



**US Army Corps  
of Engineers®**  
Omaha District



# FACT SHEET

**SITE CHARACTERIZATION IN PREPARATION  
FOR SOIL AND GROUNDWATER REMEDIATION  
FORMER ATLAS “E” MISSILE SITE 12  
WELD COUNTY, COLORADO**

**JANUARY 2009**

## *Project Information*

**T**he U.S. Army Corps of Engineers (Corps) has awarded a contract to North Wind, Inc. to clean up soil and groundwater contamination at Atlas E Missile Site 12, located outside of Windsor, Colorado. One of five former Atlas E sites in northeastern Colorado, Atlas 12 operated in the 1960s and contained one intercontinental ballistic missile armed with a nuclear warhead.

The Corps Omaha District is investigating and cleaning up the site for the Department of Defense in accordance with the Formerly Used Defense Sites (FUDS) program, which follows the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or Superfund, process. The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division, provides regulatory oversight of the FUDS programs in Colorado, with assistance from the U.S. Environmental Protection Agency, Region 8, and local governments.

## *Project Location*

Atlas 12 is located approximately three miles southeast of Windsor, Colorado, near the town of Greeley. The Air Force (566th Strategic Missile Squadron, 389th Strategic Missile Wing) at F.E. Warren Air Force Base, Cheyenne, Wyoming, operated the installation from October 1960 to March 1965.

## *Site Background*

In 1994, the Air Force identified past operational or maintenance activities at the Atlas E missile sites that could have resulted in subsurface trichloroethene (TCE) contamination. TCE is an industrial solvent used primarily in metal degreasing and cleaning.

At the Atlas 12 site, TCE was used to flush the missile fuel tanks to remove residual fuel and prevent accidental explosion. Waste TCE and residual rocket fuel were dumped into a flame pit, where it flowed into a floor drain connected to the wastewater drainage sump and eventually to the ground surface.



**Administrative Record**

A project administrative record is the collection of documents that form the basis for selecting a response action at an environmental restoration site. In accordance with CERCLA, the Corps is required to establish an administrative record file for every remedial or response action under the FUDS program and to make a copy of that file available at or near the site. The administrative record for Atlas E Missile Site 12 is available for public review at the following location:

*Weld County Library  
Farr Branch Library  
1939 61st Street  
Greeley, CO 80634*

**Information Repositories**

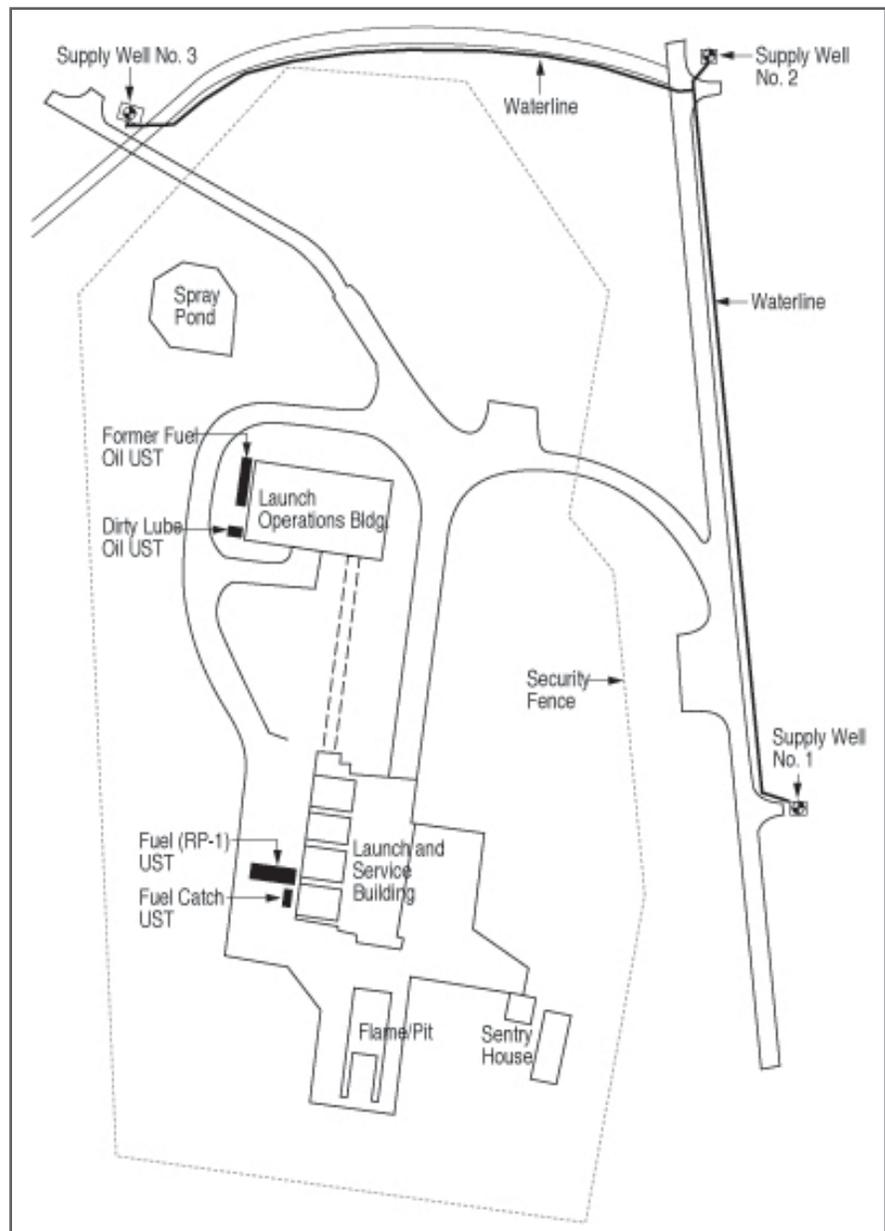
CERCLA also requires that information developed, received, published or made available to the public related to response actions be available for public inspection and copying at an information repository at or near the facility. Documents related to the environmental investigations and clean up plans at the Atlas 12 site are available for review at the following locations:

*Colorado Department of Public Health and Environment  
Hazardous Materials and Waste Management Division Records Center  
4300 Cherry Creek Drive South  
Denver, CO 80246-1530  
303-692-3331  
comments.hmwmd@state.co.us  
include "Records Center" in the subject line*

*Weld County Library  
Farr Branch Library  
1939 61st Street  
Greeley, CO 80634*

The Atlas 12 site originally comprised 258.84 acres and included the following:

- An underground launch operations building
- An underground launch and service building and flame pit
- A sentry house
- Several underground petroleum storage tanks (removed)
- Spray pond
- Roads, walks and fences
- A septic system and tile field
- Three water supply wells
- Water and electrical systems
- A wastewater drainage system consisting of three sumps





Currently, Weld County maintains the property and uses the facility for storage of vehicles, supplies and files. A fence constructed around the facility structures ensures restricted access. The area immediately surrounding the facility buildings is now the Weld County Missile Silo Park and includes campsites, picnic tables and bathrooms. The site has public water from the city of Greeley, and three original water supply wells constructed during missile site operations remain for property irrigation purposes. These supply wells are completely within a deeper aquifer, which is separated from the contaminated shallow aquifer by a geologic confining layer. The septic system for the park bathroom facilities is separate from the system originally constructed for the missile facility.

### *Previous Investigations*

A number of previous investigations and remedial actions have taken place at Atlas 12:

- Closure of several underground storage tanks (USTs) in 1994
- A Site Investigation in 1996
- A Remedial Investigation, Streamlined Risk Evaluation and a Feasibility Study in 1999
- Water-level measurements, or potentiometric surface survey, in 2002 to characterize the surface of the water table
- Feasibility Study Data Gathering Report in 2003
- A Remedial Investigation Addendum in 2004
- Sampling of soils, groundwater and other subsurface areas in 2006 and 2007, followed by analyses to test for light non-aqueous phase liquids (LNAPLs) and other contaminants.

### **For more information:**

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4300 Cherry Creek Drive South  
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EPA Community Involvement Coordinator  
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Denver, CO 80202-1129  
303-312-6622  
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LNAPL, the term used to indicate the presence of petroleum liquids in soils and groundwater, conveys the fact that these liquids are lighter than water and float on top of it. The 2006-2007 investigations identified diesel fuel on the groundwater and TCE vapors in the soil near the Missile Launch and Service Building, as well as the need to gather additional data and better characterize the nature and extent of contamination.

### ***Project Work Scope***

Although CERCLA regulatory processes, including a Remedial Investigation/Feasibility Study and Site Investigation, have already taken place, some additional site characterization activities are still required prior to the start of the remedial action.

A key element in evaluating the site and determining the performance of the remedial action is a Conceptual Site Model -- a representation of the site history, geology and hydrology, and identification of the extent of contamination -- developed from all relevant information including environmental data. The Corps has developed a preliminary Conceptual Site Model based on existing data and will update it after completing additional characterization studies at the Atlas 12 site. The revised Conceptual Site Model will serve as a basis for conducting pilot tests and preparing a report that identifies a proposed final remedy for cleaning up TCE and petroleum product contamination. The report will identify a proposed remedial action as well as cleanup objectives and standards. The proposed remedy and associated remedial action objectives and standards will be presented in a Proposed Plan, which should be available for public comment in January 2011. The long-term goal is to complete all final on-site remediation within 10 years.

### ***Work Plan***

Site characterization work at Atlas 12 is currently underway to gather data that can be used to design the pilot tests of potential remedial technologies. The pilot tests are scheduled to begin in spring 2009.

### ***Public Involvement***

Cleanup plans, including long-term groundwater monitoring plans, will be available to the public as they are developed. Notices will be placed in local newspapers when the plans are available. Public meetings will be scheduled, as needed, and representatives from the Corps, the Colorado Department of Public Health and Environment, and the Environmental Protection Agency are available to discuss the on-going work.