose a rule under section 8(a) requiring "the maintenance of records and submission to EPA of reports by manufacturers, importers and processors of asbestos and mixtures and articles containing asbestos (including as an impurity) that address the information-gathering deficiencies identified in the Court's Summary Judgment Order." Under the agreement, EPA is obligated to publish a proposed rule by April 14, 2022 and take final action by early December of this year.

The draft scoping document fails to reference EPA's upcoming reporting rule but information submitted under the rule will inform the Part 2 evaluation in several ways. For example, it will identify asbestos-containing articles and mixtures imported into the US in recent years and provide information on how they were used and processed and pathways of exposure. Under the October 12, 2021 settlement agreement, conditions of use that are disclosed under the reporting rule would then need to be addressed in the Part 2 risk evaluation if they were not included in Part 1.[20] In addition, because the rule would require the submission of reports on mixtures, articles and substances in which asbestos is present as an impurity, EPA would obtain information about asbestos contamination of TSCA-regulated talc and other products. In accordance with the Part 2 settlement agreement and as confirmed in the draft scoping document, the risks associated with this contamination would likewise be addressed in the Part 2 evaluation.

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[19] *Asbestos Disease Awareness Organization, et al., v.. Andrew Wheeler, et al*., Case 3:19-cv-00871 (N.D. Cal.)

[20] The draft scoping document does not recognize that EPA may need to address conditions of use identified under the reporting rule in Part 2. However, the settlement agreement requires the Part 2 evaluation to address "[a]ny circumstances of known, intended, or reasonably foreseen manufacture, processing, distribution in commerce, use, or disposal not evaluated in Part 1, if any such conditions of use are identified through forthcoming reporting requirements under TSCA section 8(a) pursuant to the settlement agreement in Asbestos Disease Awareness Organization v. EPA (ND Cal. No. 19-CV-00871) or other reasonably available information."

EPA's final scoping document should directly acknowledge the upcoming reporting rule and how it will impact the Part 2 evaluation.

II. LEGACY ASBESTOS IS A SERIOUS THREAT TO PUBLIC HEALTH

The draft scoping document identifies many of the legacy conditions of use that are sources of current asbestos exposure (see pp. 26-20) but provides virtually no information on the nature and extent of this exposure and the magnitude of the health risk it may pose. The final scoping document must provide a richer picture of the prevalence of legacy asbestos throughout the United States and the many ways in which people may be at risk.

For the last 120 years, use of asbestos has been massive in scale. According to the U.S. Geological Survey (USGS):[21]

- From 1900 to today, the U.S. has consumed more than 31 million metric tons of asbestos;
- From 1991 to 2002, the U.S. mined 111,420 metric tons of asbestos until the last domestic mine closed in 2002;
- From 1991 to 2021, the U.S. consumed 413,494 metric tons of asbestos.

This asbestos was incorporated in numerous products manufactured in the US and, increasingly, imported from other countries. These products —including attic and wall insulation, pipes and boilers, floor tiles, gaskets, roofing, shingles and siding—were widely used in constructing homes, schools, apartments, public buildings, offices, stores, and factories. This asbestos remains in place in millions of structures across the country and in previously manufactured products that remain in use. Much of the asbestos is in friable form and can be released into the air when disturbed during routine building maintenance and upkeep. Large numbers of workers and consumers are likely exposed to legacy asbestos during the ongoing use and disposal of asbestos containing products.

From 1991 to 2019, more than one million Americans died from preventable asbestos-caused diseases.[22] Every year, even though the production and distribution of asbestos-containing products has greatly declined, over 40,000 additional Americans die because of asbestos-caused illness and disease.[23]

Many of these deaths are attributable to legacy asbestos. As discussed in the separate comments of Dr, Richard Lemen,[24] a 2019 paper by him and Dr. Phil Landrigan concludes that:[25]

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[21] https://pubs.usgs.gov/circ/2006/1298/

[22] http://ghdx.healthdata.org/gbd-results-tool?params=gbd-api-2019-permalink/169914b37e28a8fdb0c5d7e3367a5357

[23] http://ghdx.healthdata.org/gbd-results-tool?params=gbd-api-2019-permalink/e42ad5d4422141c71c08eafd0e78dbf8

[24] Dr. Lemen, Co-Chair of ADAO's Science Advisory Board, is former Assistant Surgeon General of the United States as well as former Deputy and Acting Director of the National Institute for Occupational Safety and Health.

[25] Landrigan PJ, Lemen RA, 2019. A Most Reckless Proposal – A Plan to continue Asbestos Use in the United States. The New England Journal of Medicine. July 10. DOI:10.1056/NEJMp1906207

> "Most asbestos-related deaths in the United States today are caused either by cancers of long latency that resulted from exposures decades ago or by more recent exposures to asbestos installed long ago in the form of insulation, pipe wrapping, roofing tiles, and siding in thousands of office buildings, schools, and homes. The populations at greatest risk for exposure to legacy asbestos are firefighters, maintenance workers, and people employed in the construction and demolition industries."

Discussed below are selected sources of exposure to legacy asbestos and their potential contribution to risk to human health.

A. The Continuing Presence of Legacy Asbestos in Buildings is a Major Risk Driver

The continued presence of asbestos building materials in homes, schools, apartments, public buildings, offices, stores, factories and abandoned buildings is a major ongoing source of exposure and risk.

In 1984, EPA conducted a survey to determine the extent of the use of friable asbestos-containing materials in US buildings and the amount of asbestos in them.[26] The survey focused on federally owned buildings; apartment buildings; and commercial buildings. **Single-family homes, small rental properties, schools, factories and non-federal public buildings were not addressed.** Despite these limitations, the report reached several significant conclusions. It found that 20 percent of the buildings included in the survey (733,000 buildings) had asbestos-containing friable material; 16 percent of buildings had asbestos-containing pipe and boiler insulation; the average asbestos content in friable material was 14 percent; and 14 percent of asbestos-containing material was significantly damaged.

No comprehensive assessment of legacy asbestos exposure has been conducted in the last 35 year despite the likelihood that EPA's 1984 findings are out-of-date and no longer represent the extent of damaged asbestos in buildings and the level of risk of disease and death which this asbestos now presents. The Part 2 evaluation is a critical opportunity to update our understanding of the current prevalence and condition of legacy asbestos in US buildings, the number of people exposed and the magnitude of the ongoing risk. However, this analysis will require EPA to access current data sources and/or develop new information on asbestos in buildings. The draft scoping document does not explain how this will be done.

A helpful overview of asbestos in buildings is provided by *Managing Asbestos in Buildings: A Guide for Owners and Managers*, a 2015 publication of the Environmental Information Association ("EIA") known as the *Purple Book.*[27] This excellent publication summarizes the asbestos-containing materials (ACM) present in buildings as follows (p. 11):

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[26] USEPA, *Asbestos in Buildings:* A *National Survey of Asbestos-Containing Friable Materials*. Washington, DC: Office of Toxic Substances, EPA 560/5-84-006 (1984).

[27] *The Purple Book* responded to a realized need within the leadership of the EIA and the asbestos–control industry to update a 1985 EPA document entitled "Guidance for Controlling Asbestos-Containing Materials in Buildings" (EPA 560/5-85-024). When this document was first published by EPA, it was the principal source of information on basic asbestos issues faced by industry. Since that time, the regulatory landscape has changed dramatically and our knowledge of asbestos control has improved significantly. Under the leadership of Editor-In-Chief Thomas G. Laubenthal, the Purple Book provides a comprehensive update of the original EPA guidance.

> "ACM in buildings encompasses many different materials that are placed into one of three categories:
>
> • Surfacing materials are those sprayed or troweled on ceilings and walls such as fireproofing, textured or decorative ceilings;
>
> • Thermal system insulation (TSI) as in insulation around hot or cold pipes, ducts, boilers and tanks; and
>
> • Miscellaneous materials as in a variety of other products such as ceiling and floor tiles, wall board joint compound, asbestos cement products and roofing materials.
>
> Asbestos can also be found in other building construction materials such as vermiculite that was used in attic spaces and wall cavities as an insulation material. Historically, ACM in the first two categories (surfacing material and TSI) are of greatest concern, especially when friable. Friable materials are those that can be crumbled, pulverized or reduced to powder by hand pressure when dry."

The *Purple Book* further explains (p. 14) that:

> "Asbestos-containing products were installed in buildings in great quantities through the late 1970's. Commonly used products included fireproofing on structural steel, pipe and boiler insulation, floor tile and mastic, and a wide variety of other products. Asbestos was also used in many items not traditionally identified as building products such as electrical wiring insulation, wallboard joint tape and sealer compound, lighting fixture reflectors and pipe gaskets."

However, the *Purple Book* cautions (p. 10) that:

> "A common misconception of building owners and managers is to assume that because their building was built in the last twenty years that it is 'asbestos free.' This may not be the case. As a matter of regulatory compliance, there
> is no "end date" as to when a building owner, manager or employer can assume no asbestos is present in a building or structure."

Another important caution is that:

> "there are no federal regulations that require the removal of ACM from a building merely because it is present. A common misconception is that ACM was removed from buildings long ago. While there were some building owners and managers that did elect to remove ACM from their buildings, most of those materials originally installed in buildings remains today. There is not a specific requirement to remove ACM because of its presence."

The hazards of ACM depend on its condition (p.10):

> "The presence of asbestos in a building does not mean that the health of building occupants is necessarily endangered. As long as ACM remains in good condition and is not disturbed, exposure is unlikely. Undetected, deteriorated or damaged ACM can add to environmental and worker safety issues. When building maintenance, repair, renovation or other activities disturb ACM in an uncontrolled manner; asbestos fibers are released creating a hazard for the workers conducting the disturbance and a potential hazard to building occupants."

However, materials considered non-friable can become a source of asbestos exposure (p.19) :

> "Often emphasis has been, and continues to be, placed on the control of surfacing materials and TSI because of their friable nature. It should be noted that miscellaneous materials are the largest category of ACM. The group includes friable (i.e., ceiling tiles) or non-friable (i.e., vinyl floor tiles) materials. Non-friable materials such as floor tiles and asbestos cements can release asbestos fibers if they are cut, drilled, sanded, abraded, crumbled or pulverized during building repairs, renovation or demolition. As a general matter, if ACM is in poor condition or if they are disturbed in an uncontrolled manner, worker exposures and environmental contamination can occur."

Table 2-2 of the draft scoping document provides a description of the Conditions of Use ("COUs") that EPA plans to address in the Part 2 evaluation. This description, however, does not identify the full range of asbestos-containing products known to be present in structures. For example, it does not include friable materials like fireproofing and thermal system insulation ("TSI"), both of which are present in buildings in large quantities.

The *Purple Book* provides a more comprehensive breakdown of asbestos-containing products found in buildings, as shown below:

Appendix 1: REPRESENTATIVE LIST OF MATERIALS LIKELY TO CONTAIN ASBESTOS

This list is to be used as a guide and does not include all potential ACM's

Sprayed-On Or Trowel-Applied Fireproofing

Sprayed-On Or Trowel-Applied Acoustical Treatments

Sprayed-On Or Trowel-Applied Decorative Treatments

Sprayed-On Or Trowel-Applied Thermal Insulation

Blown-In Insulation
The potential ACM's would most likely be <1980

Insulation; Domestic Plumbing , Boiler/Steam etc.:
- Piping Insulation; runs & fittings (elbows, joints, valves etc.)
- Boiler Block
- Breeching Insulation
- Boiler Wearing Surface
- Joint compounds
- Pipe Gaskets
- Exhaust flues
- Equipment Insulation

Insulation, HVAC:
- Piping Insulation; runs & fittings (elbows, joints, valves etc.)
- Duct insulation (interior & exterior)
- Gaskets
- Duct-work taping
- Flexible fabric joints (as with vibration dampening cloth)
- Flue, seam taping
- Duct mastics (metal & fiberglass ducts)
- Condensate

Gypsum Wall Systems
- Joint compound
- Taping compounds
- Skim coats
- Spackling compounds
- Wallboard paper facing (rare)
- Various fiberboards (not construction particle board)

Flooring:
- Asphalt tile
- Vinyl asbestos tile
- Vinyl sheet flooring & backing felt
- Flooring felts
- Mastics; all including carpets and computer flooring pedestals
- Covebase (rare in the vinyl, often the mastic)
- Stair tread and risers (rare in the vinyl, often the mastic)
- Floor coatings
- Leveling compound

Asbestos Cement Materials
- Wallboard; flat & corrugated (can be interior or exterior)
- Siding shingles (often on homes)
- Roofing surface; flat & corrugated sheets
- Roof soffits, facia, drains and wall connections
- Covered walkway & portico soffits and facia
- Insulating panels
- Cement pipe; interior, exterior, buried
- Exterior (typically) cooling towers
- Electrical panel partitions
- Exterior decorative panels
- Chalkboards
- Louvers or shutters
- Lightweight concrete
- Duct (electrical possibly others)

Ceiling Tile
Can be a variety of sizes; note patterns, marks & color (on back)
- Lay-in (grid) tile
- Glued-on tile and mastics
- Concealed spline tile

Plasters
- Many plasters do not contain asbestos, but can
- Wall plasters (layers; brown/scratch coat & finish coat)
- Acoustical plaster
- Decorative plaster

Roofing (can be multiple generations):
New products can be ACM
- Asphalt saturated felt
- Reinforced flashing sheet
- Finishing felt
- Flashing
- Cement
- Layered or finish mastic
- Damproofing (membrane roofs)
- Asphalt shingles; roof & siding
- Rolled roofing
- Reflective or refinishing paints

Laboratories:
- Hoods (interior)
- Oven Gaskets
- Gloves
- Bench Tops
- Hood flues
- Fire blankets

Tony Rich, an industrial hygienist with deep experience with asbestos in buildings and a member of ADAO's Prevention Board, has described the pervasive presence of asbestos in abandoned structures across the US as follows:[28]

> "As an industrial hygienist and asbestos professional specializing in asbestos inspections over the past 28 years, I've had a unique perspective into the vast extent of asbestos usage in the US and the seemingly overwhelming amount of legacy asbestos

[28] Personal communication with Linda Reinstein, ADAO, February 25, 2022.

> still remaining in much of our nation's buildings and infrastructure. Tens of millions of tons of toxic chrysotile asbestos and its resulting harmful products have been imported, manufactured and ultimately incorporated into our everyday places where the asbestos can and does present exposure risks to the health and safety of those working or living around the contaminated materials. Currently, my involvement with the large-scale demolition program and NESHAP inspections of tens of thousands of abandoned structures in Detroit, Michigan — the majority of which are blighted houses — has resulted in the identification of chrysotile asbestos being found in greater than ninety percent of the inspected properties, comprising many friable and non-friable asbestos-containing materials (ACMs) in poor condition. These damaged ACMs often include, but not limited to: pipe insulations, duct insulations, surfacing materials, transite, and vermiculite insulation; causing additional costs of abatement and disposal due to increased contamination of the properties. The massive extent of legacy chrysotile asbestos usage, costs associated with handling asbestos exposure risks (including proper abatement and disposal) seem to strain the existing federal and state resources involved with operating such an important municipal program, much less with how individual homeowners may not be able to manage asbestos risks within their own homes. I strongly support the EPA's efforts to evaluate legacy asbestos and appreciate the opportunity to comment about the ongoing issues of chrysotile asbestos and protecting our citizens."

As Mr. Rich emphasizes, damaged or disturbed ACM is common not only in currently occupied structures but in tens of thousands of abandoned housing units and commercial and industrial sites in older cities across the US.

ACM is also commonly present in older public infrastructure such as water delivery and sewage treatment systems, power generation and supply equipment and even parks and playgrounds.

For example, beginning in the 1960s and continuing into the 1980s, cities throughout the U.S. installed millions of miles of asbestos-cement pipes. As these pipes wear over time, they rupture and require repair. In one incident in Houston investigated by ADAO, workers in Houston, Texas were exposed to asbestos while repairing the city's water mains in 2011. The Scientific Analytical Institute determined that the pipe was composed of 35% asbestos (25% chrysotile asbestos and 10% crocidolite). According to the workers, they were not informed that the pipe contained asbestos nor given personal protective equipment appropriate for handling asbestos. The workers told ADAO that they were instructed to cut the pipe using a power saw.

In another incident, an 86 year-old asbestos-lined steam pipe exploded in New York City's Flatiron District. This explosion put almost 600 New York residents and first-responders in danger of asbestos exposure. New York Mayor de Blasio said that "Test results that showed there was asbestos in the steam line raised concerns about the long-term effect of exposure through debris."

It has been estimated that "[asbestos cement] pipe generally contains about 12-15% asbestos and there are 400,000 miles of A/C pipe in the U.S., which is enough to circle the globe 16 times." This is an important example of legacy ACM in public infrastructure that should be investigated in the Part 2 evaluation.

B. Release of Asbestos Fibers When ACM Is Disturbed or Damaged Contributes to Elevated Exposure and Health Risk

The incidence of asbestos-related disease is elevated in populations with exposure to legacy asbestos.

In the 2013 NIOSH study of mortality and cancer incidence in a pooled cohort of US firefighters, researchers examined cancer incidence and mortality among firefighters in San Francisco, Chicago, and Philadelphia and found that "the population of firefighters in the study had a rate of mesothelioma two times greater than the rate in the U.S. population as a whole" and that "it was likely that the[se] findings were associated with exposure to asbestos, a known cause of mesothelioma."[29]

A study in Wisconsin of mesothelioma victims identified 41 persons with likely exposure to in-place asbestos-containing building materials, concluding that "individuals occupationally exposed to in-place ACBM are at risk for the subsequent development of mesothelioma."[30]

In a later study, the same researchers found that teachers, particularly in elementary and middle schools, are "at higher risk than the general population" due to the widespread presence of asbestos in schools built in the 1960s and 1970s.[31]

Historically, the levels of airborne asbestos in the asbestos industry workplace (milling and manufacturing of asbestos and asbestos products) have been substantially higher than levels found outdoors or in buildings with undisturbed ACM. However, elevated exposure levels have consistently been found in buildings where asbestos has been disturbed. A 1991 report by the Health Effects Institute, *Asbestos in Public and Commercial Buildings: A Literature Review and Synthesis of Current Knowledge*, compiles available air concentration data for asbestos in buildings and concludes that:

> "Asbestos containing material (ACM) within buildings in good repair is unlikely to expose office workers and other general building occupants to airborne asbestos fiber concentrations above the levels found in air outside such buildings.
>
> Janitorial, custodial, maintenance, and renovation workers are in a different category. In the course of their work, they may experience peak exposure episodes because of disturbance or damage to ACM, which may release relatively high concentrations of fibers. The frequency and degree of such exposure are uncertain because such episodes have seldom been monitored. . . . Because custodial and maintenance workers may be

[29] R. D. Daniels *et al.*, "Mortality and cancer incidence in a pooled cohort of US firefighters from San Francisco, Chicago and Philadelphia (1950-2009)," *Occupational and Environmental Medicine,* vol. 71, no. 6, pp. 388-397, Jun 2014.

[30] Anderson HA, Hanrahan LP, Schirmer J, Higgins D, Sarow P. Mesothelioma among employees with likely contact with in-place asbestos-containing building materials. Ann N Y Acad Sci. 1991 Dec 31;643:550-72. doi: 10.1111/j.1749-6632.1991.tb24506.x. PMID: 1809169.

[31] https://www.inquirer.com/education/a/mesothelioma-philadelphia-school-district-lea-dirusso-cancer-20191121.html.

> transiently exposed to higher levels of asbestos, their added lifetime risk of cancer may be appreciably higher than the risk to general building occupants.
>
> Asbestos removal workers are at the highest risk of potential exposure."

In its Toxicological Profile for asbestos, ATSDR notes that "asbestos fibers may be released to indoor air due to the possible disturbance of asbestos-containing building materials such as insulation, fireproofing material, dry wall, and ceiling and floor tile." ATSDR provides an extensive summary of asbestos monitoring results in a variety of building settings, concluding that "measured indoor air values range widely, depending on the amount, type, and condition (friability) of asbestos-containing materials used in the building."[32]

The comments of the International Association of Firefighters ("IAFF") on the Part 2 draft scoping document underscore that:[33]

> "damaging or disturbing any asbestos-containing products can release asbestos fibers into the air. Small diameter fibers may remain suspended in the air for a long time, while larger diameter fibers and particles tend to settle more quickly. Asbestos fibers generally do not break down to other compounds and remain virtually unchanged over long periods. This means that once the asbestos is disturbed, it can result in continuous exposures. Asbestos fibers are most commonly inhaled into the lungs or swallowed."

A challenge for the Part 2 evaluation will be to estimate cancer and non-cancer risks based on available air concentration data for a range of exposure and use scenarios for ACM in buildings, including high exposure conditions where the ACM is disturbed and is releasing asbestos fibers into the work or residential environment. Considerable monitoring of asbestos in buildings has been conducted over the years but much of it is not in the published literature. Instead, the results of this monitoring are in the files of EPA and OSHA compliance officials, abatement contractors, facility owners and construction firms. The Office of Pollution Prevention and Toxics ("OPPT") needs to work closely with its colleagues in EPA, OSHA and the General Services Administration and industry organization to access this "gray literature."

C. Fires, Extreme Weather Events and Other Disasters Result in Elevated Exposure to Legacy Asbestos

Emergency response crews and volunteers (as well as building occupants) are at high risk of legacy asbestos exposure in the wake of fires and other disasters. Where the duration of exposure is prolonged and more exposure events occur, the risk of asbestos-related disease is increased.[34] A well-studied disaster resulting in widespread asbestos release was the 2001 attack on the New York World Trade Center (WTC).[35] When the twin towers collapsed, "thousands of tons of particulate matter consisting of cement dust, glass fibers, lead, asbestos, polycyclic aromatic

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[32] ATSDR, *Toxicological Profile For Asbestos* (2001) , at 161, https://www.atsdr.cdc.gov/ToxProfiles/tp61.pdf.
[33] International Association of Fire Fighters, Comments on Part 2 Draft Scoping Document, February 14, 2022.
[34] C. Bianchi and T. Bianchi, "Malignant mesothelioma: Global incidence with asbestos," (in English), *Industrial Health,* Review vol. 45, no. 3, pp. 379-387, Jun 2007.
[35] P. J. Landrigan *et al.*, "Health and environmental consequences of disaster," *Environmental Health Perspectives,* vol. 112, no. 6, pp. 731-739, May 2004.

hydrocarbons (PAHs)" and other pollutants were expelled into the environment. The pollutants spread over Manhattan and Brooklyn for miles beyond the WTC site. Although the elevated airborne levels of asbestos declined eventually, the settled dust at and around Ground Zero had concentrations ranging between 0.8 and 3.0%.

Waste management and disposal are a potential source of significant risk after any disaster, due to the large amounts of debris that typically contains toxic substances, including asbestos. "Poor waste management not only causes environmental pollution in water, soil and air, but also causes harm to human health, particularly that of workers. 5000 tons of ACBMs [Asbestos Containing Building Materials] were released during the collapse of the World Trade Center in 2001, and the amount of asbestos fibers discharged was 555 times greater than the permissible level."[36] Following fires, extreme weather events and other natural disasters, non-friable asbestos in numerous building components may be severely disturbed, releasing asbestos fibers that are dangerous not just to emergency responders but to workers performing cleanup and building repairs and homeowners and their families performing do-it-yourself" waste removal and renovation work.

In its comments,[37] IAFF describes the heightened risks to firefighter from asbestos releases as follows:

> "Accordingly, fire fighters face a greater risk of asbestos exposure than the general population, making them a susceptible sub-population. Asbestos becomes airborne when disturbed or damaged by fire and when performing firefighting tasks. The IAFF has documented in previous comments to the EPA that part of the firefighting occupation requires entering burning buildings, extinguishing fires, and then opening walls and ceilings during overhaul to check for fire extension. All three tasks expose fire fighters to asbestos fibers. These activities are daily occurrences and result in frequent exposures to legacy asbestos. Our members' exposure to asbestos does not stop once we leave a fire. These fibers can remain on a fire fighter's turnout gear and equipment and spread to the apparatus cabs and fire stations. Fire fighters can inhale large amounts of these microscopic fibers and unknowingly increase their risk of developing an asbestos-related disease like Mesothelioma, Lung Cancer, and Asbestosis, to name a few."

D. Asbestos Risks to Teachers and Students in Schools Are Widespread and Significant

1. Schools Subject to AHERA

About half of all schools in the U.S. were built between 1950 and 1969 -- a period when asbestos was commonly added to building materials to increase durability and fire resistance. EPA estimates that there are asbestos-containing materials in most of the nation's primary, secondary and charter schools and if a school was built before the 1980s, it likely contains some form of asbestos. The Agency has found that ACM is present in 31,000 schools, frequented by 15 million

[36] Y. C. Kim and W. H. Hong, "Optimal management program for asbestos containing materials to be available in the event of a disaster," *Waste Management,* vol. 64, pp. 272-285, Jun 2017.
[37] See note 33.

school children and 1.4 million teachers and other school employees.[38] According to EPA, "asbestos is most commonly used in schools as insulation and in building materials. It has also been used in floor and ceiling tile, cement asbestos pipe, corrugated paper pipe wrap, acoustical and decorative insulation, pipe and boiler insulation, and spray-applied fireproofing."
In 1980, early in its evaluation of asbestos health impacts, EPA declared that: "[t]he Agency has determined that exposure to asbestos in school buildings poses a significant hazard to public health."[39] One reason for EPA's concern was that schoolchildren are at greater risk from asbestos than adults:

> "The highly active nature of school children and their physical characteristics generate concern that, under similar circumstances, their degree of actual exposure to asbestos may be greater than that of adults. Because children generally are more active than adults, they have a higher breathing rate. They also inhale relatively more often through the mouth than through the nose. Consequently, more fibers would be inhaled and fewer would be trapped by the nasal hairs and mucosa. Young children are shorter than adults and their mouths and noses are closer to the floor. Therefore, they are likely to inhale higher concentrations of dust that is stirred up from the floor."[40]

In response to mounting concern about the dangers of asbestos in schools, Congress enacted AHERA. The law requires school districts, including private elementary and secondary schools, to inspect their buildings for ACM; to prepare management plans by October 12, 1988, describing the actions they will take regarding any friable ACM found; and to carry out appropriate response actions necessary to protect human health and the environment. The Act also provides additional appropriations of federal funding to defray abatement costs and requires EPA to establish a model contractor accreditation plan that states must adopt.

Early appraisals of AHERA raised concerns about its effectiveness. One analysis concluded that the law failed "to address adequately many of the problems that have delayed school officials in responding to the asbestos hazard" and that "[f]oremost among these problems are the lack of adequate funding for schools to carry out inspections and abatement, and a shortage of qualified contractors to perform these tasks."[41] AHERA has continued to be plagued by these problems: recent assessments have documented persistent asbestos hazards, poor compliance and lackluster enforcement in numerous schools. Moreover, as school buildings have aged, asbestos-containing building components have deteriorated and suffered damage during negligent maintenance work or improper abatement procedures, resulting in the release of asbestos dust in classrooms and other heavily used spaces where children and teachers congregate.

In 2015, Senator Barbara Boxer (D-Calif.) and Senator Edward J. Markey (D-Mass.) launched an investigation into the management of asbestos hazards in school buildings, sending letters to the

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[38] Greenblatt, Janet. Evaluation of the Asbestos-in-Schools Identification and Notification Rule. Report No. EPA 560/5-84-005. October 1984. Pp xvi. Available at https://ia801409.us.archive.org/23/items/ERIC_ED250818/ERIC_ED250818.pdf.
[39] U.S. EPA, *Asbestos-Containing Materials in Schools: Health Effects and Magnitude of Exposure.* October 1980. Available at http://1.usa.gov/1AhBIQs.
[40] Id.
[41] James C. Stanley, Asbestos in Schools: The Asbestos Hazard Emergency Response Act and School Asbestos Litigation, 42 Vanderbilt Law Review 1685 (1989) Available at: https://scholarship.law.vanderbilt.edu/vlr/vol42/iss6/6.

governors of all 50 states to inquire about the implementation and enforcement of AHERA. Senator Markey's 2015 report, "Failing the Grade: Asbestos in America's Schools,[42] is based on the responses to this investigation and underscores the continuing lack of progress in addressing asbestos hazards in schools under AHERA. Based on responses to questionnaires sent to state authorities, the report makes the following key findings:

> **#1: The scope of asbestos hazards in schools in the United States is likely widespread but remains difficult to ascertain**. More than 30 years have elapsed since the last systematic study of the scope of asbestos hazards in schools conducted by the EPA in 1984. Based on the responses received by Senators Markey and Boxer, about two-thirds of local education agencies (69.5%, or 3,690 of the 5,309 local education agencies in the fifteen responding states) have schools that have been identified as harboring asbestos. Additionally, states have not fully abated the asbestos, suggesting asbestos-containing materials remain ubiquitous in our nation's aging schools.
>
> **#2: States do not appear to be systematically monitoring, investigating or addressing asbestos hazards in schools.** Three decades of inaction have enabled oversight responsibilities for AHERA to become ambiguous and confusing. Even identifying the appropriate point of contact for AHERA enforcement in a particular state has proven challenging.
>
> **#3: States do not report conducting regular inspections of local education agencies to detect asbestos hazards and enforce compliance**. A majority of responding states (eight of fifteen) were unable to articulate a clear schedule used to inspect or audit each local education agency to detect asbestos hazards. . . Enforcement actions taken generally seem to be reactive to complaints lodged by parents and school employees and not part of a proactive, regular oversight strategy or scheduled enforcement or inspection scheme.
>
> **#4: States do not report record-keeping activities intended to keep track of asbestos hazard information or remediation activities in schools.** There are few data reporting requirements to ensure compliance with AHERA. Local education agencies are simply trusted to maintain the required documentation of operations plans, inspection reports, and management plans, annual notifications and take appropriate management actions.

Describing the study findings, Senator Markey commented that: "We know so little about current asbestos hazards in our schools, and what we do know indicates we have a widespread problem in addressing this toxic threat. Decades of inaction have put students and teachers at risk of asbestos exposure."

A 2018 report by EPA's Office of Inspector General ("OIG") confirmed that weak oversight by EPA was a major contributing factor to AHERA's poor record in remedying asbestos hazards in schools.[43] OIG emphasized that "asbestos exposure risk is higher in children because they are

[42] 2015-12-Markey-Asbestos-Report-Final.pdf (senate.gov).
[43] Office of Inspector General, *EPA Needs to Re-Evaluate Its Compliance Monitoring Priorities for Minimizing Asbestos Risks in Schools*, Report No. 18-P-0270, September 17, 2018, https://www.epa.gov/sites/default/files/2018-09/documents/_epaoig_20180917-18-p-0270.pdf.

more active, breathe at higher rates and through the mouth, and spend more time closer to the floor where asbestos fibers can accumulate." It noted that EPA regions reported that asbestos in schools was still "a significant problem" and that, although required by AHERA, "not all of the schools we reviewed maintained an asbestos management plan." Moreover, OIG found that "EPA puts limited emphasis on AHERA inspections" and "asbestos in schools [is] not a top priority for EPA." The report concluded that "[w]ithout sufficient oversight, the EPA cannot verify that local educational agencies are identifying and properly managing asbestos in schools."

Further demonstrating the failure of AHERA, a series of investigative reports in the Philadelphia Inquirer revealed pervasive asbestos contamination in the city's school system. In tests on 84 surfaces in 11 of the city's most rundown elementary schools, the Inquirer found "alarmingly high" amounts of asbestos fibers on gym floors, cafeterias, hallways, classrooms and auditoriums. Nine of the schools had elevated asbestos levels in areas accessed by students. Surface tests in six of the schools showed more than 100,000 asbestos fibers per square centimeter, an alarming level of exposure according to experts contacted by the Inquirer. The highest level - 8.5 million fibers - was found in a floor near an insulated pipe in a hallway outside a classroom in a school where asbestos remediation was done the previous fall.
While asbestos repairs were made in some schools, other schools were left behind, the Inquirer report said. According to the paper, in the school district's last full asbestos inspection in 2015-16, more than 80 percent of schools showed damaged asbestos in more than 2,000 locations.

The Philadelphia experience is far from unique in major urban centers with aging school buildings. There are numerous reports of schools evacuated or shut down because of asbestos contamination, improper asbestos removal, health scares from unexpected asbestos releases, and lack of funding for asbestos abatement.[44]

Asbestos exposure in schools has been identified as a cause of mesothelioma. In 2019, a 51-year-old teacher, Lea DiRusso, was diagnosed with mesothelioma after a 30-year career teaching at two asbestos-contaminated Philadelphia schools. One of her classrooms at Meredith Elementary contained damaged asbestos pipe insulation. Outside of Philadelphia. elevated mesothelioma rates have been reported for numerous school employees,[45] and studies indicate that teachers are more than twice as likely to die from mesothelioma than the general U.S. population.[46]

2. Colleges and Universities

Although AHERA does not apply to colleges and universities, they have many buildings containing asbestos building materials that may be exposing teachers, students and administrative staff to unsafe conditions.

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[44] http://www.asbestosnation.org/facts/asbestos-in-schools/.
[45] There have been 57 known cases of mesothelioma involving Massachusetts school employees from 1987-2008. 2013 ADAO AAC: Dr. Charles Levenstein, "Lessons Learned from AHERA: Asbestos Management in Schools." Available at https://www.youtube.com/watch?v=dYsop4y6jk8.
[46] Although the absolute numbers are small – 13 teachers died of mesothelioma in 1999 – the National Institute for Occupational Safety and Health's "Work-Related Lung Disease Surveillance Report" for 2007, the latest year available, noted that elementary school teachers are more than twice as likely to die from the disease than Americans as a whole. National Institute for Occupational Safety and Health, Work-Related Lung Disease Surveillance Report 2007, September 2008. Available: http://www.cdc.gov/niosh/docs/2008-143/pdfs/2008-143a-i.pdf.

A letter to the docket from an attorney in Pittsburgh describes long-standing asbestos concerns at the Pennsylvania State University: [47]

> "In 2014, I was retained to represent the family of a retired Pennsylvania State University professor who had contracted and died from mesothelioma, a fatal cancer with no known cure and only one cause, asbestos exposure. My client's lawsuit against Penn State was the first ever to be brought against a major university alleging that legacy asbestos in its structures had caused someone (an occupational non-user) to contract and die from an asbestos-related disease (mesothelioma)."

During discovery in the case, it emerged that testing conducted in 1979 found asbestos in more than 100 university structures. To address this asbestos contamination, Penn State sued an asbestos manufacturer in 1986 to force it to fund a multimillion-dollar asbestos removal project across campus. However, recovery in the case was minimal and the university "…switched its policy from trying to remove as much asbestos as possible to simply monitoring it via a so-called "in-place" management approach … under which … the only time asbestos is removed from a college or university structure is when the school decides to renovate that structure." As described by the lawyer, a "quick online review of colleges and universities reveals most American higher education institutions have aging structures contaminated with asbestos…because they utilize the "in-place" asbestos management program similar or identical to Penn State."

The asbestos control policies and procedures of universities and colleges should be investigated in EPA's Part 2 evaluation. It is important to ascertain whether universities and colleges are implementing inspection programs to determine whether ACM has been damaged and should be abated or are failing to monitor the condition of ACM except in areas where building repairs or renovations are planned. In the latter event, faculty, students and maintenance staff could unknowingly be exposed to asbestos fibers from damaged ACM.

E. Environmental Releases from Legacy Use and Disposal Are a Significant Source of Exposure

In contrast to the Part 1 evaluation, the draft scoping document indicates (p. 10) that "EPA plans to evaluate releases to the environment as well as human and environmental exposures resulting from the conditions of use of asbestos that EPA plans to consider in the Part 2 risk evaluation." This should be an important area of focus in Part 2.

1. Releases From Building Repair, Renovation and Renovation

Repair, renovation and demolition of buildings containing ACM are major contributors to environmental exposure. These activities release asbestos fibers to the ambient environment, resulting in exposure by the general population. They also generate sizable volumes of asbestos-containing debris that enter waste streams which are ultimately disposed of at a variety of waste

[47] Letter from Michael P. Robb, Esquire of Bailey & Glasser, LLP to Michael S. Regan, EPA Administrator, March 1. 2022

management facilities. Asbestos debris is also generated at the scenes of fires, floods and other natural disasters that result in damage to structures or their complete destruction. How much asbestos-containing waste is created through these activities, where it goes and how it is handled, transported and managed are critical issues for understanding the risks of legacy asbestos.

In the draft scoping document, EPA has summarized asbestos releases reported for the Toxic Release Inventory ("TRI") in 2019 as follows:

Table 2-10. Summary of Asbestos TRI Production-Related Waste Managed in 2019

Year	Number of Facilities	Recycled (lbs)	Recovered for Energy (lbs)	Treated (lbs)	Released[a] [b] [c] (lbs)	Total Production Related Waste (lbs)
2019	38	0	0	1,499	12,084,362	12,085,861

Data source: 2019 TRI Data U.S. EPA (2019b)
[a] Terminology used in these columns may not match the more detailed data element names used in the TRI public data and analysis access points.
[b] Does not include releases due to one-time event not associated with production such as remedial actions or earthquakes.
[c] Counts all releases including release quantities transferred and release quantities disposed of by a receiving facility reporting to TRI.

Of these releases, 11 million pounds were released to land. RCRA Subtitle C landfills accounted for 7,052,146 pounds and unspecified disposal methods for 4,001,623 pounds. Since asbestos is not regulated as a Subtitle C waste, non-Subtitle C disposal is permissible.

As EPA recognizes, the asbestos releases reported under TRI likely significantly understate the amounts of asbestos in waste streams from legacy-related activities.

First, TRI reporting is only required for facilities in covered sectors that manufacture (including import) or process more than 25,000 pounds or otherwise use more than 10,000 pounds of the chemical in a given year. This would not include construction sites that generate asbestos debris (because these sites are not in a sector subject to TRI) or disposal sites managing asbestos in amounts lower than reporting thresholds.

Second, facilities are required to submit TRI reports only for releases of asbestos in friable form under the general CASRN 1332-21-4. According to the TRI Reporting Forms and Instructions, "friable" refers "to the physical characteristic of being able to be crumbled, pulverized, or reducible to a powder with hand pressure."[48] Personnel at construction sites or disaster locations often may not know whether debris and waste contain asbestos in friable form (or even whether the debris contains asbestos). Moreover, even if it is non-friable at the point of origin, ACM debris may later be disturbed or damaged during handling or transport, releasing asbestos fibers that could be unsafe to exposed workers or members of the public but would not be reflected in TRI reports.

[48] *Toxic Chemical Release Inventory Reporting Forms and Instructions; Revised 2019 Version*; U.S. Environmental ProtectionAgency; EPA 740-B-19-037; January 2020; https://ofmpub.epa.gov/apex/guideme_ext/guideme/file/ry_2019_rfi.pdf

Third, knowledgeable experts report that considerable quantities of ACM from construction sites are placed in landfills not licensed to accept these wastes or in illegal dump sites, both of which would not submit TRI reports.

Thus, the universe of ACM-containing waste may be far larger than TRI-reported volumes and the conditions of disposal may not include recognized safeguards for managing asbestos.

The scoping document properly recognizes (p. 44) that:
"[TRI] information sources pertain to asbestos releases primarily from industrial facilities. The risk evaluation will consider asbestos releases from many other activities beyond industrial releases. These other activities include, but are not limited to, asbestos in building materials and other products that may be released during construction and demolition activity. EPA will consider other information sources (e.g., the peer-reviewed literature) when characterizing asbestos releases from these various other activities."

We agree that EPA cannot rely on TRI data in characterizing asbestos releases from construction activities and disasters and must access other data sources to determine legacy asbestos risks from these exposures.

The TRI data-base is also of little relevance in determining ambient air levels for local residents or passers-by who are exposed to asbestos releases from construction sites, burning or abandoned buildings or other disasters. EPA will similarly need to access other data sources that shed light on these exposure pathways.

2. Drinking Water Contamination

As noted above, one legacy use of asbestos is in asbestos cement pipes. According to the EPA Part 1 evaluation, asbestos cement is no longer being manufactured imported and used in the US,[49] but asbestos cement pipes remain in service in drinking water distribution systems.

The American National Standards Institute ("ANSI") indicates that asbestos enters our water supplies from "the deterioration of asbestos-cement pipes, which make up between 12-15 percent of drinking water systems in the United States and can be found all over Europe, Japan, and Australia. Over time, damage to these pipes erodes the cement, allowing asbestos fibers to seep into the water. Many of these municipal water distribution systems were built in the early-to-mid 1900s, with an average recommended lifetime of 70 years. Since these pipelines are used long past their peaks and subject to harsh water and soil conditions, they are more prone to breakage, adding to the level of contamination."[50]

Another source of asbestos in drinking water is leaching of natural occurring asbestos from soil and rock erosion and "loose fibers spreading into the environment from nearby construction sites or landfills. Disposing of older asbestos products in the environment can create toxic runoff that eventually flows into watersheds." [51]

[49] However, there is evidence that asbestos cement is still being imported into the US. If true, these imports should be identified in reports under EPA's upcoming TSCA section 8(a) reporting rule for asbestos.
[50] ANSI Blog: Keeping Asbestos Out of Drinking Water https://blog.ansi.org/?p=158120
[51] Id.

In 1982, EPA set a maximum contaminant level ("MCL") for asbestos in drinking water of 7 million fibers per liter ("MFL").[52] According to the Environmental Working Group ("EWG"), monitoring required by EPA has detected asbestos in the drinking water of 34 water suppliers in 12 states serving a combined population of 241,000 people.[53] Exceedances of the MCL have been detected in some of these drinking water systems. ATSDR reports that asbestos "concentrations in most areas are <1 MFL (EPA 1979b), but values of 1–100 MFL and occasionally higher have been detected in areas contaminated by erosion from natural asbestos deposits (EPA 1976; Kanarek et al. 1980) or from mining operations (Sigurdson et al. 1981) . . . The amount of asbestos contributed from asbestos cement pipe is negligible in some locations (Hallenbeck et al. 1978) but may result in concentrations of 1–300 MFL at other locations (Craun et al. 1977; Howe et al. 1989; Kanarek et al. 1981)."[54]

There is evidence that ingestion of drinking water containing asbestos is a cause of gastrointestinal malignancies. According to ATSDR, a "number of epidemiological studies have been conducted to determine if human cancer incidence is higher than expected in geographical areas where asbestos levels in drinking water are elevated (usually in the range of 1–300 MFL) . . . Most of these studies have detected increases, some of which were statistically significant, in cancer death or incidence rates at one or more tissue sites (mostly gastrointestinal) in populations exposed to elevated levels of asbestos in their drinking water."[55]

EPA did not address risks from ingestion of asbestos in its Part 1 evaluation but the Part 2 draft scoping document recognizes that "oral exposure is possible via ingestion of asbestos fibers in drinking water" and commits to "to analyze oral, dermal and inhalation exposures to consumers" from legacy conditions of use (p.45). We strongly support this approach.

3. Superfund Sites

ATSDR reports that asbestos has been identified in at least 83 of the 1,585 hazardous waste sites that have been proposed for inclusion on the EPA Superfund National Priorities List (NPL).[56] Legacy ACM from abandoned, demolished or repaired buildings, obsolete products and infrastructure components is a common source of asbestos contamination at these sites. At several sites, asbestos continues to leach to groundwater and surface water, often spreading beyond site boundaries and creating a potential exposure pathway for nearby communities. Despite years of cleanup, some sites like the infamous Ambler, PA manufacturing operations continue to pose active threats. OPPT should work closely with the CERCLA program to obtain monitoring and other information about asbestos releases to the environment.[57]

[52] https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations
[53] https://www.ewg.org/tapwater/contaminant.php?contamcode=1094
[54] ATSDR at 164.
[55] Id at 65.
[56] Id at 149.
[57] Because releases of legacy asbestos are still occurring at many sites, they fall within the TSCA definition of "disposal" and should be addressed in the Part 2 evaluation.

III. GAPS IN FEDERAL REGULATIONS AND INCONSISTENT COMPLIANCE AND ENFORCEMENT LIMIT THEIR EFFECTIVENESS IN PREVENTING UNSAFE EXPOSURE TO LEGACY ASBESTOS

A critical aspect of the Part 2 evaluation will be understanding the role of existing regulations in managing exposure to legacy asbestos in building structures and other environments. Two principal federal agencies – EPA and OSHA – have put in place requirements designed to protect human health during activities that could disturb ACM and release asbestos fibers in buildings and at construction sites. The EPA and OSHA regulations date back to the early 1970s and have undergone several revisions since that time.

It is important to recognize that, except for the AHERA program to manage asbestos in schools, EPA and OSHA regulations do *not* create an affirmative obligation to inspect buildings or construction sites for the presence of asbestos and determine whether it may be endangering building users and workers. As explained by Brent Kynoch, chair of ADAO's Prevention Committee and a recognized expert in asbestos abatement:[58]

> "While EPA might assume that employers have knowledge of the presence of ACM in buildings, this is generally not true. There is no EPA requirement to do a complete building survey (inspection) for the presence of ACM except that which is required for schools (K-12, 40 CFR Part 763, Subpart E). This means that there are a vast number of buildings where there never has been a complete survey, nor have workers been trained even at the basic awareness level as is required by EPA (schools) and OSHA in their regulations. To this day there are many workers on a daily basis performing necessary tasks with no knowledge of the presence of ACM in their work, nor have they been trained in required worker protection and work practices. These 'unknowing, unprotected' exposures . . . obviously lead to an under assessment of the exposures and risk associated with existing asbestos."

A health-protective Part 2 evaluation requires a recognition that numerous asbestos exposures are occurring without the knowledge of employers, building owners and operators and construction firms -- and without worker protections and safe handling practices required by federal regulations once the presence of asbestos is known.

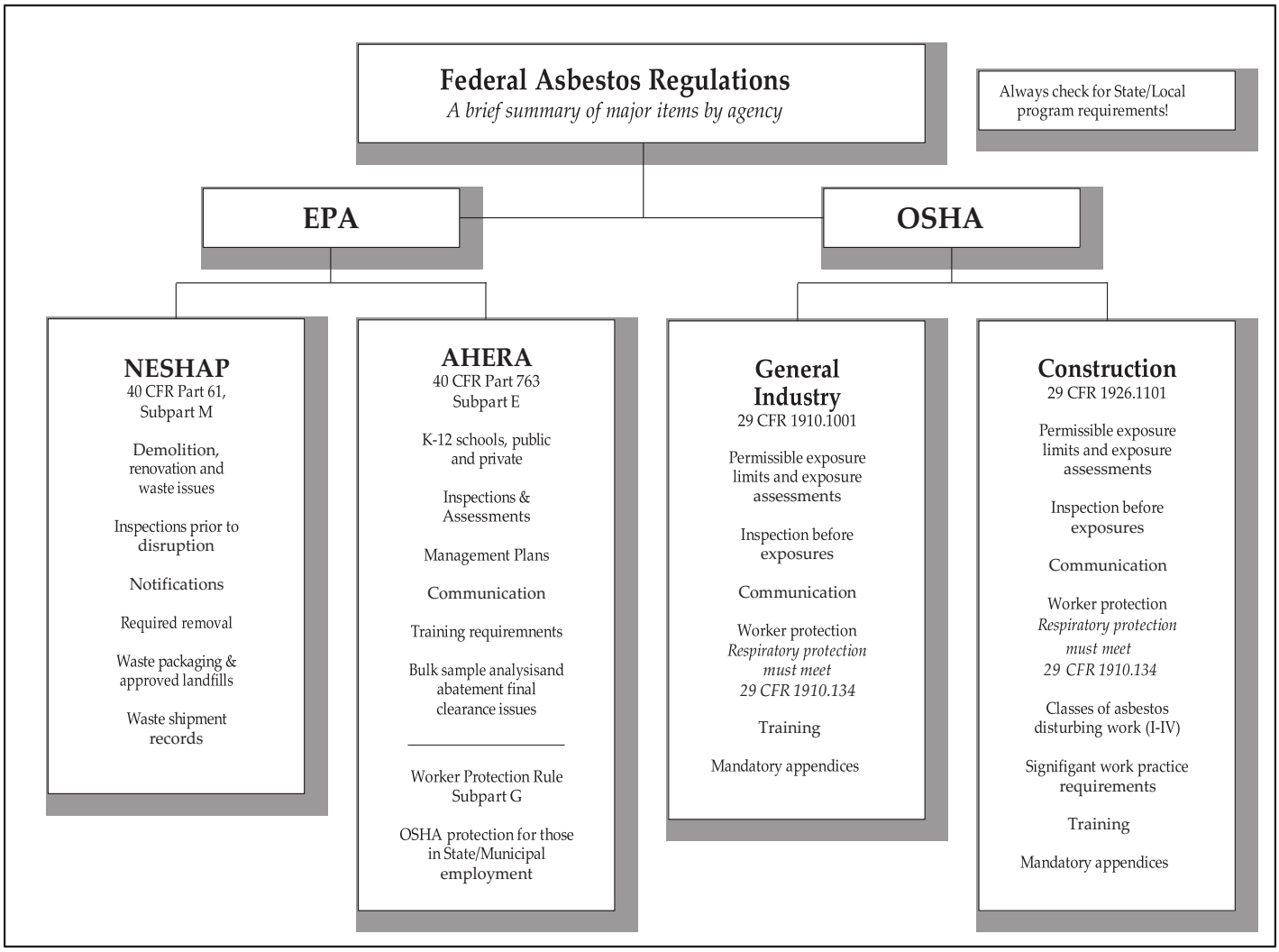
It is also important to recognize that, in the absence of disturbances that make ACM friable, federal regulations impose no obligation to remove asbestos. As the *Purple Book* emphasizes (p.11):

> "Further, there are no federal regulations that require the removal of ACM from a building merely because it is present. A common misconception is that ACM was removed from buildings long ago. While there were some building owners and managers that did elect to remove ACM from their buildings, most of those materials originally installed in buildings remains today. There is not a specific requirement to remove ACM because of its presence."

[58] Comments of J. Brent Kynoch, Managing Director Environmental Information Association, in response to the Draft Risk Evaluation for Asbestos, at 2.

For this reason, "with no existing mandate for removal, there is in fact a significant amount of installed asbestos still in place in buildings in the United States" (p. 16).

The *Purple Book* provides the following overview of the EPA and OSHA regulations:



The regulations themselves are complex but in general address the following issues according to the *Purple Book* (p.23):

- Addressing restrictions on the use of some categories of asbestos products in buildings (see links in section 1.2.2),
- Specifying work practices for removal of ACM from buildings and disturbance of ACM during maintenance activities,
- Requiring the detection of ACM before disturbance and the control of these materials if disturbed during maintenance, renovation or demolition activities,
- Requiring notification to EPA or State/Local programs prior to most renovation and all

demolition projects,
- Mandating worker exposure protection for those that could come in contact with ACM with prescribed exposure limits, required training, and personal protective equipment,
- Requiring communication about the presence of ACM and activities that could disturb these materials with affected workers and building occupants, and
- Proper handling and disposal of ACM waste
- Required EPA and OSHA recordkeeping.

Some states and local governments have developed their own asbestos regulations and they can be more stringent than federal requirements. One example is state certification (licensing) of those performing abatement services. In addition, state agencies are in many cases delegated to enforce federal requirements.

Because of the pervasiveness of asbestos in buildings, the large and diverse exposed population, the complexity of the regulations and limited government resources to enforce asbestos programs, compliance with EPA and OSHA requirements is far from universal. As with schools subject to AHERA, violations are widespread in public and private buildings and many regulated entities are simply unaware of or disregarding their responsibilities.[59] This necessarily means that many building occupants, maintenance staff, construction workers and others who are in theory protected by the regulations are in fact at risk. These risks must be recognized and accounted for in the Part 2 evaluation.

In its recent proposal to modify its TSCA risk evaluation for the Cyclic Aliphatic Bromide Cluster ("HBCD"), EPA said that it will no longer rely on assumptions of regulatory compliance used in risk evaluations by the Trump EPA. Instead, EPA proposed to base risk determinations on "a baseline scenario that does not assume compliance with OSHA standards, including any applicable exposure limits or requirements for use of respiratory protection or other personal protective equipment ("PPE")."[60] The Agency correctly concluded that an assumption of OSHA compliance fails to recognize that "unreasonable risk may exist for subpopulations of workers that may be highly exposed because they are not covered by OSHA standards, such as self-employed individuals and public sector workers who are not covered by a State Plan, or because their employer is out of compliance with OSHA standards, or because EPA finds unreasonable risk for purposes of TSCA notwithstanding OSHA requirements."[61]

These considerations apply with special force to legacy asbestos. The Part 2 evaluation should accordingly make determinations of unreasonable risk on the assumption that neither EPA nor OSHA regulations can be relied on to uniformly prevent unsafe exposure.[62]

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[59] While EPA has work practice regulations within the asbestos NESHAP, the OSHA asbestos construction standard is the yardstick by which work is performed today. The current asbestos NESHAP regulations were published in 1990 (of importance are §61.141, §61.145 and §61.150). The current OSHA construction standard became effective in the mid-1990s. OSHA also requires training as enumerated by the EPA's Model Accreditation Plan. Most of the enforcement of the asbestos NESHAP rules is at the State/Local agency level, not at the federal level.

[60] 86 Fed. Reg. 74082 (December 29, 2021).

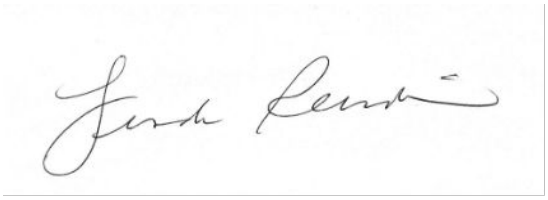
[61] 86 Fed. Reg. at 74086

[62] The draft scoping document indicates (p.44) that "EPA generally intends not to make risk determinations based on assumptions about the use of PPE or control technologies. However, EPA plans to develop exposure scenarios with and without the use of PPE and engineering controls to inform any potential risk management required subsequent to an unreasonable risk determination for workers or ONUs."

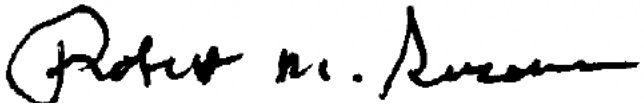
CONCLUSION

ADAO strongly supports EPA's Part 2 asbestos risk evaluation and is encouraged by elements of the draft scoping document that implement our settlement agreement with EPA. However, the Agency faces a daunting challenge to assure that the serious risks of legacy asbestos to the US population are fully addressed in Part 2. In these comments, we have provided our understanding of the sources and magnitude of these risks and offered recommendations to assure that Part 2 is comprehensive, health protective and based on the best available science and data. ADAO and its large network of experts look forward to working closely with EPA as the Part 2 risk evaluation proceeds.

Respectfully submitted,



Linda Reinstein
Asbestos Disease Awareness Organization
President and Cofounder



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