



**DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
INSTALLATION SUPPORT SECTION
EDWARDS AIR FORCE BASE, CALIFORNIA**



14 August 2018

MEMORANDUM FOR DISTRIBUTION

FROM: AFCEC/CZOW
120 North Rosamond Boulevard
Edwards AFB CA 93524

SUBJECT: Minutes of the Edwards Air Force Base (AFB) Restoration Advisory Board (RAB)
Meeting, 16 November 2017

1. Time: 5:51 p.m.
2. Place: Lancaster, California
3. Chairman: Mr. Bruce Davies, Public Co-chair
4. The following RAB members were present:

<u>Name</u>	<u>Position</u>
Ms. Ericka Buckreis	Boron Public Representative
Mr. Kevin Depies	California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) Remedial Project Manager (RPM)
Mr. Christopher Dirscherl*	United States Environmental Protection Agency (U.S. EPA) RPM
Mr. William Gaddis	Rosamond Public Representative
Mr. Alonzo Poach	Lahontan Regional Water Quality Control Board (LRWQCB) RPM
Mr. Paul Schiff	Edwards AFB RPM
Mr. Otto Zahn	Edwards AFB Main Base Test Wing Public Representative

* Participated by phone.

5. The following members were absent:

<u>Name</u>	<u>Position</u>
Mr. Marvin Crist	Lancaster Public Representative (Alternate)
Dr. Joseph Mabry	Air Force Research Laboratory, Detachment 7 (AFRL) Public Representative
Dr. David Smith	Air Force Co-chair
Ms. Jocelyn Swain	Lancaster Public Representative
Mr. Victor Yaw	Mojave Public Representative
Vacant	Edwards AFB Base Housing Public Representative

Vacant	California City Public Representative
Vacant	Edwards AFB North Base Public Representative
Vacant	Edwards AFB South Base Public Representative
Vacant	National Aeronautics and Space Administration (NASA) Armstrong Public Representative

6. The following advisors were present:

<u>Name</u>	<u>Organization</u>
Ms. Amena Atta	Air Force Civil Engineer Center (AFCEC)/Installation Support Section-West (CZOW)
Mr. Gary Hatch	412th Test Wing Public Affairs (412 TW/PA)
Ms. Amanda Lopez	LRWQCB
Mr. Craig Nathe	AFCEC/CZOW
Dr. Nash Saleh	AFCEC/CZOW
Mr. Warren Seidel	412th Test Wing Judge Advocate (412 TW/JA)
Ms. Julia Tseng	AFCEC/CZOW

7. Others present were as follows:

<u>Name</u>	<u>Organization</u>
Mr. H. Daftari	Public
Mr. James Elliot	Tetra Tech
Mr. Kyle Larson	Media Fusion
Mr. John Perry	Media Fusion
Ms. Leilani Richardson	AGEISS (Recorder)
Mr. Ethan Wagner	Media Fusion

8. Mr. Davies read the *Statement of Purpose and Conduct*. Mr. Depies asked if Mr. Dirscherl could participate in the RAB meeting by telephone, and Ms. Richardson provided a cell phone number for Mr. Dirscherl to use.

9. Mr. Davies noted that there are no new RAB members to introduce.

10. Mr. Davies presented the 18 May 2017 RAB meeting minutes for acceptance. The RAB accepted the minutes as presented.

11. New Business – *Environmental Restoration Program (ERP) Update* (Attachment 1). Mr. Davies introduced Mr. Schiff, Edwards AFB RPM.

a. Mr. Schiff provided an update of action items generated at the May 2017 RAB meeting:

(1) *The Statement of Purpose and Conduct*—based on Dr. Smith’s recommendation, the Air Force proposed a revised statement for the RAB’s acceptance. Mr. Schiff suggested the RAB members review the revised statement during the meeting’s break and voice their objection or acceptance during the “Reports from Public Representatives and Remedial Project Managers” portion of the meeting.

(a) Mr. Hatch explained that the revisions abbreviate the statement and are not meant to change the rules, which are still in effect. Mr. Schiff added that the rules are documented in the RAB Bylaws. Mr. Depies noted that it would be helpful to review the original statement against the revised statement.

(b) Mr. Gaddis said his preference is for the revised statement to be read at the beginning of each meeting and a poster board created to display the original statement. Mr. Davies supported the use of the revised statement, which he felt captured the essence of the original statement while omitting superfluous language. Mr. Poach agreed with Mr. Gaddis's suggestion to display the original statement on a poster board for the public to reference.

(c) Mr. Depies confirmed with Mr. Hatch that the statement was created as a result of issues that arose at past meetings. He noted that in his 8 years on the board, he has not seen any issues occur.

(d) The RAB requested that a redline version of the revised statement be sent to them via e-mail for review and approval.

(2) *Report to Stakeholders (RTS)*—Mr. Schiff briefed that several RAB members provided feedback after the May 2017 meeting to report that hard-copy distribution of the RTS continues to be of value. As a result, the Air Force will continue producing hard copies of the newsletter while looking for opportunities to reduce the number of copies produced. Mr. Schiff noted that the electronic version of the newsletter will continue to be available through the RAB's Facebook website and Edwards AFB's Environmental public website. Mr. Poach commented that he does not require hard copies of the RTS.

(3) *Flyers to Advertise Electronic Resources*—Mr. Schiff reported that the Air Force provided each public representative with hard copies of flyers to distribute within their communities to advertise public resources available online regarding the base's cleanup program.

b. Mr. Schiff briefed the status of two formal disputes at Edwards AFB. For the South AFRL Explanation of Significant Differences (ESD) dispute, the Senior Executive Committee (SEC) met on 8 August 2017 and requested technical experts from the Air Force and regulatory agencies gather to review the toxicity science for perchloroethylene (PCE) and related legal aspects. The technical review occurred 12-14 September 2017, and the SEC is expected to reconvene in December 2017. The state of California is developing a regulation associated with toxicity criteria for human health risk-based screening levels, action levels, and remediation goals. A final regulation is expected in the spring of 2018, and officials anticipate resolution of the dispute in 2018. For the AFRL Arroyos Record of Decision (ROD) dispute, Mr. Schiff reported that the Dispute Resolution Committee (DRC) met on 14 September 2017 and tasked the RPMs to develop a Joint Statement on disputed items by 8 November 2017. Mr. Schiff reported that a final statement was submitted on 15 November 2017, and the DRC is expected to reconvene in December 2017.

c. Mr. Schiff briefed that the Site Inspection fieldwork for emerging contaminants called perfluoroalkyl and polyfluoroalkyl substances (PFAS) was completed in July 2017. He said the

fieldwork included the sampling of soil and groundwater at sites throughout the base that were identified as potential release locations for aqueous film forming foam—a type of firefighting foam.

(1) Preliminary results indicate that 19 sites have PFAS contamination in groundwater above the U.S. EPA health advisory level of 0.07 micrograms per liter. Mr. Schiff stressed that none of the contamination is affecting the base's production [i.e., drinking water] wells—confirmed through sampling conducted by Edwards AFB's Bioenvironmental Engineering personnel.

(2) Mr. Schiff noted that the Remedial Investigation phase of the PFAS effort may not start for a few years at Edwards because of funding constraints expected to start in fiscal year 2019 (FY19). He explained that Air Force installations where PFAS is affecting drinking water are expected to receive higher priority in terms of funding.

d. Mr. Schiff presented the progress of the base's cleanup program, highlighting restoration activities performed within the last 6 months. He noted that each of the Operable Unit slides now identify if a designated cleanup area is pre-Record of Decision (ROD) or post-ROD. Mr. Schiff said pre-ROD areas do not have a formal cleanup remedy selected and post-ROD areas are in the process of implementing a cleanup remedy as agreed to by the Air Force and regulatory agencies.

(1) Mr. Gaddis asked how the expected funding constraints will impact critical aspects of the base's cleanup program. Mr. Schiff responded that some of the critical aspects the Air Force will look to fund include the monitoring and maintenance of the Site 3 landfill and certain groundwater monitoring activities. He noted that the Air Force is leveling cleanup funds to be distributed throughout the nation, and post-ROD requirements at each base will be a priority for funding. Mr. Schiff explained that funding constraints should be lifted by 2023; in the meantime, base officials will allocate funding to ensure the protection of human health and the environment.

(2) Mr. Gaddis asked the amount of funding that was cut from the cleanup program. Mr. Schiff replied that in FY19, the base is expected to receive 12 percent of the funding requested and—in one of the years prior to 2023—the amount will dip as low as 5 percent. He assured board members that the base cleanup program is fully funded through FY18, and the Air Force is working to improve future funding, particularly for ROD requirements. Mr. Schiff noted that, although base officials continue working through pre-ROD phases at different cleanup sites, progress on those areas may be a challenge in the next few years.

12. Opportunity for Public Comment – Mr. Hatch reported that no comment cards were received.

13. Old Business – *Status of RAB Vacancies* – Mr. Hatch informed the board members that an application is being processed for the California City public representative position. Four vacancies remain on the RAB, including public representative positions for North Base, South Base, NASA Armstrong, and Base Housing.

a. Mr. Hatch reported that the Air Force updated and distributed flyers advertising the four vacancies, and will run another notice in three local newspapers (Aerotech News, Antelope Valley Press, and Mojave Desert News) later in November 2017.

b. Mr. Hatch said the base is waiting on approval from the North Edwards Water District to renew Mr. Davies's term of service. Mr. Davies informed the RAB that he plans to retire in 1½ years, and he is already talking to people in his community to find a replacement.

c. Mr. Davies suggested a reward system for RAB attendees who bring a member of the public from one of the communities with a vacancy to a meeting. He asked Mr. Hatch to verify how many vacancies are on the RAB. Mr. Hatch replied that there are four vacancies—for the public representative positions of Base Housing, NASA Armstrong, South Base, and North Base. He added that it has been difficult to find a North Base representative because employees in that area are low in number, transient, and do not communicate with each other on a regular basis.

(1) Mr. Schiff recalled that, at a previous meeting, the RAB had discussed the possibility of combining representative positions, but decided against it. Mr. Davies commented that the more representatives on the RAB, the better. Mr. Hatch noted that any member of the RAB can act as a conduit for base cleanup information to any member of the public, regardless of community affiliation.

(2) Mr. Depies asked if North Base has the population to support a board member and if there is a minimum population required to create a community representative position. He recommended eliminating the North Base position from the board if the community population is insufficient. Mr. Hatch responded that he does not know if there is a mechanism for eliminating a position from the RAB, and Mr. Depies did not recall such a process existing in the RAB Bylaws.

(3) Mr. Seidel commented that the Air Force needs to review the RAB Bylaws to determine if there is a process and if a quorum of the RAB is defined. Mr. Hatch said he is not certain if a quorum is defined in the bylaws because the RAB is not a decision-making body; they only make decisions about their bylaws and submit recommendations to the Air Force. Mr. Seidel volunteered himself and Mr. Hatch to review the bylaws and report to the board at the next meeting regarding membership and minimum population requirements.

14. Reports from Public Representatives.

a. Ms. Buckreis, Boron, did not have any comments.

b. Mr. Gaddis, Rosamond, had nothing to report.

c. Mr. Zahn, Main Base Test Wing, did not have any comments.

d. Mr. Davies, North Edwards, reported that he considers the distribution of hard-copy RTS issues to be very helpful because he lives in a small community. He also commented that the distribution of the online resources flyer is a good idea. Mr. Depies stated that the RTS is a very professional publication with informative content, and he appreciates being able to browse through a hard copy, even though he is aware that younger generations may prefer an electronic copy. Ms. Buckreis explained that she finds electronic copies to be easier to store, search, and reference. Mr. Depies acknowledged the value in issuing an electronic version of the RTS, and expressed gratitude that the Air Force will continue to provide hard copies for those who may still need them.

15. Reports from RPMs.

a. Mr. Depies, Cal/EPA DTSC, provided an update of the South AFRL ESD dispute regarding toxicity criteria that has been ongoing for 3 years. He summarized the dispute as being the result of the Air Force's interpretation of federal guidance to use U.S. EPA toxicity criteria in developing cleanup levels at Edwards, whereas the state of California believes state toxicity criteria for certain compounds should be used instead. Mr. Depies said in response to the ongoing dispute, the state of California is promulgating a new regulation to enforce the use of critical toxicity criteria within the state. Mr. Depies commented that the development of the regulation consumes a significant amount of state personnel resources because it is a lengthy process that involves collecting and addressing public input through workshops and a formal hearing. He reported that the state of California is currently responding to public input on the draft regulation. The goal is to submit a final rulemaking package to California's Office of Administrative Law—who will determine if the proposed regulation fits legal requirements—by early 2018. Barring any revisions, the regulation is expected to be finalized in April 2018, at which time the Air Force will be required to follow the state's toxicity criteria. Mr. Depies noted that the Air Force may contest the final regulation, which will further delay resolution of the dispute.

b. Mr. Dirscherl, U.S. EPA, did not have any comments.

c. Mr. Poach, Cal/EPA LRWQCB, introduced Ms. Lopez, a new employee who may eventually share RPM responsibilities with Mr. Poach.

d. Mr. Schiff, Edwards AFB, encouraged the RAB to provide him with feedback on how to better present the environmental restoration briefing. Mr. Gaddis commented that it was helpful to see the pre- and post-ROD categories on the slides because it gave more context to the presentation. Other RAB members agreed with Mr. Gaddis's comment. Mr. Schiff also offered to provide an overview of the contaminant plume posters and answer any follow-up questions if anyone was interested.

16. The next RAB meeting is proposed for 17 May 2018 in California City. Mr. Hatch asked if the RAB had any recommendations for a meeting venue in California City. Ms. Buckreis suggested the high school, and Mr. Davies said the RAB usually reserves the community center in California City.

17. The meeting was adjourned at 6:49 p.m.

//original signed by//

DAVID G. SMITH, NH-IV, DAF
Air Force Co-chair
Restoration Advisory Board

//original signed by//

BRUCE H. DAVIES
Public Co-chair
Restoration Advisory Board

Attachment:

Environmental Restoration Program Update for Edwards Air Force Base, CA

DISTRIBUTION:

AFCEC

412 TW/DS/JA/PAE/SE

412 AMDS/SGPB

AFRL

RAB Members

Cal/EPA DTSC

Cal/EPA LRWQCB

U.S. EPA



Air Force Civil Engineer Center



Environmental Restoration Program Update for Edwards AFB, California

Paul Schiff
AFCEC/CZOW
16 NOV 17

Battle Ready ... Built Right!

1



List of Acronyms



- AFB = Air Force Base
- AFRL = Air Force Research Laboratory, Detachment 7
- CERCLA = Comprehensive Environmental Response, Compensation and Liability Act
- CT = carbon tetrachloride
- DRC = Dispute Resolution Committee
- DTSC = Dept. of Toxic Substances Control
- ESD = Explanation of Significant Differences
- FS = Feasibility Study
- FYR = Five-Year Review
- OU = Operable Unit
- PCE = perchloroethene
- PFAS = perfluoroalkyl and polyfluoroalkyl substances
- RI = Remedial Investigation
- ROD = Record of Decision
- RPM = Remedial Project Managers
- RTS = *Report to Stakeholders*
- SEC = Senior Executive Committee
- SI = Site Inspection
- TCE = trichloroethene
- TWG = Technical Working Group
- ug/l = micrograms per liter

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Action Items from May 2017 RAB Meeting



- **Opening statement read by the co-chairs**
 - **Dr. Smith asked if there is value in reading the Statement of Purpose and Conduct at the start of every meeting**
 - Air Force proposes revising the statement to be more succinct
 - If revisions accepted by the RAB, these changes will be reflected in the RAB Bylaws (Section I-H)
- **Report to Stakeholders (RTS) hard copies**
 - **Dr. Smith proposed electronic-only distribution or a reduction in hard-copy production**
 - **Several RAB members provided feedback after the May 2017 RAB meeting to say there is value in distributing hard copies but agreed the number may be reduced**
 - **Air Force will continue to provide hard copies of RTS, while looking for opportunities to reduce the number produced**

3



Action Items from May 2017 RAB Meeting



- **Advertise electronic resources**
 - **Dr. Smith suggested the Air Force provide RAB members with flyers they can post in community areas to advertise online resources**
 - Available for the public to access more information about the base's cleanup program

Edwards AFB
Environmental Restoration Program

LINKS TO ONLINE RESOURCES
The Environmental Restoration Program at Edwards AFB characterizes, monitors and cleans up known or suspected releases of chemical contaminants that occurred before October 1995.

RESTORATION ADVISORY BOARD
www.facebook.com/RAB.Edwards

CURRENT DOCUMENTS
www.edwards.af.mil/Environment
under the "Publications" section

HISTORIC DOCUMENTS
www.admirrc.com
or
afcc.publicadmin@record.us.af.mil

PM contact Gary Hahn, 412th Test Wing Public Affairs, at (861) 277-4707 or e-mail 412203aah@us.af.mil

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Status of Formal Disputes



- **South Air Force Research Laboratory, Detachment 7 (AFRL) Explanation of Significant Differences (ESD)**
 - August 2014: Dispute invoked by California's Dept. of Toxic Substances Control (DTSC)
 - U.S. EPA Administrator deferred a final decision to allow DTSC to update and finalize its toxicity value on perchloroethene (PCE), tentatively scheduled for mid-2018
 - 8 August 2017: Senior Executive Committee (SEC) met and requested experts to convene for toxicity science and legal reviews
 - 12-14 September 2017: Toxicity science and legal review meetings occurred at California EPA in Sacramento, attended by Air Force staff and representatives from U.S. EPA Region 9 and two California regulatory agencies
 - SEC to reconvene in December 2017
 - 2018: Anticipate resolution/decision on dispute

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Status of Formal Disputes



- **AFRL Arroyos Record of Decision (ROD)**
 - November 2014: Dispute invoked by the U.S. EPA and DTSC
 - April 2017: The Air Force submitted a formal response letter to the Dispute Resolution Committee (DRC) regarding their position on three remaining disputed issues, which include appropriate application of the cancer-risk range related to human health
 - 14 September 2017: DRC met at California EPA in Sacramento, attended by Air Force staff and representatives from U.S. EPA Region 9 and two California regulatory agencies
 - DRC tasked the Remedial Project Managers (RPMs) from all agencies (i.e., Air Force, U.S. EPA, California) to develop a Joint Statement on disputed items by 8 November 2017
 - The RPMs submitted the joint statement to the DRC
 - DRC to reconvene in December 2017

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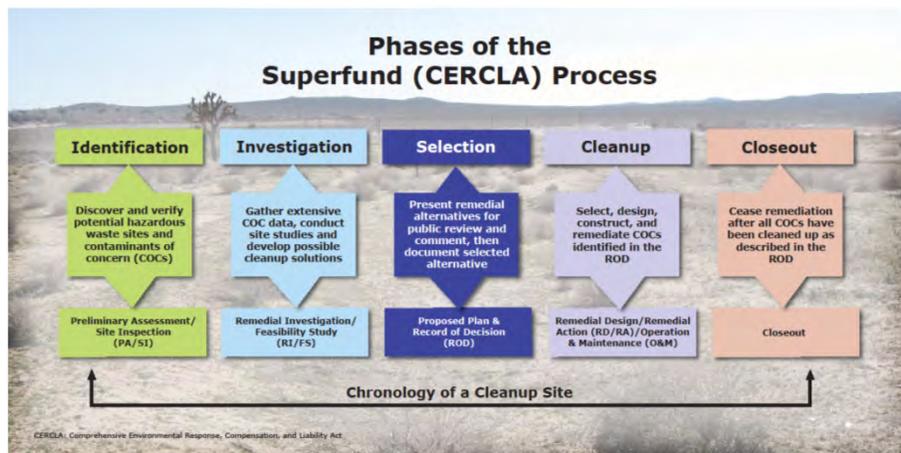
Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)



- **Site Investigation (SI) from March–July 2017**
 - Sampling/surveying completed in June 2017. Investigation-derived waste disposal completed in July 2017
 - Results for all 24 sites presented to the regulators during an August 2017 meeting
 - Preliminary positive results are in for groundwater at 19 sites
 - 2 sites (Hangers 4802/4840) more than 1,000 times the health advisory (HA) level of 0.07 micrograms per liter (ug/L)
 - 7 sites (Hangers 1600/1870/1874/4826, Fire Station #5, Current/Former Fire Training Area at Site 14 and Former Nozzle Spray Test Area) more than 100 times the HA level of 0.07 ug/L
 - 10 sites less than 100 times the HA level of 0.07 ug/L
- **Draft SI Report submitted to the regulators in November 2017**
- **Results of SI will determine which sites move forward into the Remedial Investigation (RI) phase**

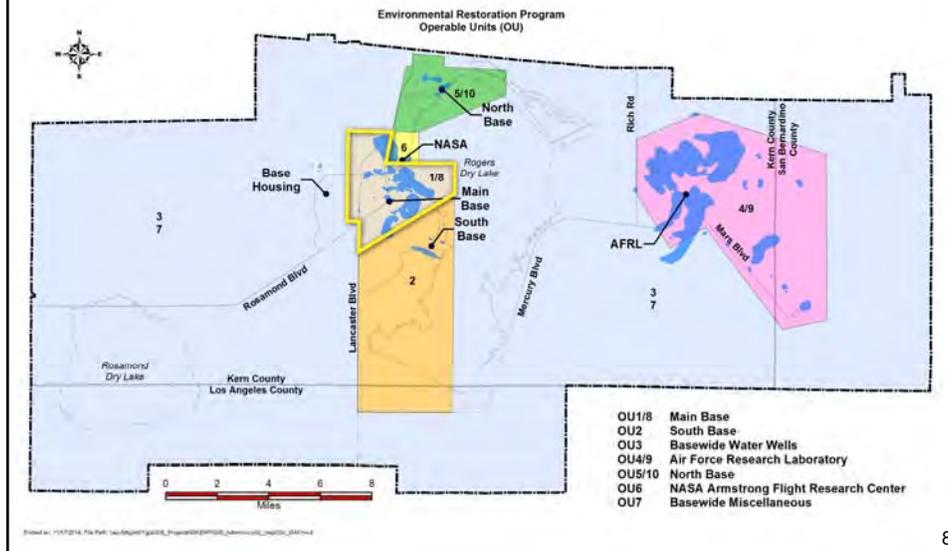


Superfund Phases





Operable Unit (OU) 1/8 Main Base (Pre-ROD)



8



OU1/8 Main Base (Pre-ROD)

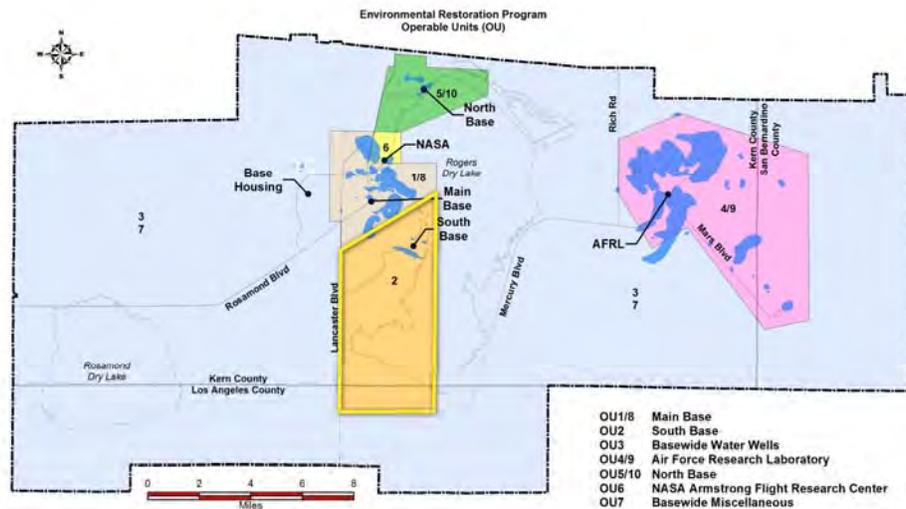


- **Installation of 13 new groundwater monitoring wells in OU1 (edge of Rogers Dry Lakebed) completed and sampled in July 2017**
 - New wells were successful in fully delineating the leading edges of the plumes
- **2017 OU1/8 Groundwater Monitoring**
 - Comprehensive groundwater monitoring completed in October–November 2017
- **Technical Working Group (TWG) meetings are planned with regulatory agencies to advance OU1/8 to an agreed-to Feasibility Study (FS) Addendum**

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OU2 South Base (Post-ROD)



OU2 South Base (Post-ROD)

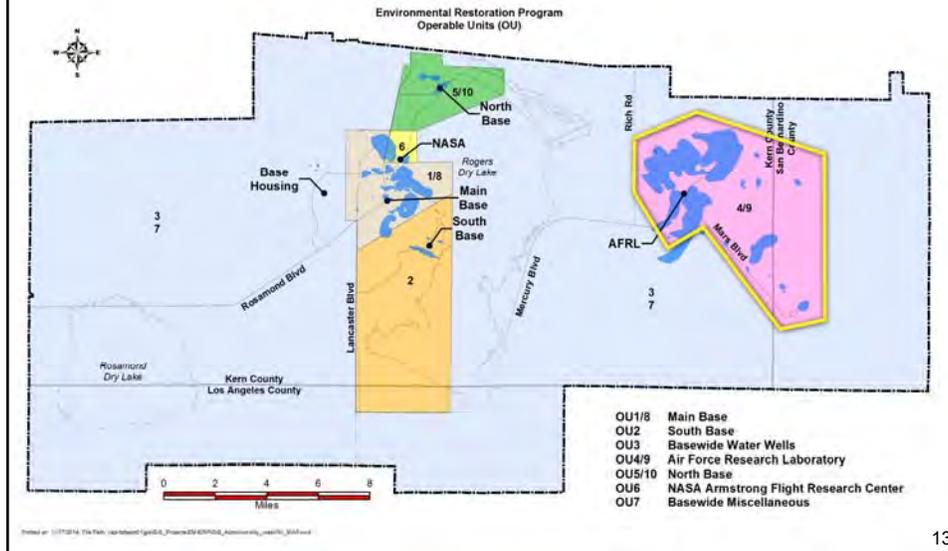


- **Sites 5/14, 76, and 86**
 - Treatment systems continue operating at the three sites
- **Sites 29, 81, and 102**
 - A new contract includes preparing documentation and covering the old South Base Landfill and two former skeet sites with crushed concrete
 - Former Muroc Army Airfield building foundations and former Main Base Runway concrete are being crushed under a separate contract





OU4/9 AFRL (Pre- and Post-ROD)



OU4/9 South AFRL (post-ROD)



- The Air Force finalized the South AFRL Second Five-Year Review (FYR) Report
- Notifications will run in the local newspapers to announce that the final report is available to the public
 - Expected to run later this month
- Air Force plans to install a new well at the South AFRL to help delineate the plume's leading edge, tentatively scheduled for early 2018



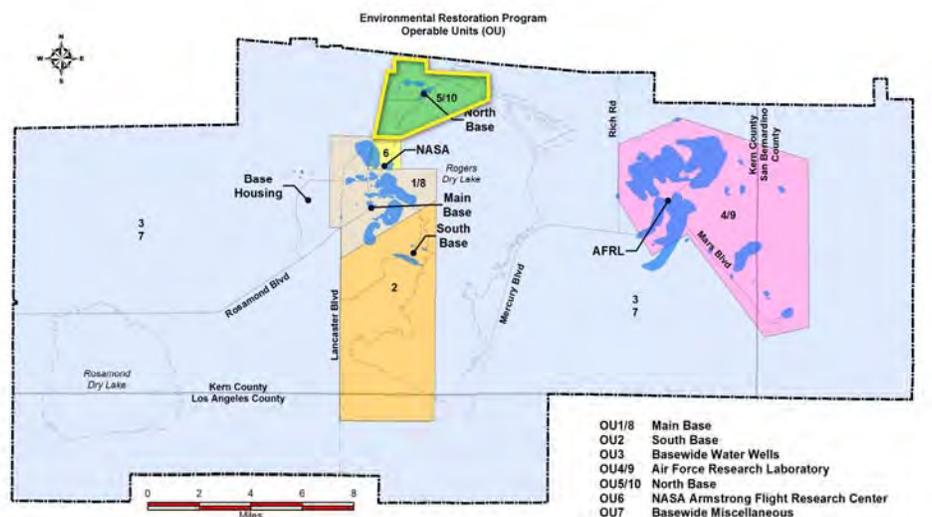
OU4/9 AFRL Soil and Debris Sites (Post-ROD)



- The Air Force started the second Five-Year Review of the AFRL Soil and Debris sites
 - A required site inspection with regulators is scheduled for December 2017
- Notifications will run in the local newspapers when final report becomes available to the public, expected September 2018



OU5/10 North Base (Pre-ROD)





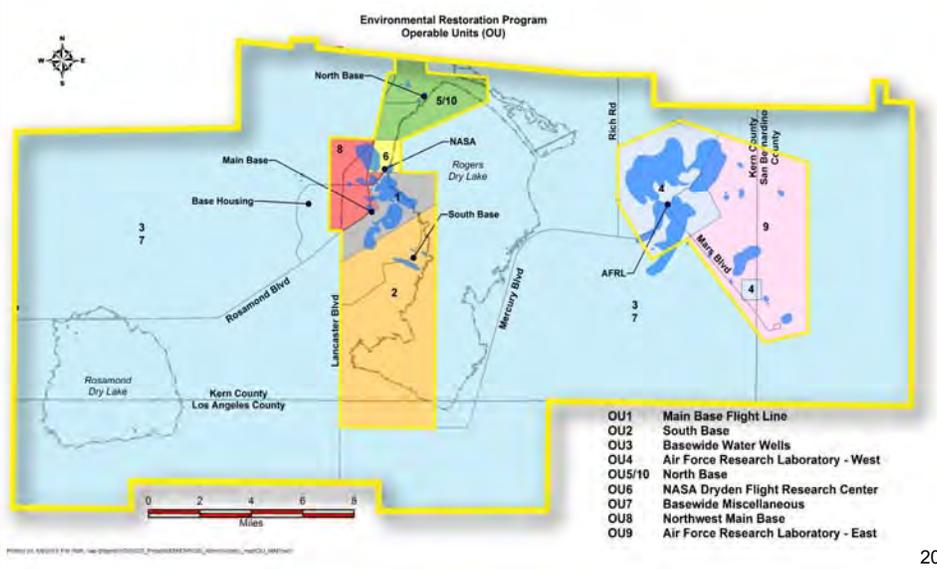
OU6 NASA Armstrong (Post-ROD)



- **OU6 plume delineation effort at Rogers Dry Lakebed**
 - Initial hydropunch groundwater sampling has been completed, and placement/location of permanent plume delineation wells has been agreed to by the regulators and Air Force
 - Awaiting funding and contracting action from NASA Armstrong to install the wells



OU7 Basewide Miscellaneous (Pre-ROD)





OU7 Basewide Miscellaneous (Pre-ROD)

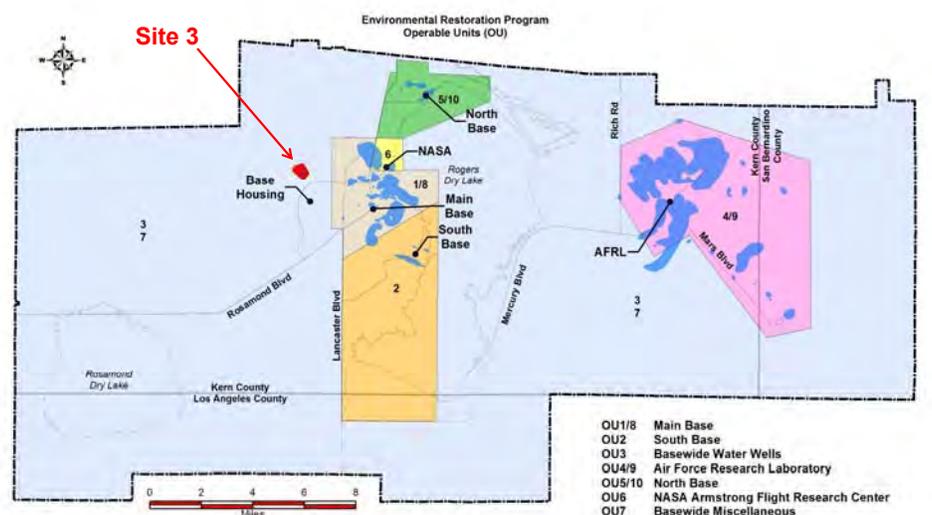


- Draft OU7 Supplemental RI/FS Report for Sites 267, 269 and 294 was submitted to the regulators and the Air Force is currently responding to their comments
- Draft OU7 FS Addendum for Sites 272, 280, 292 and 339 was submitted to the regulators and the Air Force is currently responding to their comments

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OU7 Site 3 (Post-ROD)



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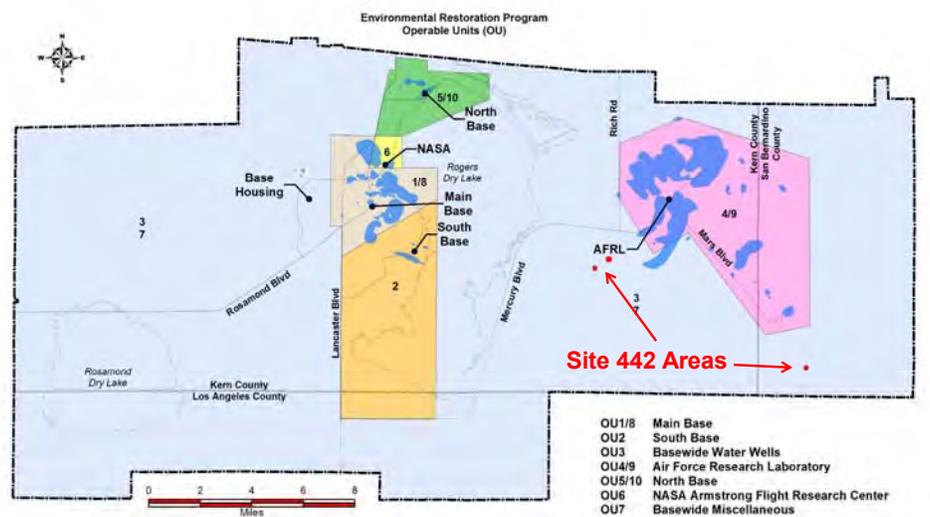
OU7 Site 3 (Post-ROD)



- The eastern portion of the landfill cover has been completed
- Netting has been placed on the slopes of the cover
- The landfill surface has been seeded with shallow rooting plants
- Desert tortoise fencing has been installed around the landfill and drainage channel perimeter
- Coyote dams have been installed under the access gates



OU7 Chemical Warfare Materiel (Post-ROD)





OU7 Chemical Warfare Materiel (Post-ROD)

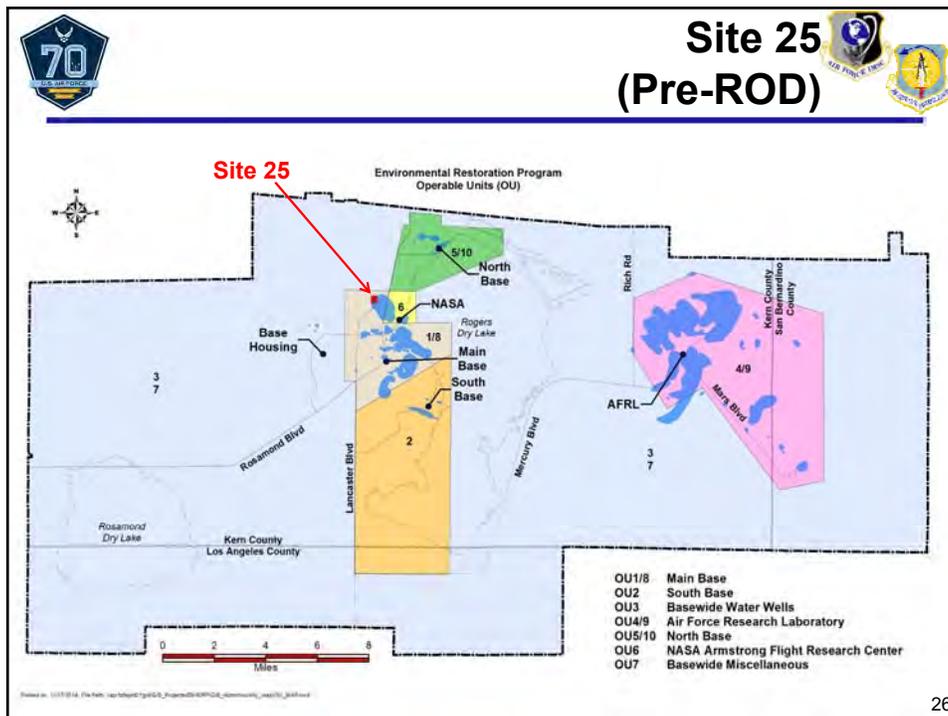


- Draft Site 442 Annual Remedial Action Status Report scheduled to be submitted to regulators in December 2017/January 2018
- Anticipate survey completion later this month to determine if any subsidence has occurred on the cap covers

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Site 25 (Pre-ROD)



26



Site 25 (Pre-ROD)

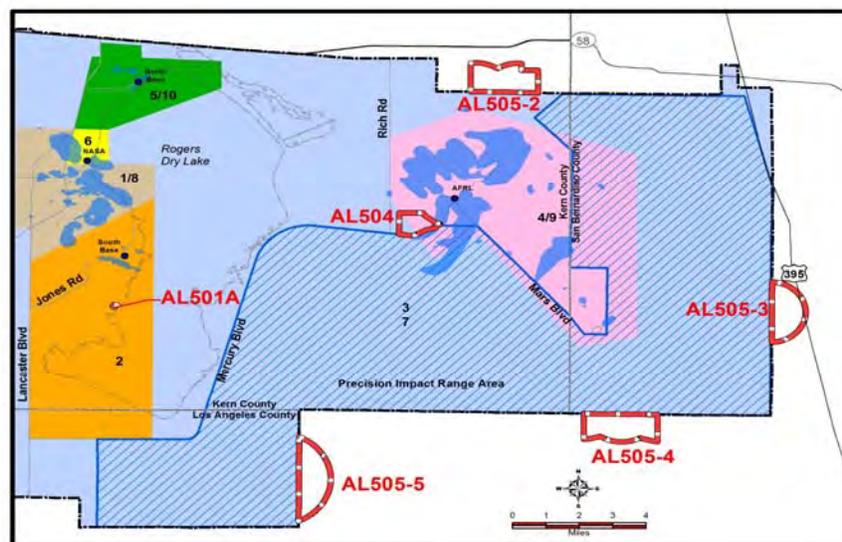


- **Source Area and Plume Stability Technical Working Groups, comprised of Air Force and regulatory agency technical experts, are currently focusing on contaminant plume toe delineation at Site 25**
 - Plan to install 9 wells in December 2017
- **Several data collection efforts (generated from the Site 25 TWGs) are ongoing to feed a revised Feasibility Study**

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Military Munitions Response Program (MMRP) (Pre-ROD)



28



MMRP (Pre-ROD)



- **Site Inspection Report for AL505-3 and AL505-5**
 - Draft Final planned for submittal to regulatory agencies in December 2017
- **Remedial Investigation Report and Feasibility Study for AL501A, AL504, AL505-2, and AL505-4**
 - Draft planned for submittal to regulatory agencies in December 2017

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Questions?

