

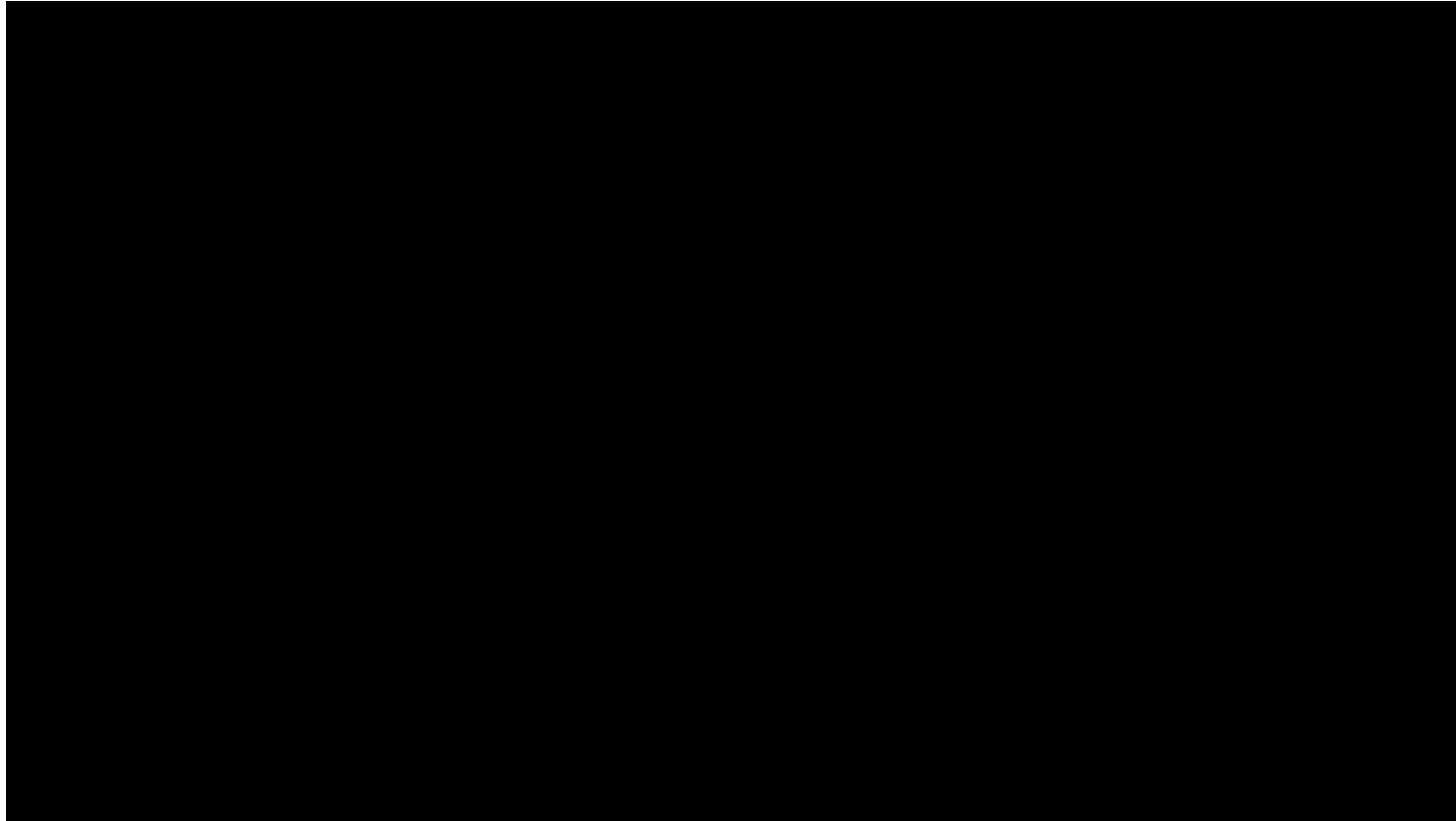
EPA Caribbean Environmental Protection Division (CEPD)

- HHW collection
- Case Studies:
 - Dry-cleaning facilities
 - Vega Baja
 - Ochoa Fertilizer
- WBC pre-deployment



HHW COLLECTION

The role of the U.S. Environmental Protection Agency is included in Emergency Support Function #10 (ESF #10), which covers the handling of oil and hazardous materials. This may include other materials as directed by FEMA.



At the peak of its response to Hurricane Maria, EPA had more than 450 response personnel focused on emergency work in Puerto Rico and the USVI. More than 700 personnel, many doing multiple rotations, responded from throughout the United States.



HHW COLLECTION

DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
RESOURCE REQUEST FORM (RRF)

O.M.S. No. 1660-0002
Expires May 31, 2017

PAPERWORK BURDEN DISCLOSURE NOTICE
Public reporting burden for this form is estimated to average 20 minutes per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing this form. This collection of information is required to obtain or retain benefits. You are not required to provide this information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472-3105, Paperwork Reduction Project (1660-0047). NOTE: Do not send your completed form to this address.

I. REQUESTING ASSISTANCE (To be completed by Requestor)

1. Requestor's Name (Please print) Augusto Marquez 2. Title Environmental Emergency Response Manager 3. Phone No. 787-450-7617
4. Requestor's Organization PR Environmental Quality Board 5. Fax No. _____ 6. E-Mail Address augusto.marquez@jea.pr.gov

II. REQUESTING ASSISTANCE (To be completed by Requestor)

1. Description of Requested Assistance: Request EPA to conduct OVI and hazardous materials removal, clean-up, cleanup and disposal of oil and other hazardous materials including fuel disposal at the site. To also request actual and potential future environmental costs of the site.

2. Quantity _____ 3. Priority Lifessing Life Sustaining Normal High 4. Date and Time Needed 9/26/2017

5. Delivery Site Location Various location TBD. 6. State of Incident PR

7. 24 Hour Phone No. 787-450-7617 8. Fax No. _____

9. State Approving Official Signature _____ 10. Date and Time _____

III. SOURCING THE REQUEST - REVIEW/COORDINATION (Operations Section Only)

1. OPS Review by: _____
 LOG Review by: _____
 Other Coordination: _____
 Other Coordination: _____
 Other Coordination: _____

2. Source: Donations Other (Explain) _____
 Requisitions Procurement Interagency Agreement Mission Assignment

3. Assigned to: _____
ESF/IOFA: _____
RSF/IOFA: _____
Other: _____
Date/Time: _____

Immediate Action Required Yes No

IV. STATEMENT OF WORK (Operations Section Only)

OFA Action Officer _____ 2. 24 Hour Phone # _____ 3. Fax # _____
EMA Project Manager _____ 5. 24 Hour Phone # _____ 6. Fax # _____

Statement of Work _____ See Attached

Estimated Completion Date _____ 9. Estimated Cost _____

DISPOSITION TAKEN (Operations Section Only)

Accepted Rejected Requestor Notified

Disposition _____

FORM 010-0-7 PREVIOUSLY FF 90-136 Page 1 of 2

1. Initiation and Submission

The local or territorial Emergency Operations Center (EOC)—such as the Virgin Islands Territorial Emergency Management Agency (VITEMA)—identifies a resource shortfall (e.g., medical supplies, heavy equipment, or emergency personnel) that exceeds their capacity. They complete Sections I and II of the RRF, detailing:

- What is needed and the quantity
- Where it needs to be delivered
- The point of contact for the receiving location

2. Review and Validation

The form is submitted to FEMA. FEMA's Operations Section reviews the request to ensure it is valid, verifies that the requesting jurisdiction has exhausted local/mutual aid options, and assigns a tracking number.

3. Mission Assignment (MA)

If FEMA cannot provide the resource directly, they can issue a Mission Assignment. This legally tasks another federal agency (like the U.S. Army Corps of Engineers or the Department of Health and Human Services) to provide the goods or services.

4. Tracking and Fulfillment

FEMA tracks the resource from sourcing to delivery. Once the resource arrives and the mission is completed, the form is updated and officially closed out.



HHW COLLECTION

Hurricane Maria - Puerto Rico

Collected more than 320,000 containers of hazardous materials, including drums, propane tanks, cylinders, electronics, and batteries.

Extracted Freon from household “white goods” throughout the island.

Collected almost 60 tons of solid hazardous waste for shipment and disposal off-island.

Collected 285 gallons of liquid hazardous waste for shipment and proper disposal off-island.

Collected 1500 gallons of liquid non-hazardous waste for recycling or reuse in Puerto Rico.

Assessed all 51 wastewater treatment plants and hundreds of pumping stations.

Assisted the U.S. Coast Guard in the assessment and recovery and removal of hazardous substances from 377 vessels

Assessed 237 rural, “non-PRASA” (Non-Puerto Rico Aqueduct and Sewer Authority) drinking water systems.

Assessed 177 chemical and hazardous waste and oil facilities.

Supported the Puerto Rico Environmental Quality Board’s efforts to restore its science laboratory.

Repaired, re-energized and rebooted Puerto Rico’s air monitoring network.



HHW COLLECTION

Hurricane Maria - USVI

Collected and transported off-island for proper disposal more than 145,000 items of waste, keeping them out of landfills and out of harm's way. Items included different types of containers, drums, propane tanks, cylinders, batteries, and freon extraction.

Collected and shipped off-island for proper disposal 38 tons of solid hazardous waste.

Bagged and transported 15 tons of medical waste out of the USVI for proper disposal off-island.

Collected and shipped off-island for proper disposal 1800 gallons of liquid hazardous waste.

Collected 8300 gallons of liquid non-hazardous waste for recycling or reuse.

Assisted the U.S. Coast Guard in the assessment and recovery of 477 sunken or grounded vessels; hazardous substances were removed from 327 of them.

Assessed eight municipal wastewater treatment plants.

Collected and analyzed more than 2,400 drinking water samples to advise system operators on any problems with the quality of their drinking water.

Assessed 123 chemical and hazardous waste and oil facilities.

Conducted air monitoring around marine vessel crushing operations and construction and demolition debris operations to safeguard health and safety.



HHW COLLECTION WORKSHOPS



¡Regístrate!

US EPA Webinar: Manejo de Residuos
en Respuesta a Emergencias

Estimada membresía del PRRP,

La Asociación de Reciclaje de Puerto Rico desea compartirles una importante oportunidad de desarrollo profesional que no querrán perderse.

La **Agencia de Protección Ambiental de Estados Unidos** llevará a cabo un seminario web sobre *Manejo de Residuos en Respuesta a Emergencias*, el cual será este próximo **13 de mayo de 2026** de **2:00-3:00 PM (EST)** de manera virtual.

- June 18, 2026
Auditorium, Department of Natural Resources, PR-8839 km 6.3, Sector, San Juan, 00927
- June 26, 2026
Rincón Municipal Theater, 14 Calle Progreso, Rincón, 00677.

PREPARADOS PARA ACTUAR
Soluciones Municipales para el Manejo de Escombros y Residuos en Tiempos de Emergencia

Fortalece las capacidades de planificación, coordinación y respuesta de tu municipio para el manejo de residuos ante emergencias.

¡TENEMOS FECHA!

ACOMPÁÑANOS A LA SEGUNDA SESIÓN DE ESTE TALLER

martes **9 septiembre 2025**
8:00AM-1:00PM
Teatro Municipal de Cayey

REGISTRO
QR CODE
bit.ly/4oJ4HxI

Logos: EPA, DNR, Cayey



CASE STUDIES



VEGA BAJA SOLID WASTE DISPOSAL SUPERFUND SITE



THE SITE IS LOCATED IN THE RÍO
ABAJO WARD,
VEGA BAJA MUNICIPALITY



VEGA BAJA SOLID WASTE DISPOSAL SUPERFUND SITE

Background



SW - SOLID WASTE

The Site is a 72-acre area which operated as a solid waste disposal/open burning facility from 1948 to 1979.



VEGA BAJA SOLID WASTE DISPOSAL SUPERFUND SITE

Background

- The Site includes a 55-acre Residential Area known as Brisas del Rosario and a 17-acre Non-Residential Area.
- Waste disposal operations at the Site were discontinued in 1979
- Site was included in the NPL in 1999.
- Removal actions were conducted from 1999 to 2004.







VEGA BAJA SOLID WASTE DISPOSAL SUPERFUND SITE 2025 Site Assessment

- January 2024 EPA lowered screening levels to 200ppm
- 41 residential properties sampled
- 8 residential properties require remediation

VEGA BAJA SOLID WASTE DISPOSAL SUPERFUND SITE

2025 Site Assessment





VEGA BAJA SOLID WASTE DISPOSAL SUPERFUND SITE

Planned Response Action

01

Removal of lead-contaminated soils.

02

Disposal of contaminated soil off-Site.

03

Backfilling with clean soil and revegetation to restore pre-excitation conditions to the extent practicable.

04

Institutional controls to restrict contact with soils beneath structure on properties where soil removal is undertaken and under paved areas including roadways.



DRY-CLEANING VAPOR INTRUSION SAMPLING

DRY-CLEANING VAPOR INTRUSION SAMPLING

Puerto Rico Site Discovery Initiative

- Purpose of the project is to identify potential sources of contamination associated with dry cleaning solvents and industrial degreasers operations.
- EPA Pre-Remedial team Investigated and Sampled various Dry Cleaners in Puerto Rico.
- Available environmental data resources from Federal and Commonwealth agencies are used to identify /discover facilities that may be affecting the subsurface.

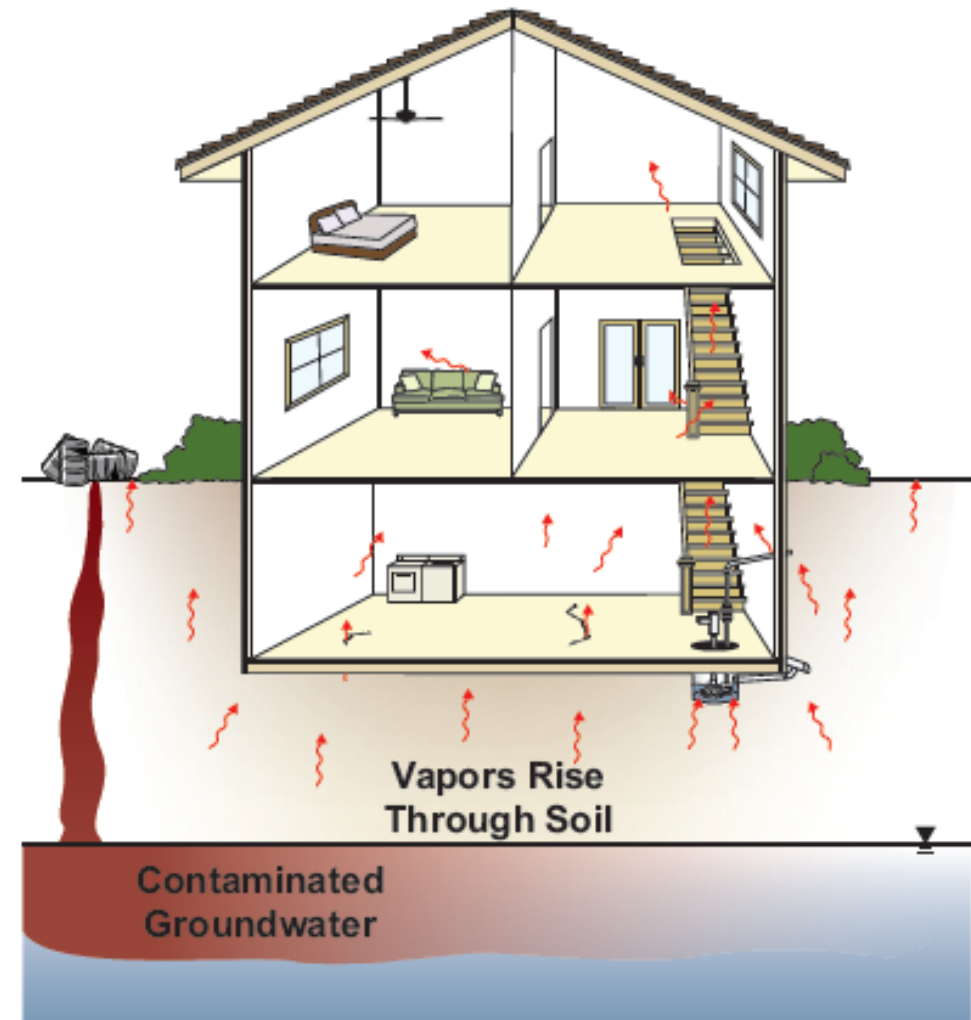


DRY-CLEANING VAPOR INTRUSION SAMPLING

Vapor intrusion is the movement of chemical vapors from contaminated soil, groundwater or sewer lines into nearby buildings.

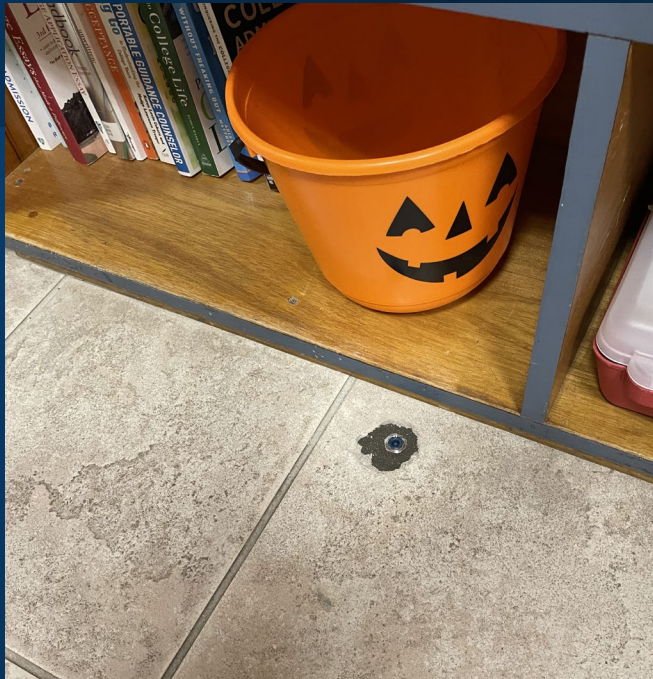
EPA Removal Solvent of Interest:

- TCE (Trichloroethylene)
- PCE (Tetrachloroethylene)



Vapors from contaminated groundwater enter a home.

DRY-CLEANING VAPOR INTRUSION SAMPLING





- ▲ Background Indoor Air Sample Location
- Approximate Former Facility Footprint
- Approximate Property Boundary

REPORT DATE: May 2024	PROJECT MANAGER: G. Gilliland	DRAWING TITLE: Sub Slab Soil Gas and
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Sample Locations



MITIGATION SYSTEMS



DRY-CLEANING VAPOR INTRUSION SAMPLING

Stage	
Pre-remedial samples collected. Removal review.	2
No Action	5
Removal evaluating Vapor Intrusion samples.	2
Vapor mitigation system installed.	2
Vapor mitigation system to be installed if building is occupied.	1

OCHOA SUPERFUND SITE



Eastern Lot -
112 acres

Initial Study Area
(Removal)

Guánica Bay
as identified in HRS

Western Lot -
13 acres

Site named after a **former fertilizer manufacturer**, which produced ammonia, anhydrous ammonium, ammonium sulfate, and sulfuric acid between 1950 to the 1970's

Added to the National Priority List in 2022 (18 Sites in PR / 1 in St. Thomas)



OCHOA SUPERFUND SITE

1991-2017 Multiple investigations in Eastern Lot and Guánica Bay identified:

- Eastern Lot: PCBs, metals, asbestos and VOCs
- Guánica Bay Sediments: PCBs in fish tissues, and people's blood samples (Not by EPA)

2018-2022 EPA assessments identified:

- PCBs, metals, VOCs, and SVOCs, in soil in the Eastern Lot
- PCBs in soil of 19 residential and commercial properties and along PR-33

➤ Eastern lot – To be assessed

Administrative Order on Consent – PRP work:

- 65 Properties evaluated
- 20 properties impacted, including area along PR-333 – Soil removal and replacement
- 3 Paved areas
- 8,598 tons of polychlorinated biphenyls (PCBs) removed



BENEFIT: BUILDING PUBLIC CONFIDENCE

Our support was modeled after the EPA's involvement in various major events, where we provide comprehensive air monitoring through equipment, personnel, and data management.

- **Personnel and Expertise:** Deploy trained personnel from divisions such as the Environmental Response Team (ERT), Superfund Technical Assessment and Response Team (START), and On-Scene Coordinators (OSC) to staff joint operations centers and on-scene teams.
- **Equipment:** Co-deploy our air monitoring equipment with local agencies and provide support for equipment in the field.
- **Data Management and Analysis:** Offer data management tools and support to analyze collected data, communicate findings to decision-makers, and integrate results into the larger incident response effort.
- **Specialized Assets:** Deploy specialized assets that provide real-time chemical, radiological, and photographic data.
- **Integration into Command Structure:** Integrate EPA staff into Incident Command structure to provide support to federal, state, and local agencies during the event
- **Operational Framework:**
 - **Pre-event:** Provide support to prepare for the event, including equipment troubleshooting and logistics planning.
 - **During event:** Work alongside local authorities to monitor air quality before, during, and after the event, with real-time data review to support decision-making.



EPA Monitors Integrated





Instrument	Type		Latest	VOC 15-min	NH3 15-min	Cl2 15-min	PH3 15-min	HCN 15-min
CF	AreaRAE Pro		3/6/2026 12:03:23 PM	525.223 ppb	0 ppm	0 ppm		0 ppm
FZ	AreaRAE Pro		3/6/2026 12:03:23 PM	423.92 ppb		0 ppm	0 ppm	
LFBB	AreaRAE Pro		3/6/2026 12:03:21 PM	0.36 ppb		0 ppm	0.1 ppm	
ME	AreaRAE Pro		3/6/2026 12:03:21 PM	341.736 ppb		0 ppm	0.1 ppm	
RFBB	AreaRAE Pro		3/6/2026 12:03:23 PM	0 ppb	0 ppm			0.001 ppm
TE	AreaRAE Pro		3/6/2026 12:03:23 PM	37.951 ppb	0 ppm			0.032 ppm
RCC	MultiRAE Pro		3/6/2026 12:05:37 PM	7.483 ppb	0 ppm	0.001 ppm		

