



FINAL

Operational Range Assessment Program Phase I Qualitative Assessment Report Ethan Allen Firing Range, Vermont

U.S. Army Operational Range Assessment Program
Qualitative Operational Range Assessments

Prepared for:

U.S. Army Environmental Command and
U.S. Army Corps of Engineers Baltimore District



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Final Operational Range Assessment Program Phase I Qualitative Assessment Range Assessment Reports will be released beginning in March 2008 per the Direction of Army Headquarters. The cover page of this Report reflects the official finalization date. The date on subsequent pages/figures reflects the date upon which this document's conclusions are based.



EXECUTIVE SUMMARY

The United States (U.S.) Army is conducting qualitative assessments at operational ranges to meet the requirements of Department of Defense policy and to support the U.S. Army Sustainable Range Program. The operational range qualitative assessment (hereinafter referred to as Phase I Assessment) is the first phase of the U.S. Army Operational Range Assessment Program (ORAP). This Phase I Assessment evaluates the operational range area at Ethan Allen Firing Range (Ethan Allen) to assess whether further investigation is needed to determine if potential munitions constituents of concern (MCOC) are or could be migrating off-range at levels that may pose an unacceptable risk to human health or the environment. In conducting the Phase I Assessment, MCOC sources, potential off-range migration pathways, and potential off-range human and ecological receptors are evaluated as appropriate.

Ethan Allen is located east of the city of Jericho Center in northwestern Vermont. The installation was established in 1926 as Fort Ethan Allen Artillery Range, situated on 6,026 acres of land. In 1941, the installation was enlarged to its current size of 11,011 acres. The Air Force, Air National Guard, Army National Guard, Active Army, Army Reserve, Marine Corps Reserve, Reserve Officers' Training Corps units, and civilian law enforcement agencies train at Ethan Allen throughout the year. General Dynamics, formerly Armament Systems Department of General Electric, maintains a government-owned, contractor-operated facility (i.e., test range complex) within the operational range complex at Ethan Allen. General Dynamics has had contracts with the Army, Navy, and Air Force to test weapons at the site since 1952.

The installation contains 79 operational ranges¹, totaling 10,966 acres, including firing ranges, maneuver and training areas, a test range complex (encompassing two operational ranges), biathlon ranges, and an impact area. There is limited or no use of munitions within 61 of the operational ranges; therefore, there is no potential for offsite migration of MCOC from these ranges. The remaining 18 ranges at Ethan Allen include 12 live-fire ranges, four firing points, a demolition training area, and the main impact area. Military munitions use at these ranges results in a potential source of MCOC. These ranges are located within the Lee River and Mill Brook drainage basins, which serve as a potential pathway for MCOC to migrate offsite and impact aquatic plant and animal habitat. Impacts to the plant and animal habitat could pose a risk to sensitive species living in the streams as well as recreational users (e.g., fishermen) of the streams.

While there is potential for impact to both human and ecological receptors from military munitions use at Ethan Allen due to the presence of a source, pathway, and offsite receptors, two sampling events performed at the site indicate that there are no adverse effects to the environment resulting from operational range activities at Ethan Allen.

The 79 operational ranges at Ethan Allen are categorized as Unlikely.

¹ There are 86 operational ranges depicted in the Army Range Inventory Database-Geodatabase, which includes seven major maneuver and training areas as well as 46 subdivided training areas located within the boundary of these seven major training areas. For the purpose of this report, only the 46 subdivided training areas will be counted and discussed resulting in a total of 79 operational ranges.

Unlikely – Five Year Review

A total of 79 ranges at Ethan Allen are categorized as Unlikely, totaling 10,966 acres. These ranges consist of small arms ranges, medium and large caliber firing points, biathlon ranges, a test range, an impact area, and maneuver and training areas. Ranges where, based upon a review of readily available information, there is sufficient evidence to show that there are no known releases or source-receptor interactions off-range that could present an unacceptable risk to human health or the environment are categorized as Unlikely. Ranges categorized as Unlikely are required to be re-evaluated at least every five years. Re-evaluation may occur sooner if significant changes (e.g., change in range operations or site conditions, regulatory changes) occur that affect determinations made during this Phase I Assessment.

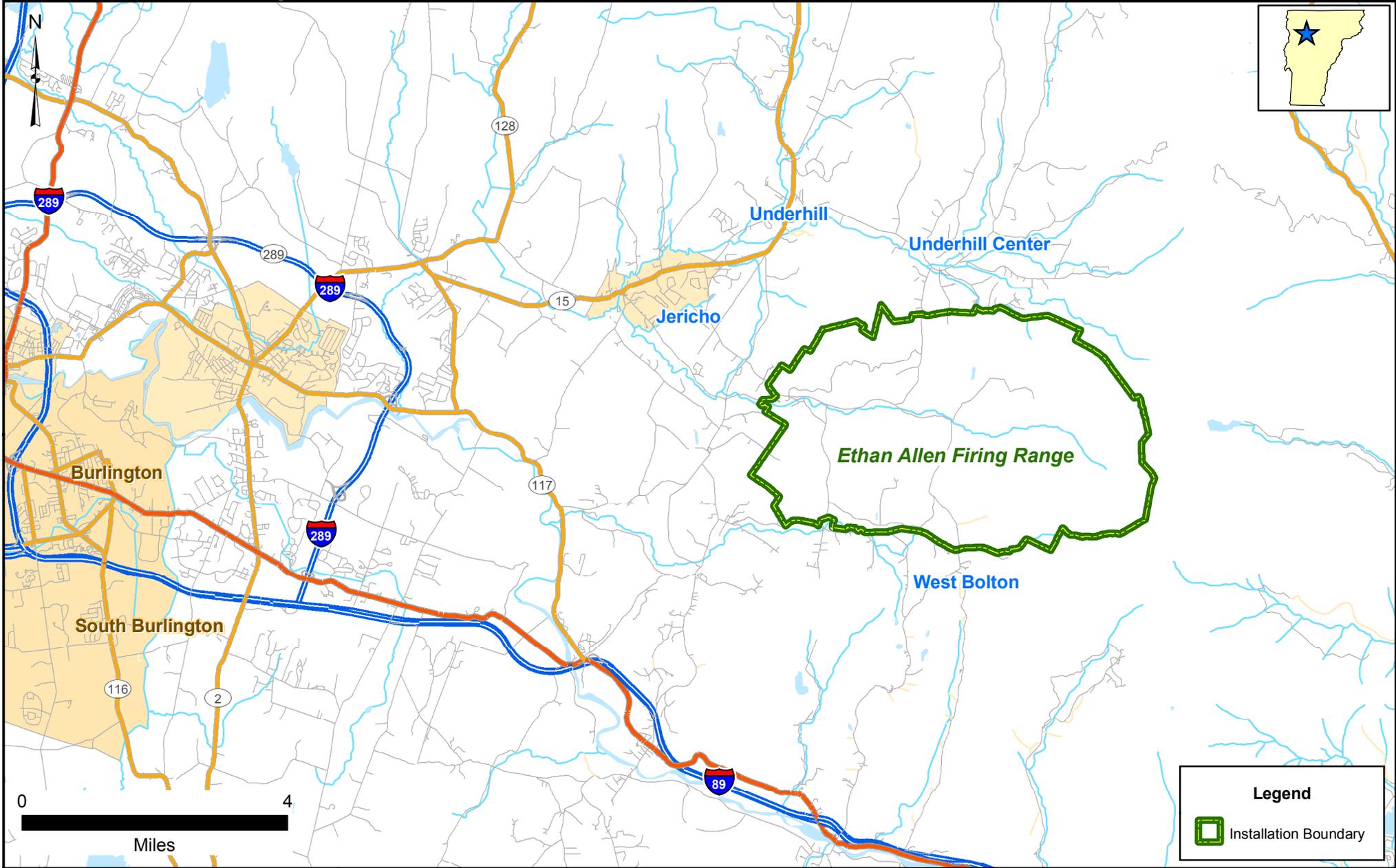
Table ES-1 summarizes the Phase I Assessment findings.

Table ES-1: Summary of Findings and Conclusions for Ethan Allen

Category	Total Number of Ranges and Acreage	Source(s)	Pathway(s)	Human Receptors	Ecological Receptors	Conclusions and Rationale
Unlikely	18 operational ranges; 714 acres	MCOC from firing points, impact areas, and small arms firing	Lee River and Mill Brook	Recreational users of the Lee River and Mill Brook	Class II wetlands	Re-evaluate during the five-year review. Sampling data determined no MCOC migration.
	61 operational ranges; 10,252 acres	No source – limited or no military munitions use	Not evaluated (no source was identified)	Not evaluated		Re-evaluate during the five-year review. No source was identified.

ABBREVIATIONS/ACRONYMS

ARID-GEO	Army Range Inventory Database-Geodatabase
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	Conceptual Site Model
DNT	Dinitrotoluene
DoD	Department of Defense
DODI	Department of Defense Instruction
E	Ecological receptors identified. (This refers to range grouping; pathway designation always precedes E designation.)
GW	Groundwater pathway identified. (This refers to range grouping; M designation always precedes GW designation.)
H	Human receptors identified. (This refers to range grouping; pathway designation always precedes H designation.)
HMX	Cyclotetramethylenetetranitramine
LS	Limited Source.
M	Munitions used. (This refers to range grouping; M designation always precedes applicable pathway.)
MCOC	Munitions Constituents of Concern
NG	Nitroglycerin
NGB	National Guard Bureau
ORAP	Operational Range Assessment Program
PETN	Pentaerythritoltetranitrate
PU	Pathway unlikely or incomplete. (This refers to range grouping; M designation always precedes PU designation.)
RDX	Cyclotrimethylenetrinitramine
RFMSS	Range Facility Management Support System
SW	Surface water pathway identified. (This refers to range grouping; M designation always precedes SW designation.)
TNT	Trinitrotoluene
U.S.	United States
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Command
USEPA	United States Environmental Protection Agency
VTARNG	Vermont Army National Guard



**Operational Range Assessment Program
Phase I Qualitative Assessment
Ethan Allen Firing Range, VT**

Figure 1-1

General Ethan Allen Location

Data Sources: ESRI, 2005; ARID-GEO, 2006

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