

28th Bomb Wing

Public Meeting 13 July 2011



28 BW/CCA
385-4411

OU-11 Basewide Groundwater Proposed Plan

UNCLASSIFIED



OVERVIEW



- **Ellsworth AFB is proposing a remedy change for Operable Unit 11 (OU-11) Basewide Groundwater through a Record of Decision (ROD) Amendment**
- **OU-11 Basewide Groundwater Original Remedy:**
 - On – Base Groundwater: extraction/treatment, institutional controls (ICs), long term monitoring (LTM)
 - Off – Base Groundwater: monitored natural attenuation (MNA), LTM, ICs
- **OU-11 Basewide Groundwater Proposed Remedy:**
 - On – Base Groundwater: In-situ reductive treatment (IRT), MNA, ICs, LTM
 - Off – Base Groundwater: MNA, LTM, ICs



SITE HISTORY AND BACKGROUND



- **EAFB on National Priority List in 1990 (Superfund)**
- **Federal Facilities Agreement signed in 1992**
 - 12 OUs were identified and assigned
 - OU-11 was assigned for basewide groundwater
- **Records of Decision (RODs) were completed for all OUs**
- **Remedial actions were implemented**
- **OU-11 ROD signed in 1997**
- **Explanation of Significant Differences (ESD) in 2007**
officially transferred groundwater from all OUs to OU-11
 - ESD also allowed In-situ Reductive Treatment (IRT) technology
 - Full-scale IRT was implemented in 2007



Site Characteristics



➤ **OU-11 Basewide Groundwater:**

- Shallow unconfined aquifer considered a potential drinking water resource, contaminants can migrate off-Base
- Deep aquifers on-Base are not hydraulically connected to shallow aquifer

➤ **Shallow aquifer was contaminated by:**

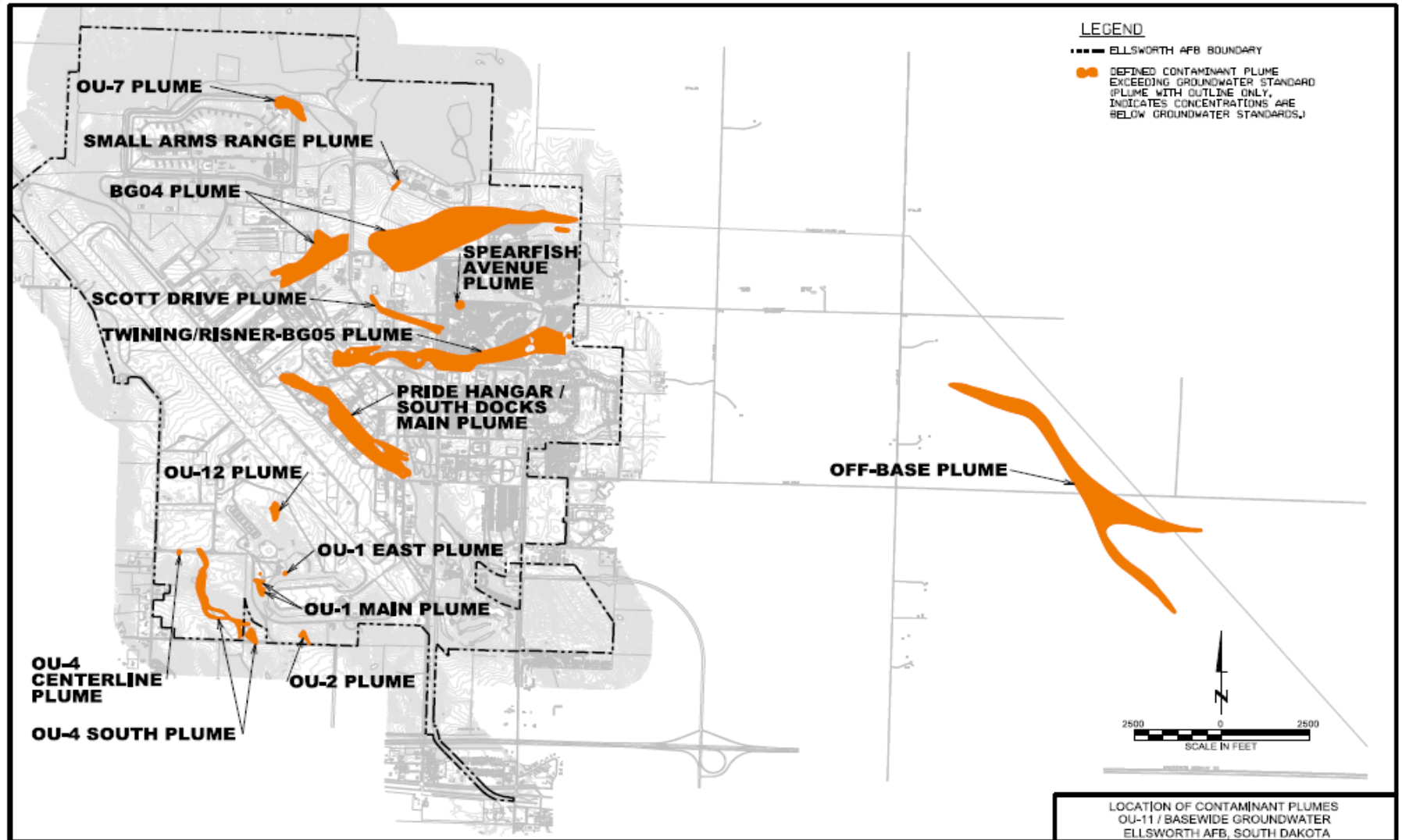
- Historic fire training activities and on-Base disposal sites
- Historic solvent use at small arms range and liquid oxygen plant
- Maintenance and chemical handling practices

➤ **Contaminants of Concern (COCs) include:**

- Solvent related contaminants (TCE, PCE, DCE, Vinyl Chloride)
- Fuel related contaminants at OU-1 only (BTEX, TPH)



OU-11 Groundwater Plumes



World Class Airmen ... Expeditionary Combat Power



On-going Groundwater Cleanup



- **1997 OU-11 ROD Groundwater Remedy:**
 - Groundwater pump and treat (air stripping and activated carbon)
 - MNA
 - LTM (groundwater sampling, landfill monitoring)
 - ICs (control access and contact i.e. fencing/signs)
- **2007 ESD**
 - Assigned all groundwater to OU-11
 - Added IRT as treatment technology since it adds biostimulant and microbes to groundwater aquifer without removing for treatment
- **IRT technologies were implemented and found to effectively degrade chlorinated compounds**



REMEDIAL ACTION OBJECTIVES



These are the proposed Remedial Action Objectives (RAOs)

- 1. Prevent current and future human exposure to on-Base groundwater with COCs exceeding groundwater standards**
- 2. Prevent groundwater containing COCs above groundwater standards from moving off-Base**
- 3. Prevent off-Base human exposure to groundwater with COCs that pose an unacceptable health risk**
- 4. Attain cleanup of COCs to groundwater standards throughout groundwater plumes**



EVALUATION OF ALTERNATIVES



Evaluation Criteria for Superfund Alternatives

- **Protectiveness of Human Health and Environment**
- **Compliance with Federal and State Statutes and Regs**
- **Long Term Effectiveness and Permanence**
- **Reduction of Toxicity, Mobility or Volume of Contaminants through Treatment**
- **Short Term Effectiveness**
- **Implementability**
- **Cost**
- **State and EPA Acceptance**
- **Community Acceptance**



REMEDIAL ALTERNATIVES



- **Focused Feasibility Study (FFS) Evaluated 3 Alternatives**
- **Alternative 1**
 - On – Base Groundwater: extraction/treatment, MNA, ICs, LTM
 - Off – Base Groundwater: MNA, LTM, ICs
- **Alternative 2**
 - On – Base Groundwater: IRT, extraction/treatment, MNA, ICs, LTM
 - Off – Base Groundwater: MNA, LTM, ICs
- **Alternative 3, Preferred Remedy**
 - On – Base Groundwater: IRT, MNA, ICs, LTM, maintain extraction/treatment systems as a backup
 - Off – Base Groundwater: MNA, LTM, ICs
- **ICs and LTM remain the same as 1997 ROD (i.e. access control, groundwater monitoring, landfill inspections)**



PREFERRED ALTERNATIVE



➤ **Alternative 3 is recommended**

- Will achieve same goals as Alternatives 1 and 2 in an equal or shorter period of time and adds technological improvements
- Costs less than other alternatives
- ICs and LTM remain the same as 1997 ROD
- Changes from 1997 ROD and RAOs include:
 - Adding IRT and MNA for on-base groundwater
 - Shutting down extraction/treatment systems (maintain as backup)
 - Prevent off-Base human exposure to groundwater with COCs that pose an unacceptable health risk
 - Attain cleanup of COCs to groundwater standards throughout groundwater plumes



SUMMARY

- **Ellsworth AFB is proposing a remedy change for OU-11 Basewide Groundwater through a ROD Amendment**
- **FFS evaluated 3 Alternatives that would meet RAOs**
- **Preferred Remedy:**
 - On – Base Groundwater: IRT, MNA, ICs, LTM, maintain active systems as backup
 - Off – Base Groundwater: MNA, LTM, ICs
 - Changes from 1997 ROD include adding IRT and MNA for on-base groundwater
- **This alternative was preferred because:**
 - Achieves same goals as other alternatives in an equal or less time period and at significantly less cost with technological improvements
 - ICs and LTM remain the same as 1997 ROD
 - Allows shut down of existing groundwater extraction and treatment systems but these systems will be maintained as backup



COMMUNITY PARTICIPATION



Ellsworth AFB encourages public comment on the PP

- **The USAF will accept written comments on the Proposed Plan during the public comment period. Comments must be post marked by 19 July 2011.**

Please direct questions to Jerald Styles, ERP Manager

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