Welcome!

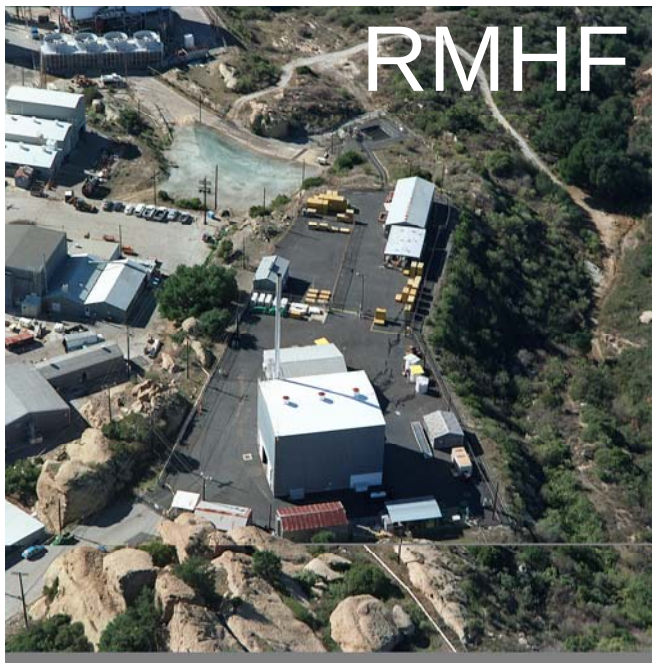
November 15, 2005

Meeting Topics

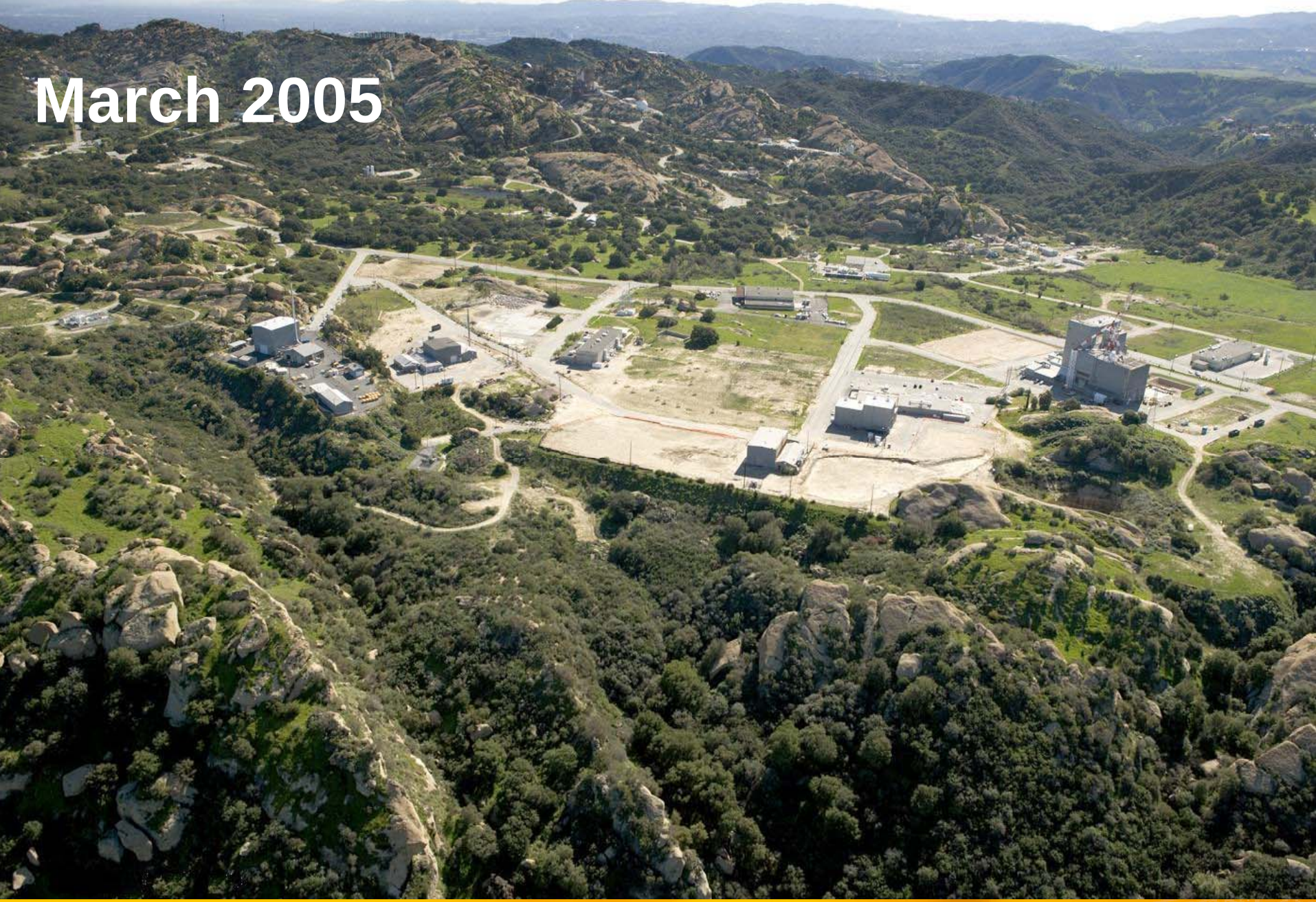
- Work to be completed
- Update on tritium in groundwater
- Topanga Fire and impact on Santa Susana

http://apps.em.doe.gov/etec

Work to be Completed



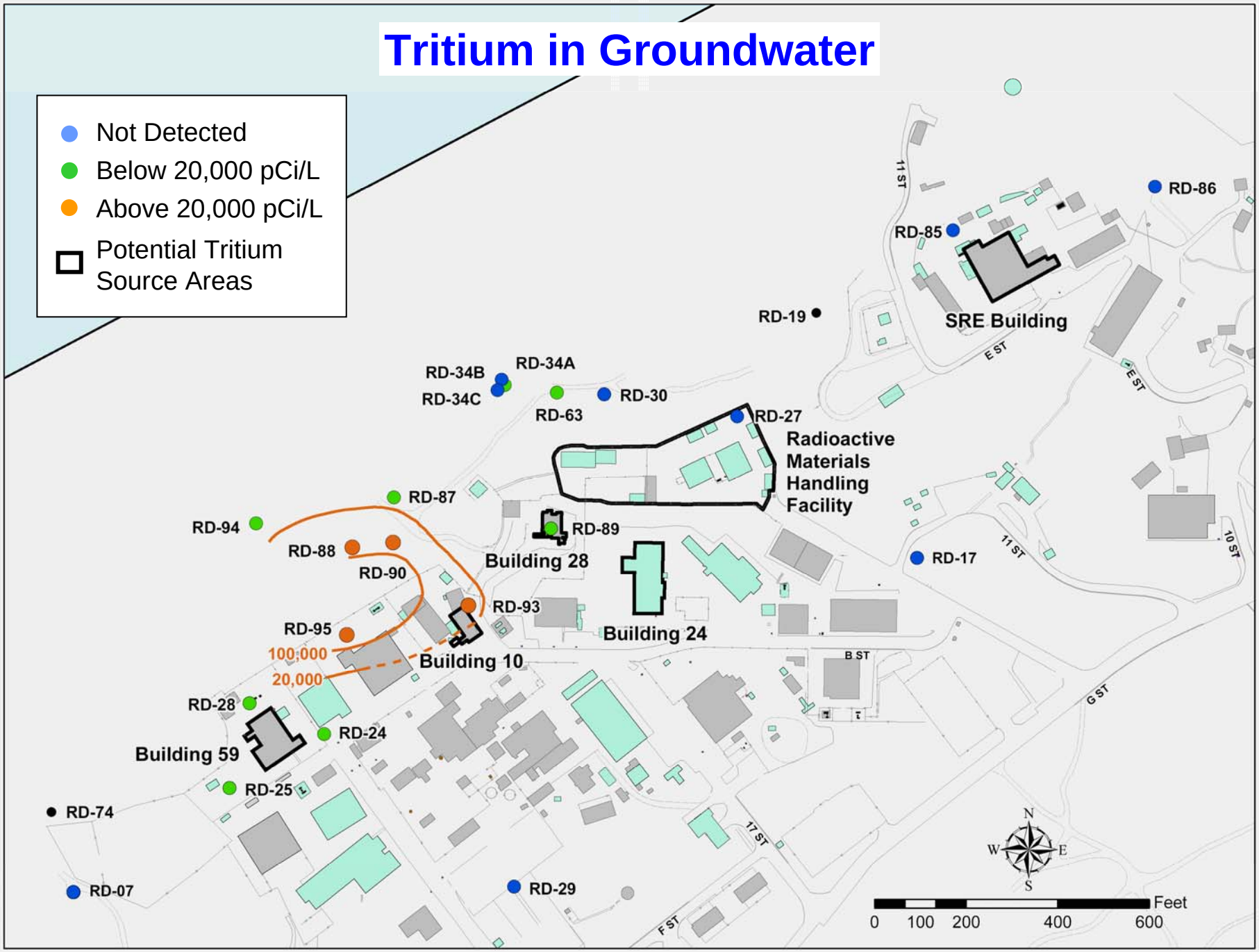
The tritium investigation


March 2005

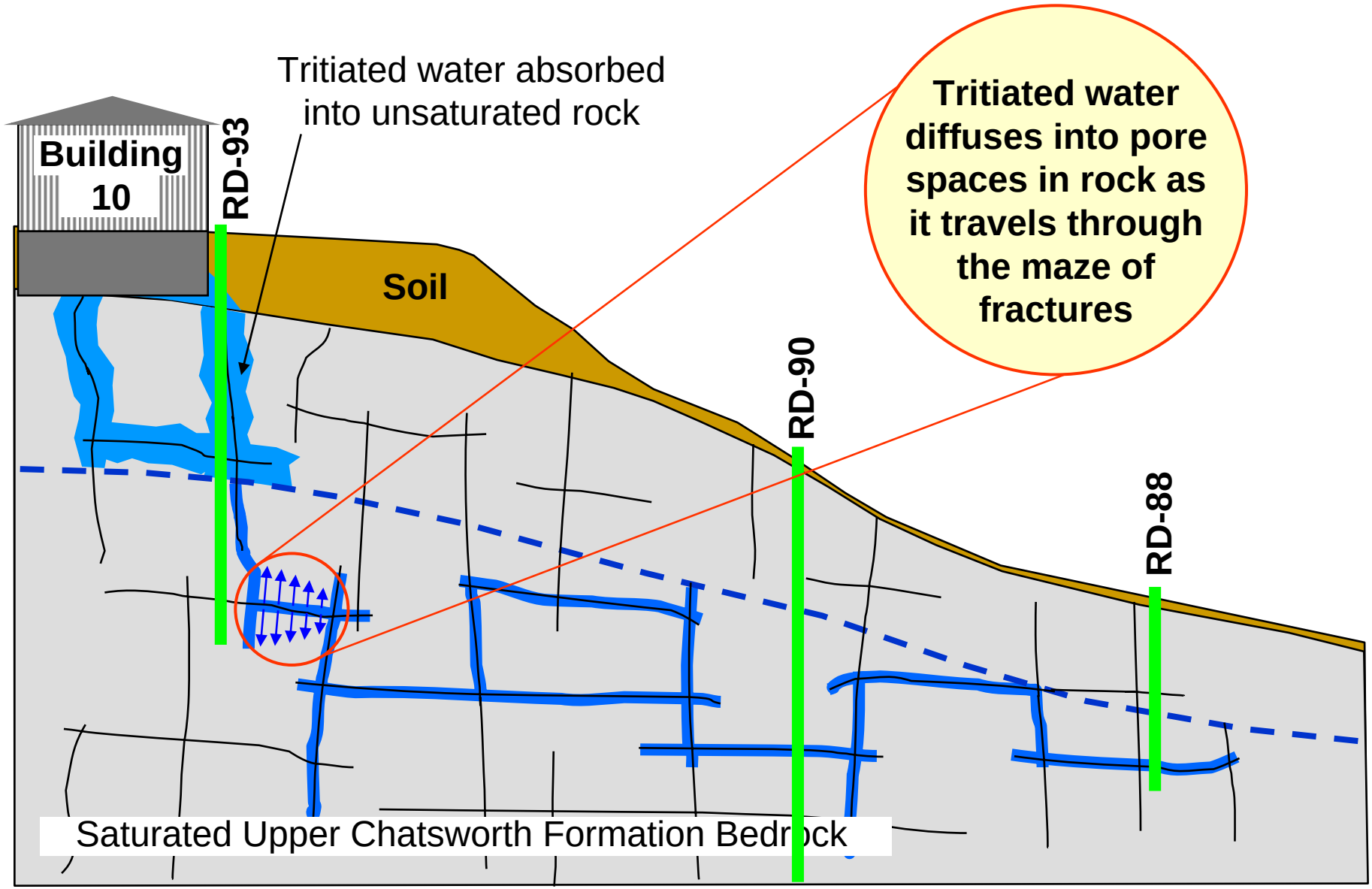
Area IV Investigation for Radioactivity

Installation of well RD-94

Tritium in Groundwater

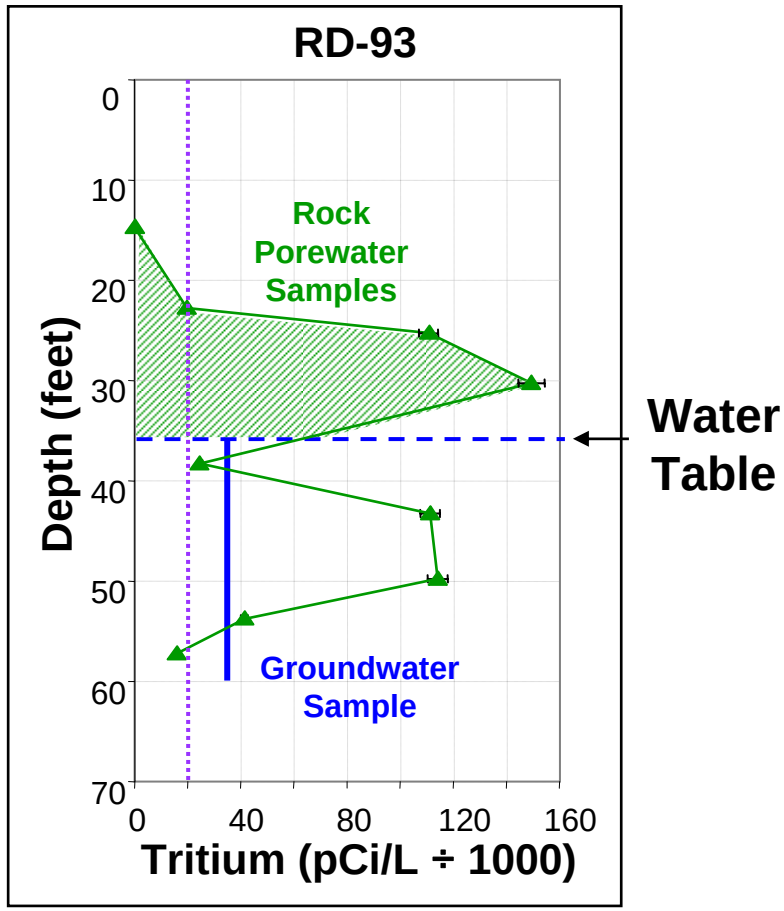


Why Tritium is Still Close to the Source

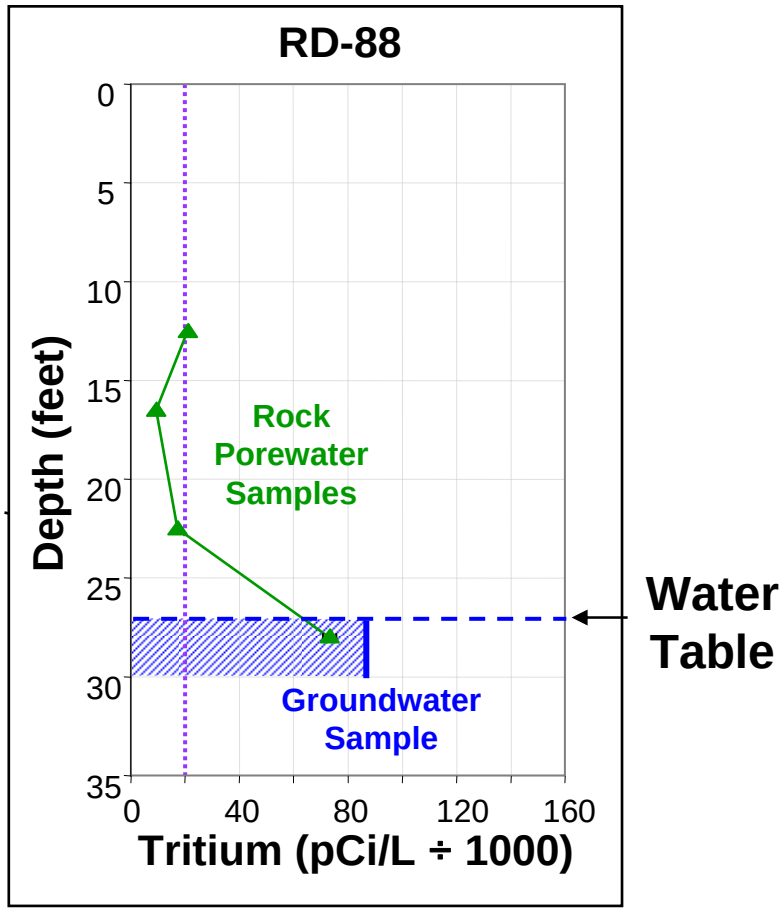


Collecting rock core samples

The highest tritium levels are in porewater samples above the water table at RD-93, near Building 10, suggesting it is a source



At all other locations away from Building 10, tritium concentrations are highest below the water table, suggesting tritium migration in groundwater



Preliminary Conclusions

- No personnel exposure
- Tritiated water is held in the rock porewater
  - diffusion is occurring in the rock matrix, slowing the movement of tritiated groundwater plume
- Tritium is reduced by radioactive decay while it is held in the rock (12.3 year half life)

Next Steps…

- Continue monitoring of groundwater wells
- Analyze additional rock core samples
- Install new groundwater wells to define the horizontal and vertical extent of tritium in groundwater

October 4th NASA Infrared Image of Topanga Fire

- Fire 9/28 – 9/30
- Fought by over 3000 firemen
- No lives lost
- Few homes lost

What Happened at Santa Susana?

- ***Wednesday, September 28th***

2:00 pm, the fire starts in Chatsworth

3:00 pm, the site is evacuated, except for emergency personnel

6:12 pm, the fire crosses into SSFL

- ***Thursday, September 29th***

The fire burns much of the brush in SSFL South Coast Air District is monitoring

Regulatory agencies notified

Emergency personnel continue efforts on-site

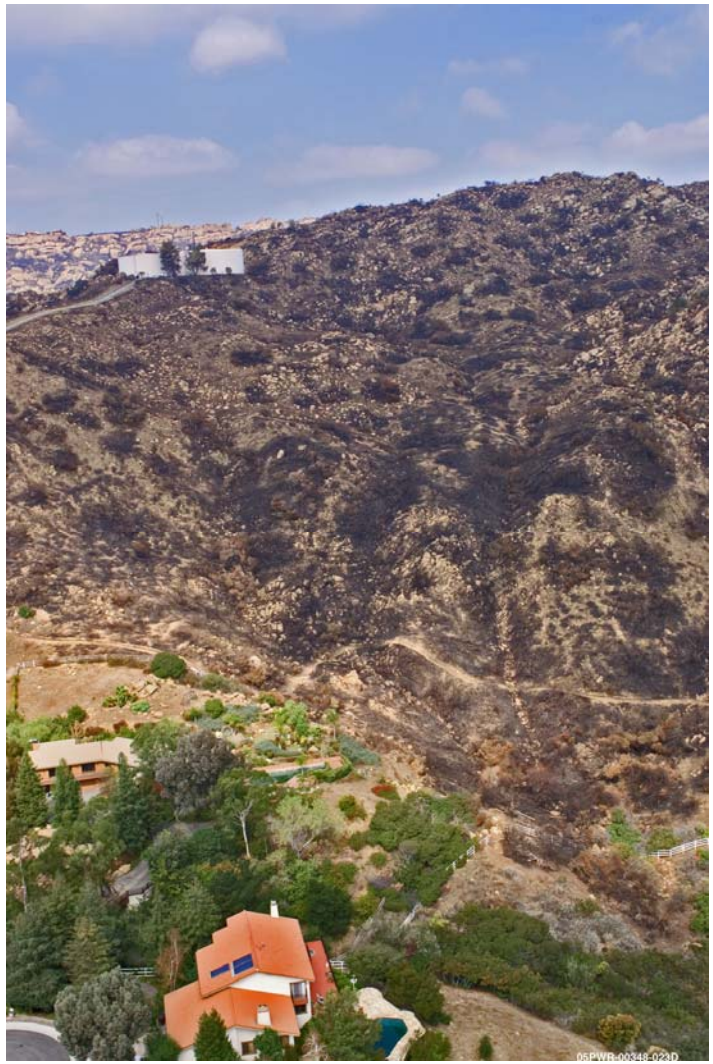
Lost all utilities at SSFL

- ***Friday, September 30th***

Fire burns additional portions of SSFL

Emergency personnel continue efforts

Safety and Environmental assessments begin



Post fire Actions at Santa Susana

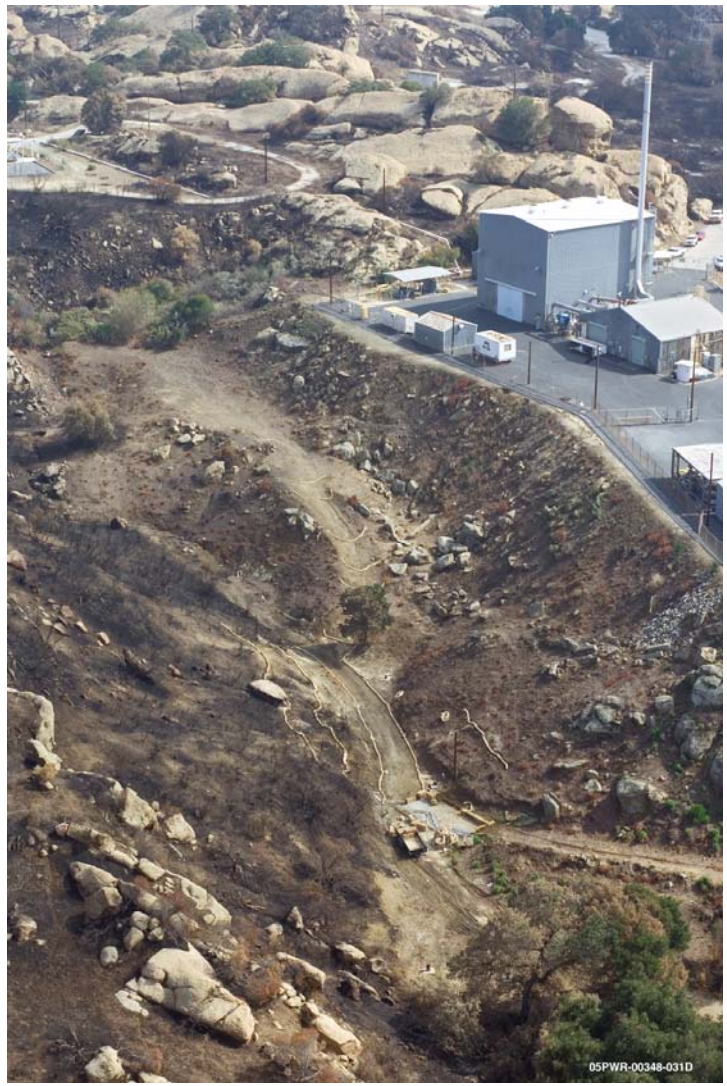
- Safety Hazards Assessment
  - Downed power poles and lines
  - Broken pipelines
  - Hazardous material storage
- DTSC, DOE, DHS, VCEHD, RWQCB and various fire departments came to the site to inspect and assess the fire damage
- We conducted environmental sampling

What was damaged at SSFL?

- Over 2000 acres of brush burned
- 10 of over 200 structures
- Hundreds of telephone and power poles
- Some pipelines for the groundwater remediation system
- Surface water sampling stations and erosion control systems
- Guardrails and retaining walls along Black Canyon and Woolsey Canyon

What Escaped Damage?

- Fire fighting efforts protected operational areas of the site
- Fire prevention measures helped
  - Paving the vicinity of operating facilities
  - Natural and man-made fire breaks
  - Brush clearing and weed abatement around active buildings
- No hazardous/radioactive storage areas were affected
  - This includes the Radioactive Materials Handling Facility (RMHF) in Area IV
  - The hazardous materials storage areas



Hazardous Material Storage Areas

Gasoline and Diesel Storage Tanks

Alfa Test Stand Tanks

Making Santa Susana Operational

- Reconnecting utilities
  - Water, electrical power, and telecommunications
  - Area IV telecommunications expect to be completed in December

Making Santa Susana Operational

Erosion control at surface water sampling locations

Debris clean-up from burned buildings

COCA Fire house debris

Debris clean-up from burned buildings

COCA Fire house - cleared debris

What chemicals could have been released from SSFL during the fire?

- Small amounts of oils, grease, and lubricants stored in a burned building.
- Approximately 150 pounds of freon from cooling systems in burned buildings.
- Asbestos associated with burned buildings
- Trace amounts of volatile organic chemicals lost from groundwater treatment systems.
- Since most of the soil and groundwater contamination is below the surface, it is unlikely that the fire released a significant amount of this contamination.
- The extent to which contaminants concentrate in plants does not significantly increase the potential health risk over that normally produced by fire.

Assessing Potential Chemical Impacts from Wildfires

- More than 24,000 acres of brush burned **(2,000 acres at SSFL)**
  - Wildfires naturally release hundreds of chemicals that are considered hazardous
  - Main pollutants are particulate matter and carbon dioxide
  - Other chemicals from wildfires include metals, benzene, formaldehyde, polyaromatic hydrocarbons (PAHs), and dioxins
- Post-fire sampling included:
  - Air for metals and dioxins
  - Ash and burned soil for PAHs, metals, and dioxins

Post-Fire Area IV

Week of October 3rd 2005

Radioactive Material Handling Facility
(10/12/05)

Vegetation Sampling for Radioactivity

In 2000, following the Cerro Grande fire at DOE's Los Alamos National Laboratory in New Mexico:

- We analyzed vegetation from locations of prior and current radiological facilities in Area IV of SSFL
- Samples analyzed for gamma emitting radionuclides
- No man-made gamma emitting contaminants were detected

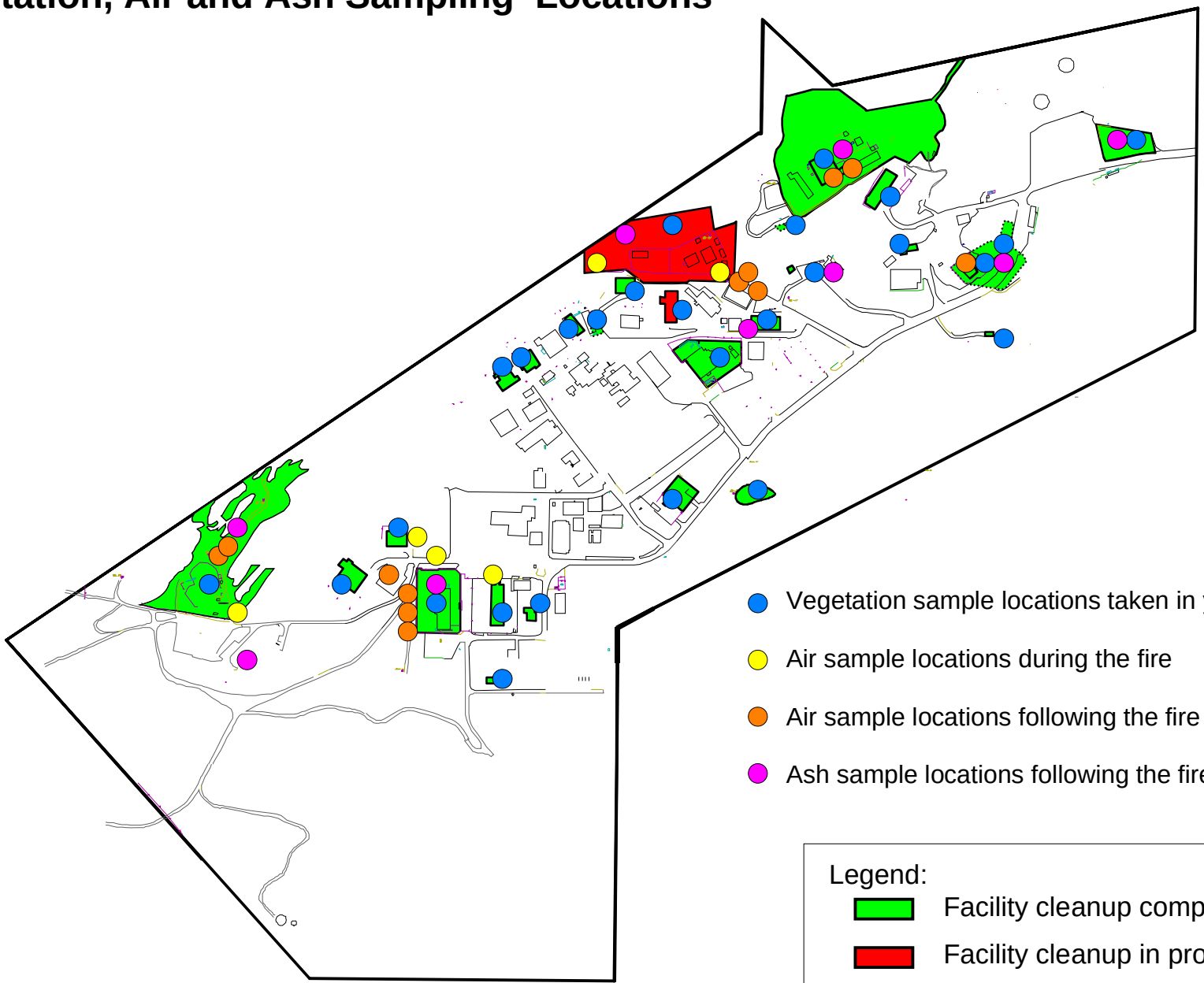
Air Sampling for Radioactivity

- Five continuously operating air samplers in Area IV operated for six hours on Wednesday evening, after the fire entered SSFL
- No sampling performed on Thursday
- Three battery powered air samplers operated Friday afternoon during the fire
  - One in the western portion of Area IV
  - One north of Bell Canyon
  - One near front gate in Area I
- Twelve grab air samples taken on Monday, Tuesday and Wednesday following the fire during windy conditions
- Samples analyzed by Eberline Laboratories
- No man-made contaminants detected

Ash Sampling for Radioactivity

- Ash from burnt vegetation in 14 locations was sampled on Monday following the fire
- Samples analyzed by Eberline Laboratories
- Naturally occurring uranium and thorium isotopes detected at low levels, typical of that found in clean soil
- One positive detect for Cs-137 and one positive detect for Sr-90, both much less than soil cleanup standards

Santa Susana Field Laboratory (Area IV)
Vegetation, Air and Ash Sampling Locations



- Vegetation sample locations taken in year 2000
- Air sample locations during the fire
- Air sample locations following the fire
- Ash sample locations following the fire

Legend:

- Facility cleanup completed
- Facility cleanup in progress

Signs of natural re-growth

(Photo taken ~ 40 days after Topanga Fire)

Many Thanks to…

Boeing Security and Fire Protection Crews and other Site Services

Ventura County Fire Department

Numerous California Fire Departments

California Department of Forestry

… for their hard work and dedication during the Topanga Fire.