



95 ABW

# Reports from Environmental Program Managers

Environmental Restoration Program  
Edwards AFB, CA

Joe Dunwoody, Rebecca Hobbs, Patrice Hallman,  
Bruce Oshita, and Tom Merendini  
19 August 2010



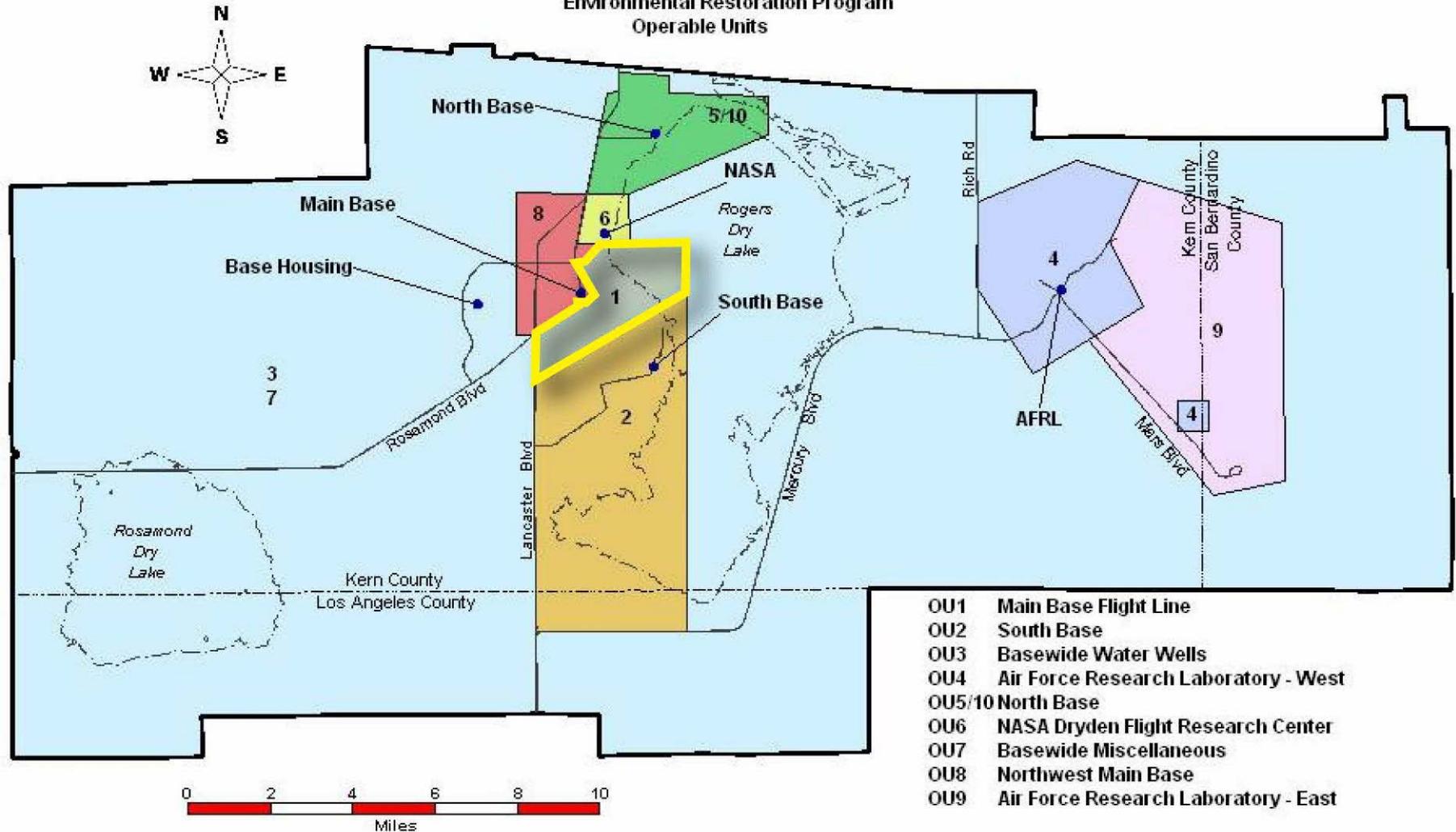


# Operable Unit (OU) 1 Main Base Flightline



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## Environmental Restoration Program Operable Units

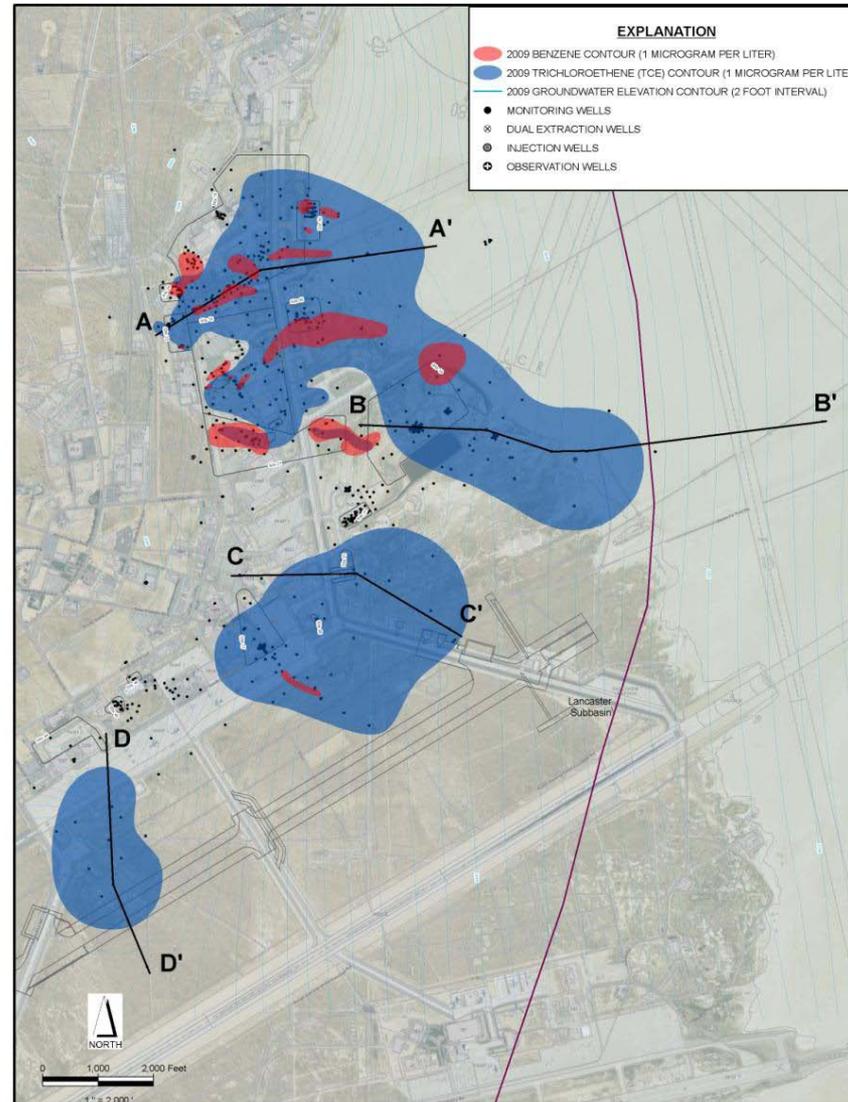




# OU1 Main Base Flightline



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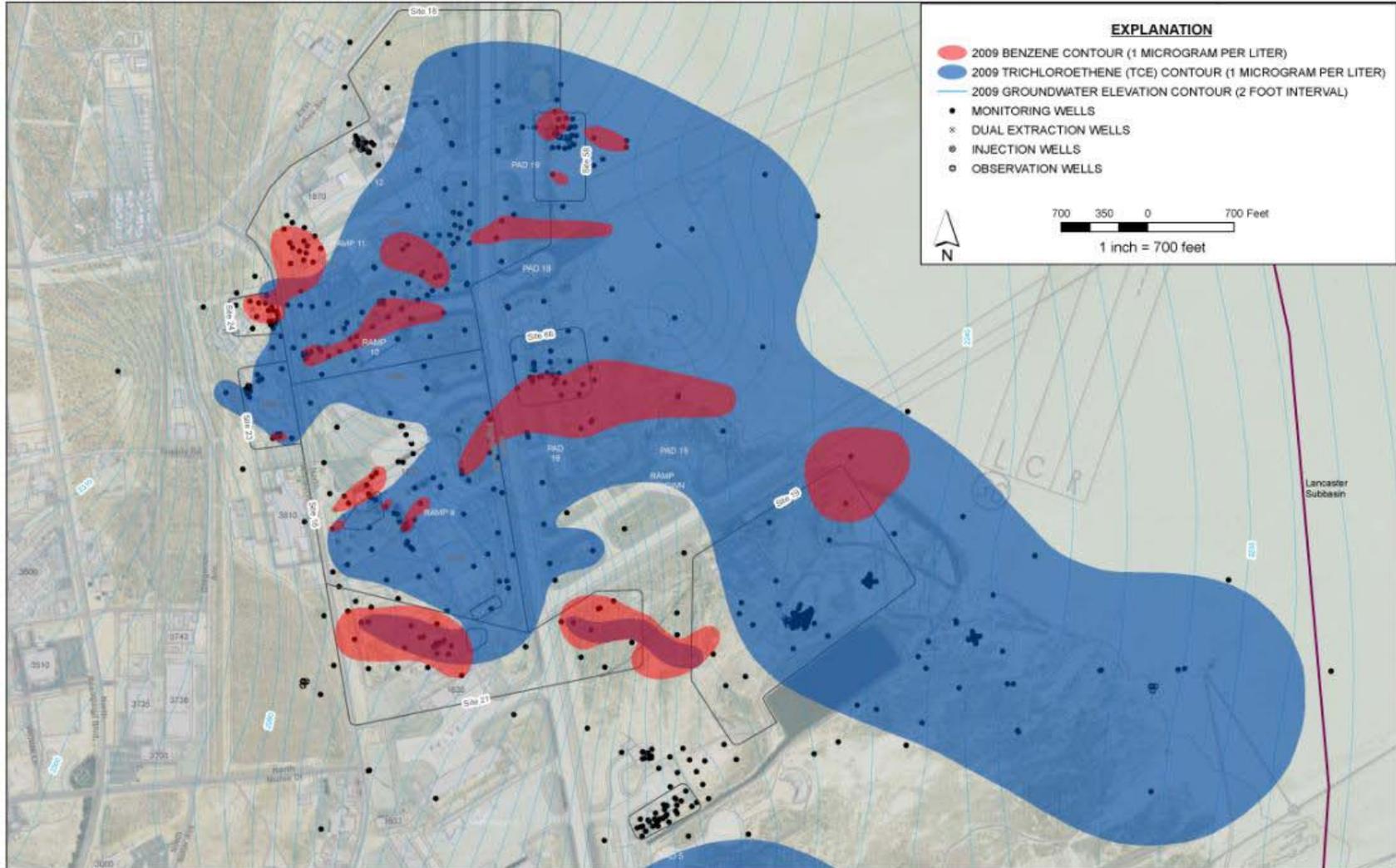
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# OU1 Main Base Flightline North Plume



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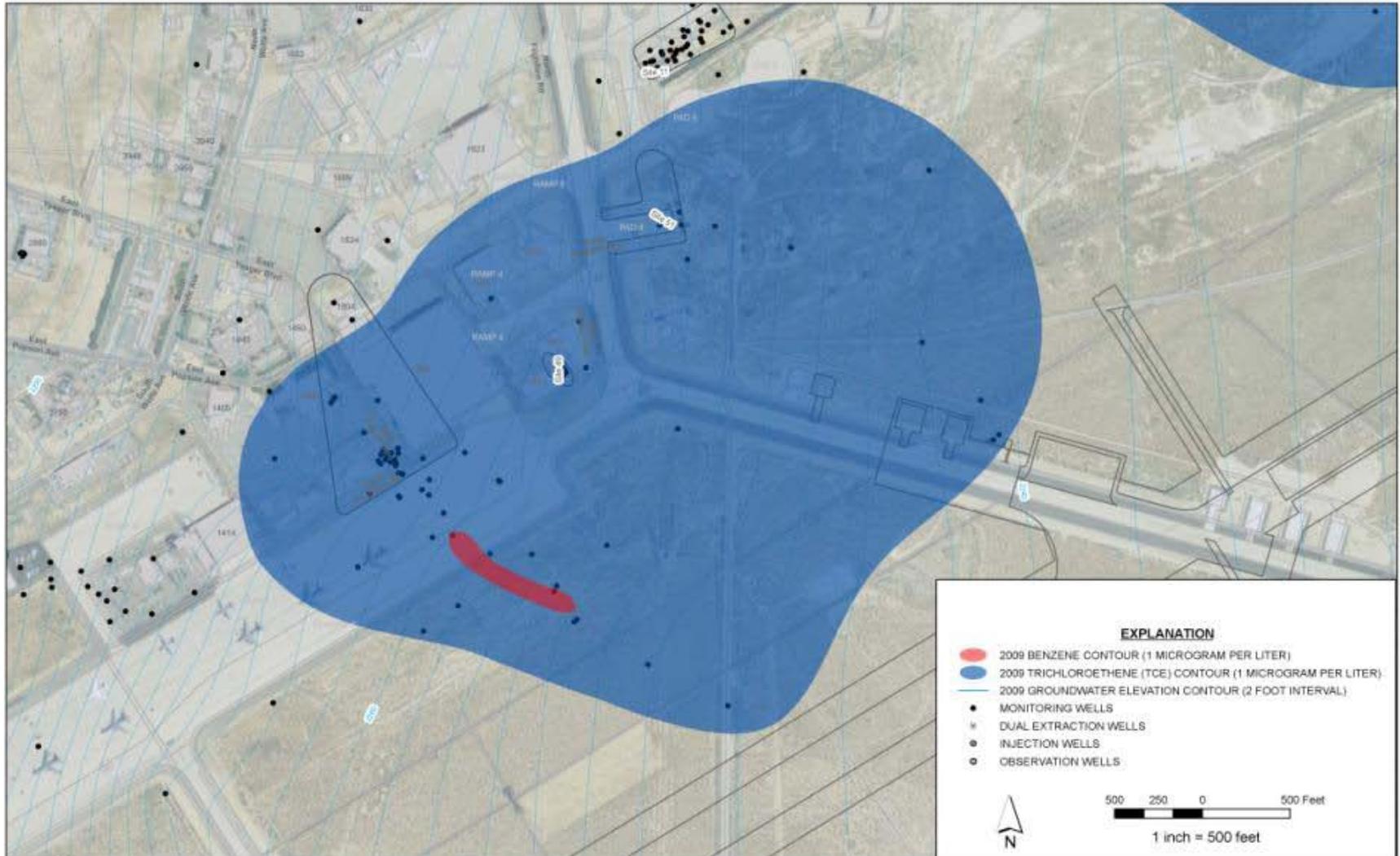




# OU1 Main Base Flightline South Plume



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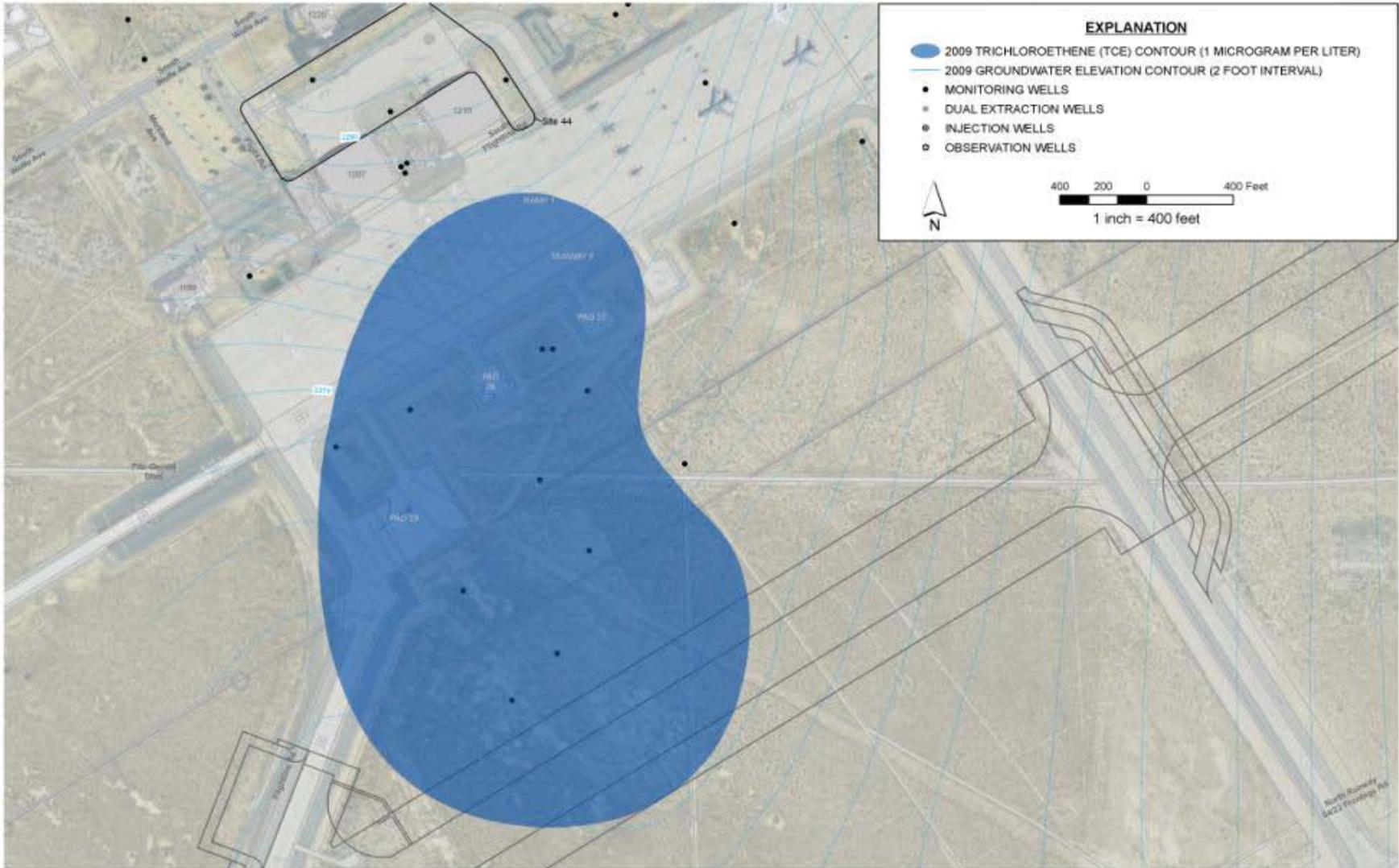




# OU1 Main Base Flightline Site 44 Plume



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# OU1

## Main Base Flightline



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- **OU1 Proposed Plan (PP)**
  - Revised Draft Final PP to be issued November 2010
    - Air Force is completing revised groundwater modeling, on-track to issue the following PP support documents
      - OU1 Groundwater Modeling Report, to be issued August 2010
      - OU1 2009 Groundwater Monitoring Report, to be issued September 2010
    - U.S. EPA must still formally respond to the National Remedy Review Board (NRRB) prior to Air Force issuance of Final OU1 PP
- **OU1 public comment period early 2011**
- **Final OU1 Record of Decision (ROD) anticipated May 2012**



# OU1

## Main Base Flightline



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- **OU1 *Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA) Interim Treatment Systems Status***
  - Site 16 *In Situ* Bioremediation Study
    - Electron donor (whey powder) effective in localized areas where distributed (near injection wells)
      - Sampling events have shown trichloroethene (TCE) degradation
    - Air Force plans to redistribute electron donor to other wells within the study area to expand TCE degradation
  - Site 18 dual extraction system (DES) operating
  - Site 58 soil vapor extraction (SVE) system operating



# OU1

## Main Base Flightline



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- **OU1 Vapor Intrusion Studies**
  - Final Vapor Intrusion Sampling Plan for Bldgs 1807 and 1830 in progress; Air Force is finalizing responses to regulator comments
  - Bldg 1830 sampling anticipated Fall 2010
  - Draft Report anticipated early 2011
  - Additional buildings within OU1 are planned for 2011



# OU1

## Main Base Flightline



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- **OU1 Groundwater Monitoring Well Installations**
  - Final Work Plan issued in May
  - Installation of 21 new monitoring wells across OU1 began in July and will continue through the end of August



# Military Munitions Response Program (MMRP)



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- **Final Comprehensive Site Evaluation (CSE) Phase II Report issued in May 2010**
- **Supplemental CSE Phase II investigation necessary for Munitions Response Areas (MRAs) AL505-3 and AL505-5**
  - On contract with UXB International, Inc., through the U.S. Army Corps of Engineers (COE), Omaha District
  - Consists of additional visual survey transects to obtain more representative coverage of the Munitions Response Areas
  - Field effort anticipated to begin in Spring 2011



# Military Munitions Response Program (MMRP)



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- **Non-Time Critical Removal Action (NTCRA) – Surface Clearance necessary for Munitions Response Sites (MRSs) AL504, AL505-2, and AL505-4**
  - On contract with UXB International, Inc., through the U.S. Army COE, Omaha District
  - Final Engineering Evaluation/Cost Analysis (EE/CA) in progress; Air Force is currently preparing responses to regulator comments
  - Public Comment Period and availability session will be scheduled soon, anticipated for Fall 2010
  - Action Memorandum (AM) documenting the selected removal action and a detailed work plan are required prior to field effort
  - Field effort anticipated to begin in Spring 2011



# Military Munitions Response Program (MMRP)



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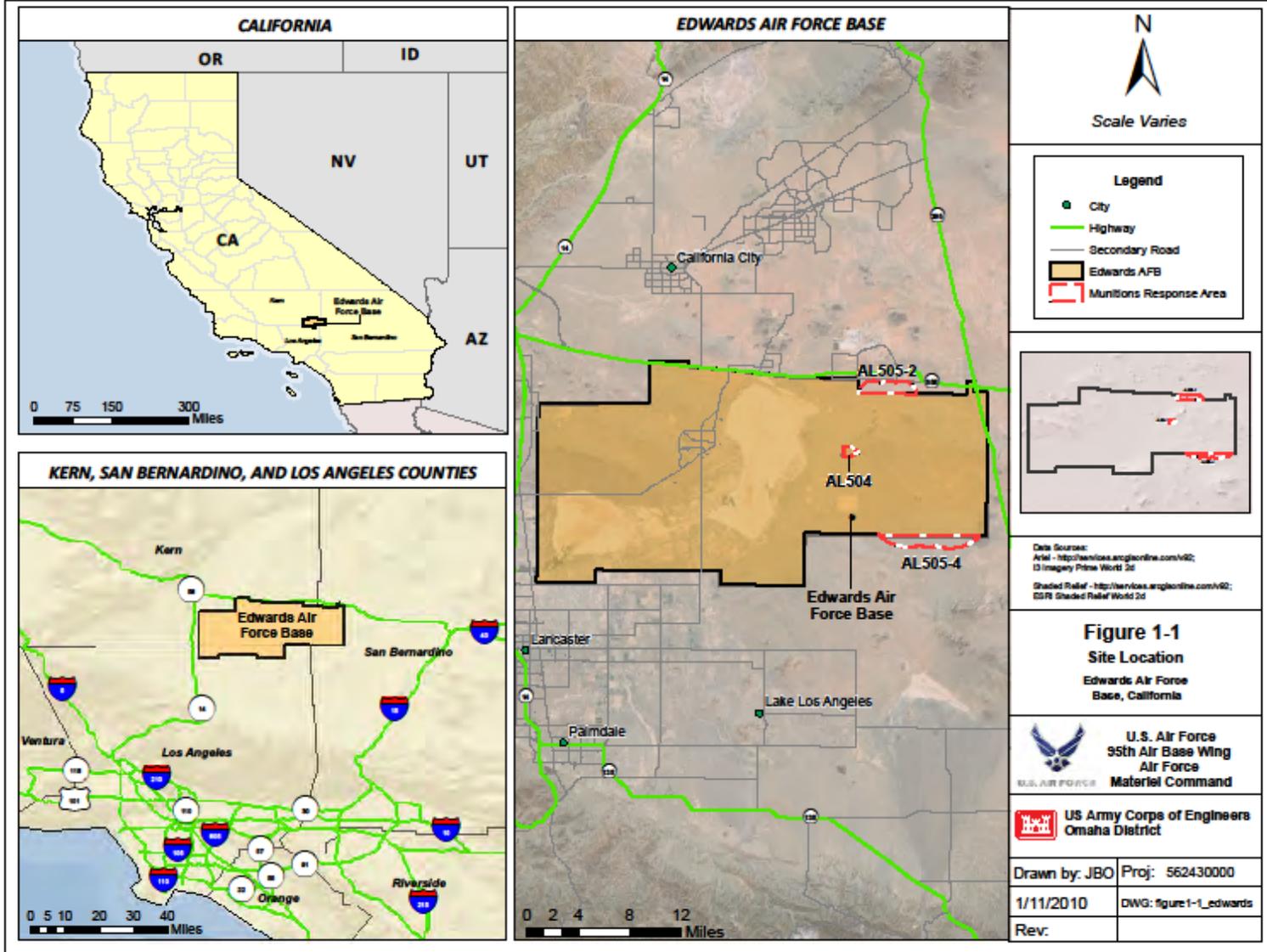
- **Prepared Scope of Work for Fiscal Year 2010 contract award for Remedial Investigation (RI) at Edwards MMRP MRSs:**
  - AL501 (Pistol Range), AL504, AL505-2, AL505-4, and AL505-5
  - Need for RI at AL505-3 and AL505-5 is contingent upon outcome of Supplemental CSE Phase II



# MMRP Munitions Response Areas



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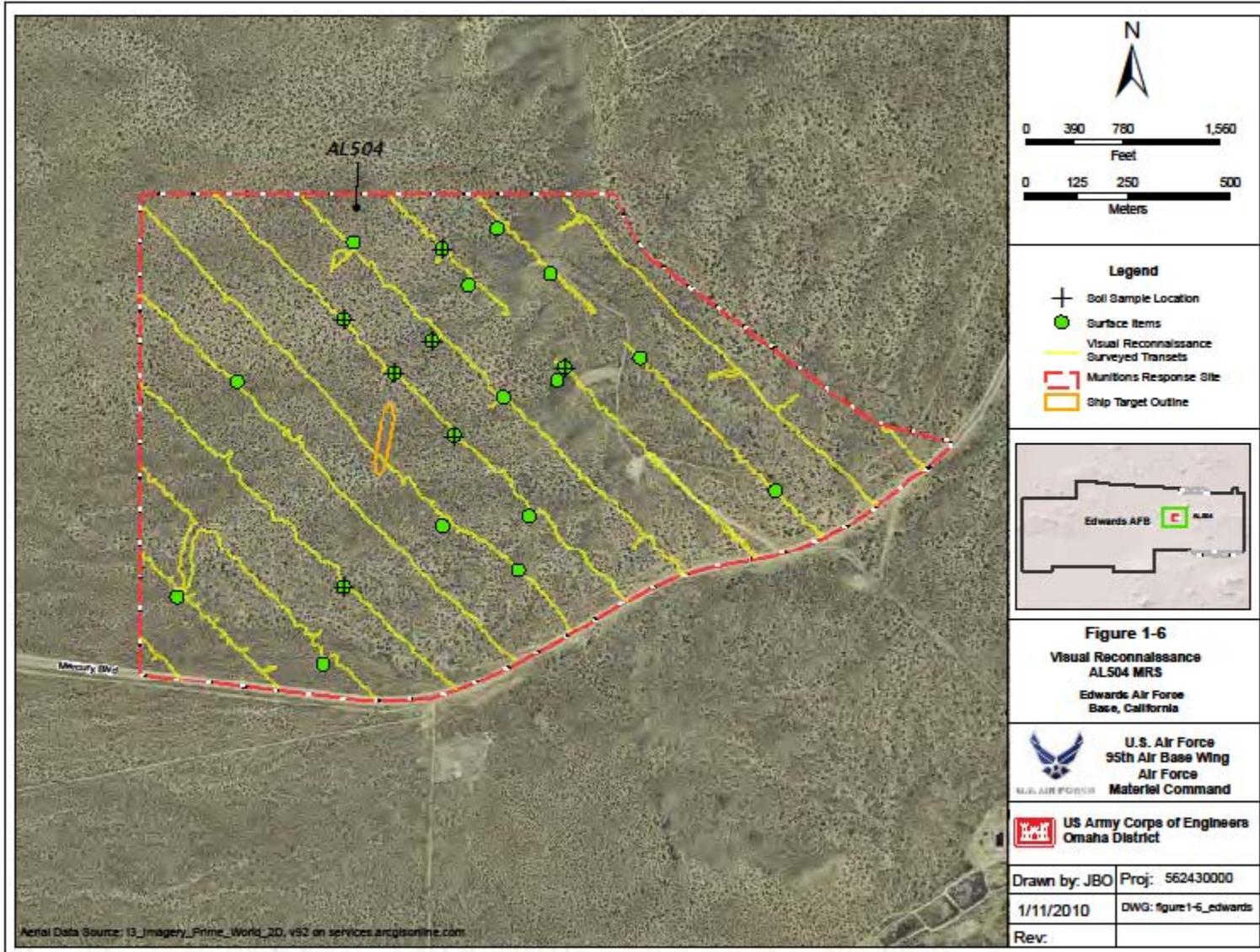




# Further Action – Battleship Target area of AL504 near AFRL



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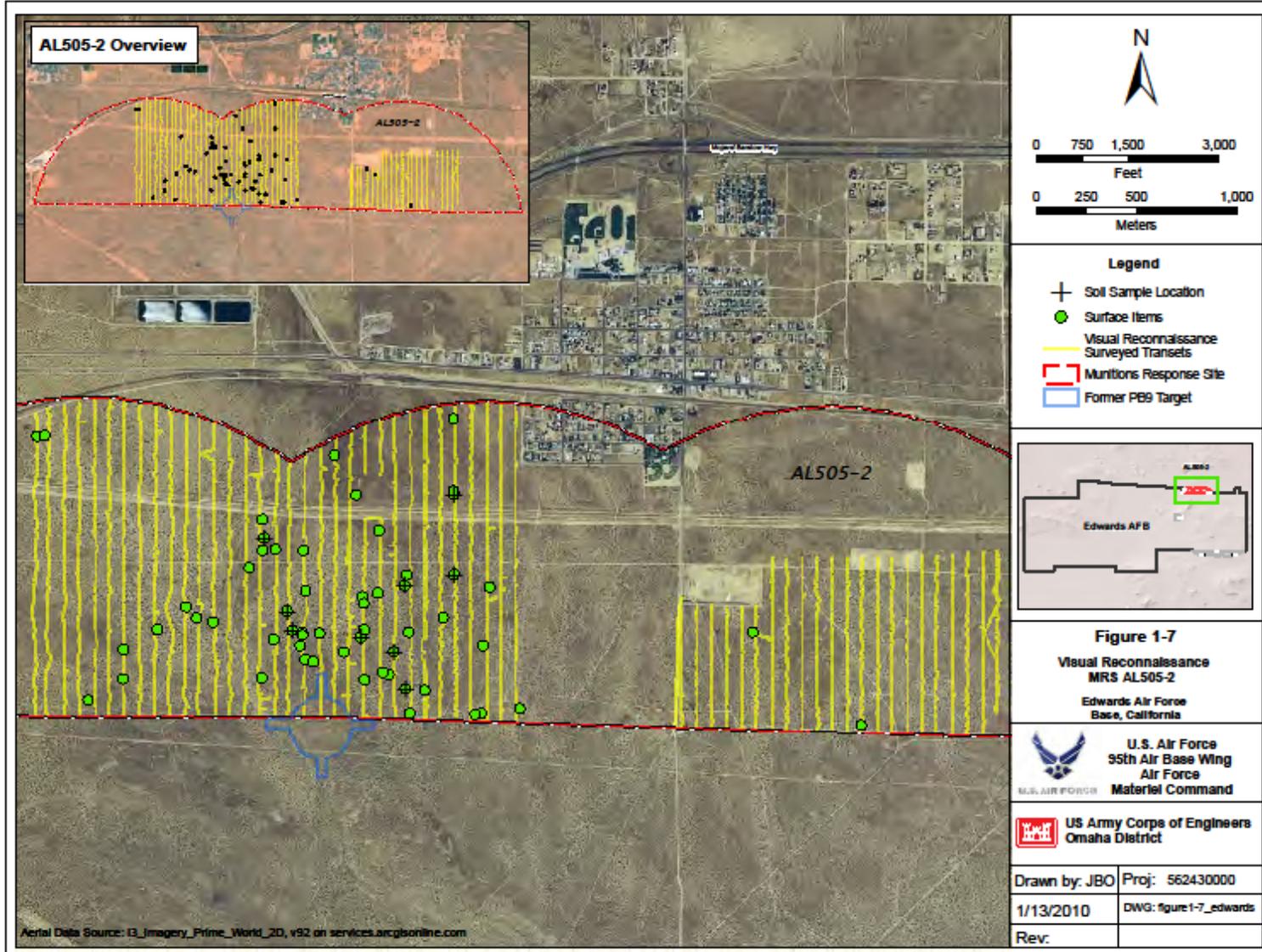




# Further Action – Portion of AL505-2 near Boron



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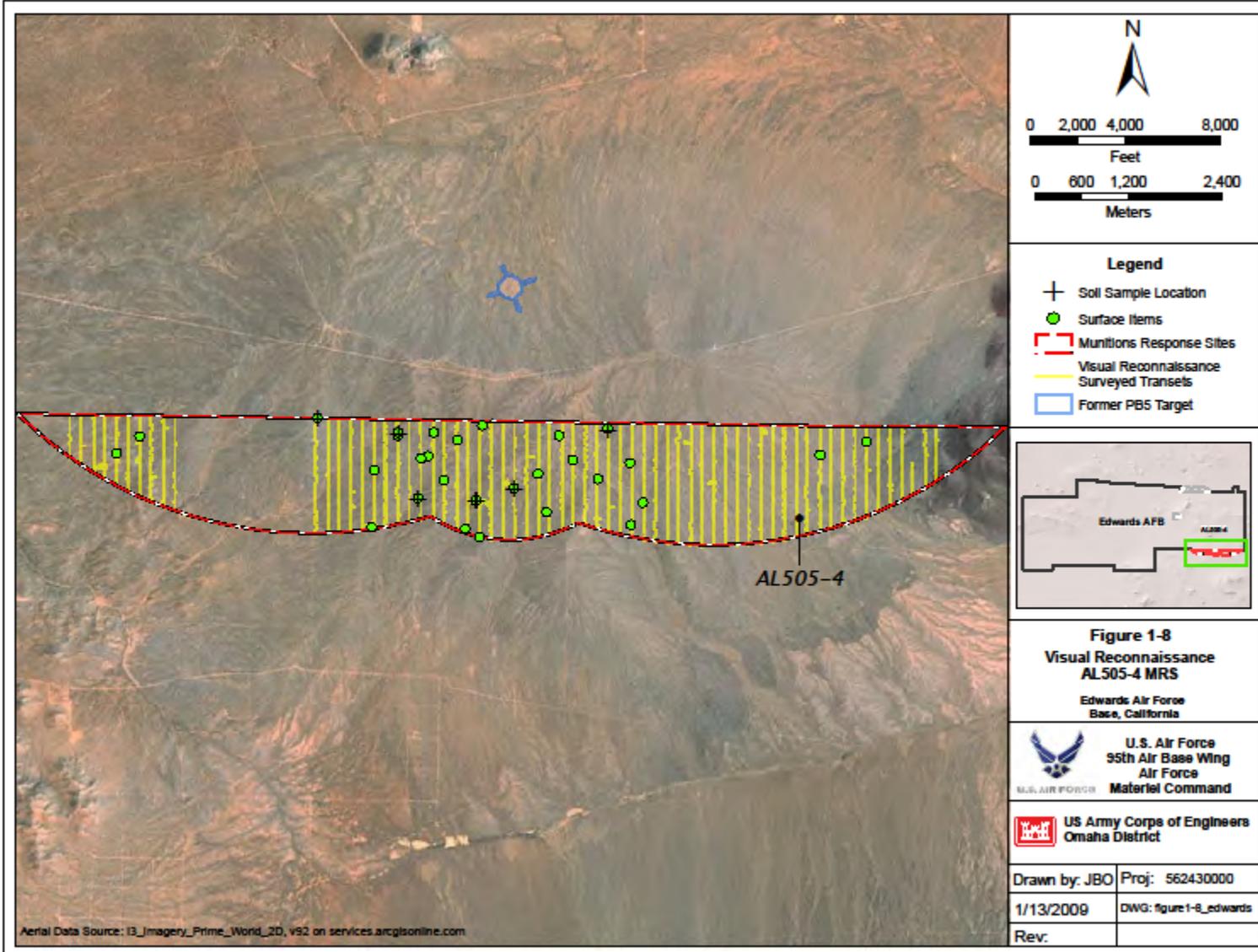




# Further Action – Portion of AL505-4 south of PIRA



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**Questions or Comments?**



# Petroleum Sites Program



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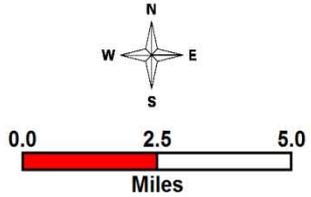
- **Petroleum sites include:**
  - Current petroleum sites
  - Sites identified by the Compliance Restoration Program (CRP)
  - Current Defense Energy Support Center (DESC) sites
  - Non-CERCLA (*Comprehensive Environmental Response, Compensation, and Liability Act of 1990*) sites
- **All sites will be managed in one unit by one program manager**



# Petroleum Sites Location Map



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**Petroleum Sites**



# Petroleum Sites



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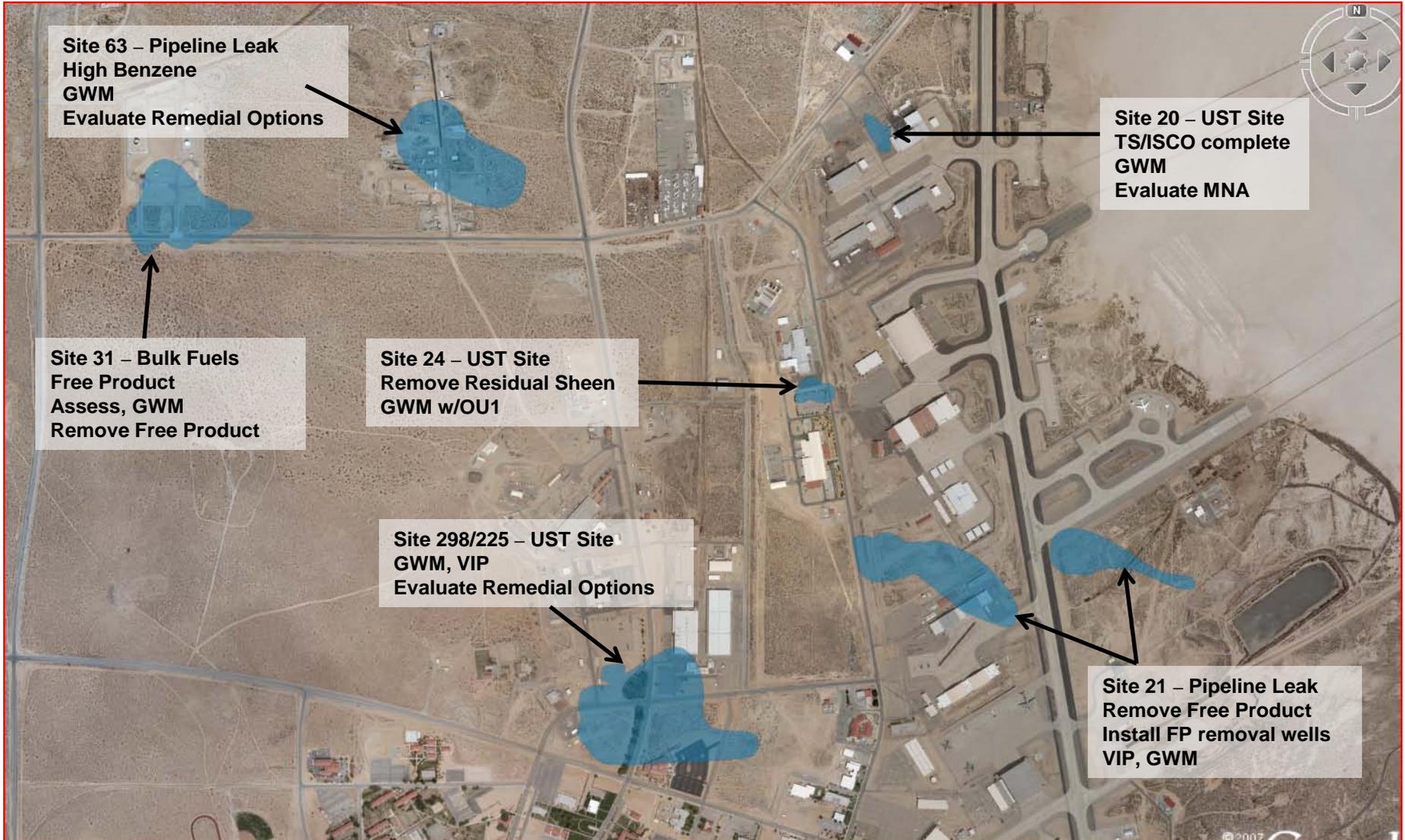
- **Eighteen sites were identified**
  - Three sites recently closed
    - 266, 292 and 234
  - Fifteen active sites
    - Six Environmental Restoration Program (ERP) sites
      - 20, 21, 24, 32, 40 and 63
    - Seven CRP sites
      - 46, 534, 538, 539, 541, 297 and 298/225
        - » Sites 538 and 541 are chlorinated solvent sites
    - Two DESC sites
      - 31 and Hydrant III



# Site Status



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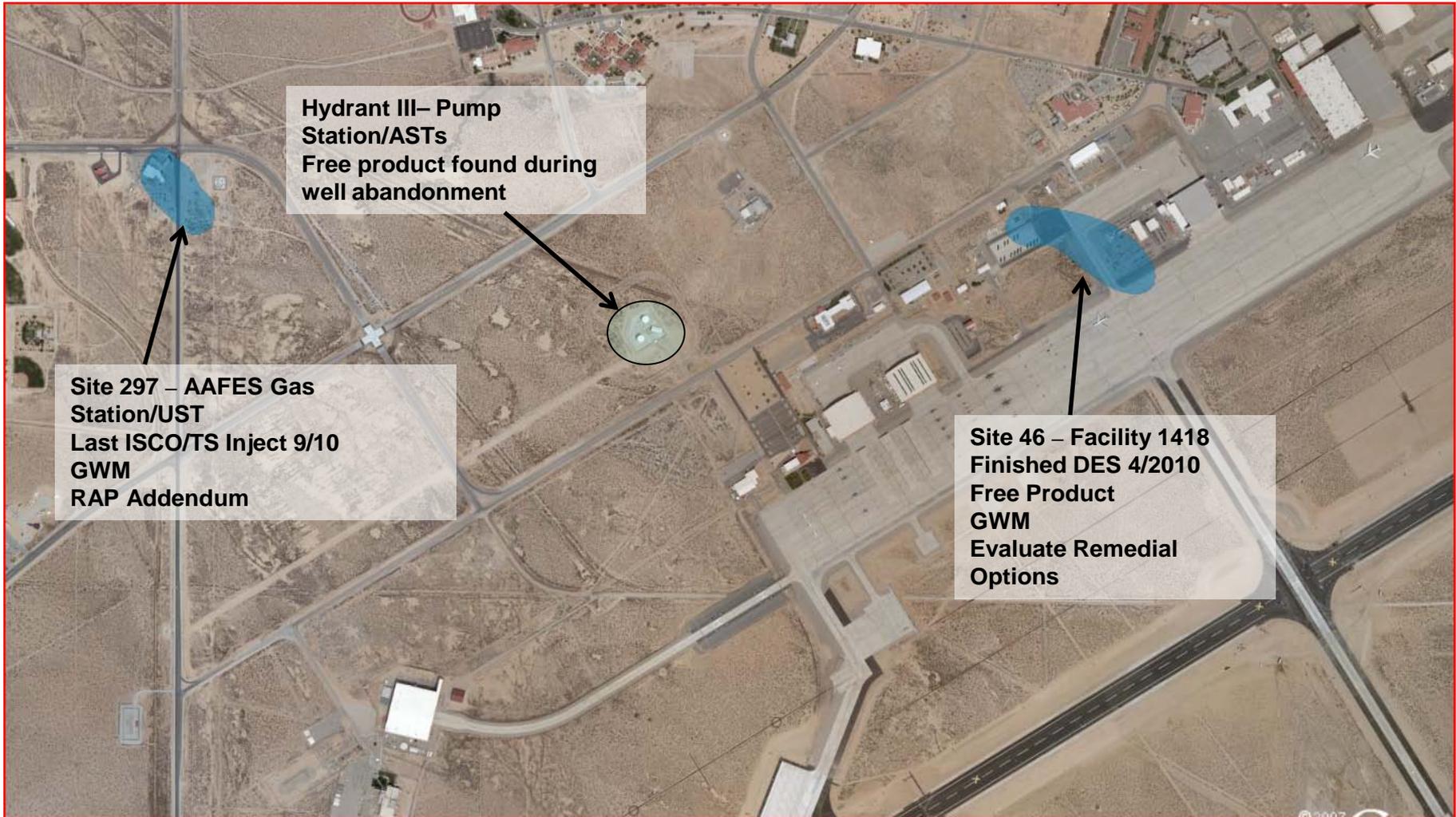




# Site Status



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# Site Status



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**Site 534 – AST/Surface spill Assessment**

**Site 539 – Oil-Water Separator Assessment**

**Site 541 – Oil Water Separator  
Carbon Tetrachloride  
Moved into OU2**



# Site Status



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Site 32 – Rail Car/Surface Spill  
Risk based closure – 2006

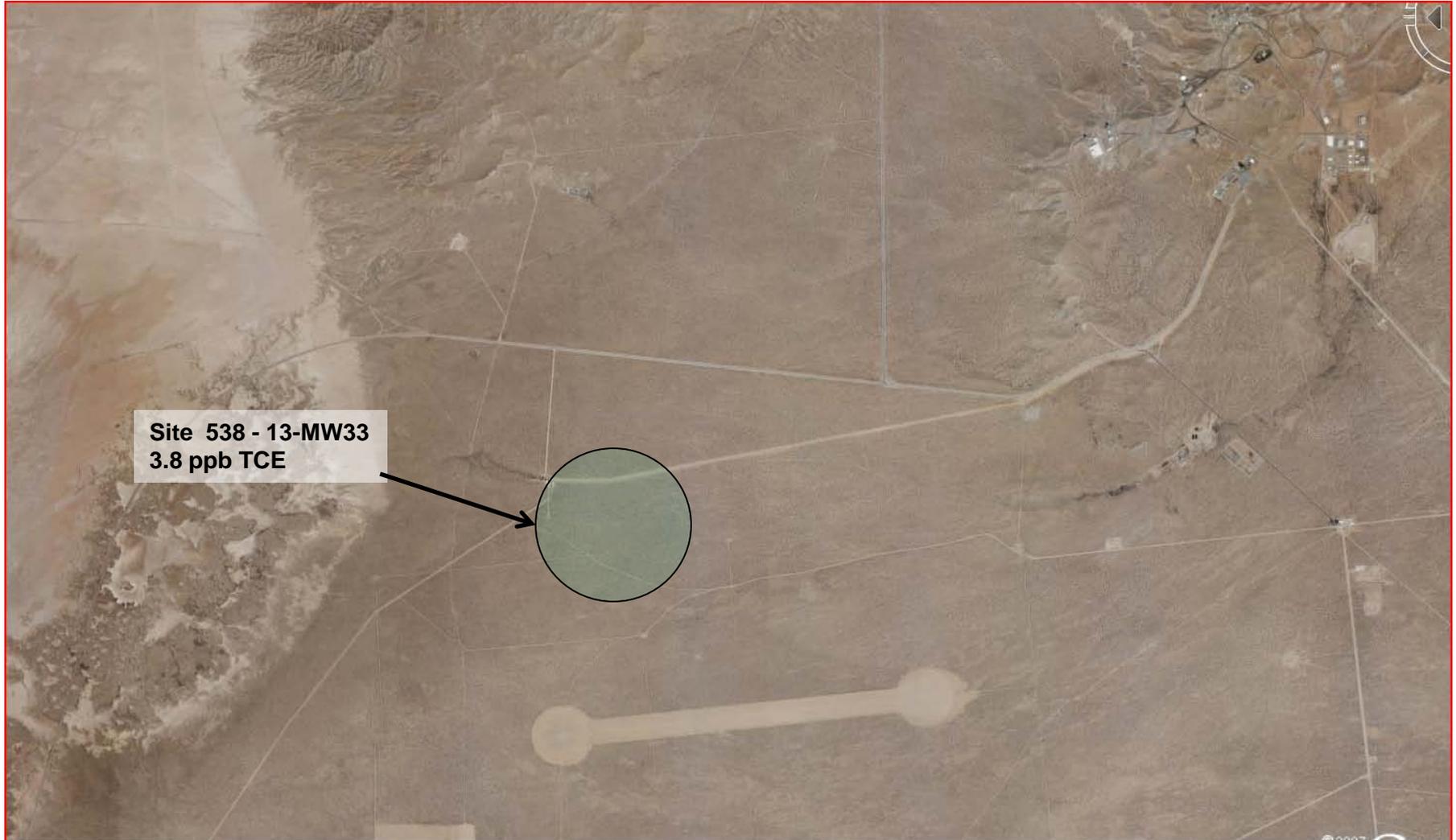
Site 40 –AST Release  
Risk based closure – 2006



# Site Status



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Site 538 - 13-MW33  
3.8 ppb TCE



# Glossary of Terms for Site Status Slides



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- **AST = aboveground storage tank**
- **DES = dual extraction system**
- **FP = free product**
- **GWM = groundwater monitoring**
- **ISCO = *in situ* chemical oxidation**
- **MNA = monitored natural attenuation**
- **ppb = parts per billion**
- **RAP = remedial action plan**
- **TCE = trichloroethene**
- **TS = treatability study**
- **UST = underground storage tank**
- **VIP = vapor intrusion pathway**



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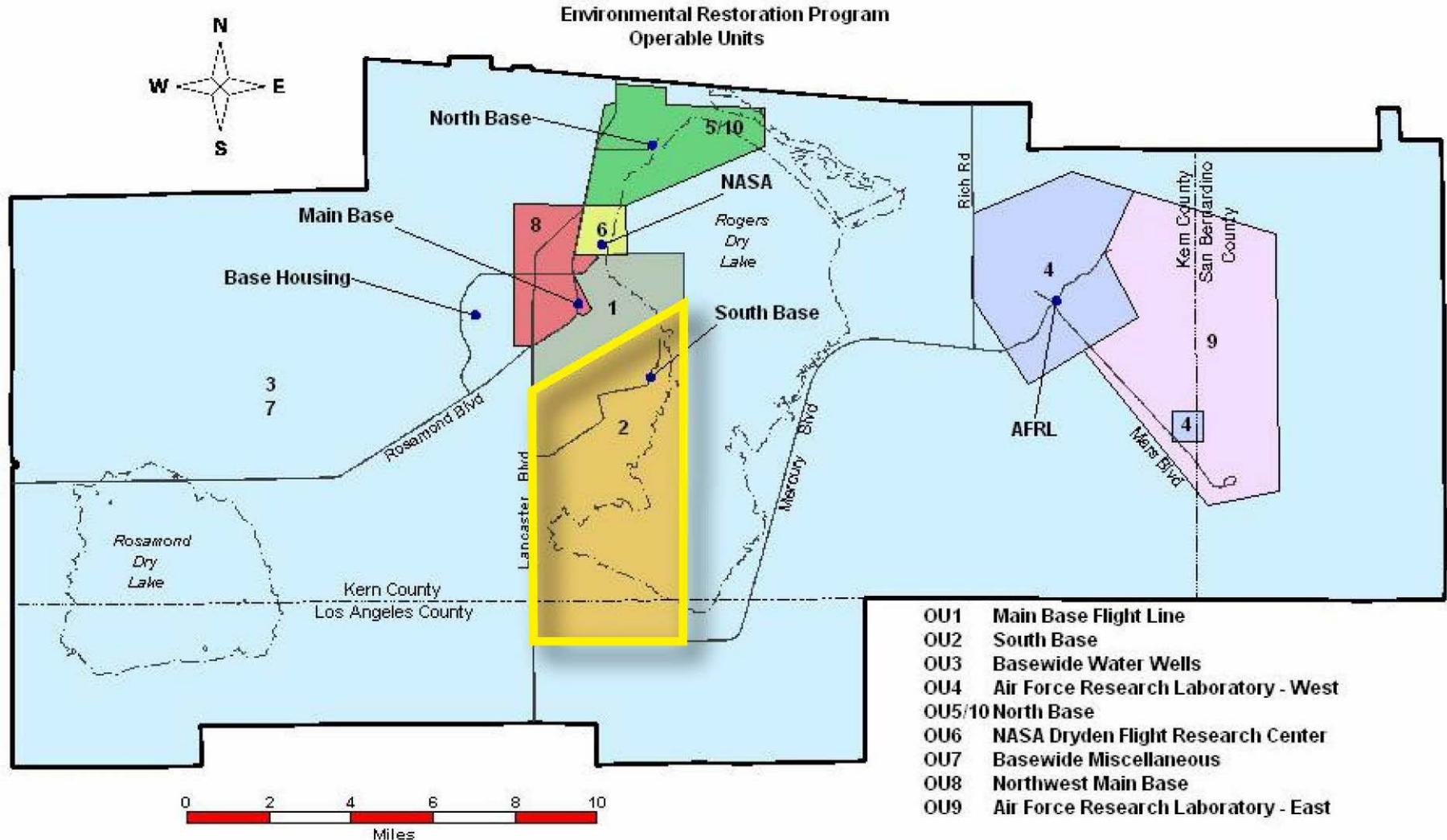
**Questions or Comments?**



# OU2 South Base



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# OU2

## South Base



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- **Draft Final Remedial Action Work Plans for Sites 76 and 86 are being reviewed by the Remedial Project Managers (RPMs)**
  - Comments are due on 19 and 26 August 2010, respectively
- **Site 29 Proposed Plan (revised) is being prepared; proposes clean closure of the landfill**
  - Test pit results indicate only 21,700 cubic yards of debris remain buried at the site
  - Draft Proposed Plan is due to the RPMs for review on 17 September 2010



# OU2 South Base



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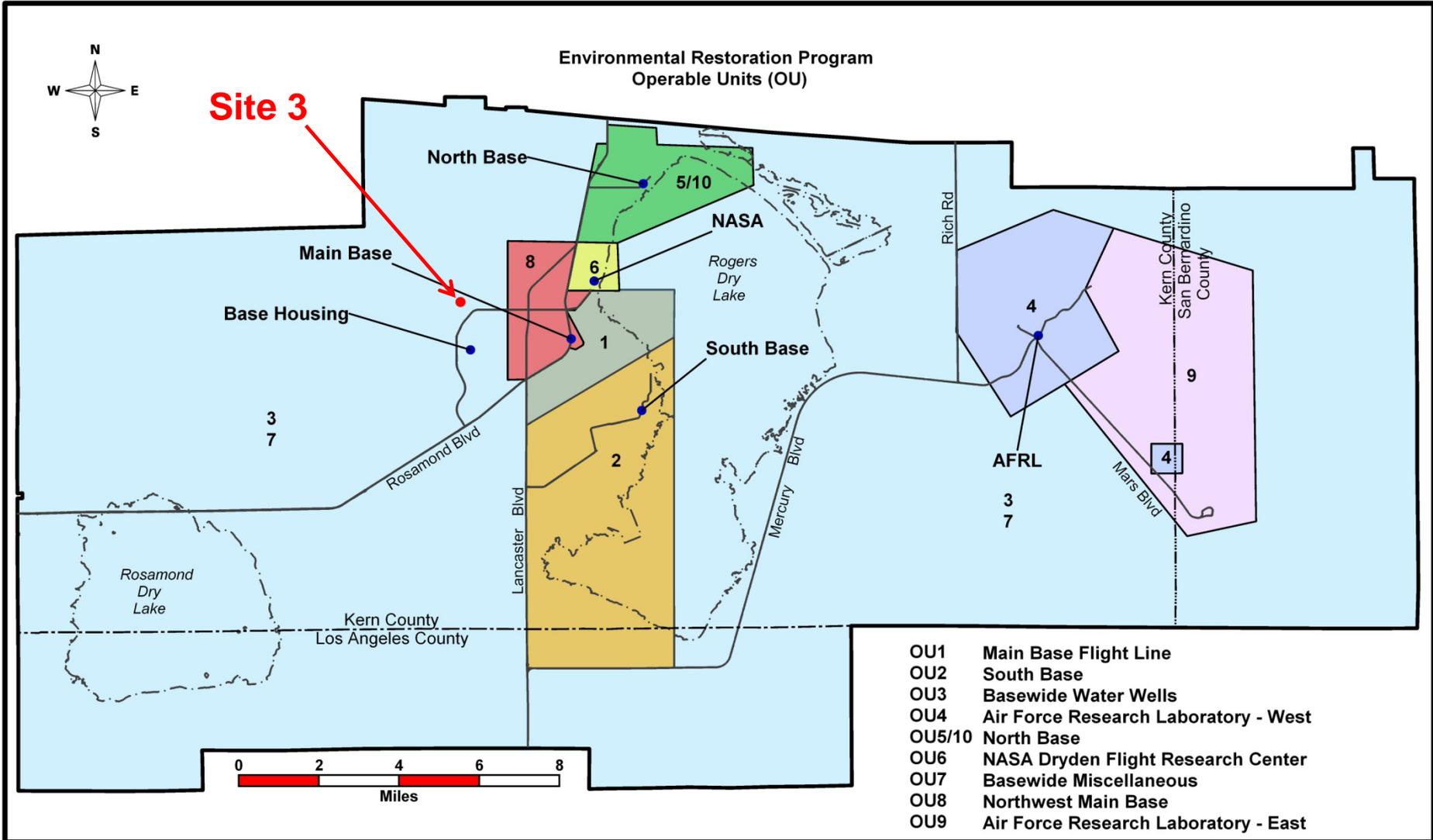
- **Draft Sites 81 and 102 Remedial Investigation Work Plan Addendum and Draft Sites 81 and 102 Unified Federal Program – Sampling and Analysis Plan are being reviewed by the RPMs**
  - The skeet target debris and lead shot will be weighed and counted, and the soil will be sampled to determine if contaminants are present
  - Comments are due on 23 September 2010



# OU7 Site 3



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# OU7 Site 3 Landfill



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- **Draft Site 3 Record of Decision is being reviewed by the RPMs**
- **Comments are due on 7 September 2010**

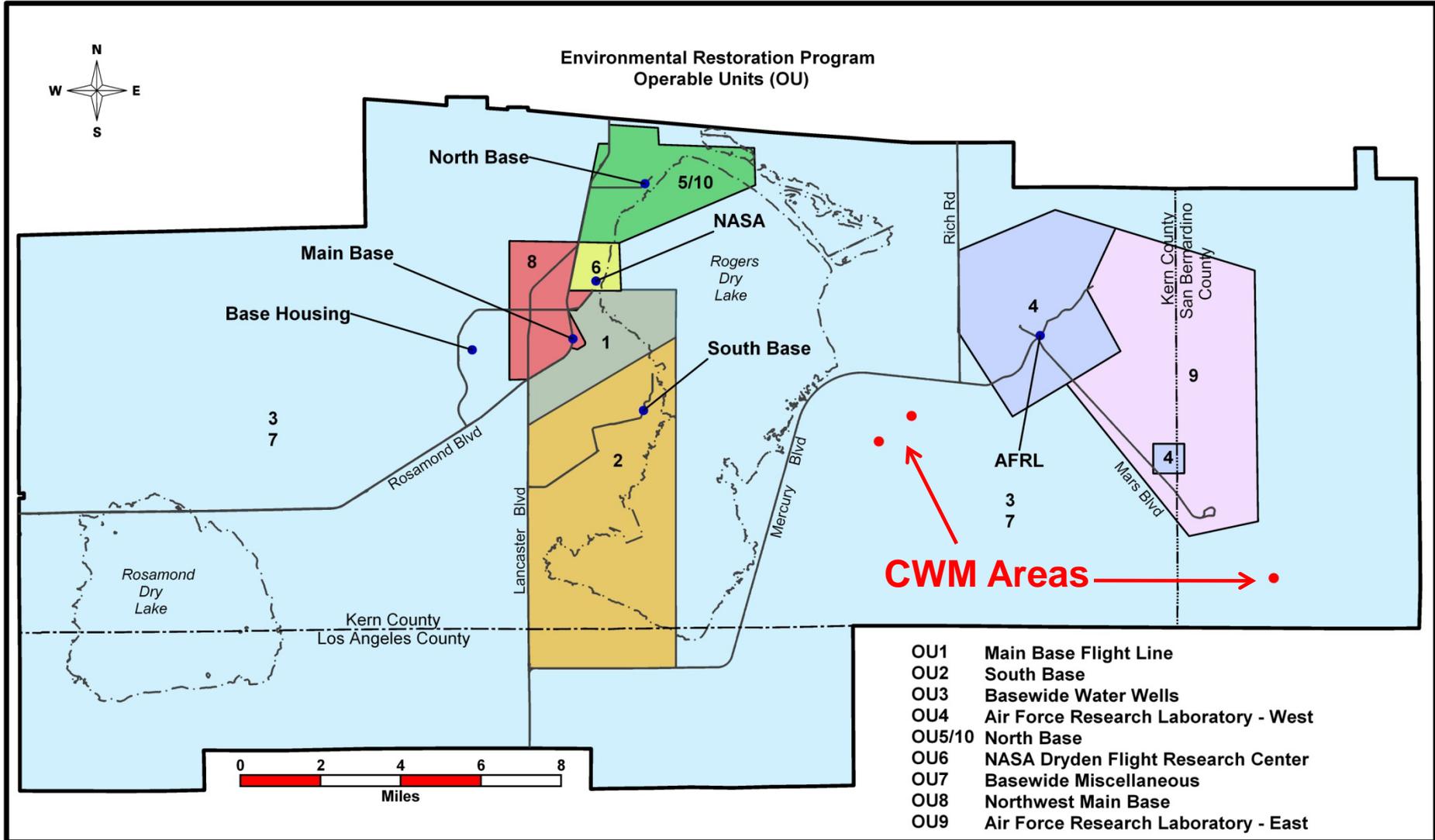


# OU7

# Chemical Warfare Materiel



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# OU7

## Chemical Warfare Materiel



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- **Draft Site 442 Remedial Action Work Plan is being reviewed by the RPMs**
- **Comments are due on 19 August 2010**



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**Questions or Comments?**



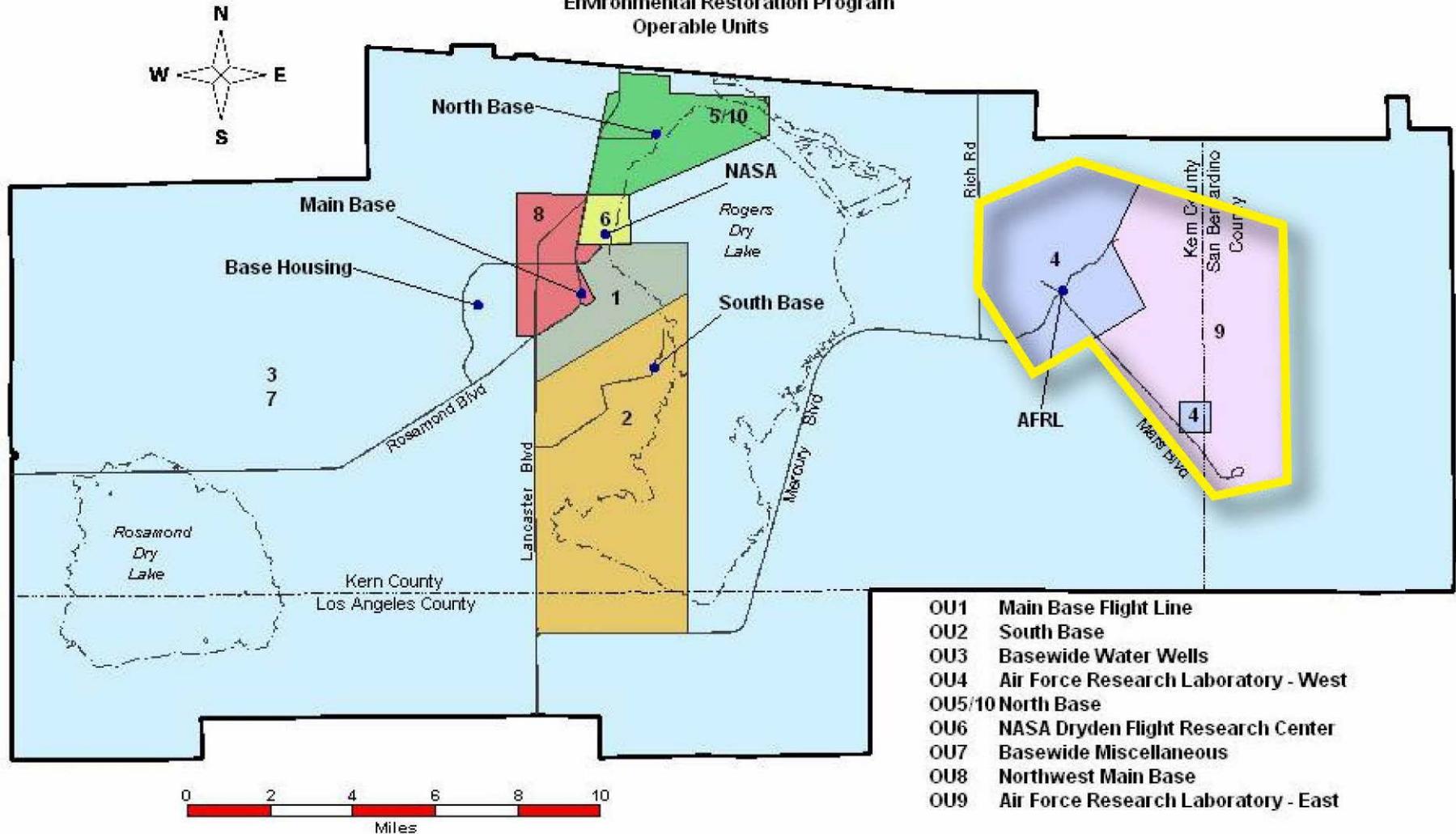
# OUs 4 & 9

## Air Force Research Laboratory



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### Environmental Restoration Program Operable Units





## OUs 4 & 9

# Air Force Research Laboratory



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- **Remedy in Place**

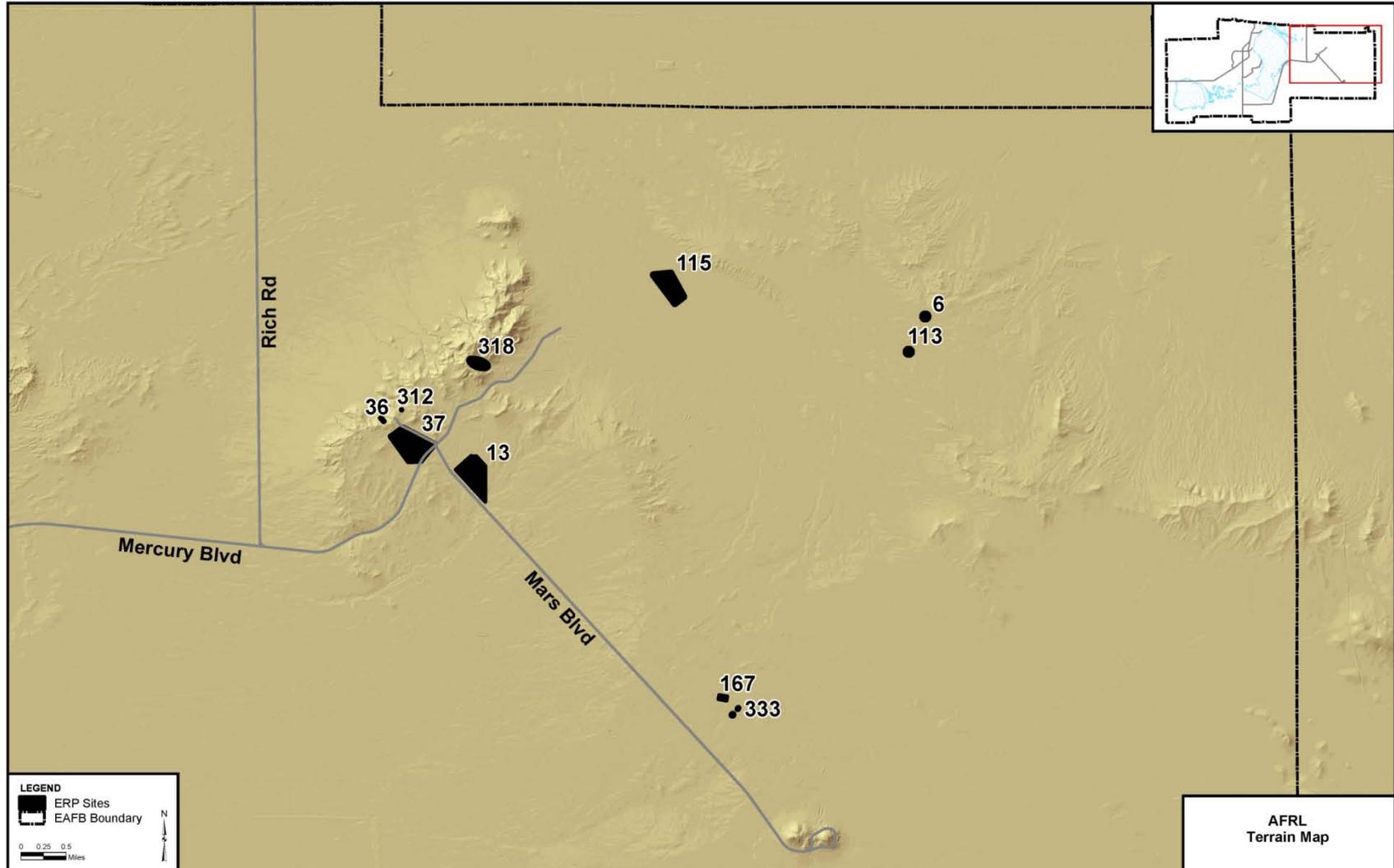
- Remedy completion for Sites 6, 36, 113, 115, 167, and 318
  - Fencing, warning signs, excavation and removal of contaminated soil/concrete (Sites 36 and 312)
- Site 312
  - Polychlorinated biphenyl (PCB) cleanup scheduled in August



# Operable Units 4 & 9 (AFRL)



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# Site 36



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# Site 36



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# Site 115



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# Site 167



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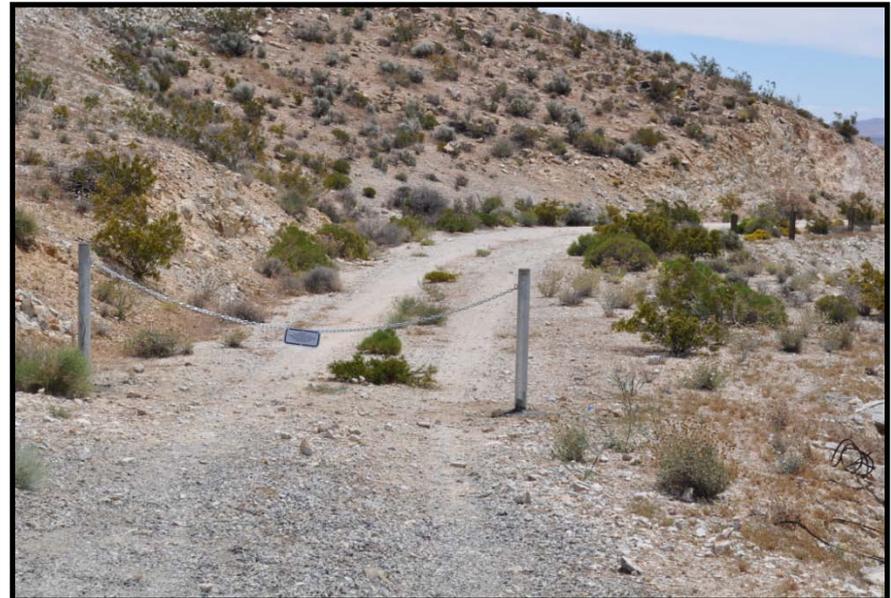




# Site 318



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# Site 6/113



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## OUs 4 & 9

# Air Force Research Laboratory



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- **Groundwater Modeling**

- Phase I effort involving flow and transport modeling for Northeast (NE) AFRL is near completion
- Attended a meeting with the RPMs in Sacramento to discuss progress of the modeling efforts and input parameters



# OUs 4 & 9

## Air Force Research Laboratory



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- **Field Activities (June-July 2010)**

- Installed Micropurge<sup>®</sup> pumps in four new wells at Site 6/113
- Installed a vapor well south of Bldg 8595
- Developed six newly installed wells at NE AFRL and one (125-MW15) at Mars Blvd.
- Installed dedicated pumps and collected groundwater samples from the new wells
- Conducted field inspection and quarterly field gas monitoring at Site 13 closed landfill
- Surveyed new groundwater monitoring wells and new vapor extraction well



# OUs 4 & 9

## Air Force Research Laboratory



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- **Field Activities (June-July 2010)**
  - Site 125 Test Cell B shaft water pumping and disposal – ongoing
  - Soil vapor extraction system south of Bldg 8595 – ongoing



# OUs 4 & 9

## Air Force Research Laboratory



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- **Reports and Other Deliverables**

- Draft AFRL Arroyos Record of Decision under regulatory review
- 2010 Well Installation Work Plan for AFRL Arroyos Sites finalized in early August
- 2010 Annual Groundwater Field Sampling Work Plan (sites monitored by JT3) to be submitted in August
- Site 333 *In Situ* Bioremediation Treatability Study Work Plan
  - Responded to regulatory agency comments, final document in preparation



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**Questions or Comments?**

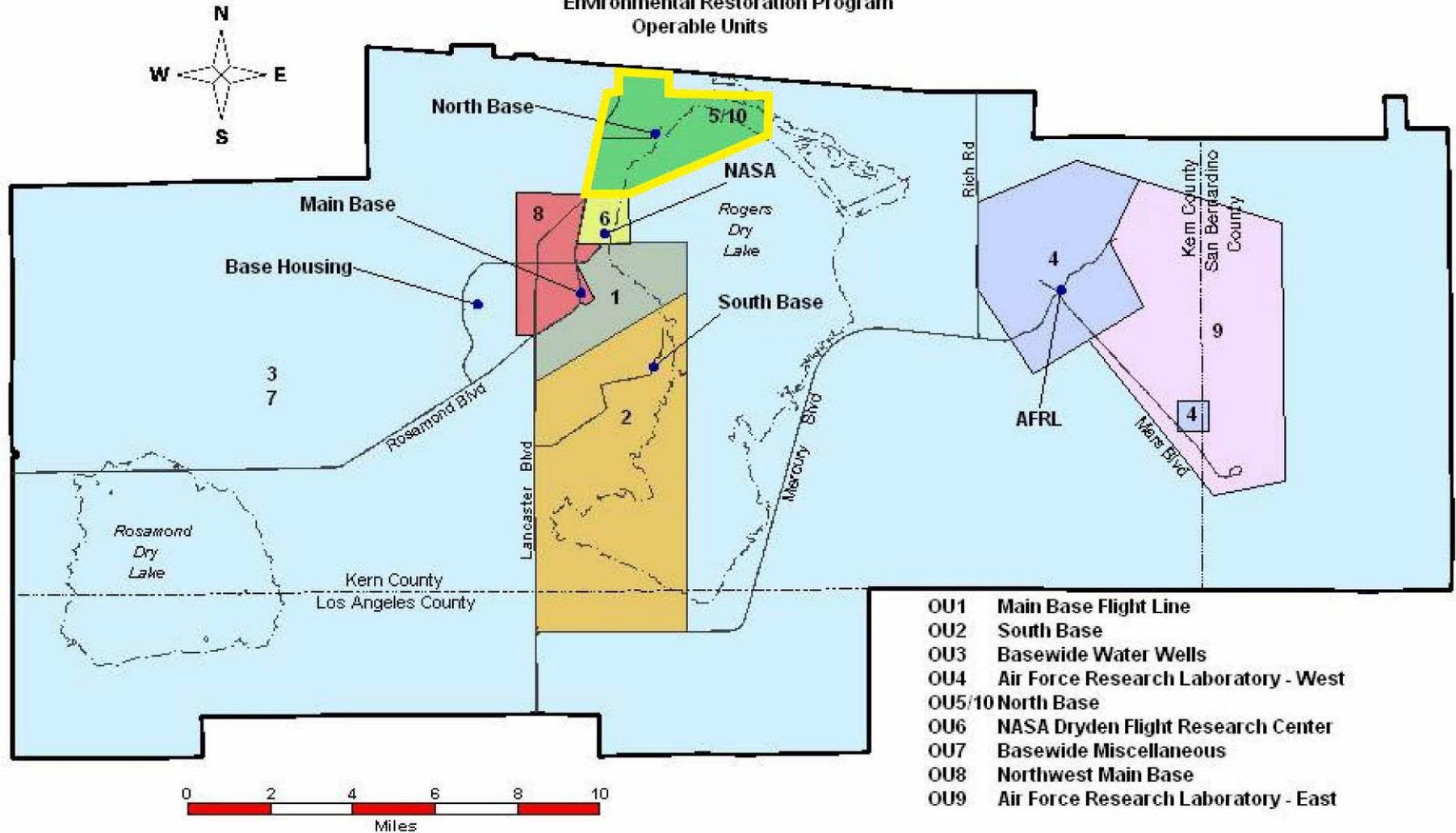


# OU5/10 North Base



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## Environmental Restoration Program Operable Units

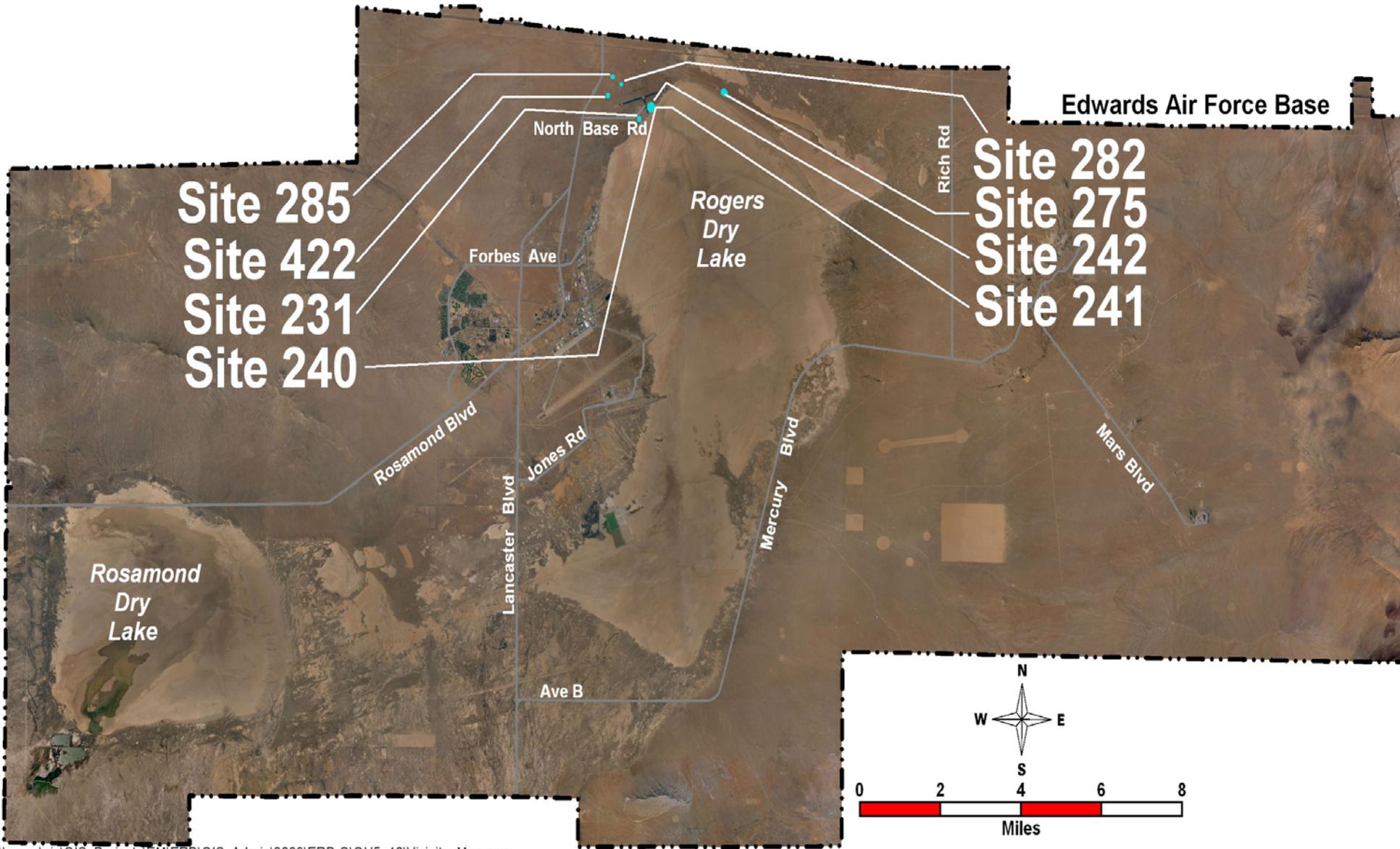




# OU5/10 Site Location Map



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# OU5/10 Current FFA Schedule



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- **Draft Final Feasibility Study (FS) 7 April 2013**
  - Additional plume characterization and delineation required
  - Scheduled for fourth quarter fiscal year 2010 award
  - Two-year effort (work plans, fieldwork, groundwater sampling, summary report)
- **Final FS 18 December 2013**
- **Final Proposed Plan (PP) 18 November 2014**
- **Final Record of Decision (ROD)  
30 November 2015**



# OU5/10 Project Status



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- **Site 231 under Time Critical Removal Action (TCRA)**
  - Soil excavation September to October 2010
  - Completed work sampling approach with RPMs July 2010
- **Community Involvement for Site 231 TCRA**
  - Completed public notices with 30-day comment period (ended June 2010)
  - Article in Report to Stakeholders (RTS) scheduled October 2010



# OU5/10 Project Status



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- **Site 242 continues as Non-Time Critical Removal Action (NTCRA)**
  - Final EE/CA completed 30 April 2010
  - RPM comments on draft Action Memo due 9 September 2010
  - Final Action Memo 10 November 2010
  - Removal Action (soil excavation) May 2011
- **Community Involvement for Site 242 NTCRA**
  - Public notice with 30-day comment period 11 August to 10 September 2010
  - Public Availability Session 2 September 2010
    - Lynch Education Center, North Edwards, CA, 5-7 p.m.



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**Questions or Comments?**

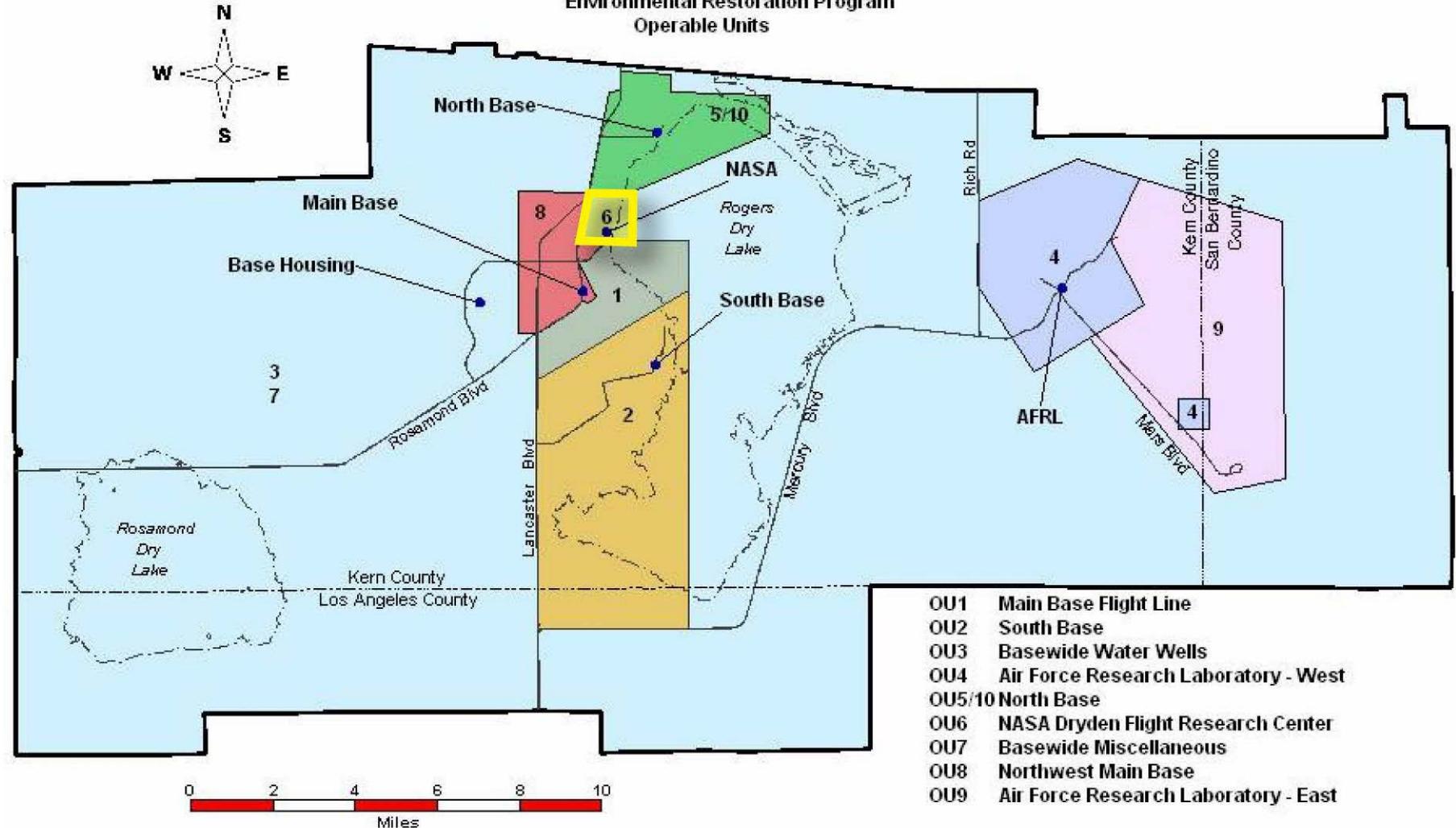


# OU6 NASA Dryden



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## Environmental Restoration Program Operable Units



- OU1 Main Base Flight Line
- OU2 South Base
- OU3 Basewide Water Wells
- OU4 Air Force Research Laboratory - West
- OU5/10 North Base
- OU6 NASA Dryden Flight Research Center
- OU7 Basewide Miscellaneous
- OU8 Northwest Main Base
- OU9 Air Force Research Laboratory - East



# OU6

## NASA Dryden



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- **Post-ROD**
  - Six new monitoring wells installed to further delineate trichloroethene (TCE) plume in May/June 2010
  - Monitoring wells sampled throughout comingled plume in June/July 2010
  - Five wells showed contamination greater than maximum contaminant level (MCL)



# OU6

## NASA Dryden



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- **Post-ROD**
  - Future Plans
    - Remedial Action Phase II, Injection Event II (injection of sodium permanganate solution to oxidize high TCE concentration areas of the groundwater plume) in August 2010
    - Groundwater sampling and analysis in October/November 2010

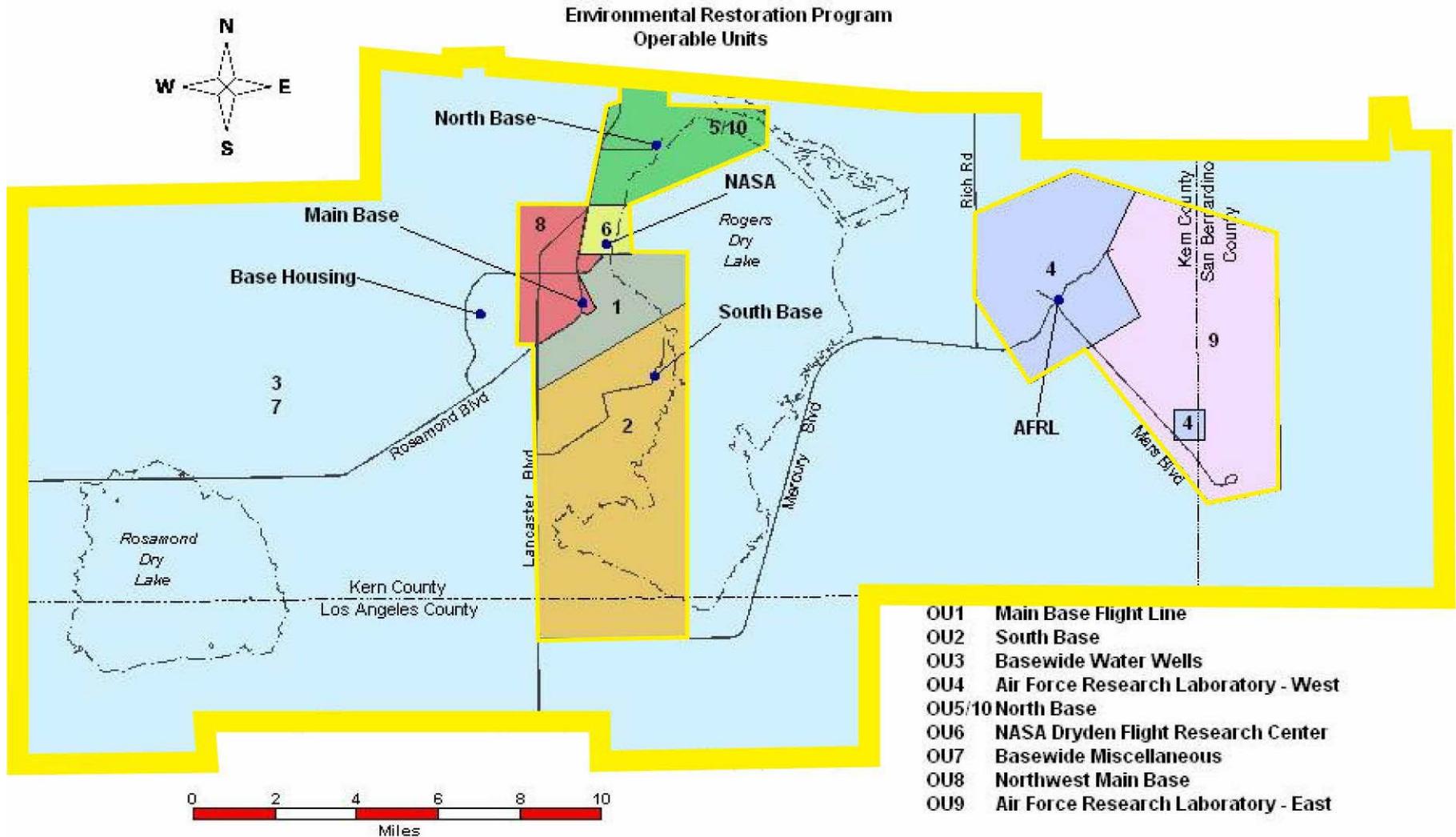


# OU7

## Basewide Miscellaneous



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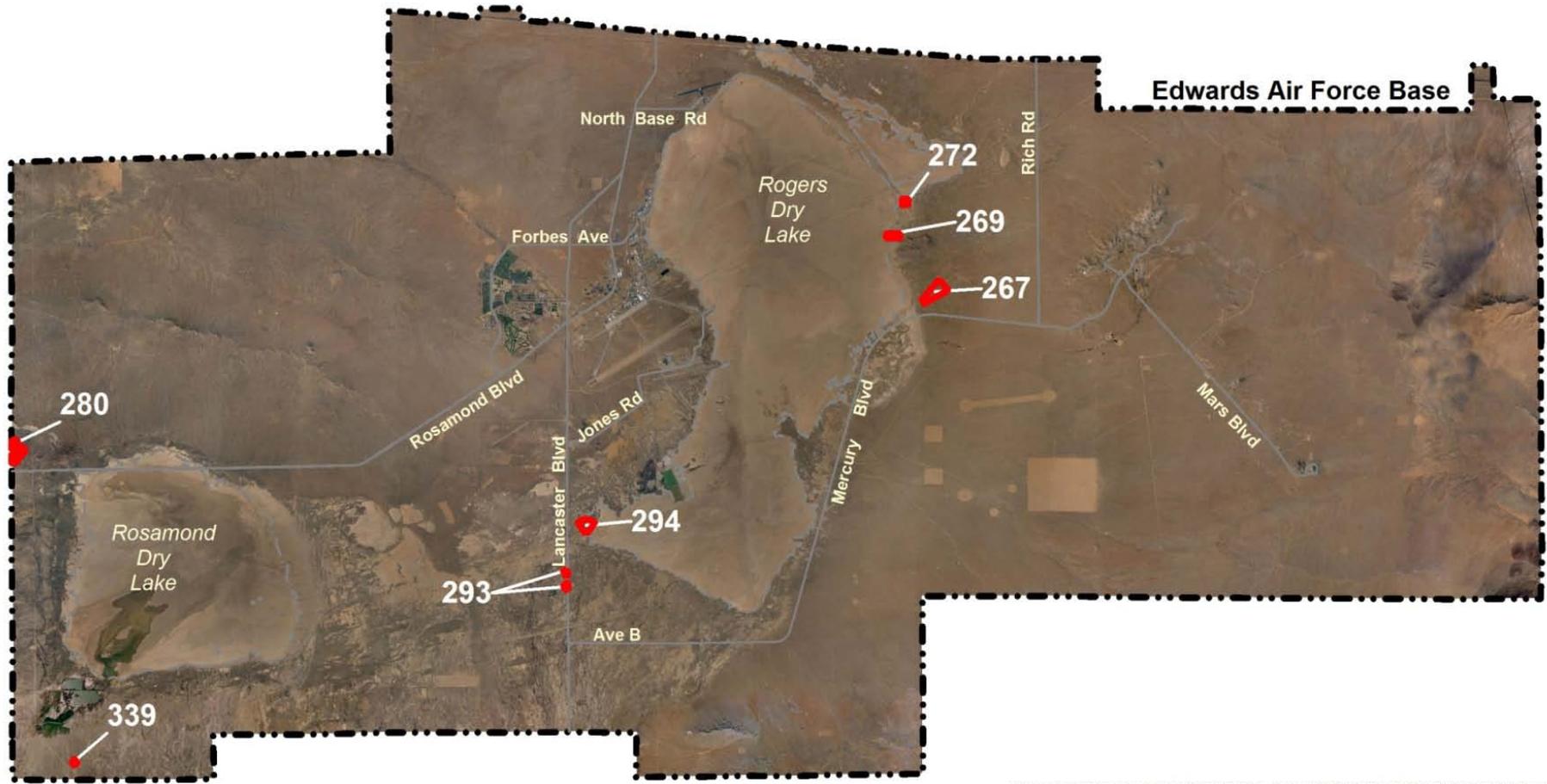


# OU7

## Basewide Miscellaneous



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# OU7

## Basewide Miscellaneous



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- **Proposed Plan**
  - Draft Final for RPM review 30 September 2010
- **Engineering Evaluation/Cost Analysis (EE/CA)**
  - Draft EE/CAs for RPM review 20 July 2010
    - Non-Time Critical Removal Actions – Soil Only – Sites 280 and 294
  - Beginning EE/CA for Non-Time Critical Removal Action at Site 339



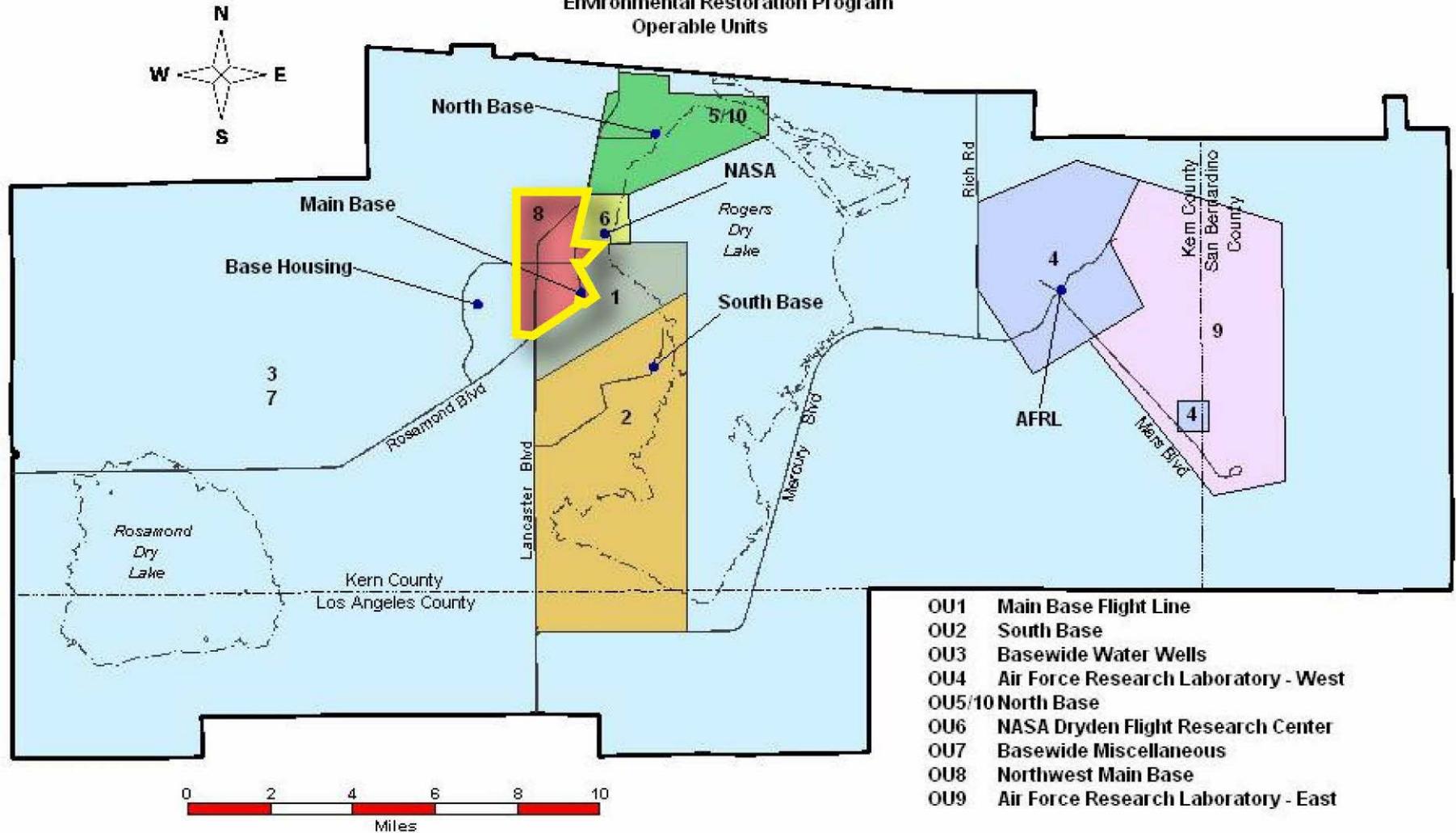
# OU8

## Northwest Main Base



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### Environmental Restoration Program Operable Units



- OU1 Main Base Flight Line
- OU2 South Base
- OU3 Basewide Water Wells
- OU4 Air Force Research Laboratory - West
- OU5/10 North Base
- OU6 NASA Dryden Flight Research Center
- OU7 Basewide Miscellaneous
- OU8 Northwest Main Base
- OU9 Air Force Research Laboratory - East



# OU8

## Northwest Main Base



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- **Draft OU8 Proposed Plan**
  - In RPM comment resolution
  - Draft Final for RPM review 16 January 2012
- **Data Gap Project to be awarded January 2011**
  - For Sites 61, 301 and 299



# OU8

## Northwest Main Base



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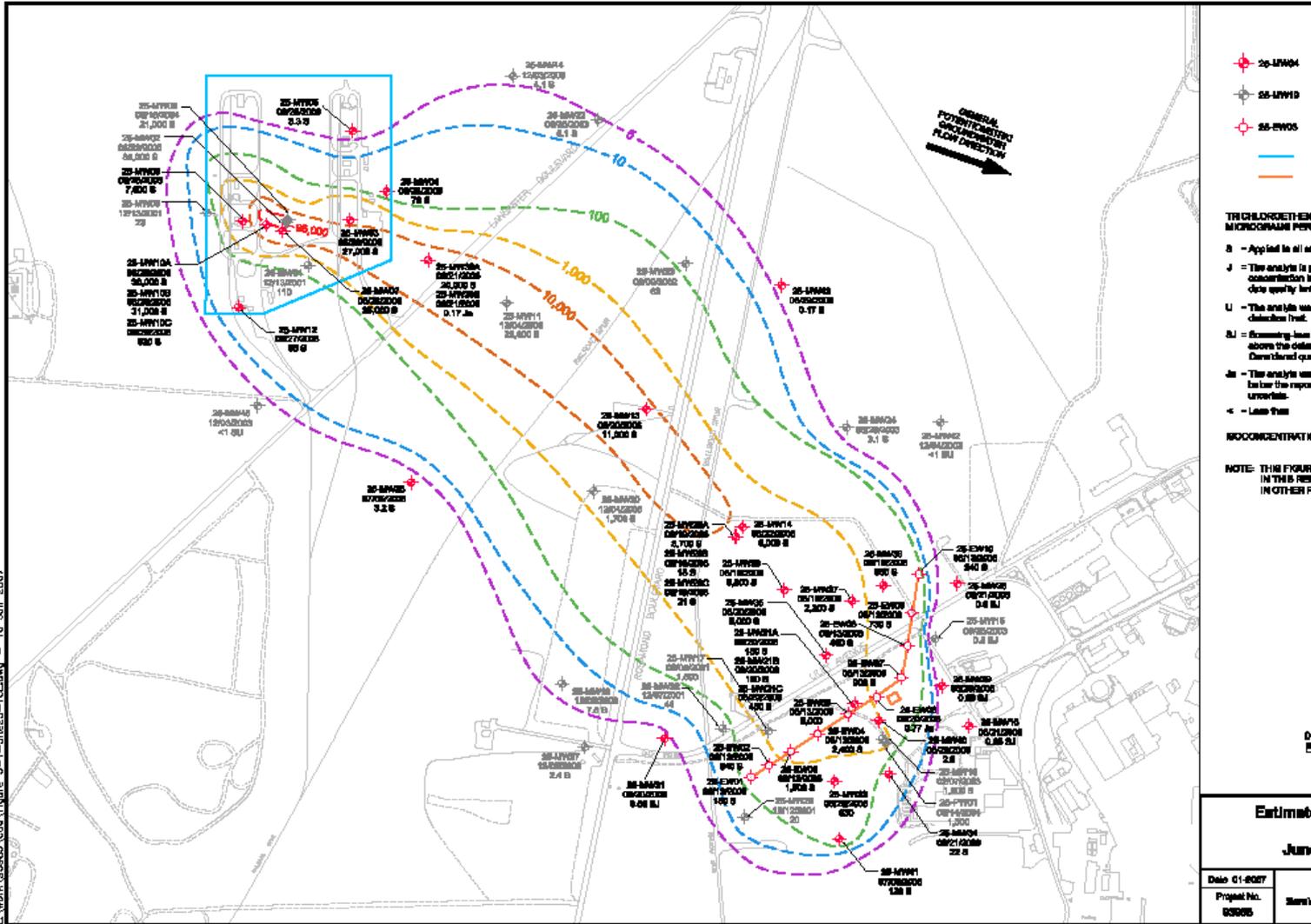
- **Interim Action Sites 257, 299, and 300**
  - Excavation of shallow contaminated soil
  - Draft EE/CA under RPM review
- **Pre-Design Investigation Work is underway**
  - Site 226: 12 new borings to define arsenic
  - Site 299: Five new wells to define solvents
  - Site 257: Three new wells to define nitrite



# OU8 Site 25 GW Plume



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# OU8 Site 25



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- **Draft OU8 Site 25 Feasibility Study**
  - Technical Impracticability (TI) waiver
  - In RPM comment resolution
  - Extension for Draft Final submittal  
13 November 2010
- ***In Situ* Chemical Oxidation Treatability Study**
  - Trench delivery for treatment of shallow groundwater in fractured bedrock is underway



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**Questions or Comments?**