



FINAL

Operational Range Assessment Program Phase I Qualitative Assessment Report Caswell Training Site, Maine

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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ABBREVIATIONS/ACRONYMS

ANWR	Aroostook National Wildlife Refuge
ARID-GEO	Army Range Inventory Database-Geodatabase
BEEF	Base Engineer Emergency Force
BRAC	Base Realignment and Closure
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.)
ERM	Environmental Resources Management
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.)
ITAM	Integrated Training Area Management
LAFB	Loring Air Force Base
LS	Limited Source
M	Munitions used. (This refers to range grouping; M designation always precedes applicable pathway.)
MCOC	Munitions Constituents of Concern
MEARNG	Maine Army National Guard
MEDEP	Maine Department of Environmental Protection
MEDWP	Maine Drinking Water Program
MEGIS	Maine Office of Geographic Information Systems
NG	Nitroglycerin
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
ORAP	Operational Range Assessment Program
RFMSS	Range Facility Management Support System
SW	Surface water pathway identified. (This refers to range grouping; M designation always precedes SW designation.)
TS	Training Site
U.S.	United States
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Command
USAF	United States Air Force
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
°F	Degrees Fahrenheit

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 Caswell Training Site (TS) 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.

Caswell TS is a 1,049.08-acre facility that consists of three separate parcels (Caswell TS, Loring Prime Base Engineer Emergency Force [BEEF], and Loring Range) located in northeastern Maine, approximately four miles west of the U.S. / Canadian border. Initial use of the site began in 1947 when the U.S. Army's Strategic Air Command began the construction of Limestone Army Air Base. The Maine Army National Guard (MEARNG) began using the site in the mid-1960s and was granted federal license in the 1970s. Loring Air Force Base was closed under Base Realignment and Closure in the early 1990s; the MEARNG requested the Loring Prime BEEF Area and Loring Range at that time and was granted license in 1999. The Army Range Inventory Database-Geodatabase (2007) identifies five operational range areas at Caswell TS consisting of maneuver and training areas and firing ranges encompassing the entire 1,049.08 acres.

Primarily, MCOC sources identified at Caswell TS consist of current and historical small caliber firing points and impact berms. In general, MCOC from source areas potentially impact soil (e.g., impact berms) and surface water / sediment (e.g., deposition into streams and wetlands).

MCOC can be released to groundwater (down gradient), surface water / sediment (downstream), or the food chain via a variety of release mechanisms. Release mechanisms for soil may include erosion and runoff to nearby streams and wetlands or leaching/infiltration to surficial deposits or the bedrock aquifer. Once potential MCOC are deposited in surface water / sediment, they have the potential to migrate downstream and/or be taken up by aquatic plants or animals. Release mechanisms for surface water / sediment are natural stream flow and sediment transport. Once potential MCOC leach/infiltrate into the surficial deposits or bedrock aquifer they have the potential to discharge into streams and wetlands or be taken up through groundwater wells. Surface water and groundwater at Caswell TS generally flow to the south and southeast, with the exception of Loring Prime BEEF where surface and groundwater apparently flow to the southwest.

The five operational ranges at Caswell TS are categorized as Unlikely.

Unlikely – Five-Year Review

The five ranges at Caswell TS are categorized as Unlikely, totaling 1,049.08 acres. These ranges consist of maneuver and training areas and firing ranges. 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 Caswell Training Site

Category	Total Number of Ranges and Acreage	Source(s)	Pathway(s)	Human Receptors	Ecological Receptors	Conclusions and Rationale
Unlikely	5 operational ranges; 1,049.08 acres	No source—limited or no military munitions use	Not evaluated (no source was identified)			Re-evaluate during the five-year review. No source was identified.
		Historical small arms firing points and impact berm	Wetlands and intermittent streams	Off-range residents downstream and down gradient	Sensitive environments (i.e., Aroostook National Wildlife Refuge, upland sandpiper, and wetlands)	Re-evaluate during the five-year review. Based on on-range wetland characteristics and the level of vegetation at the site, limited potential for off-range MCOC migration was identified.
		Active small arms firing points and impact berm	Surficial deposits and bedrock aquifer			Re-evaluate during the five-year review. Based on lead removal activities and the characteristics of the surficial deposits and bedrock aquifer, limited potential for off-range MCOC migration was identified.