



# Monitoring Plans and Response Coordination

IASC/ CARPA Workshop, May 2015



# Topics

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- Steps for responding
- Generating a monitoring plan
- Creating a monitoring network
- Requesting support from ARB

# Steps to responding to an event

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- Discover (collect intelligence)
- Coordinate (availability, assets & proximity)
- Deploy (**create plan** and mobilize)
  
- Assess (review and translate data)
- Communicate (share information)
- Maintain (resources)
- Reassess (needs and equipment)
- Demob (reposition resources)

# Deployment Coordination

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Necessary for multi-agency response.

THE PLAN WILL TELL YOU:

- What assets belong in the response
- Incident objectives (what)
- Personnel (who)
- Monitoring location (where)
- Data collection and management (how)



# Monitoring Plan

- Operational Period
- Sit Summary
- PPE
- Contact info
- Responding Agencies

<b>Operational Period</b> 12/7/10 0600 to 12/10/10 1800 <small>Date/Time to Date/Time</small>		<b>California Environmental Protection Agency</b> <b>Air Resources Board</b> <b>Office of Emergency Response</b>		Prepared by: C.Pearson Approved by: G.Vlasek																																
<b>Air Emergency Response Sampling Plan</b>																																				
Incident: San Diego County Explosives Stockpile				<input type="checkbox"/> State Responsibility Area <input type="checkbox"/> Federal Responsibility Area																																
Counties/District Affected: San Diego County																																				
CalEMA Mission Task No. 2010-SOU-6059 Description Chemical Fire																																				
ICP/EOC Location(s): ICP at Escondido Fire Station 3 (1808 Nutmeg Street, Escondido)																																				
Situation Summary <input checked="" type="checkbox"/> CalEMA <input type="checkbox"/> FEMA <input type="checkbox"/> Other																																				
* On November 18, a massive stockpile of highly explosive materials was discovered at a residential structure located at 1954 Via Scott, in an unincorporated area of San Diego County, near Escondido. On Tuesday, November 30, San Diego County submitted a Proclamation of Local Emergency for the incident and subsequently requested Governor Schwarzenegger to proclaim a State of Emergency. On Wednesday, the Governor proclaimed a State of Emergency for the County. * A Multi Agency Coordination Group conference call took place.																																				
Suggested PPE <input type="checkbox"/> Site specific health & safety plan attached																																				
Because staff will be working downwind of the incident, it's possible that there may be brief, moderate exposures to air toxics and particles. Staff are required to have with them at all times an air purifying respirator with dual VOC/HEPA filters. Field work also requires steel-toed boots, long pants, and high visibility vests. We anticipate a																																				
<b>Field Staff Deployed</b>																																				
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# Common monitoring objectives

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- Chemical identification
- Plume predictions
- Personal Protective Equipment (PPE) recommendations
- Protective health actions (schools, events)
- Re-entry and clearance issues
- Potential long-term public health effects

# Monitoring and Deployment Objectives

- Identify impacted areas (where)
- Health Actions
- \* Define sampling objectives (why)
- Determine what monitoring equipment to use (how)

**Area of Impact and any Specific Targets of Concern:**  
 Schools downwind of incident, multi-family dwellings downwind of incident, locations far downwind where terrain meets plume spread, including Dixon Lake, and any locations where there are supported reports of plume laydown or smolder.

**Contaminant(s) and Health Action Levels:**  
 Pentaerythrite tetranitrate (PETN): TEEL-1 = 0.05 mg/m3; Sulfur Trioxide:AEGL-1 (4 hr) = 0.20 ppm  
 Nitric Acid (fuming): ERPG-1 = 1 ppm; note odor threshold ~ 1ppm  
 Hydrogen peroxide (>35% aq sol): ERPG-1 = 10 ppm; Sulfuric acid (conc): ERPG-1 = 2.0 mg/m3 (0.5 ppm)  
 Hydrogen chloride, Hydrochloric acid: 8 hr AEGL-1 = 1.8 ppm; Benzene AEGL-1 8 hr = 9 ppm  
 Hexamethylene tetramine (HMTD): TEEL-1 = 30.0 mg/m3 (5.23 ppm); Vinyl chloride AEGL-1 8 hr = 70 ppm

**Weather forecast (12-24 hrs):**  
 From SDC APCD; Weather condition favor burn on Thursday Dec 9, 2010

**General Sampling Objectives**

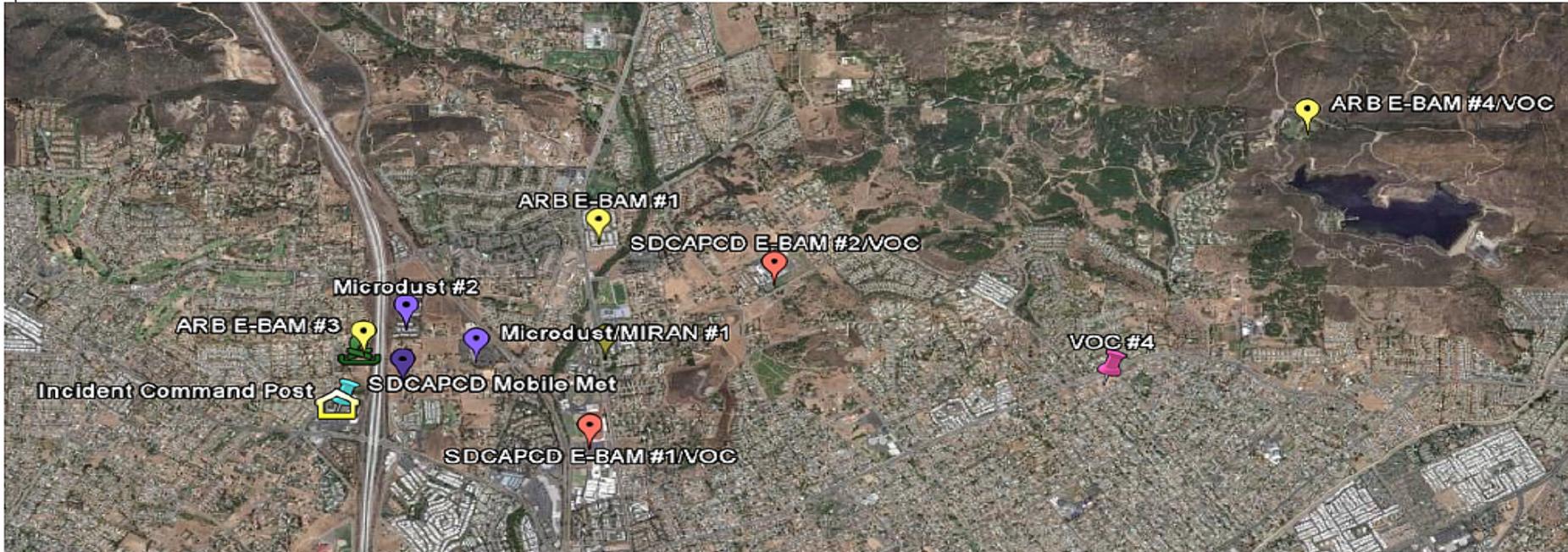
- Gather reference sampling data within area of concern to for historical/background pollutant levels
- Establish real-time sampling within affected population center to determine contamination levels
- Establish monitoring in evacuation area for pending re-entry
- Establish air sampling to determine contaminant gradients or boundaries
- Conduct personal air sampling of on-site ERT personnel
- Site-specific sampling for targeted location (i.e., evacuation center, hospital, fire camp, etc)
- Complaint investigation; Location: \_\_\_\_\_
- Other objective: Summa Canister analysis to support real time measurements.

Deployed Field Sampling Equipment	
<p><b>Reference (network sites):</b></p> <p><b>Particulate Matter</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> BAM 10</li> <li><input checked="" type="checkbox"/> BAM 2.5</li> <li><input checked="" type="checkbox"/> Gravimetric Filter: <input checked="" type="checkbox"/> PM10 <input checked="" type="checkbox"/> PM2.5</li> </ul> <p><b>Meteorology</b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> station met</li> </ul> <p><b>Toxics</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> VOC canisters (910)</li> <li><input type="checkbox"/> Metals filters (924)</li> </ul>	<p><b>Portable (day-week):</b></p> <p><b>Particulate Matter</b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> EBAM 2.5 <input type="checkbox"/> EBAM 10</li> </ul> <p><b>Meteorology</b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> WEATHERPAK</li> <li><input type="checkbox"/> iMet</li> </ul> <p><b>Toxics</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> VOC canisters (910)</li> <li><input type="checkbox"/> Metals filters (BGI)</li> <li><input type="checkbox"/> Asbestos (HighVol/MiniVol)</li> </ul>
<p><b>Mobile (hour-day):</b></p> <p><b>Particulate Matter</b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> MicroDust</li> </ul> <p><b>Toxics</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> areaRAE (PID)</li> <li><input type="checkbox"/> Canister (critical orifice)</li> </ul>	<p><b>Survey/Confirmation (min-hour):</b></p> <p><b>Toxics</b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Miran (field IR)</li> <li><input type="checkbox"/> ppbRAE (PID)</li> <li><input checked="" type="checkbox"/> Colorimetric tubes</li> <li><input type="checkbox"/> Sorbent tubes</li> <li><input checked="" type="checkbox"/> Canister (grab sample)</li> <li><input type="checkbox"/> areaRAE (PID)</li> </ul>

# Monitoring Plan Map

Sketch/Compose map of site and any areas of concern.

(Indicate major landmarks and sampling)



## Legend:

Google Map Link=  
[http://maps.google.com/maps/ms?f=q&source=s\\_q&hl=en&geocode=&ie=UTF8&msa=0&msid=104284236844156191006.00049673dc5d3f7488527&ll=33.031076,-117.079658&spn=0.522707,1.234589&t=h&z=10](http://maps.google.com/maps/ms?f=q&source=s_q&hl=en&geocode=&ie=UTF8&msa=0&msid=104284236844156191006.00049673dc5d3f7488527&ll=33.031076,-117.079658&spn=0.522707,1.234589&t=h&z=10)

## Notes:



Google Map Available Online

[Click Here](#)

# Creating a monitoring network

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**Portable Samplers**



**Mobile Samplers**



**Network Monitors**



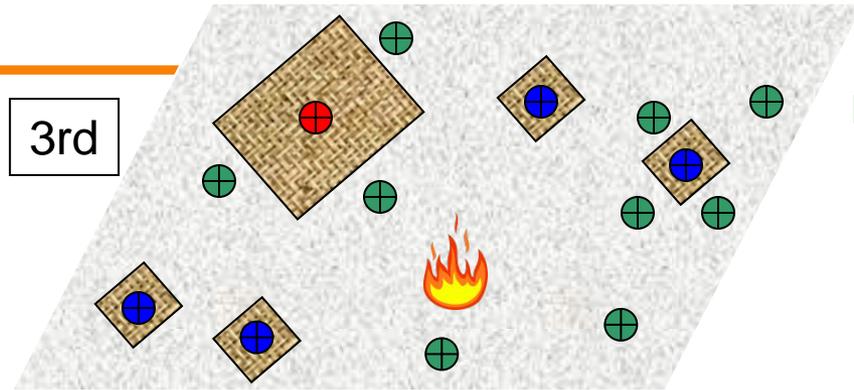
**Field GC/MS and IR  
Detectors**



**Summa Canisters**

# Layered Monitoring Deployment Strategy

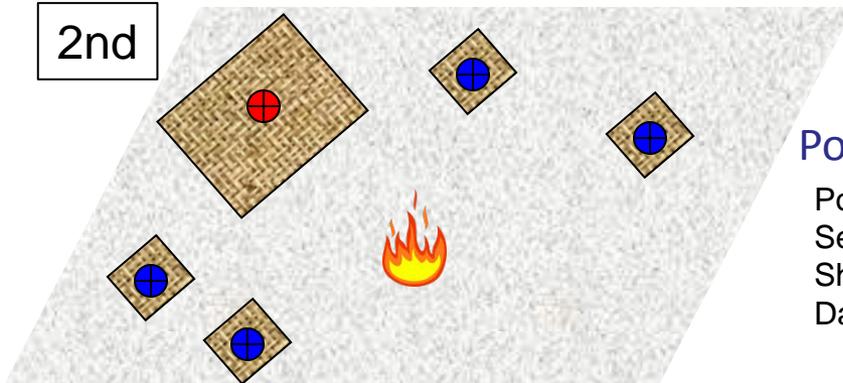
3rd



## Mobile Sites - survey

Complaints  
Follow up to action  
Reentry  
Hour to Day

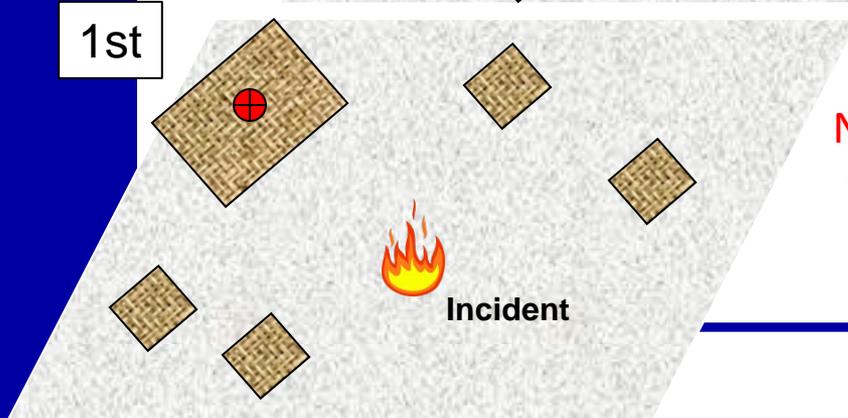
2nd



## Portable Sites - supplement the network

Population exposure  
Sensitive population  
Short terms changes and trends  
Day to Week

1st



## Network Sites

Compliance  
Regulatory  
Annual

# Deploying the instruments/siting



Select a site that has:

- Safety (you & monitor)
- Power
- Security
- Easy access
- EPA Siting Criteria
- Local sources

Coordinate w/locals on location



# Monitoring Plans Template Location (Data Toolkit)

California Environmental Protection Agency  
**Air Resources Board**

About ARB | Calendars | A-Z Index | Contact Us

Search ARB

Google Advanced

Home | Reducing Air Pollution | Air Quality | Business Assistance | Laws & Regulations | Health

Tuesday, April 29, 2014

## CARPA Toolkit - Data

*This page last reviewed December 12, 2013*



**Operational Tools and Guidance for Emergency Air Monitoring, Sampling, Modeling, Meteorology, and Data Management**

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**Particulate Monitoring**  
ARB Air Monitoring SOPs  
ARB E-Bam Evaluation (pdf)  
EBAM Guidance for Particulate Monitoring in Emergencies (pdf)  
EBAM Telemetry (pdf)  
USFS Smoke Particulate Monitor Comparison (2006)

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**Sampling Plans and Data Management**  
CTEH Sampling Plan from the BP Oil Spill (pdf)  
OER Monitoring & Sampling Plan (pdf)  
CARPA Monitoring & Sampling Plan (docx)  
Use of AirNow during Emergencies (pdf)

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**Toxic Releases and Fires**  
The US EPA developed an array of [Emergency Response Air Monitoring Guidance Tables](#) (2009 edition) which are quick-reference guides to assist field responders during emergency response or time-critical site clean-up. The guidance covers the

**UP LINKS**

- ARB Homepage
  - Outreach Programs
    - California Air Response Planning Alliance (CARPA)

**PROGRAM LINKS**

- Background and Mission
  - Charter
- Fire Information Page
- Newsletter
- Steering Committee (login required)
- Subcommittees
- Tool Kit
  - Data
  - Data to Message
  - Message to Audience
  - Emergency Response
- Trainings / Meetings

**RESOURCES**

- Contact Us
- Join the CARPA Email List
- RSS / Newsfeed

# Additional Response Planning Considerations

## Staffing

- availability and workload
- shift changes
- weekends and after hours
- safety

## Resources

- equipment availability/contracts
- interoperability
- are resources being optimally used, relocate, etc.

## Field Deployment

- availability and consistent power source
- lodging vacancies
- road closures
- cellular/internet connection



# When/How to Request OER Monitoring Assistance

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- Insufficient resources or may be overwhelmed
- Initial email from APCO to CARB OER
- Follow with formal request from APCO to op area (County) → REOC → CalEMA
- Mission request to CARB OER to provide monitoring assistance

# Steps to Request Support

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## 4 Easy Steps to get OER Support

1. Contact OER (begins responding)
  2. Obtain a State Support “Mission Task” (we can help you get it)
  3. Mission Request Approval
  4. Deployed & Operational (usually under 24 hours)
-

# OER Mission Request Procedure (CARPA Mainpage)



## Requesting ARB Emergency Air Monitoring Support Services

Updated March, 2014

This procedure applies to any emergency involving release of a hazardous airborne contaminant for which a local agency has exhausted its resources to protect public health or the environment. Requesting agencies typically include local air districts, public or environmental health departments, and county or city fire departments. The process for requesting State support is established by the Emergency Services Act (Government Code § 8550-8692 et seq.) and the Standardized Emergency Management System, or SEMS.

The Air Resources Board's (ARB) Office of Emergency Response (OER) can provide State-level support for air contaminant monitoring, sampling, analysis, and dispersion modeling. OER also coordinates with numerous partner agencies to provide emergency toxicological assessments, health advisory recommendations, indoor air quality assessments, air monitoring for recovery operations, and assessment of air quality for re-entry.

### Steps to Obtain OER Support



California Environmental Protection Agency  
**Air Resources Board**

About ARB

Home Reducing Air Pollution Air Quality Business Assistance Law

Tuesday, April 29, 2014

#### UP LINKS

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#### RESOURCES

- ◊ Contact Us
- ◊ Join the CARPA Email List
- ◊ RSS / Newsfeed



**CARPA**  
California Air Response Planning Alliance

#### In the event of an emergency, contact:

California State Warning Center	(800) 852-7555
US EPA Region 9 Duty Officer	(800) 300-2199
CDC/ATSDR 24-Hour Emergency Response Center	(770) 488-7100

#### Current Emergencies

There are no current fires with major impacts in California. More information

- [www.northcasmoke.blogspot.com](http://www.northcasmoke.blogspot.com)
- CAL FIRE Current Incidents
- [Fire Information Map - PFIRS](#)
- [Federal Interagency Smoke Management Site](#)
- [Interagency Incident Information System \(Inciweb\)](#)
- Office of Emergency Response: Mission Request Procedure

#### New fire related articles of interest:

[California 2014 Fire Conditions Forecast \(January 29, 2014\) \(pdf\)](#)

This document was created by the California Air Resources Board: Office of Emergency Response in support of a forthcoming 2014 Wildfire Air Monitoring Plan. The Office of Emergency Response (OER) is enhancing its air emergency response procedures and resources to better support local air districts. These enhanced procedures combined with additional resources will provide California with improved response capabilities and increased effectiveness during this wildfire season.

[2014 Summer Assessment \(January 31, 2014\) \(pdf\)](#)

This report was presented by Calfire Operations Division during the January 31st, 2014 CARPA Meeting. This presentation provides a projection of the upcoming fire season in California.

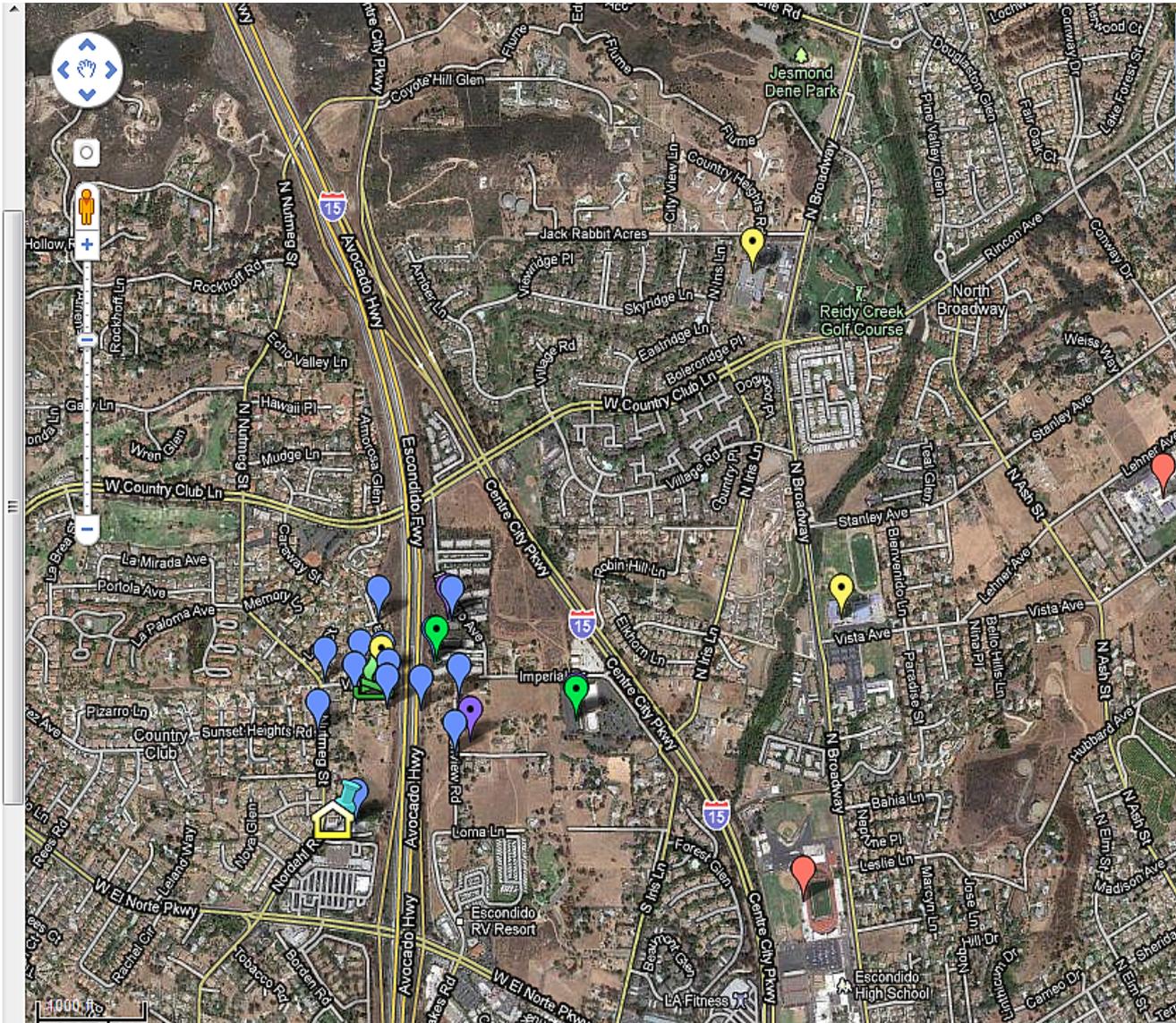
#### Latest Information

**Program Available: IASC/CARPA Spring 2014 Workshop, 4/30 and 5/1, McClellan**

The steering committees for the California Interagency Air and Smoke Council and the California Air Response Planning Alliance invite you to the IASC/CARPA Spring 2014 Workshop.

# Multi agency response (Escondido)

-  SDCAPCD E-BAM #1/Summa #89030  
Escondido Union High School District
-  SDCAPCD E-BAM #2/Summa #6000  
Rincon Middle School
-  ARB E-BAM #1  
North Broadway Elementary School
-  ARB E-BAM #2/Summa #80422/MIRAN #2  
Calvin Christian School
-  ARB E-BAM #3  
Terrace Park
-  ARB E-BAM #4/Summa #89049  
Dixon Lake
-  Microdust/MIRAN #1  
Jehovah Witness Kingdom Hall
-  Microdust #2  
MSA Safesite Loc #14
-  Microdust #3  
MSA Safesite Loc #15 (Greenview & Greenview)
-  Weatherpak 2504
-  Weatherpak 2506
-  SDCAPCD Mobile Met/SD Summa #?
-  MSA Location #3
-  MSA Location #4
-  MSA Location #5
-  MSA Location #6
-  MSA Location #7
-  MSA Location #8
-  MSA Location #9
-  MSA Location #10
-  MSA Location #11



Large responses often have multiple agencies responding.



# More Information

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## ARB/Office of Emergency Response

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