CleanEarth™

Responses to December 4, 2024 Public Information Meeting Comments Part 1 (Sections 1-5) Part 2 (Sections 6-10) Part 3 (Sections 11-19)

Environmental Soil Management of New York LLC
Fort Edward Township, NY
Research, Development & Demonstration (RD&D) Permit
NYSDEC Application # 5-5330-00038/00027

February 11, 2025

Introduction

This document contains ESMI / Clean Earth's responses to questions asked during the December 4, 2024, public information meeting regarding its NYSDEC Research, Development & Demonstration (RD&D) Permit Application # 5-5330-00038/00027. 269 people joined the meeting. 52 participants made oral comments and asked questions. Additional comments were provided through the web chat function, and additional questions were submitted via email, voicemail, and letter. To provide a clear, comprehensive, and concise response to the questions raised, we have combined similar questions into one summarized version. Questions that were not directly relevant to this permit application, ESMI / Clean Earth operation in Fort Edward, or PFAS, or were otherwise seeking information that is confidential in nature (e.g., personal information about our employees) are not addressed by this document.

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1 Corporate History

1.1 Who is Clean Earth?

Clean Earth, a division of Enviri Corporation, is one of the largest specialty waste companies in the United States, providing disposal, recycling, and beneficial reuse solutions for hazardous and non-hazardous waste, contaminated soil, and dredged materials. Our portfolio of technologies and services helps commercial, industrial, government, and retail businesses achieve their sustainability goals, reduce their carbon footprint, and engage in the circular economy. Clean Earth is dedicated to recycling and beneficially reusing wastes and is proud to be an Industry leader recycling over 90% of the total volume we process each year. The work at our facilities across the country tells our story:

- 8.6 billion lbs. of total waste recycled in 2023
- 7.5 billion lbs. of contaminated soil reused or repurposed in 2023
- 653 million lbs. of wastewater recycled or reused in 2023
- 243 million lbs. of fuel recycled or reused in 2023
- 11 million lbs. of electronics recycled in 2023
- 6.2 million lbs. of lamps / lightbulbs recycled in 2023
- 6 million lbs. of batteries recycled in 2023

1.2 How long has Clean Earth operated and employed team members in Fort Edward, NY?

The Clean Earth facility in Fort Edward (also known locally and under permit name as ESMI), located at 304 Towpath Lane, has operated as a local employer, taxpayer, and good steward to the environment and the local community since 1995.

1.3 What does the Clean Earth facility in Fort Edward facility do?

At this facility, contaminated soil is remediated and cleaned to exceed state environmental regulatory requirements using a physical separation process known as thermal desorption. The cleaned soil can then be beneficially reused in residential, commercial, and industrial land applications. Examples of remediated soil beneficial reuse projects in Fort Edward include Market 32, Hudson Headwaters Medical Facility, and Fort Edward School Bus Garage.

1.4 Generally, what is Clean Earth's business model for its Fort Edward facility?

Clean Earth Fort Edward's business is to clean contaminated soil by our thermal desorption process and generate a beneficial use soil product.

2 Current Operations – General (not specific to PFAS)

2.1 Is the Fort Edward facility regulated by the government?

Yes, the facility and its operations are regulated under New York State Department of Environmental Conservation (NYSDEC) regulations and hold permits from both the Solid Waste and Air Resources Divisions.

2.2 What is the process for removing contaminants from the soil?

Clean Earth uses a well-established environmental remediation technology process called thermal desorption to remove contaminants from the soil.

2.3 What is thermal desorption?

Thermal desorption utilizes heat to separate or "desorb" organic contaminants from the soil. This process works similarly to the way water is removed from clothing in your home dryer. The soil is tumbled in a rotating cylinder tube called a rotary dryer where heat is used to desorb (or separate) the contaminants from the soil. The remediated soil, cleaned of contaminants, is discharged from the process unit. The desorbed contaminants are conveyed to a thermal oxidizer, which destroys the desorbed contaminants.

2.4 What happens to the contaminants that are removed from the soil?

The contaminants desorbed from the soil move into a second fully enclosed process unit called the thermal oxidizer (air emission control device). In this unit, the contaminants are destroyed (oxidized and chemically broken down into water, carbon dioxide, and their elemental components). The thermal oxidizer is operated at the facility under strict performance criteria set forth in the facility's NYSDEC Air Resources Permit.

2.5 How clean is the soil, and what happens to the soil after the contamination is removed?

Soil that has been treated at the facility meets NYSDEC's strict beneficial use regulations (6 CRR-NY 360.12), is no longer a regulated waste, and can be reused in residential, commercial, and industrial applications.

2.6 How does the facility ensure the soil has been properly treated?

The facility operates under strict quality assurance measures to confirm successful thermal treatment and verify that the soil meets reuse criteria. All soil is tested by a third-party certified laboratory prior to leaving the site. Once testing confirms the soil meets regulatory requirements for its intended use, the post-treated soil can be delivered to an approved destination.

2.7 What kind of contaminants does the facility currently remove from soil?

The facility is permitted to treat soils contaminated with fuels (gasoline, diesel, fuel oil), various lubricants, greases, waxes, petroleum-based oils, manufactured gas plant waste, and polychlorinated biphenyls (PCBs).

2.8 Where does the soil treated at the facility come from, and how is the soil transported to the facility?

Soil received at the facility originates from states within the northeast U.S. and are transported in covered trailers and roll-off containers meeting all New York State Department of Transportation (NYSDOT) and federal Department of Transportation (DOT) requirements.

2.9 How does the facility determine if soil can be accepted?

In accordance with and as approved by the NYSDEC, the facility has a Waste Analysis Plan (WAP). The WAP controls the acceptance and processing of contaminated soil and media and describes in detail the methods and procedures used to accurately characterize the material by respective generators. The plan consists of different steps of waste sampling, evaluation, and analysis. A waste profile is required to be completed by generators that provides information on the generating site, including site location, history, contaminating process, and contaminants. The waste profile is reviewed by Clean Earth employees trained in waste acceptance regulations and protocols to determine if the waste material and chemical analysis meet the facility permit acceptance requirements.

2.10 What materials can the facility accept besides soil?

The facility's solid waste permit defines what material can be accepted for treatment through the thermal desorption process. Acceptable material is defined as "inert, predominately non-combustible, nonvolatile solids such as: soil, stone, mine tailings, concrete, brick, lime, dredged material, iron oxide, and other such mineral-based materials." This facility does not accept liquid wastes.

2.11 What happens to the large rocks, plastic, and other trash that sometimes arrive mixed within the soil?

Any material, such as wood and plastic, received as part of the soil shipment are screened and segregated from the soil and subsequently managed by NYSDEC permitted solid waste companies. Rocks are crushed, treated, and/or beneficially reused.

2.12 Does the facility treat biosolids (like those proposed for processing at the Saratoga Biochar facility)?

No, under the facility's permit, acceptable material is defined as "inert, predominately non-combustible, nonvolatile solids "such as: soil, stone, mine tailings, concrete, brick, lime, dredged material, iron oxide, and other such mineral-based materials." This facility does not accept liquid materials, only solid or semi-solid.

2.13 Does the facility's current permit allow for the processing of PCB and volatile organic compound (VOC) containing soils?

Yes, VOCs can be accepted by the facility. This provision has been part of the facility's permits since operations commenced in 1995. PCBs up to 45 parts per million (ppm) were added to the facility's permit in 2014. The original permit and all subsequent permit modifications have been properly noticed per the NYSDEC public notice procedures in force at the time.

2.14 Does the facility process dioxin-containing materials?

No, dioxin-contaminated materials are not an approved waste stream in the facility's solid waste permit. As noted in other responses, the facility's Waste Analysis Plan (NYSDEC approved) and solid waste permit control the acceptance of contaminated soil and media.

2.15 What other chemicals may be contained in the contaminated soil processed at the Clean Earth facility in Fort Edward?

For the complete list of contaminants that may be processed at the Fort Edward facility, please reference the solid waste permit that has been posted on the Public Participation Plan website. The information can be found on pages 2 and 3 of the permit.

2.16 Clean Earth's corporate website indicates that the company manages many types of materials, including soils, hazardous waste, electronics, and pharmaceuticals. Will the Fort Edward facility be accepting any or all of these wastes eventually?

The facility in Fort Edward handles non-hazardous contaminated soil as per the facility's solid waste permit. There are no current or future plans to modify the facility to manage hazardous wastes, electronics, or pharmaceuticals.

2.17 Does the facility discharge water?

The facility does not discharge liquid water from its process. Water (found in the soil and utilized in the process) in the form of steam is discharged as water vapor from the permitted emission point**.**

2.18 What is the compliance record of the Clean Earth facility located at 304 Towpath Lane, Fort Edward, NY?

The facility has an exceptional compliance record. Since operations began in 1995, the facility has received only one minor notice of violation, which occurred 25 years ago. Facility workers receive comprehensive (annual refresher and monthly module) training, which includes Resource Conservation and Recovery Act (RCRA), Hazard Communication (HAZCOM), Hazardous Waste Operations and Emergency Response (HAZWOPER), and Department of Transportation (DOT) training, as well as site-specific safety and environmental training.

2.19 Is Clean Earth currently processing PFAS-contaminated soils?

No, Clean Earth's location in Fort Edward does not currently process soil designated as containing PFAS. The facility's permits do not allow it to treat soil via thermal desorption that is known to be contaminated with PFAS. Clean Earth requires every customer to complete a material profile that contains past site history describing contaminants found in the soil to be delivered to a Clean Earth facility.

2.20 Has the Clean Earth facility in Fort Edward processed PFAS-contaminated soil in the past?

Yes, in the past, with the permission of the NYSDEC, the facility treated small volumes of PFAS-contaminated soil under a NYSDEC-approved Research, Development, and Demonstration (RD&D) registration (58Z10005T).

2.21 What is Clean Earth's current experience processing PFAS-contaminated materials?

Clean Earth provides collection, transportation, treatment, and disposal services for PFAS-contaminated environmental media and wastes safely and compliantly across our network of facilities. Clean Earth has managed PFAS-contaminated wastes through water treatment systems, third-party incinerators, and landfills and by thermal desorption during the 2018 RD&D project. Clean Earth has thousands of combined years of experience that we utilize to safely and compliantly manage hazardous and non-hazardous waste in the communities where we operate.

2.22 What is Clean Earth's long-term plan for processing PFAS in Fort Edward?

Clean Earth is in the application process for an RD&D permit to treat PFAS-contaminated soil. The application is an initial phase of the permit process. If Clean Earth is permitted to perform the testing requested in the RD&D submittal, the data and science developed will be a tool utilized in determining future treatment operations for PFAS-contaminated soil at the facility.

2.23 How many trucks, on average, does the facility accept on a daily basis?

Daily deliveries to the facility, on average, are approximately 16 tractor-trailer loads, Monday through Friday. However, actual daily truck deliveries to the facility vary based on projects approved and scheduled for acceptance at the facility.

2.24 Is the thermal desorption process noisy?

Any potential noise emanating from the facility will not change because of the proposed PFAS project. Noise can be higher if the soil being treated has a high level of aggregate/rock, which is likened to putting coins in the clothes dryer instead of socks. As ambient noise lessens (i.e., into the evening hours) the facility may seem to be "louder." Noise levels do not fluctuate based on treatment temperatures or air flow volumes at current operating conditions.

2.25 Why do I see visible emissions from the stack at Clean Earth Fort Edward? Is this smoke?

This is not smoke. Depending on atmospheric conditions (temperature and humidity), at times there is a visible steam plume/moisture plume that can be seen emanating from the emission point. The moisture evaporated from the processed soil and utilized in the process is emitted in the form of steam / water vapor. During cooler temperatures, this steam (moisture) condenses and forms a visible plume.

2.26 Has the NYSDEC received complaints about odors emanating from the Clean Earth Fort Edward facility?

Some commenters noted that at times there is an odor that may emanate from the facility. Clean Earth has been in contact with NYDEC. At that time, the DEC acknowledged that it had received an odor complaint and had investigated, including an onsite visit to the facility and the surrounding area. The DEC did not identify any odor or potential sources of odor. NOTE – there are multiple possible sources of odors in the area surrounding the Clean Earth facility.

2.27 What are the piles of metal at your facility?

The facility stores metal from old process components that may be repurposed to support current operations. Metals segregated from soil received at the facility are containerized and shipped offsite for reclamation.

2.28 Was it your company that was previously fined in a separate incident for a leak of hazardous waste?

No. Clean Earth Fort Edward did not have a leak nor was it fined for a leak. The Fort Edward facility has had only one notice of violation in 29 years. Clean Earth rigorously follows comprehensive policies and procedures for waste management, including regular audits, emergency response planning, and continuous employee training. We take the safety of

the communities in which we live and work very seriously and seek to be good partners, employers, and corporate citizens.

2.29 Does Clean Earth accept Department of Defense (DoD) / military waste streams at its Fort Edward facility?

No. The facility is not currently managing soil from DoD installations. Clean Earth has a waste acceptance process that requires site specific history and analysis be provided to the facility prior to any soil acceptance. Clean Earth can only accept non-hazardous soil media waste from its customers.

2.30 Does the Fort Edward facility accept nuclear waste?

No. Fort Edward is not permitted to accept nuclear waste.

2.31 What health and safety precautions does Clean Earth take to protect its employees when they process contaminated soil at the Fort Edward facility?

Personal protective equipment (PPE) is provided to employees based on an evaluation of potential hazards and applicable OSHA regulations. Clean Earth believes that health and safety are a priority and responsibility of all Team Members. To mitigate exposure, we implement engineering controls wherever possible. Additionally, we employ a team of highly trained health and safety professionals that thoroughly and regularly review each task our Team Members are required to perform and determine the PPE necessary based on all applicable OSHA guidelines. Audits are performed on a regular cadence to ensure the set standards are being adhered to.

2.32 How does Clean Earth Fort Edward manage contaminated soil that might end up on an employee's uniform or boots?

All plant employees (not those who remain solely in the office) are provided work clothes and boots. A third-party company picks up dirty uniforms and provides clean uniforms, typically on a weekly basis. Clean Earth provides lockers for the employees to change from street clothes to work clothes. The Fort Edward facility also has boot brushes that workers use to knock off dirt before entering building/locker rooms.

2.33 Can you provide information on the facility's zoning status and related material?

The facility is located within the Fort Edward Industrial Park, which is zoned "industrial" by the Village and Town of Fort Edward. Current zoning maps can be sourced at both the Village and Town of Fort Edward websites.

3 Clean Earth's Proposed Research, Development & Demonstration Project

3.1 What is Clean Earth proposing to do at its Fort Edward facility?

Clean Earth intends to conduct a short-term test to treat up to a maximum of 5,000 tons of PFAS-contaminated soil. We anticipate that this test will take less than two weeks. The U.S. Environmental Protection Agency (EPA) and the Department of Defense (DoD) have conducted laboratory bench-scale research that shows thermal desorption can effectively treat PFAS-contaminated soil. During this test, Clean Earth will validate this research at full-scale. This test will take place under an approved NYSDEC Research, Development & Demonstration (RD&D) permit. Validation testing will include air emissions testing and laboratory analysis on the soils both pre- and post-treatment. This short-term test, as well as all emissions sampling and laboratory tests, will be completed as approved by NYSDEC.

3.2 Why is this PFAS destruction research necessary?

The effectiveness of thermal desorption and thermal oxidation to remove and destroy PFAS compounds has been proven in many laboratories including the U.S. EPA's Office of Research & Development (ORD). This research has included both bench-scale and full-scale studies. Further information is still needed to verify the proper operating conditions for PFAS destruction at full scale. This important research will answer questions to help the NYSDEC prepare for compliance with upcoming federal regulations and allow the NYSDEC to develop its own state-specific PFAS policies, guidance, and regulations. Furthermore, this research will help to ensure that PFAS contamination in New York communities can be cleaned up safely.

3.3 Under what authority would the RD&D permit be issued?

An RD&D permit for this project would be issued by the State of New York under authority granted by New York Codes, Rules, and Regulations Title 6 § 360.18 (Solid Waste) and Title 6 § 201-1.16 (Air Resources). These regulations allow the NYSDEC to issue short-term research permits to test innovative technologies while simultaneously ensuring that public health is protected.

3.4 Why Clean Earth's Fort Edward facility?

The Fort Edward facility was chosen because of its excellent operating history, including the facility's compliant regulatory history and ability of the process units to reach PFAS destruction temperatures identified in published laboratory, bench scale, and full-scale studies.

3.5 If PFAS containing soils are to be processed at Clean Earth Fort Edward, how would this R&D permit allow for different processing methods?

The submitted RD&D permit would allow Clean Earth to receive PFAS-contaminated soil. The facility would continue to utilize the current facility technology (thermal desorption) as

outlined in the submittal. No other technologies will be utilized to treat PFAS contaminated soil during this RD&D project. The RD&D permit will contain operating parameters, such as system temperatures, at which the system will operate during the term of the project.

3.6 If the RD&D permit is approved, how will the regulators monitor the project?

If the RD&D permit is approved, an air emission testing plan will be submitted to NYSDEC for approval. This plan will outline the test methods the facility intends to deploy to monitor process emissions for potential PFAS as well as pre- and post-treated soil for PFAS. During past testing events, NYSDEC representatives were onsite to witness testing as it was being completed. Clean Earth expects NYSDEC representatives to be onsite for the testing associated with this RD&D Project, as well.

3.7 Has the thermal desorption and thermal oxidation technology used at Fort Edward to destroy PFAS been successfully tested by others?

Yes, currently there are two permitted thermal desorption units in Alaska that have treated PFAS contaminated soil, and there have been numerous publications showing the effectiveness of thermal desorption and thermal oxidization for the treatment of PFAS:

- A discussion on the Alaksa thermal desorption units can be found on this website. Similar information can be found on page 8 of the RD&D permit application.
- Frank Barranco, Paul Caprio, and George Hay, "Final Report – Evaluation of Indirect Desorption Coupled with Thermal Oxidation Technology to Treat PFAS-Impacted Investigation-Derived Waste, SERDP Project ER18-1572," February 2020. (Documents PFAS removal from soil processed through a thermal desorber and subsequent destruction with a thermal oxidizer.)
- Nathan H. Weber, Sebastian P. Stockenhuber, Ammar Abu Fara, Charles C. Grimison, John A. Lucas, John C. Mackie, Michael Stockenhuber and Eric M. Kennedy, "Experimental Thermal Decomposition of PFOS and PFOA," proceedings of the IT3 Conference, January 27-28, 2021. (Study evaluated the products formed at temperatures of 1,706 and 1,994°F and under various types of atmospheres – argon, nitrogen, air, water. When air plus water vapor were used as the carrier gas, no lighter fluorinated compounds were identified in the off gas at 1,706°F. PFOS data was also presented at 1,994°F with similar trends evident.)
- Benjamin Hanley, John Lucas, and Annette Nolan, "Remediation of PFAS-impacted Soil Using Innovative Treatment Technologies," presentation at Ecoforum Conference and Exhibition, 2016. (Study of removal of PFOS and PFOA from soil using thermal desorption.)
- J. Ryan, B Gullett, Analysis of Fate of PFAS During Incineration PFAS Emissions Measurement Methods Development and Emissions Characterization Study at National Response Corporation Alaska, LLC AFFF Contaminated Soil Thermal Treatment Facility SERDP Project ER19-1408, Nov. 2020.

- E. Shields, et al, "Pilot Scale Thermal Destruction of PFAS in a Legacy AFFF," May 2023. (Study measured products of incomplete combustion in the off gas from direct destruction of aqueous film forming foam (AFFF) liquid at different residence times and temperatures in a pilot scale furnace.)

3.8 At what temperatures do you intend to conduct this project?

Clean Earth is proposing to treat the PFAS-contaminated soil at temperatures ranging from 700°F to 900°F and operate the thermal oxidizer for the destruction of PFAS at temperatures ranging from 1550°F to 1750°F.

3.9 How long does it take to process and clean the soil?

Soil treated in the thermal desorption unit (rotary kiln or tumbler) is processed / cleaned in about 10 minutes.

3.10 Can the Fort Edward thermal oxidizer attain the temperatures necessary to destroy PFAS?

Yes, the thermal oxidizer has the ability to reach temperatures that have been demonstrated to destroy PFAS.

3.11 Can you go into more detail about the thermal oxidizer?

The thermal oxidizer is a vertically fired, refractory lined vessel, with a retention time of approximately 2.1 seconds, which can operate at various treatment temperatures to destroy contaminants in the process airstream.

3.12 On page 8 of the permit application, it is noted that Clean Earth believes PFAS can be controlled at temperatures lower than 982 Fahrenheit. Can I get some additional information on this?

Please reference the following documents, which are available on the PPP website:

- Evaluation of Indirect Thermal Desorption Coupled with Thermal Oxidation Technology to Treat Solid PFAS-Impacted Investigation-Derived Waste SERDP Project ER18-1572 FEBRUARY 2020 - LINK
- Low-temperature thermal treatment of gas-phase fluorotelomer alcohols by calcium oxide - LINK
- Thermal Mineralization of Perfluorooctanesulfonic Acid (PFOS) to HF, CO2 and SO2 - LINK

3.13 Is it correct that your facility can only reach 600 degrees Celsius for thermal oxidation?

No, that is incorrect.

3.14 Will the soil still contain PFAS after the thermal desorption treatment?

Based on laboratory bench-scale and full-scale testing that has been completed by others, we do not expect identifiable concentrations of PFAS in the soil. The RD&D permit will require laboratory analysis on the soils both pre- and post-treatment to validate removal of the PFAS.

3.15 Will this short-term research contaminate the soil, air, and water around the facility and in the surrounding communities?

No. Based on studies and testing to date, the surrounding community will not be adversely impacted by this project. According to existing research (U.S. EPA and others), as well as our emissions modeling completed in accordance with U.S. EPA and NYSDEC procedures, emissions associated with the testing will meet the state's identified air emission criteria.

3.16 Are there other companies in New York that use the technology used at Clean Earth Fort Edward?

Clean Earth is unaware of other companies in the State of New York that utilize thermal desorption to treat contaminated soils.

3.17 Has Clean Earth conducted similar testing at any of its facilities in other states?

No.

4 Permitting

4.1 What NYSDEC permits does the facility currently possess?

The Fort Edward facility holds both an Air Resources Permit (5-5330-00038/00021) and a Solid Waste Permit (5-5330-00038/00019).

4.2 Is the Fort Edward facility permitted to process hazardous waste?

No. The facility is only permitted to process non-hazardous waste. The facility has a Waste Analysis Plan (WAP). The WAP addresses the acceptance and processing of contaminated soil and media. It describes in detail the methods and procedures used to accurately characterize material before acceptance. The plan consists of different steps of waste sampling, evaluation, and analysis. This includes a requirement that the generator must complete a waste profile, including site location, history, contaminating process, and contaminants.

4.3 Do the facility's current permits allow for the treatment of PFAS contaminated materials?

No, the facility is not currently permitted to treat PFAS contaminated material, and the facility does not accept material identified as containing PFAS.

4.4 Does this project require approval by the Village or Town of Fort Edward?

The Clean Earth facility is located within the Village of Fort Edward. Our understanding is that the Village, from a permitting standpoint, does not need to approve the project. We have no intention of bypassing community concerns and will certainly continue to work with the Village to ensure that we comply with any permit requirements.

4.5 Who reviews and approves the RD&D permit application?

The RD&D permit application will be reviewed and approved by the New York State DEC. The NYSDEC regional contact is Beth Magee – (518) 623-1283, beth.magee@dec.ny.gov

5 Source of PFAS Contaminated Soil to be Used for Project

5.1 From where does Clean Earth intend to source the PFAS-contaminated soil?

Because the NYSDEC has not yet approved and issued the RD&D permit, Clean Earth does not yet have permission to accept PFAS-contaminated soil and is not in a situation where it can contract to receive soil for treatment. No source of the contaminated soil has been identified. The permit application discusses this issue.

5.2 Can you give the community a predicted range of possible PFAS concentrations in the soil to be processed under this RD&D permit?

Currently no. It will be dependent on the soils identified and available for treatment once the RD&D permit has been approved.

5.3 Will this facility be processing AFFF?

No. Aqueous Film Forming Foam (AFFF) is a liquid with very high concentrations of PFAS. Clean Earth Fort Edward is not permitted to handle liquids and has no intention of handling such high concentration PFAS waste.

5.4 How does the facility accept contaminated soil? How do we know what contaminants are in the soil that the facility accepts?

In accordance with and as approved by the NYSDEC, the facility has a Waste Analysis Plan (WAP). The WAP controls the acceptance and processing of contaminated soil and media and describes in detail the methods and procedures used to accurately characterize the material by respective generators. The plan consists of different steps of waste sampling, evaluation, and analysis. A waste profile is required to be completed by generators that

provide information on the generating site, including site location, history, contaminating process, and contaminants. The waste profile is reviewed by Clean Earth employees trained in waste acceptance regulations and protocols to determine if the waste material and chemical analysis meet the facility permit acceptance requirements. The facility only accepts profiled materials for which the facility is permitted. Clean Earth does not accept any truckload without a customer going through this strict process.

6 Transportation

6.1 Will this project increase truck traffic or create a nuisance?

No. The community will see no difference in facility operations. The project will not increase normal truck traffic destined for the facility. As discussed in the RD&D permit application (pages 9 and 10), the Fort Edward facility will dedicate floor space in its enclosed storage building for the soil to be stored during the RD&D project. Only a fixed volume of material can be stored in the building. This reduces the area available for storage of other soil and, therefore, replaces traffic from other soil-carrying trucks.

6.2 Will the size and type of trucks change as part of the project?

No, the size and type of truck delivering soil to the facility will not change.

6.3 How many total trucks will be used to transport the 5000 tons of soil over the two-week period?

Approximately 130 trucks will be utilized to move the PFAS contaminated soil for the RD&D Project to the Fort Edward facility. This will not increase the overall number of trucks destined for the facility.

6.4 What is Clean Earth's response plan if, during transportation, a release does occur?

The trucks hauling material to the facility are managed by Clean Earth's clients or Clean Earth itself. Clean Earth works with these trucking companies to ensure that material is safely delivered to and from our facilities. The trucking companies are responsible for following all DOT regulations. If a release were to occur enroute to the facility, the trucking company and its response contractor would manage the situation in coordination with Clean Earth and the local community responders. As noted in other responses herein, PFAS contaminated soil transported to the Fort Edward facility would contain no free liquids and would only be slightly contaminated.

6.5 What precautions will be used during transportation to prevent leaks, spills, or other releases?

The Fort Edward facility does not accept liquids, so there is no opportunity for leaks or "splash" out of the trucks. All trucks transporting soil to the Fort Edward facility, including soil for this RD&D study, are designed to properly haul soil. In compliance with regulations, trucks transporting soil to the facility have sealed truck beds and a cover to prevent material from "blowing out" of the truck. The truck's covered and sealed bed prevents rain from entering the truck bed and material from "washing" out of the truck. Trucks are weighed on a certified scale upon arrival at the facility so that Clean Earth has a record of the material received. Finally, all material is transported using permitted haulers as per 6 NYCRR State Part 364. New York State regulations require "transport vehicles for regulated waste must include a cargo-carrying portion that is enclosed and secured except when loading or unloading regulated waste" N.Y. Comp. Codes R. & Regs. Tit. 6 §§ 364-4.8.

6.6 Has a truck destined for the Clean Earth Fort Edward facility ever spilled its load?

A review of the Fort Edward facility records did not identify any truck destined for Fort Edward having spilled or released its contents

6.7 How does the state regulate the transportation of non-hazardous materials?

The New York State Environmental Conservation Law requires that anyone engaged in the transportation of regulated wastes, such as those materials potentially received at the Clean Earth facility, must possess one of the following depending on the waste type:

- A valid New York State Part 364 Waste Transporter Permit
- A valid New York State Part 364 Waste Transporter Registration

Specific requirements for persons transporting regulated waste can be found in 6 NYCRR Part 364 and 6 NYCRR Part 381.

6.8 How are the truck drivers transporting these non-hazardous materials to Fort Edward licensed?

Any person who drives a truck or other commercial vehicle is required to have a Commercial Driver's License (CDL). Requirements for a New York State CDL include training, a physical exam, a written test, and a road skills test.

6.9 What routes are used by the trucks delivering contaminated soil to the Clean Earth facility in Fort Edward?

Trucks entering the Village of Fort Edward head North along Route 4 to Schuyler Street. Schuyler Street is followed to the intersection of Burgoyne Avenue. Trucks head South on Burgoyne Avenue to McIntyre Street, then McIntyre to Towpath Lane. Soil received at the facility originates from states within the northeast U.S. and is transported in covered trucks meeting all NYSDOT and federal DOT requirements as discussed in other portions of this document.

7 Soil (containing PFAS) – Handling & Storage Prior to Treatment

7.1 How will the PFAS contaminated soil be handled at the site prior to processing?

Soil that arrives will have been previously profiled and approved by Clean Earth personnel (see Section 5). When the soil arrives at the facility, transportation documentation will be reviewed to verify that the soil has been approved for acceptance. The truck, its contents (soil), and the project will then be verified and logged in Clean Earth's database system. The truck and trailer will be weighed to capture the weight of soil contained in the truck. The contaminated soil will then be placed into the soil storage building where it will be stored separately from other soil. Once all RD&D soil is received, it will be sampled prior to processing in accordance with the NYSDEC approved RD&D permit testing protocol.

7.2 How is soil moved from the trucks into the storage building?

Soil is transferred directly from the trailer into the soil storage building.

7.3 How will the storage building at the Fort Edward facility manage emissions (dust, etc.) from the PFAS contaminated soils?

As noted above, the soil will be placed directly into the soil storage building. The building's roof, sides, and doors minimize the effects of atmospheric conditions (wind, rain, snow, etc.). The storage building is equipped with activated carbon beds. Air within the building is drawn through the activated carbon beds to remove contaminants prior to the air being exhausted through a stack. The activated carbon beds are required by permit when soil is being managed within the soil storage building. Overhead doors on the building are open during the day to allow soil to be received and are closed during overnight hours.

7.4 What specific site containment measures are used to prevent the spread of contaminated soil during storage? By wind? By rain?

Contaminated soil is placed directly into the soil storage building. The soil storage building has a roof, four sides enclosed by walls, doorways that can be open and closed, and a concrete floor with an impermeable liner underneath. Soil storage inside this building prevents contact with rain/snow and minimizes the impact of wind. In addition, the

building is equipped with activated carbon beds through which air passes prior to discharge.

7.5 How long does Clean Earth anticipate the PFAS contaminated soil sitting in the storage building before the soil is processed/cleaned?

Clean Earth will prioritize the RD&D project and the processing of the PFAS contaminated soil. The amount of time PFAS contaminated soil will remain within the storage building before it is processed will depend upon the time necessary to complete laboratory analysis of the soil prior to treatment (as would be required by the RD&D permit), approvals from the NYSDEC, and coordination with the independent third-party testing companies.

7.6 Is water used during the processing of contaminated soil? Where does that water go?

The facility adds water to the treated/clean soil (rehydration) to prevent dust and allow for easier handling. Water is also added to the thermal oxidizer effluent airstream to reduce temperatures prior to the baghouse (particulate emission control device). All water used in the process is either retained in the soil or evaporated for cooling purposes. As noted in response to other questions, the facility does not discharge liquid water.

7.7 How will Clean Earth prevent the contamination of groundwater and surface water at its Fort Edward location?

The Fort Edward facility is designed to prevent potential contaminants from leaving the site. In accordance with its permits, all contaminated material is stored inside of a building isolating the soil from rain/snow/wind/etc. The soil storage building has a concrete floor and an impermeable liner below the floor to prevent potential contamination movement from the soil to the building's subsurface.

8 Soil (clean) – Handling & Storage After Treatment

8.1 What does Clean Earth do to ensure that the cleaned soil is actually clean?

Treated/clean soil is analyzed by a certified third-party laboratory. Analysis results are compared to the facility's solid waste permit and Beneficial Use Determination (BUD) criteria. The BUD criteria, which are set by the state, are specific criteria based on soil contaminants, that must be met for the soil to be reused as a product. Treated soil meeting the beneficial use criteria can be placed into residential, commercial, and/or industrial applications in alignment with the BUD.

8.2 Where is the cleaned soil stored?

Treated soil meeting the criteria for beneficial reuse is stored either at the southern end of the facility adjacent to the thermal desorption unit or at the northern end of the property.

Both post treatment storage locations are located and managed in accordance with facility permits and approvals.

8.3 If Clean Earth's thermal desorption process successfully cleans the PFAS contaminated soil, where will that soil be stored at the Fort Edward facility?

The soil will be stored in one of the areas noted in the previous question. The soil, meeting cleanup criteria identified in the RD&D permit, will be kept separate from other clean soil processed at the facility.

8.4 What is the time frame between finishing the processing and receiving the results of the testing, and what happens to the soil between the time it is tested and the time the results are received?

As discussed in question 8.1, soil is tested post-treatment to verify compliance with applicable requirements. Soil samples are sent to a third-party laboratory for testing. Test results are typically received within three days. During this time, the pile sits in one of the treated soil stockpile areas discussed in question 8.2.

8.5 How does Clean Earth suppress dust associated with the clean soil?

As noted in Section 7, the treated/clean soil is rehydrated with water to minimize dust. In addition, the facility utilizes water to provide additional dust suppression, as necessary.

9 Soil Reuse

9.1 What happens to the "clean" soil?

As discussed in question 8.1, the Fort Edward facility holds a Beneficial Use Determination (BUD) from the state of New York, which allows the facility to place treated clean soil back into the economy. Clean Earth's goal is to recycle as much material as possible. After treatment, soil is tested to confirm that the contaminants have been removed and that the soil meets the facility's BUD. The BUD allows cleaned soil to be beneficially reused in residential, commercial, and industrial applications. Examples of soil beneficial reuse in Fort Edward include Market 32, Hudson Headwaters Medical Facility, and Fort Edward School Bus Garage. Reusing soil in this manner prevents it from taking up space in existing landfills, thus extending the landfill's useful life and avoiding the need to site additional landfills. Additionally, soil reuse prevents the need to mine virgin soil.

9.2 Did Clean Earth conduct a human health and environmental impact assessment to determine the potential risks associated with the reuse of the cleaned soil?

Any soil that is reused must meet the facility's BUD. The state's development of these criteria includes an analysis of potential risks.

9.3 What happens if processed soil does not meet the state's beneficial use criteria?

Clean Earth protocols, including the Fort Edward BUD, require that all cleaned or processed soil must be tested for contaminants prior to reuse. In the rare situation when a tested soil does not meet the state's beneficial use criteria, Clean Earth then retreats the soil. As is proposed in our RD&D permit application, if the Fort Edward facility cannot successfully treat the PFAS contaminated soil, that soil will be shipped to a permitted management facility capable of handling PFAS contaminated solids.

9.4 Does Clean Earth tell the people buying the clean soil that the soil has been processed to remove contamination?

Clean Earth is required to disclose that soil sold under the BUD was previously contaminated. The purchaser is required to sign an agreement acknowledging this disclosure and verifying they understand the applications within which the soil can be placed in the environment.

10 <u>On-Site – Spill and Emergency Response</u>

10.1 What are the protocols for an accidental spill of contaminated soil at the Fort Edward facility?

Soil, as it is received, is placed directly into the storage building. This process minimizes opportunities for releases or spills. Clean Earth personnel are always in attendance to monitor the process when a truck is offloading. If during the process, soil falls outside of the building, the soil is immediately cleaned up and deposited within the building. Similar processes occur if soil is spilled during conveyance to the thermal desorption unit. Note that the Fort Edward facility, as required by its permit, is not allowed to accept liquids.

10.2 What protocols are in place for managing fires at the Fort Edward facility?

In the case of a fire, Clean Earth would follow the protocols and procedures identified in the facility's Contingency Plan, including coordination with local emergency responders. The Contingency Plan has been previously shared with the local fire department and County Sheriff.

10.3 What protocols are in place for equipment failures at the Fort Edward facility?

Clean Earth inspects the thermal desorption unit weekly as a component of the facility's preventative maintenance activities. Preventative maintenance activities are a component of the facility's NYSDEC-approved Operations and Maintenance (O&M) Manual. The O&M Manual also includes start-up, shutdown, and emergency shutdown procedures.

10.4 Are Fort Edward area first responders prepared to handle a PFAS spill?

The Fort Edward facility is not permitted to accept liquids for treatment, and thus there is no potential for PFAS liquids to be "spilled" as part of this RD&D project. If material were to be released (note that facility records indicate that Clean Earth has never had a release of contaminated soil in the community), it would be soil lightly contaminated with PFAS. If such an unlikely scenario were to occur, first responders are trained to manage truck accidents and potential releases. First responders would check shipping documents to identify potential hazards, which are required with all soil shipments destined for the Fort Edward Facility. In addition, Clean Earth communicates with local first responders, and they are familiar with the operations at the Fort Edward facility. Any further informational requests should be directed to local first responders.

11 PFAS Soil Testing

11.1 How will Clean Earth test the soil for PFOA and PFOS?

Concentrations of PFAS will be identified in the soil using EPA Method 1633, Revision A. Finalized in December 2024; this laboratory analytical method details the testing procedure for per- and polyfluoroalkyl substances (PFAS) in a variety of environmental matrices, including wastewater, surface water, groundwater, soil, sediment, and tissue samples.

11.2 Which laboratory will conduct the tests on the PFAS-contaminated soil?

Clean Earth contracts regularly with a number of certified and accredited third-party laboratories. At the time of this publication, we have not finalized the selection of the laboratory that will conduct the testing associated with this RD&D project.

11.3 What does it mean to test for PFAS in the soil pre- and post-process?

As discussed in the RD&D permit application, Clean Earth will test both the contaminated soil (pre-process, before thermal desorption) and the treated soil (post-process, after thermal desorption). Testing pre- and post-process soils will allow both Clean Earth and NYSDEC to validate the effectiveness of the thermal desorption process. Testing the post-process soils ensures that the soils meet the beneficial use criteria approved by the NYSDEC for the offsite management of clean soils.

11.4 Which PFAS would be tested for in soil, pre- and post-process?

Soil PFAS concentrations will be tested using EPA Method 1633, Revision A. The list of PFAS compounds can be found in Table 1 on page 50 of the link provided in the previous sentence.

11.5 Will you be processing soil that is contaminated with heavy metals?

All Clean Earth facilities have a strict protocol for gathering details about soil contamination, called profiling, prior to soil being accepted at any Clean Earth facility. As part of our profiling process, Clean Earth checks for potential high levels of heavy metals. If a soil contains concentrations of heavy metals that make the material a hazardous waste, the Fort Edward facility would not accept that soil. The Fort Edward facility is not permitted to accept materials that are hazardous waste per the Resource Conservation and Recovery Act (RCRA).

11.6 What other substances might be in the PFAS-contaminated soil that you intend to use for this project?

For the purposes of this project, Clean Earth intends to acquire soil that is contaminated primarily with PFAS, but other types of contamination that can be associated with PFAS releases may be present. The facility is permitted to treat soils contaminated with fuels (gasoline, diesel, fuel oil), various lubricants, greases, waxes, petroleum-based oils, manufactured gas plant waste, and PCBs. The soil used for this project would not contain other contaminants not covered by the facility's permit.

12 PFAS Air Testing

12.1 Explain how Clean Earth Fort Edward intends to test the air emissions during this RD&D project.

This short-term project and all associated emissions sampling plans and laboratory tests will be completed as approved by the NYSDEC. An independent, certified, third-party laboratory will use laboratory methods OTM (Other Test Method) 45, OTM-50, and OTM-55 to test for PFAS in air. These analytical methods are designed to identify perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) as well as potential products of incomplete destruction (PIDs). In addition, Clean Earth will test for any potential emissions of hydrogen fluoride (HF) using Method 26A and CF_4 using OTM 50.

12.2 Will Clean Earth monitor emissions for products of incomplete combustion (PICs) or products of incomplete destruction (PIDs)?

Yes, Clean Earth intends to monitor for products of incomplete combustion using EPA laboratory methods OTM-45, OTM-50, and OTM-55.

12.3 How does Clean Earth know that PFAS emissions are below the allowable emissions limits?

Clean Earth conducted extensive modeling of potential emissions. Please refer to Section 15 for a discussion of that modeling. As approved by the NYSDEC, the Fort Edward facility will collect air samples and have an independent and certified third-party laboratory analyze those samples for the modeled contaminants, as well as an extensive list of other potential PFAS. The results of this testing will be used to validate the modeling results.

12.4 As part of this RD&D project, will Clean Earth Fort Edward test for the presence of hydrogen fluoride in the facility's air emissions?

Yes, Clean Earth's third-party laboratory and testing firm, utilizing EPA Method 26A, will collect samples and conduct tests to determine if hydrogen fluoride is emitted during the RD&D Project.

12.5 Does Clean Earth intend to monitor for emissions at off-site locations?

No, Clean Earth does not intend to install monitors to evaluate potential PFAS emissions off-site of the Fort Edward facility. As discussed in the RD&D permit application, the maximum concentration receptor for every modeled contaminant is located within the nearfield (i.e., either within the footprint of the facility or just outside of the facility's property line). Please refer to Table 3 in Section 15 of this document.

12.6 Will there be real-time air monitoring?

Potential PFAS air emissions will be very low if not zero (see emissions modeling discussion in Section 15). Technology does not currently exist to continuously measure such low emissions. These potential low emissions, if present, can only be accurately measured and quantified by the more sensitive testing equipment found in a certified laboratory.

12.7 If air emissions exceed the limits set by the NYSDEC, will the project be stopped?

As noted in earlier sections of this response, continuous on-site monitoring is not technically feasible. Modeling has shown that potential emissions will not exceed state guidance. When third-party laboratory analysis is available, the results will be immediately assessed. If emissions concentrations exceed state guidance, then in consultation with the NYSDEC, the RD&D project will be paused to assess the situation.

12.8 Where and when will the air monitoring results be available for review?

PFAS emission sampling Methods OTM-45, OTM-50, and OTM-55 require analysis to be completed offsite at an independent third-party laboratory. Preliminary results will be available for review by the NYSDEC. Final results from these analyses will be submitted to NYSDEC with the RD&D Project summary report.

13 Third-Party Testing/Monitoring

13.1 Will the testing be conducted by an independent third-party laboratory?

Yes, there will be a third-party laboratory testing of all samples collected. The third-party laboratory will hold certifications to conduct these analyses. The third-party laboratory will be independent of Clean Earth. NYSDEC is not directly involved with the sampling or analysis but does, as part of the RD&D permit application process, approve a sampling and analysis plan.

13.2 Which laboratory will conduct the testing of the soil and air?

An independent third-party laboratory will analyze all air and soil samples. There may be multiple laboratories involved. All laboratories will be third-party and independent of Clean Earth. At the time of publication, Clean Earth has not selected these laboratories.

13.3 Who will monitor the test results associated with this RD&D project?

The NYSDEC will review the results of this project. Within 90 days after the completion of the testing, Clean Earth must submit to the NYSDEC a project summary report, at which time the NYSDEC will assess the results.

13.4 Will the NYSDEC monitor the project?

Clean Earth will be required to notify NYSDEC of the dates when testing will occur. In Clean Earth's experience, NYSDEC will likely have representatives onsite during emission testing events.

14 Air Emissions Controls

14.1 What are the NYSDEC ambient air quality standards for PFAS?

The NYSDEC has set an ambient air quality standard for PFOA. Please see DAR-1 Guidelines for the Evaluation and Control of Ambient Air Contaminants Under 6NYCRR Part 212. Standards can be found in the AGC/SGC tables at the back of the document.

14.2 How does the facility intend to control potential PFAS emissions?

Emissions are controlled at the Fort Edward facility using a thermal oxidizer. A thermal oxidizer is a high-temperature unit that can destroy PFAS and other organic materials. The thermal oxidizer is discussed on page 4 and in Appendix A of the RD&D permit application. Operation of the thermal oxidizer is also discussed in the earlier portions of these responses to comments.

14.3 Is there a potential for products of incomplete combustion/destruction during this project?

As noted earlier in this document, Clean Earth intends to monitor products of incomplete combustion using EPA laboratory methods OTM-45, OTM-50, and OTM-55.

14.4 Does the Fort Edward facility have air emissions controls in place to eliminate PFAS and other emissions?

Yes, the Fort Edward facility controls air emissions using a thermal oxidizer and baghouse. The thermal oxidizer destroys organic contaminants, such as PFAS, and the baghouse controls particulate matter emissions.

14.5 How does the facility intend to control potential hydrogen fluoride emissions?

One byproduct of PFAS destruction is hydrogen fluoride (HF). The production of HF is indicative of the destruction of PFAS. Table 3, referenced in Section 15, shows potential emissions of HF. Due to the low concentrations of PFAS to be destroyed during this project, potential HF emissions are very low and below state guidance.

14.6 How does the facility intend to control potential particulate matter emissions?

The Fort Edward facility will utilize a baghouse to control particulate emissions. The EPAs webpage describes a baghouse as "A fabric filter, sometimes referred to as a baghouse, utilizes fabric filtration to remove particles from the contaminated gas stream by depositing the particles on fabric material." The filter's ability to collect small micrometer and sub-micrometer particles is due to the accumulated dust cake and/or fabric itself. "The filter is usually in the form of cylindrical fabric bags, hence the names 'fabric filter' or 'baghouse,' but it may be in the form of cartridges that are constructed of fabric, sintered metal, or porous ceramic. In general, fabric filters are capable of collection efficiencies greater than 99 percent."

14.7 Will there be CF_4 emissions during the RD&D project, and how does Clean Earth intend to address these potential emissions?

Yes, there will be minor amounts of CF_4 emitted during the RD&D project. As noted in the emissions modeling included in the RD&D permit application, the maximum annual dispersion concentration for CF_4 emissions will be over 1000 times less than the NYS AGC. According to existing U.S. EPA research, as well as our emissions modeling completed in accordance with U.S. EPA and NYSDEC procedures, emissions associated with the RD&D test will be below the state's ambient air quality standards and other identified air emission criteria. Additional information associated with those emissions and the modeling associated with CF_4 is included in the RD&D permit application.

14.8 What other solids, liquids, and/or gases are produced during the process of destroying the PFAS? What will become of these waste products?

Thermal desorption does not generate liquids. Gases and other potential air emissions are discussed in the dispersion modeling section of the RD&D permit application and in Section 15 of this document.

14.9 How effective are the carbon beds used to capture potential emissions from the soil storage building where the contaminated soil will be kept prior to processing?

Air within the building is drawn through activated carbon beds. These beds are designed to capture organic contaminants that may volatilize (evaporate) from the material stored in the building. In accordance with the facility's air permit, carbon bed testing is used to determine when replacement of the carbon is required in order to maintain optimal performance.

15 Emissions Modeling

15.1 How can NYSDEC be sure that any potential PFAS emissions will not harm the surrounding community?

The purpose of the NYSDEC permitting process is to evaluate the safety of proposed activities and ensure that there will not be harmful impacts on the surrounding community. As part of Clean Earth's RD&D permit application, dispersion modeling was conducted in accordance with NYSDEC and U.S. EPA guidelines. The modeling results indicate that local communities will not be adversely impacted by this RD&D project. Potential emissions for the two-week test are below both the Annual Guideline Concentration (AGC) and Short-term Guideline Concentration (SGC) identified by the NYSDEC and NYSDOH.

15.2 Explain the air emissions modeling conducted by Clean Earth and reviewed by NYSDEC.

In summary, the air emissions modeling shows that potential emissions are below the state's guidelines and maximum exposure concentrations. Additional discussion is provided below.

Clean Earth, using a third-party consulting firm, modeled potential air emissions for this RD&D project. As discussed on page eight of Attachment C to the RD&D Permit Application: 5 – ESMI of NYRD_D PFAS June 5 Comment Response_August 1 2024, "Summary of Emission Point Modeling Using AERMOD Software," "[t]he results of the modeling software specific to air dispersion modeling were subsequently compared to the AGC [annual guideline concentration] and SGC [short-term guideline concentration] values for individual contaminants as determined by the NYSDEC, and as listed within the NYSDEC document

titled "DAR-1 AGC/SGC Tables." A summary of the modeled maximum hourly concentration and annual concentrations, and a comparison of those values to the established SGC and AGC values are presented in the table below. As a conservative approach, the sum of the five (5) modeled PFAS compounds was compared to the individual AGC for PFOA. CF_4 does not have an established AGC, and the value presented herein is based on the recommendation of the New York State Department of Health (NYSDOH) in their October 2023 assessment, included as Attachment C. The summary table shows that the modeled concentrations will not result in exceeding concentrations established by the NYSDEC or NYSDOH, which were developed to be protective of human health and the environment."

Table 3 – Summary of Concentration Data from Modeling

Contaminant	Max Hourly Dispersion Concentration	SGC	% of SGC	Max Annual Dispersion Concentration	AGC	% of AGC
	All values in ug/M^3					
Total Sampled PFAS (99.9% DRE, full receptor grid)	2.75E-05	N / A	N / A	2.72E-07	0.0053[1]	0.005%
Total Sampled PFAS (99.9% DRE, 1.5 mile endpoint))	5.39E-06	N / A	N / A	7.08E-08	0.0053[1]	0.001%
Hydrogen Fluoride (HF)	1.26	5.6	23%	0.0124	0.071	17%
Carbon Tetrafluoride (CF_4)	5.28E-03	N / A	N / A	5.21E-05	330[2]	1.58E-05[3]

[1] Individual ACG for PFOA

[2] NYSDOH recommended AGC, formally accepted by the NYSDEC

[3] This value has been corrected, as requested in the June 5, 2024, letter from James E. Hogan III, PE, NYSDEC to Robert Martin, EMSI

Please note that the "% of SGC" column compares the modeled maximum hourly dispersion concentration to the state's short-term guideline concentration (SGC), and the "% of AGC" compares the modeled maximum annual dispersion concentration to the annual guideline concentration (AGC) for each contaminant. In all cases, the modeled maximum emissions concentration is below the state's allowable short-term or annual guideline.

Also note that the maximum hourly dispersion concentration (the worst-case emissions) for the total of the five modeled PFAS compounds is only 0.5% of the ACG for PFOA, only one of the PFAS. It should also be noted that the receptor for the maximum concentration

for every contaminant modeled was located within the near field. That is, the receptor for the maximum concentration was either within the footprint of the facility or just outside of the facility's property line.

15.3 What destruction efficiency for air pollutants do you expect to achieve? Why does Clean Earth use a 99.9% PFAS destruction efficiency in its modeling?

Based on evaluation of the available science, Clean Earth expects to achieve a destruction efficiency, or destruction removal efficiency (DRE) of 99.9% or greater. This reasoning is discussed in the RD&D permit application. For this modeling, Clean Earth utilized the lower (more conservative) range of the referenced DREs. As documented in the permit application, the sources utilized in this evaluation include:

- Final Report – Laboratory Scale Thermal Degradation of Perfluoro-Octanyl Sulfonate and Related Precursors; Philip Taylor and Tak Yamada
- Thermal degradation of fluorotelomer treated articles and related materials; Takahiro Yamada a, Philip H. Taylor, Robert C. Buck Mary A. Kaiser, Robert J. Giraud
- Evaluation of Indirect Thermal Desorption Coupled with Thermal Oxidation to Treat Solid PFAS-Impacted Investigation-Derived Waste; Frank Barranco Paul Caprio George Hay EA Engineering, Science, and Technology, Inc., PBC
- Low temperature thermal treatment of gas-phase fluorotelomer alcohols by calcium oxide Theran P. Riedel, M. Ariel Geer Wallace, Erin P. Shields, Jeffrey V. Ryan, Chun Wai Lee, William P. Linak*
- Alaska DEC website: https://dec.alaska.gov/spar/csp/offsite-remediation
- Additional References are listed in Attachment B to the Clean Earth Fort Edward RD&D Permit Application

The NYSDEC also asked a similar question to which Clean Earth responded. This response can be found in the RD&D Permit Application: 5 – ESMI of NYRD_D PFAS June 5 Comment Response_August 1, 2024.

15.4 The emissions model uses a 99.9% destruction efficiency, but I can only find studies citing a 70% destruction removal efficiency (DRE). Can you please provide some additional information?

The following documents, previously posted on the Public Participation Plan website, discuss the use of a 99.9% destruction efficiency.

- SERDP Project ER18-1572 – a "TO [thermal oxidizer] operating in the range of 900-1,000 °Cat a nominal residence time of 2.0 seconds can achieve a DRE of greater than 99.9997% for exhaust gas emissions from ITD-treated PFAS material."
- Thermal Mineralization of Perfluorooctanesulfonic Acid PFOS to HF, CO2 and SO2 - Conclusion: "Using a combination of air and excess water vapor as the bath gas in the experimental trials, the thermal decomposition of PFOS produced three main products of HF, SO2, and CO2. Furthermore, at temperatures above 850 °C, it was found that only these three products were observable, and at 1000 °C (0.85 s

residence time), ≈99% conversion of F mineralized PFOS into HF and 100% of C into CO2."

- Low temperature thermal treatment of gas-phase fluorotelomer alcohols by calcium oxide - Section 4, Conclusions: "At the higher temperatures examined (~800 °C), upwards of 99% of the primary compound was destroyed/removed, but even at the more moderate treatment temperatures (~400 C), removal efficiencies were >85%. As the molecular length of the compounds increased, the effectiveness of treatment was reduced, but inclusion of the CaO treatment media still significantly reduced the formation of secondary fluorinated products of incomplete destruction as well as HF compared to strictly thermal destruction, thus minimizing significant environmental and operational issues."

15.5 How were the air emissions modeling endpoints determined? Why does the modeling end at a 1.5-mile radius from the Clean Earth facility?

Modeling endpoints were determined using EPA's AERMOD Modeling Program. For a discussion of the modeling, please reference Attachments B and C of the RD&D Permit Application: 5 – ESMI of NYRD_D PFAS June 5 Comment Response_August 1, 2024, sted on the Public Participation Plan website. Attachment B of the document discusses the protocol for emission point modeling using the AERMOD software, including a summary of modeling inputs. These inputs, when incorporated into the AERMOD Modeling Program, calculate the maximum concentration receptors. As noted earlier in this section, the modeled maximum concentration receptors are either within or adjacent to the Clean Earth Fort Edward property line. Therefore, modeling beyond the 1.5-mile radius was not required to identify the maximum concentration receptor. Please reference Question 15.5, discussion of the map grid, for additional information. Additional technical points to highlight include:

- Section 3.2 Receptor Area Modeling, labeled Page 4 of Attachment C - The modeling was conducted for the area in the vicinity of the site, with the receptors oriented in a Cartesian grid pattern set up following the initial receptor grid spacing suggested in DAR-10: NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis;
- Section 4.0 Summary of Modeling Results, labeled Page 8 of Attachment C - "A summary of the modeled maximum hourly concentration and annual concentrations, and a comparison of those values to the established SGC and AGC values are presented below. As a conservative approach, the sum of the five (5) modeled PFAS compounds was compared to the individual AGC for PFOA. CF4 does not have an established AGC, and the value presented herein is based on the recommendation of the New York State Department of Health (NYSDOH) in their October 2023 assessment, included as Attachment C. The summary table shows that the modeled concentrations will not result in exceeding concentrations

established by the NYSDEC or NYSDOH, which were developed to be protective of human health and the environment."

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Hydrogen Fluoride (HF)	1.26	5.6	23%	0.0124	0.071	17%
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[1] Individual ACG for PFOA

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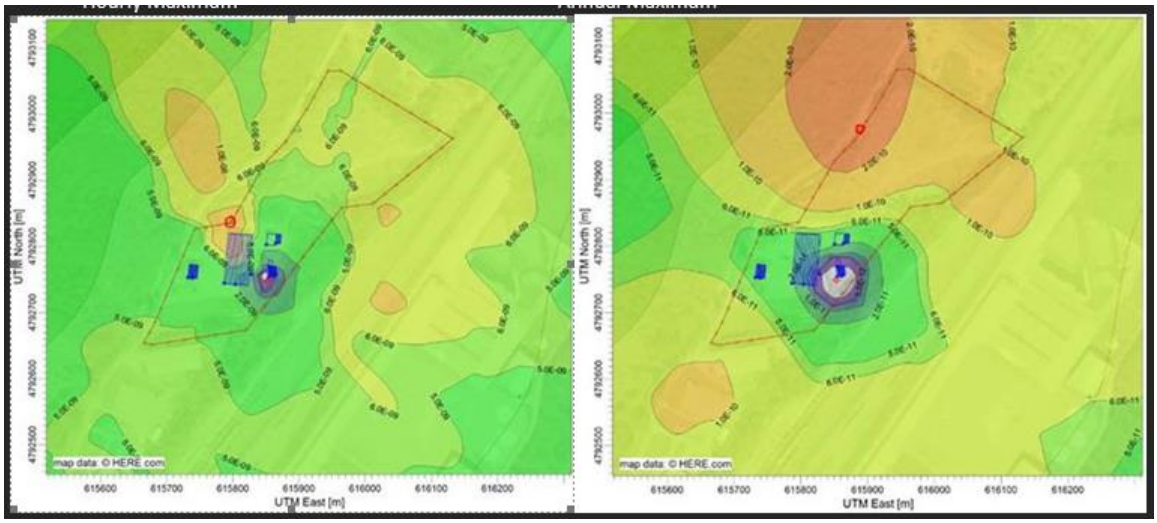
[3] This value has been corrected, as requested in the June 5, 2024, letter from James E. Hogan III, PE, NYSDEC to Robert Martin, EMSI

- Section 4.1 Location of Maximum Concentration Receptors, labeled Page 9 in Attachment C
    - "None of the maximum concentration receptors was located in close proximity to any of the sensitive receptors. The maximum receptor for all model runs was located on-site, approximately 130 meters Northwest of the emission point."
    - The AERMOD software individually calculates the contaminant concentration at each receptor, then graphical outputs display the maximum concentration on an hourly and annual basis. The individual isopleths (PDF pages 45 – 56, 59 – 64, and 67 – 78) depict the concentrations in a visual form, where the area between the receptors is mathematically interpolated by the AERMOD software. Each individual isopleth shows a zoomed-in version of the concentration results so that it is easier to view where the maximum concentration is, but the software calculated results for each receptor out to 5 km.
    - Maximum concentration receptor for every model was located within the nearfield (i.e., either within or near to the property line), indicating that a larger receptor grid is not required to ensure that the maximum concentration receptor is determined.

- Maximum concentrations were 23% of the HF SGC, 17% for the HF AGC, and less than 1% of the AGC for all other contaminants, indicating that further model refinement is not needed to ensure regulatory compliance.
- Soils identified for the RD&D Project will be analyzed in accordance with the submittal. Variances in PFAS concentrations will be compared to concentrations utilized in AERMOD modeling. Modeling will be adjusted as necessary based upon measured soil concentrations.

15.6 How were the map grid parameters set?

In the context of air quality modeling using AERMOD, the maximum concentration receptor (MCR) refers to the specific location (receptor point) within the modeled area where the highest predicted pollutant concentration is calculated by the model. In other words, the calculated MCR is the point most significantly impacted by the potential emissions from the Clean Earth Fort Edward facility during this project. These locations are noted by red circles in the maps inserted below. The MCRs are either adjacent to or within the Clean Earth facility property. These maps are also available as part of Attachment A, "Summary of Dispersion and Deposition Modeling Results and Graphical Representations of Output at 99.90% Destruction Efficiency," which is part of the "Summary of Emission Point Modeling," which is included as Attachment C to the RD&D permit application found on the Public Participation Plan website.



15.7 What local geography might be affected by the potential air emissions from the processing of PFAS at the Fort Edward facility?

Potential emissions, as determined through the dispersion modeling discussed earlier in this section, are less than both the SGCs and AGCs identified by the NYSDEC and NYSDOH. Modeling indicates that local communities will not be adversely impacted by this RD&D project. It is important to note that the proposed project is a short-term research project designed to identify scientific data to support the treatment of PFAS-contaminated soil by thermal desorption. All data developed during the project will be submitted to NYSDEC in accordance with the proposed project and RD&D permit requirements.

16 PFAS – What is it? What are its Potential Health Effects?

16.1 What is PFAS?

PFAS (Per- and Polyfluoroalkyl Substances) are a group of chemicals used to make coatings and other products that resist heat, oil, stains, grease, and water. These substances have been manufactured since the 1950s by various entities and sold for use in products such as firefighting foam, water-repellent clothing, furniture, adhesives, paint and varnish, food packaging, heat-resistant, non-stick cooking surfaces, and wire insulation. Many of the products we use every day contain PFAS chemicals. Clean Earth does not manufacture or use PFAS. Clean Earth's Fort Edward facility is in the unique position to be able to support the State of New York in its efforts to destroy PFAS, remediate soils that have been impacted by PFAS, reduce PFAS mass in the environment, and create a safer environment for the citizens of New York.

16.2 What are PFOA and PFOS?

Perfluorooctanoic acid (PFOA) and Perfluorooctane sulfonate (PFOS) are synthetic chemicals belonging to a group known as perfluorinated alkylated substances (PFAS). More information is available from the U.S. EPA's Per- And Polyfluoroalkyl Substances (PFAS) website and NYSDEC's Per- And Polyfluoroalkyl Substances (PFAS) website.

16.3 Why should I be concerned about PFAS?

In general, PFAS compounds do not break down or degrade easily in the natural environment; these compounds are often referred to as persistent organic pollutants (POPs). Although PFAS chemicals are used in everyday products, they can also be toxic to both humans and the environment. There are some PFAS compounds which, due to their combined toxicity and persistence, can represent a potential danger to public health and the environment if not properly handled and managed. Additional information on potential health impacts can be found on the NY State Department of Health (DOH) PFAS webpage.

16.4 How long does it take for PFAS to go away?

A PFAS release to the environment can take a number of years to dissipate, depending on the actual substances and the environmental conditions. PFAS degrades slowly, and that is why Clean Earth wants to work with the state to show that the system in Fort Edward can remediate contaminated soil and destroy PFAS. This will help to remove PFAS from the environment and protect drinking water, human health, and the environment.

16.5 Does the state of New York regulate PFAS in soil, water, and air emissions?

Yes, the state has guidance and regulations governing PFAS and its clean-up. We suggest you visit the state's NYSDEC PFAS webpage.

16.6 How does the NYSDEC know that the PFAS compounds are destroyed if current analytical methods do not test for every known PFAS compound?

Clean Earth acknowledges that current laboratory methodologies do not test for all PFAS compounds. Current regulations and test methods have been designed by experts at the U.S. EPA and other health organizations to address those PFAS compounds of the highest concern. Clean Earth will be utilizing the best available and approved test methods for identifying PFAS within soil and air emissions. If new laboratory test methods covering additional PFAS compounds are approved by EPA or the state prior to the initiation of this project, Clean Earth, in consultation with the NYSDEC, will assess if the new methods are appropriate to use.

16.7 Is there PFAS contamination in the water or soil in the Fort Edward/Hudson Falls/Glen Falls area?

PFAS compounds have been in use since the 1950s and are now found contaminating soil and water throughout the United States. PFAS detected in the Fort Edward/Hudson Falls/ Glen Falls area are summarized below:

- According to the Environmental Working Group's website and its Interactive Map: PFAS Contamination, PFAS has been measured in drinking water in the Fort Edward and Glen Falls area:
    - Fort Edward - EWG Tap Water Database | Fort Edward Village
    - Glens Falls - EWG Tap Water Database | Glens Falls City
- The PFAS compound Perfluorobutanoic acid (PFBA) was measured at a concentration of 5.6 parts per trillion (PPT) in one out of four tap water samples collected at the Village of Fort Edward water utility between February and November 2023. The sampling and analysis were conducted as part of the U.S. EPA's Fifth Unregulated Contaminant Monitoring Rule (UCMR5). No legal limit has been proposed for PFBA.
- The Town of Fort Edward's 2023 Water Quality Report, notes, on page 2, that a number of PFAS were detected below U.S. EPA maximum contaminant levels (MCLs) or other guidelines.

- Sampling of the leachate, sediment, and soil at the Fort Edward Landfill in 2021 conducted by Arcadis for NYSDEC identified PFAS contamination in all three media.
- Groundwater sampling of five existing landfill monitoring wells at the Queensbury Landfill in January 2020 measured (PFAS) maximum concentrations of 210 parts per trillion (PPT) PFOA.
- The W. F. Lake Corporation Site at 65 Park Road in the Town of Kingsbury, NY, less than seven miles from Fort Edward, is a known source of PFAS contamination in the area. A final Site Characterization Report, for the NYSDEC State Superfund Program reported that "PFAS are present across the Site in varying concentrations. Every sample collected exceeded applicable screening levels for PFOA, and many samples exceeded screening levels for additional PFAS." (Pages 4-3)

16.8 Will Clean Earth be testing local community soil or drinking water for PFAS?

No. Based on laboratory bench-scale testing to date, the surrounding community will not be adversely impacted by this project. According to existing U.S. EPA research, as well as our emissions modeling completed in accordance with U.S. EPA and NYSDEC procedures, potential emissions associated with the project will be well below the state's identified ambient air emission criteria. If you are concerned about existing contamination in the community, please contact the NYSDEC or NYS DOH.

16.9 I am concerned that my home well water might contain PFAS. Where can I find information to help me decide what to do?

You may contact the New York State Department of Health (DOH) at BEEI@health.ny.gov or call (518) 402-7860 to find out if PFAS, or any other contaminant, is present in your area and what steps are recommended. The DOH can provide advice on PFAS testing, interpretation of sample results, or appropriate options to reduce PFAS exposures from private wells.

17 PFAS - Hazardous Substance Designation

17.1 How is PFAS classified by the U.S. EPA?

The U.S. EPA has designated two PFAS, PFOA and PFOS, as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund. This step improves transparency and accountability to clean up PFAS contamination in communities, but it does not set clean-up levels. Classification as a hazardous substance under CERCLA does not make PFAS-containing soil or other materials a hazardous waste. At the federal level, PFAS-contaminated soil is considered a non-hazardous waste.

17.2 Are there any special requirements for handling CERCLA hazardous substances?

CERCLA does not mandate or impose handling, treatment, or disposal requirements. The NYSDEC would impose all handling, management, and/or clean-up requirements.

17.3 Is PFAS-contaminated material considered a hazardous waste under the Resource Recovery and Conservation Act (RCRA)?

No.

17.4 What is the difference between a CERCLA hazardous substance and a RCRA hazardous waste?

From the U.S. EPA website – "RCRA and CERCLA are two different statutes that govern the federal management and cleanup of hazardous waste facilities (RCRA) and response to abandoned, uncontrolled hazardous waste sites (CERCLA). They are not identical statutes but there are many similarities that consistently achieve protection of human health and the environment. RCRA is the principal Federal law in the U.S. governing the disposal of solid waste and hazardous waste. CERCLA authorizes the President to respond to releases or threatened releases of hazardous substances and pollutants or contaminants into the environment. CERCLA authorities complement those of RCRA, which primarily regulates ongoing hazardous waste management such as handling and disposal. A CERCLA hazardous substance designation does not make PFOA or PFOS contaminated waste a RCRA hazardous waste or a RCRA hazardous constituent."

17.5 Is PFAS-contaminated material currently classified as a regulated waste under New York state regulations?

Yes, in January 2016, New York became the first state in the nation to regulate PFOA as a hazardous substance, followed by the regulation of PFOS in April 2016. The regulation mandates proper storage of PFAS substances, limits their release into the environment, and allows the state to utilize its legal authority and Superfund program resources to advance investigations and cleanups of impacted sites.

18 PFAS - Scientific Studies

18.1 Can you provide studies to support your proposed RD&D permit application?

As noted earlier in this document, there are numerous scientific studies supporting this RD&D permit application. The citations are available in the RD&D permit application and the Public Participation Plan posted on the project's Public Participation Plan website.

18.2 Can you provide open-source links to the studies supporting this permit application?

Links have been posted to the project's Public Participation Plan website.

18.3 Have you reviewed the Bennington College studies on PFAS?

Yes, Clean Earth has reviewed the NYSDEC's March 2021 report "Norlite Environmental Sampling Report New York State Department of Environmental Conservation." As noted on page 6 of the report, "[i]n March 2020, Bennington College conducted limited water and soil sampling in the vicinity of the facility to assess the possible migration of PFAS contamination. Recent sampling coordinated by DEC and DOH (May 2020) at the nearest public water supplies (Cohoes, Green Island) did not find evidence of PFAS contamination stemming from Norlite's activities."

18.4 Briefly discuss the 2018 PFAS RD&D work conducted at the Clean Earth facility in Fort Edward.

This project is cited in the current RD&D permit application. With the approval of the NYSDEC [RD&D Permit # 58Z10005T], the facility treated approximately 22 tons of PFAS-contaminated soil. The project report (dated July 15, 2019) demonstrates that the PFAS evaluated could be desorbed from contaminated soil to concentrations below the NYSDEC guidance available at that time. The following table is from the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs April 2023.

Guidance Values for Anticipated Site Use	PFOA (ppb)	PFOS (ppb)
Unrestricted	0.66	0.88
Residential	6.6	8.8
Restricted Residential	33	44
Commercial	500	440
Industrial	600	440
Protection of Groundwater[2]	0.8	1.0

18.5 The RD&D permit application claims a 99.9% PFAS removal efficiency, yet data from the referenced 2018 study indicates lower removal efficiencies for certain compounds.

Clean Earth agrees that during the 2018 study, after the first thermal desorption treatment run, there was residual PFAS contamination in the soil. The residual concentrations in that treated soil would still meet current NYSDEC soil reuse criteria for residential fill. Regardless of that fact, the soil associated with the 2018 project was treated a second time via thermal desorption. After this second treatment, analysis for total and leachate PFAS demonstrated non-detect results. Such results would allow the soil to be utilized as unrestricted soil in accordance with current NYSDEC guidelines.

18.6 Can you explain the findings of the Shields et. al. 2023 paper?

The Shields et al. 2023 paper, Pilot-Scale Thermal Destruction of Per- and Polyfluoroalkyl Substances in a Legacy Aqueous Film Forming Foam is a study performed using a pilot-scale natural gas-fired refractory-lined combustor. The PFAS mixture used was an AFFF predominantly containing legacy perfluorooctanesulfonic acid (PFOS). To our knowledge, this study is the first to use a pilot-scale thermal unit to examine both AFFF destruction over a wide range of temperatures as well as conduct products of incomplete combustion (PIC) measurements as an indicator of performance. The study found that:

- Several operating conditions above 1090 °C resulted in high DEs and few detectable fluorinated PIC emissions.
- Several conditions below 1000 °C produced DEs >99.99% for the quantifiable PFAS and mg/m3 emission concentrations of several non-polar PFAS PICs.

The study concludes, "[b]ased on these experiments, high destruction of PFAS can be shown only by considering both high DEs and the absence of PICs." This conclusion by EPA scientists supports Clean Earth's intent to utilize EPA test methodologies to identify potential PICs in the process emissions.

18.7 Can you comment on the differences (and similarities) between the information found in the scientific studies cited for this permit application? In particular, F Barranco et al. study (2020) and J. Ryan and B. Gullett study (2020).

In summary, the scientific studies cited in the permit application support our permit application and the operating conditions we expect to use during the RD&D project. Clean Earth does not believe that there is a lack of transparency or unusual inconsistencies or uncertainties with the findings presented by these two researchers. Clean Earth believes these studies support its statement, located on the fifth page of the RD&D permit application, that the "intent of the RD&D Permit is to demonstrate the ability of ESMI's thermal desorption technology to treat media contaminated with Per- and Poly-fluoroalkyl Substances (PFAS) to soil concentration acceptable for beneficial reuse in accordance with NYSDEC Guidance and to control process effluent air emissions to a level acceptable to regulatory agencies within the State of New York."

Links to the two SERDP Projects are provided as follows: Frank Barranco and J. Ryan and B. Gullett. Both studies evaluate PFAS thermal destruction, but the experimental objectives differ.

- F. Barranco: The abstract states: "The overall objective of this study was to advance the current understanding of ITD/TO's effectiveness for the treatment of soil containing a typical suite of PFAS found in, but not limited to, aqueous film forming foam (AFFF) formulations manufactured and heavily utilized prior to 2002."
- J. Ryan and B. Gullett: The executive summary states: "This study successfully demonstrated the application of PSS [pre-sampling surrogates] to indicate overall

quantitative measurement performance for targeted PFAS measurements for the modified EPA Method 0010 sampling train and associated analyses." [EPA Method 0100 was the precursor to what is now known as OTM-45.]

The J. Ryan and B. Gullett study validates that EPA Method 0010 is adequate to quantify PFAS as to effectively demonstrate PFAS removal efficiencies. The F. Barranco study validates thermal desorption and thermal oxidation as successful treatment processes for PFAS-contaminated soil and process effluent airstreams. Both studies examine the thermal destruction efficiency of PFAS and the use of various analytical methods to test for PFAS. Both studies examined a range of PFAS destruction temperatures. These temperatures align with the temperatures at which the Clean Earth facility can operate its thermal oxidizer. The F. Barranco study even notes that the ". . . TO (thermal oxidizer) operating in the range of 900-1,000 C° at a nominal residence time of 2.0 seconds can achieve a DRE of greater than 99.9997% for exhaust gas emissions…"

18.8 Would soil cleaned 99.9% of the way still eventually release the remaining PFAS into the environment?

Clean Earth proposes in the RD&D Application to utilize the PFOA and PFOS soil cleanup objectives listed in the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs April 2023. The NYSDEC has determined that these PFAS concentrations are protective of human health and the environment. This reference can be found on Page 10 of the RD&D permit application. These soil cleanup objectives (SCO) are shown in the table below.

Guidance Values for Anticipated Site Use	PFOA (ppb)	PFOS (ppb)
Unrestricted	0.66	0.88
Residential	6.6	8.8
Restricted Residential	33	44
Commercial	500	440
Industrial	600	440
Protection of Groundwater[2]	0.8	1.0

18.9 As PFAS research advances, protocols for PFAS destruction may change. Is Clean Earth obligated to update their processes and protocols as new and potentially more effective technologies are established?

Future scientific advances cannot be addressed at this time as the current RD&D permit will only allow operations for approximately two weeks. If, prior to the approval and implementation of the RD&D permit, advanced protocols and/or methodologies that are applicable to thermal desorption are identified, Clean Earth is willing to evaluate these protocols/methodologies with NYSDEC for inclusion into this RD&D project.

19 Local Benefits of Clean Earth and its Fort Edward Facility

Some New York State communities, including some near Fort Edward, have PFAS in their drinking water. This PFAS contamination is most likely due to PFAS-contaminated soil. These "hotspots" release PFAS into the drinking water when it rains. To remedy the contaminated drinking water, these PFAS hotspots will need to be remediated. New York communities will need an option to clean PFAS from these soils. Without an establishment like Clean Earth, the PFAS-contaminated soil will either remain in place or must go to a landfill (further impacting the state's limited capacity).

Whether this RD&D Permit is approved or not, Clean Earth will maintain an active role in supporting the local community and economy. Clean Earth has been providing support services to the Village, Town, and local communities since 1995. This has included remediation work to remove environmental contamination from past industrial activities in the area. The following list highlights how Clean Earth's presence has benefited the local community.

- Market 32, Town of Fort Edward: Supported the rehabilitation of a brownfield site, reducing site contamination by treating site soil and proving cheaper than other remediation alternatives. This site now houses a grocery store that services Fort Edward and the surrounding communities. This project allowed the Town to place the parcel back into productive service, thus improving the local economy and generating tax revenue.
- Football Field at Fort Edward High School: Donated time and resources to install a new natural turf football field for the Fort Edward Union Free High School. This new field supports local youth sports and the school system.
- Fort Edward Earth Day: As an Earth Day activity, supplied equipment and personnel to remove brush at Mullen Park from behind and around the tennis courts and the softball/baseball backstop. Tilled the clay infield of the Fort Edward Union Free Schools baseball field to remove grass/weed growth.
- Hudson Headwaters Facility: Supported the installation of the facility by donating fill material for subgrade elevation to allow for the facility to be erected at a decreased cost. The facility provides medical services for the Village, Town, and surrounding community.
- Fort Edward Train Station: Donated material to fill a void left from the removal of a building and foundation. Assisted with the rehabilitation of the site.
- Local residential fuel tank spills: Remediated contaminated soil from several residential fuel tank spills. These projects removed contaminants from the environment and furthered the community's goals of protecting local groundwater and the environment.

- Manufactured gas plant waste: Received and treated contaminated soil from a former manufactured gas plant (MGP) site near Canal Street, helping to protect adjacent properties and groundwater.
- Fort Edward gas station: Received diesel-contaminated soils from a fuel spill at a Fort Edward gas station, helping to protect groundwater, surface water, and operations at the local sewage treatment plant.
- Hudson Falls utility/infrastructure projects: Received and treated soils from Hudson Falls utility/infrastructure projects, providing a cost-effective solution that supported a clean environment while facilitating important local infrastructure installation and repair.
- Contaminated soil near the Glens Falls Hospital: Provided remediation services for MGP-contaminated soil removed from a site located in proximity to Glens Falls Hospital. This project reduced contaminants in the environment, including the removal of soil that would lead to additional contamination in the Hudson River.
- MGP site in Granville: Provided treatment services supporting the removal of MGP-contaminated soil from a site in Granville. Soil removal occurred both adjacent to and under a waterway. Soil removal reduced contaminant leaching into ground and surface water. After the soil was remediated, it was shipped back to the site and utilized as a subbase to rebuild portions of a community park.
- State Superfund Site, Queensbury: Provided onsite treatment service at a State Superfund Site adjacent to a local union hall. This remediation returned the site to usable condition.
- Town of Fort Edward local road maintenance: Donated aggregate to the Town of Fort Edward to support local road maintenance.
- Sports Teams: Donated funds to several local sports teams and clubs, helping to support the local youth community.
- Local Community Groups: Donated funds to local community groups servicing both the Village and Town. These groups include Rogers Island Visitor Center, Village of Fort Edward Canal Street Marketplace, and Regional Food Bank of NE New York.