

Region 9 U.S. Environmental Protection Agency

EMERGENCY RESPONSE SECTION

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U.S. EPA Region 9 Emergency Response Offices

Regional Office

San Francisco, 2 Supervisors, 9 OSCs, 2 Planners & Equipment Warehouse

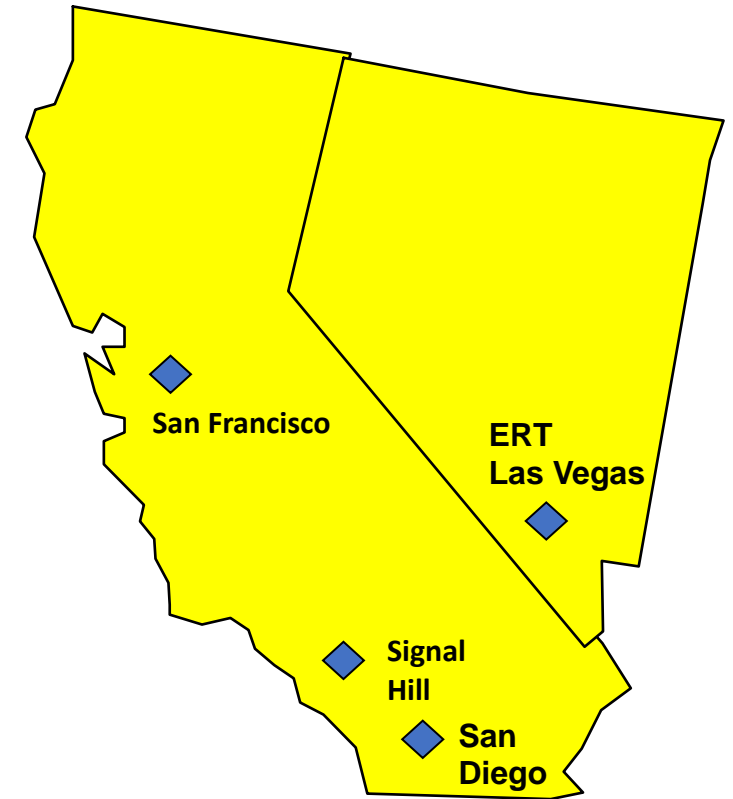
Field Offices

Signal Hill, CA, 1 Supervisor, 6 OSCs & Equipment Warehouse

San Diego, CA, 1 OSC & 1 Planner

Environmental Response Team (ERT)

Las Vegas, NV



The Role of the OSC at Oil and Hazmat Emergency's

Can assist first responders in these areas:

- Become part of the existing ICS/UC

- Monitor the incident and provide support or technical assistance

- Mobilize federal resources

- (i.e., Superfund Technical Assessment and Response Team [START], ERT)

Can fund cleanups/oversee responsible party.

Services
Provided
by USEPA
ERO

- **Emergency Response Operations**
 - Chemical
 - Radiological
 - Biological
- **Site Characterization**
- **Hazardous Substance/ Oil Removal Actions**
 - EPA Lead
 - PRP Lead with EPA Oversight
- **Enforcement Support (Civil and Civil)**
- **Training Support**
- **Technical Assistance to local, state and Federal Agencies**

24 Hour
Notification
Phone
Numbers

EPA

(800) 300-2193

NRC

(800) 424-8802

OES

(800) 852-7550

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○ ●

REMOVALS AT EXPLOSIVE SITES



Cleanup of Ammo/UXO Site



UXO/EOD on-site expertise a must



Segregate viable and non-viable materials



Segregate chemicals into a separate area by compatibility



Disposal

On-site destruction (i.e.: powder burn)

Off-site destruction (i.e.: ammo burn)

Off-site disposal

Bomb Squads

- Plan ahead
- Set up a Unified Command
- Bomb Squad always controls the scene.
- Hazmat team have to provide chemical safety support depending on where you are.



When Does the You Need to Call the Bomb Squad?

- 50 caliber munitions with color tips other than black.
- Munitions greater than 50 caliber.
- Artillery munitions
- Other military munitions
- IEDs
- Raw Explosives
- Blasting Caps
- Unstable chemicals not safe to handle or put on the highways of the US.
- Unstable cylinders
- Sovereign Citizen/Militia/Drug Labs/Pot Grow Sites or any place with booby traps may be present

Ammunition and Military Munitions Fire Recovery HHW Removals



Picture
1



Picture
2

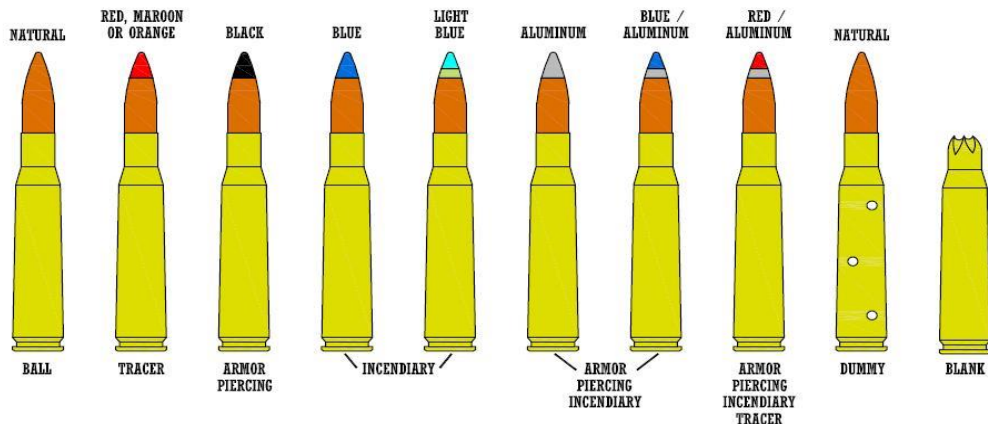
1. Small arms munitions (rifle, pistol, shotgun) may be picked up by the Household Hazardous Waste (HHW) Collection Strike Teams (Picture 1).

2. If 50 caliber ammunition is found, mark the site as High Hazard. 50 caliber ammunition munitions should be examined by High Hazard Strike Team (Picture 2).

3. The High Hazard Strike Team should examine ammo and determine tip color if possible, to determine type. If it has painted tip or is fire impinged, go to step 4 (Picture 3). If 50 caliber ammo is natural color, blank or black tipped, the High Hazard Shall Team shall collect it.

4. Munitions greater than 50 caliber; 50 caliber with colored tips other then described in step three, mines, bombs, smokeless powder, black powder, fireworks or improvised explosive devices shall not taken by High Hazard Team. The High Hazard Strike Team Leader or County Liaison should notify the County Bomb Squad. If can be done safely, photograph item to send to Bomb Squad. The High Hazard Strike Team Leader or County Liaison should remain on-site until the Bomb Squad arrives.

5. Strike Teams shall notify the Strike Team Scribe of all firearms found. Information should be noted in the Collector. The Strike Team Leader shall notify County/City representative on-site of the presence of firearms and the address of the property. If your teams discover firearms while conducting surveys and the firearms are obviously destroyed/damaged beyond repair, they are to leave them in place for disposal as common debris. If the firearms are useable or the teams are unsure, they shall contact local law enforcement guidance and/or disposal (per FEMA). HHW Strike Teams DOES NOT REMOVE FIREARMS FROM THE PROPERTY.



AMMUNITION FOR THE M2.

(Drawing by Jerry Penry)

Picture 3

Are the Munitions/Explosives on-site Hazardous Wastes?

- Questions 1: Is it a solid waste?
- 40 CFR 261.2(a)(1)
 - Not excluded
 - Discarded
 - 40 CFR 261.2(a)(2)(i)
 - Abandoned
 - 40 CFR 262.2(b)(3): Accumulated, stored or treated (but not recycled) before in lieu of being abandoned by being disposed of, burned or incinerated.
 - Statements by PRP Ed Wyman to OSC Wise on June 1 that he did not intend to do any cleanup because his house was being foreclosed on.
- 40 CFR 261.2.(c)(4): Accumulated Speculatively

Is it a Hazardous Waste? Gun Range Waste

- 40 CFR 261.24(b): Toxicity Characteristic
 - D008 (Lead)
 - Greater than 4,100 mg/l lead detected
 - TCLP Lead is 5.0 mg/l lead
 - D004 (Arsenic)
 - Shipped off-site as a hazardous waste by EPA
 - UN 1325, Waste Flammable Solid, Organic, n.o.s. (lead dust, petroleum distillates), 4.1, PG< II, RQ 100 lbs (D001, D001).
 - D008 – Lead Toxic Waste
 - D001 – Ignitable Waste
 - 3,356 lbs.

Are the munitions Hazardous Waste?

- 40 CFR 261.23(6) – Reactivity Characteristic
 - “it is capable of detonation or explosive reaction if it subjected to a strong initiating source”
 - Powder in the bullet is ignited by a primer
 - D003 – Reactive Waste
- 40 CFR 261.23(8) – Reactivity Characteristic
 - “it’s a DOT forbidden explosive”
 - 49 CFR 173.54(c): “leaking or damaged package containing an explosive.
 - Bullets were corroded or leaking
 - 49 CFR 173.54(d): “propellants that are unstable, condemned or deteriorated”



Are the Explosives Hazardous Waste?

- 40 CFR 261.23(6) – Reactivity Characteristic
 - “it is capable of detonation or explosive reaction if it subjected to a strong initiating source”
 - Primary Initiating Explosive (i.e.: Lead Azide) initited by a Blasting Cap
 - D003 – Reactive Waste
- 40 CFR 261.23(8) – Reactivity Characteristic
 - “it’s a DOT forbidden explosive”
 - 49 CFR 173.54(c): “leaking or damaged package containing an explosive.
 - Old dynamite that is corroded or weeping
 - 49 CFR 173.54(d): “Picric Acid that are unstable, condemned or deteriorated”

Are the Explosives Hazardous Waste?

- 40 CFR 261.24(b) – Toxicity Characteristic
 - Explosives containing Mercury or Lead may fail TCLP
 - D008 – Lead
 - D009 – Mercury
- 40 CFR 261.32 (a) – Hazardous Waste from Specific Sources
 - K044 - Wastewater treatment sludges from the manufacturing and processing of explosives
 - K045 Spent carbon from the treatment of wastewater containing explosives
 - K046 Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds
 - K047 Pink/red water from TNT operations

Are the Explosives Hazardous Waste?

- 40 CFR 261.33: Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof
 - P-009: Ammonium Picrate
 - P065: Mercury Fulminate
 - P-081: Nitroglycerine
 - U-105: 2,4 – Dinitrotoluene
 - U-106: 2,6 – Dinitroltoluene
 - U234: 1,3,5-Trinitrobenzene

Are the Explosives Hazardous Waste? Human Remains with Embedded Explosives

- 40 CFR 261.23(6) – Reactivity Characteristic
 - “it is capable of detonation or explosive reaction if it subjected to a strong initiating source”
 - Powder in the bullet is ignited by the primer
 - D003 – Reactive Waste
- 40 CFR 261.23(8) – Reactivity Characteristic
 - “it’s a DOT forbidden explosive”
 - 49 CFR 173.54(c): “leaking or damaged package containing an explosive.
 - Bullets were corroded or leaking
 - 49 CFR 173.54(d): “propellants that are unstable, condemned or deteriorated”



**South Gate and Vernon
Fireworks**

Southgate Fireworks

- May 24, 2016 South Gate Police Department discovered a large quantity of illegal fireworks
- Los Angeles County Fire Department (LACoFD) oversaw investigation into fireworks
- EPA assistance requested by LACoFD
- Approximately 210,000 pounds on-site
- Fireworks DOT Classes 1.1, 1.3 and 1.4

Agencies Involved

- LACoFD Arson Detail
- LACoFD Health Hazmat
- LACoFD Stations
- Southgate Police Department
- California State Fire Marshal
- California Department of Toxic Substance Control
- California Highway Patrol
- Environmental Protection Agency
- Federal Bureau of Investigation Bomb Squad
- Bureau of Alcohol, Tobacco and Investigations (BATF), Arson
- BATF Explosive Enforcement Officers

- Fireworks Stored in
- Multiple Locations
- Warehouse
- Four 60' Semi-Box Trailers
- One Rental Truck





MANUFACTURING OPERATIONS

- Approximately 7,200 M-80s
- Flash powder used in the M-80s manufactured on-site
- Manufactured one-pop mortars
- Not fireworks



Manufacturing Mess

- Illegal fireworks manufacturing contaminated warehouse and equipment with flash powder
- Flash powder is static and shock sensitive
- Flash powder inactivated using fabric guard
- Warehouse cleaned as it is emptied
- Contaminated debris disposed of as ignitable hazardous waste



Disposal and Transportation

- DTSC declared seized contraband fireworks to be Reactive Hazardous Waste
- CASFM statutorily required to disposal of seized DOT Class 1.4 fireworks.
- Fireworks must have a “EX” number assigned to be legally sold and transported in the United States.
- EPA has stated that seized fireworks that still can function as designed are not hazardous waste until disposed of.

“EX” Numbers

- An EX number, preceded by the prefix "EX–", is **issued and used by the Department of Transportation (DOT) to identify an explosive which has been tested and classified by DOT**. See U.S. Department of Transportation regulations at 49 CFR 171.8 and 49 CFR 173.56.
- EX numbers assigned for all new explosives except those made by DOD or DOE.
- Fireworks without EX numbers must be shipped in the appropriate DOT Performance Spec. Packaging based on their explosive class (i.e.: 1.4 or 1.3)

Removal of the DOT Class 1.4 Fireworks.

- EPA initiated a CERCLA Removal Action
- EPA palletized DOT legal fireworks
- EPA packaged DOT illegal fireworks in DOT performance spec. packaging
- CASFM funded the disposal of fireworks to Clean Harbors



Render Safe Activities – USMC Camp Pendleton

ATF arranged for disposal of DOT Class 1.1 and 1.3 fireworks and home made one-pop mortars

Explosive render safe at USMC Camp Pendleton

Joint effort between LACoFD, ATF, EPA and USMC Pendleton



ATF-Maricopa County Render Safe

- ATF and Maricopa County Sheriffs Bomb Squad
- DOT Class 1.1 and 1.3 Fireworks



Vernon Fireworks



Discovered on June 27, 2016 due to a confidential informant



Approximately 100,000 pounds of fireworks



LACoFD Arson Detail discovered it



EPA called in to assist in cleanup



CASFM removed fireworks to a storage facility in Victorville, CA





Fireworks without “EX” numbers

Agencies Involved

LACoFD Arson Detail

Vernon Police Department

EPA

DOT Office of Inspector General

ATF

DHS Homeland Security Investigations

CASFM

DTSC

When are Fireworks Hazardous Waste?

CALIFORNIA

- DTSC considers all seized fireworks to be a waste.
- Section 1417.6(a) of the California Penal Code states dangerous evidence may not be returned (i.e.: explosives)
- Dangerous Fireworks are described pursuant to the California Health and Safety Code 12505.
- Reactive or Ignitable Waste

EPA

- Fireworks that have been seized as evidence that can still be used as designed by the manufacture are not waste.
- Fireworks that are functioned as designed does not constitute treatment
- When disposed of they become a waste.
- Reactive or Ignitable Waste

Is It Exempt from RCRA?

An Explosive or other Munition Posing or Potentially Posing An Imminent and Substantial Endangerment Threat Are exempt from RCRA permitting under 40 CFR §§264.1(g)(8) and 270.1(c)(3).

It is the responsibility of the person in charge of the emergency response to make the determination if an imminent threat is applicable or if a RCRA emergency permit should be requested.

Who Makes the Decision?

- OSC
- Bomb Squad Commander
- Fire or Police Chief
- Incident/Unified Command

Who Doesn't Make the Decision?

- Agency Permitting Official
- Regulators



Francis Street Fireworks Air Surveillance Case Study

Agencies Involved



Summary



1) An explosion in a residential neighborhood in Ontario, CA caused a secondary explosion of an outbuilding containing illegal fireworks and ammunition reloading supplies.



2) The explosions impacted the surrounding residential properties (~80 properties) and scattered unexploded and damaged fireworks over an approximate two-square-block area.



3) The Ontario Fire Department Bomb Squad performed controlled burns of the remaining scattered fireworks and explosives.



4) EPA performed pre-burn and post-burn soil sampling activities and while conducting co-located air monitoring and air sampling activities during the controlled burn activities.

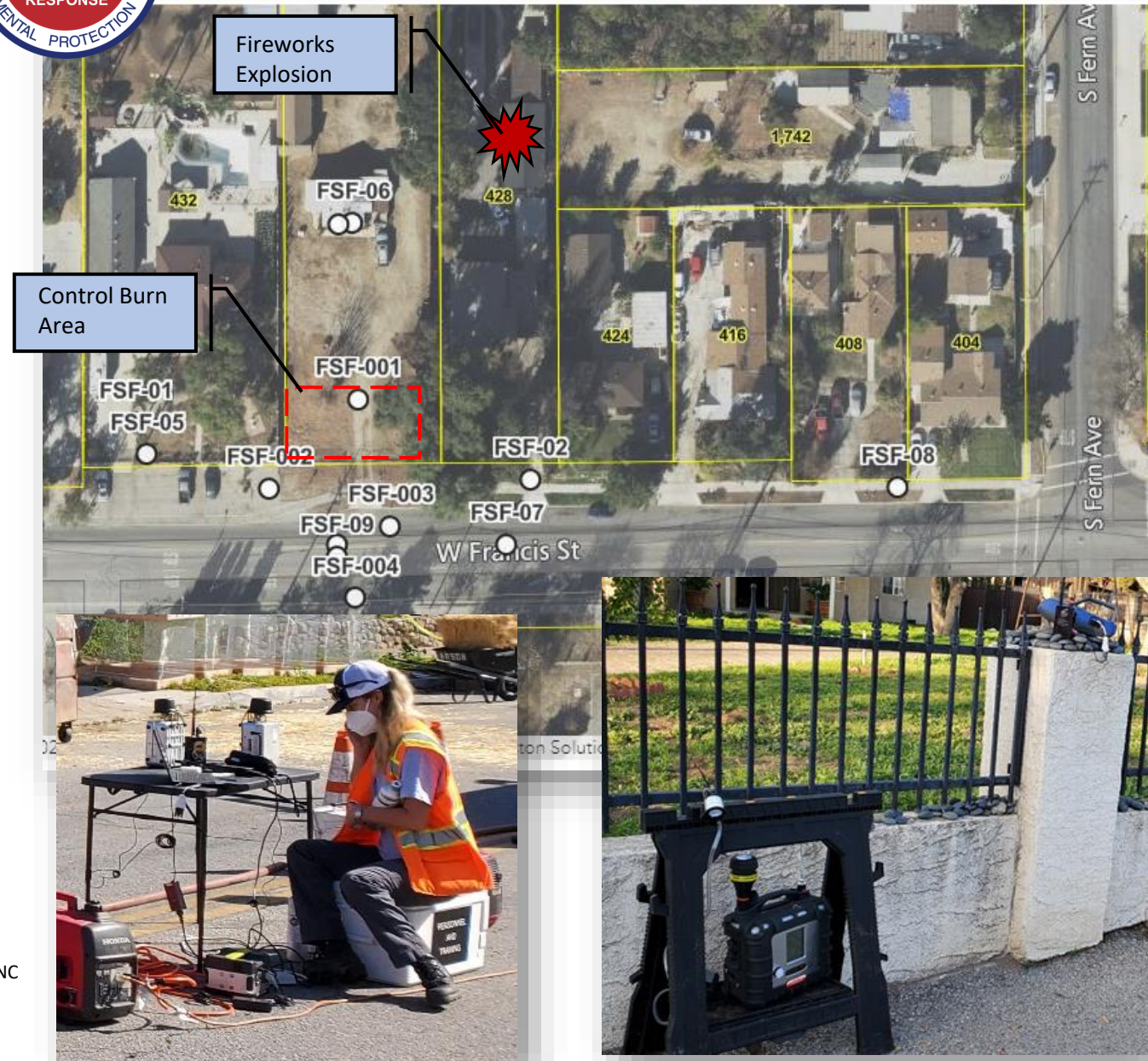
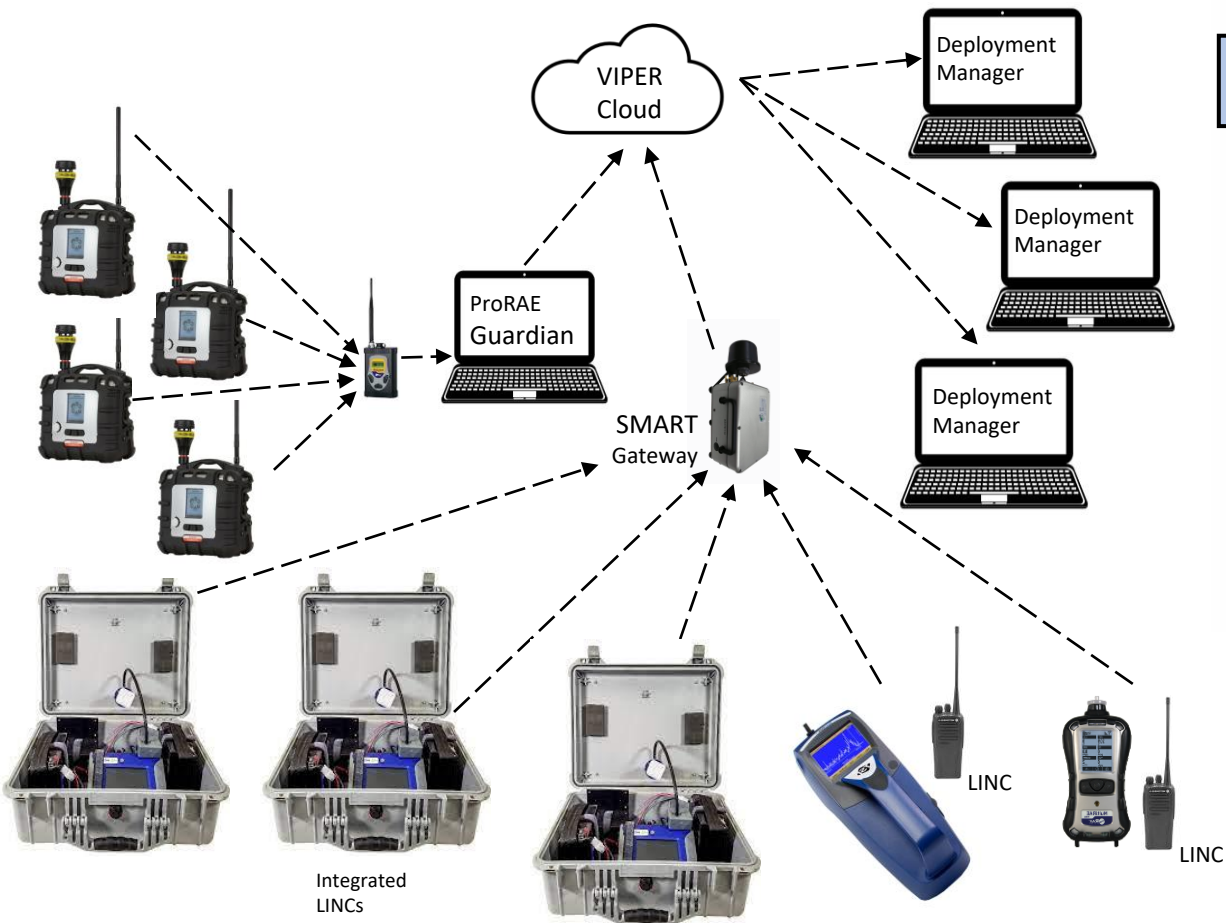
Evacuation Zone Map



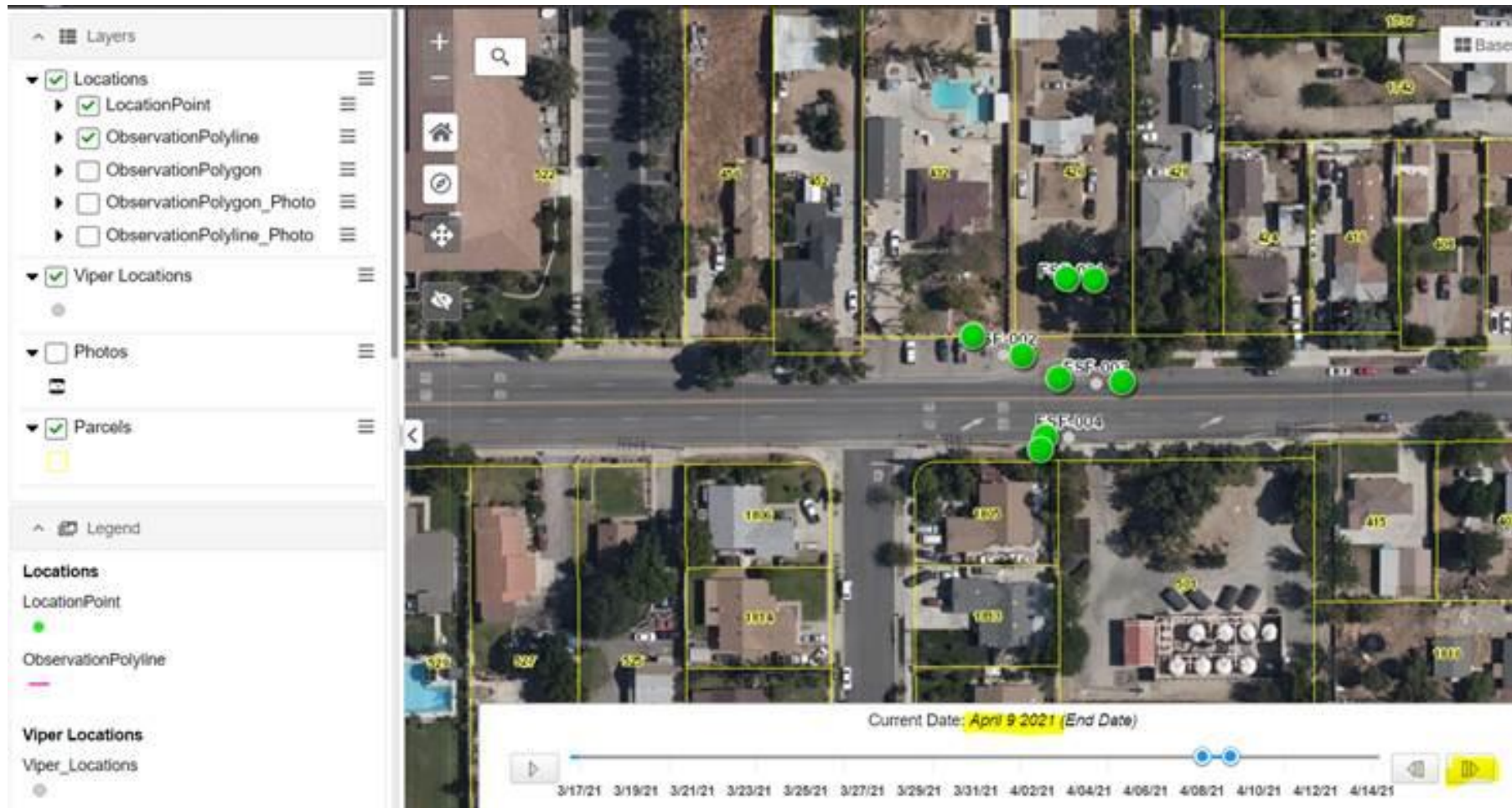
- Approximately 80 homes were evacuated for 2 days.
- The firework explosion was strong enough to cause foundation issues to nearby residential properties.
- Fireworks exploded for an approximately 7 hours.



Air Monitoring and VIPER



VIPER Live Run



Controlled burn of fireworks





VIPER Deployment and Reporting

Francis Street Fireworks Case Study and Common Obstacles

EPA Region 9
April 30, 2021

[Introduction](#)

[SSDMP](#)

[Data Set-Up](#)

[Equipment Deployed](#)

[Design and Placement](#)

[Co-Location of Sampling and Mo...](#)

[Signal Interference](#)

[Power Sources/Battery Life for...](#)

[Other Field Obstacles](#)

