FINAL
OPERATIONAL RANGE ASSESSMENT PROGRAM
PHASE I QUALITATIVE ASSESSMENT REPORT
FORT LEWIS
FORT LEWIS, WASHINGTON

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Prepared for:

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EXECUTIVE SUMMARY

PURPOSE:

This qualitative assessment, hereinafter referred to as Phase I Assessment, evaluates Fort Lewis' operational range area 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. The Phase I Assessment results in the categorization of operational ranges as appropriate, as follows:

- **Referred – Refer to Appropriate Cleanup Program:** ranges with compelling evidence (e.g., sampling data) to indicate the presence of an off-range release that potentially poses an unacceptable risk to human health or the environment;
- **Inconclusive – Phase II Quantitative Assessment Required:** ranges where existing information either is insufficient to make a source-receptor interaction determination or indicates the potential for such interaction to be occurring; or
- **Unlikely – Five-Year Review[1]:** 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 that could present an unacceptable risk to human health or the environment.

SUMMARY OF FINDINGS:

To facilitate the qualitative analysis, MCOC sources, potential migration pathways from a range, and potential off-range human and/or ecological receptors associated with the ranges at Fort Lewis were evaluated. Each range was then placed into one of several descriptive groups that meet the criteria for the Unlikely category.

The 235 operational ranges at Fort Lewis that were included in the Phase I Assessment have been placed into the following category:

- **Unlikely –** 235 ranges consisting of artillery and mortar firing points, grenade courses, small arms ranges, impact areas, observation points, drop zones, landing strips, and training and maneuver areas totaling 84,333 acres.

These findings are summarized in **Table ES-1.**

[1] All operational ranges must be periodically re-evaluated to determine if there is a release or substantial threat of release of MCOC from an operational range to an off-range area. Range groups categorized as Unlikely are to be re-evaluated at least every five years. Re-evaluation may occur sooner if significant changes (e.g., changes in range operations, site conditions, regulatory changes) occur that affect determinations made during the Phase I Assessment.

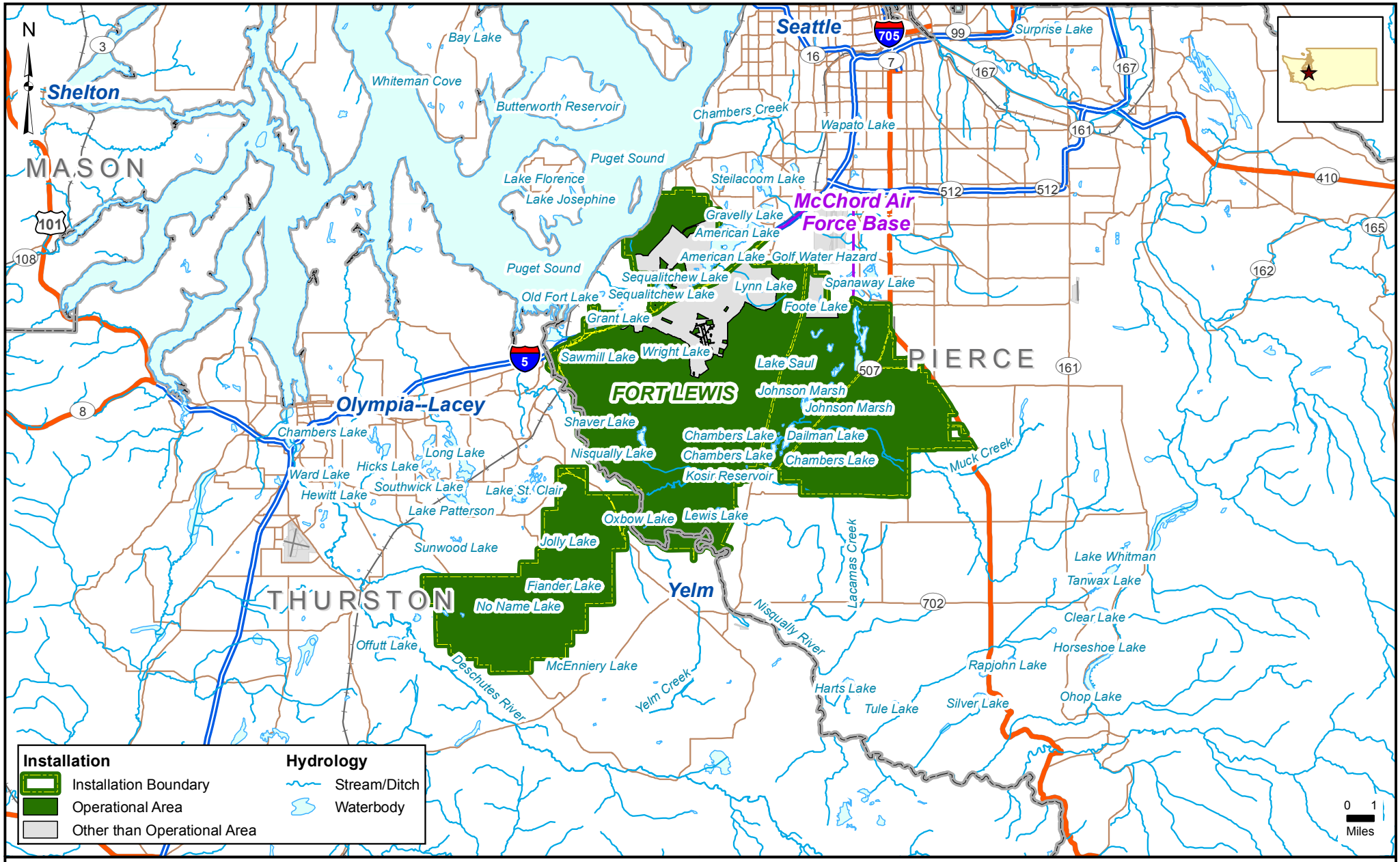
Table ES-1: Summary of Findings, Conclusions, and Recommendations for Fort Lewis

Category	Total Number of Ranges and Acreage	Source(s)	Pathway(s)	Human Receptors	Ecological Receptors	Conclusions and Rationale
Unlikely	80 operational ranges; 26,500 acres	Artillery and mortar firing points, grenade courses, small arms ranges, impact areas, observation points, and training and maneuver areas	Surface water and groundwater	Residents down gradient, off-range residents, and recreational users of Lacamas Creek, Nisqually River, Puget Sound, and Sequalitchew Creek	Threatened and endangered species	Re-evaluate during the five-year review (re-evaluation may occur sooner if future sampling data under the installation's current sampling program indicate constituents are above regulatory standards).
	11 operational ranges; 118 acres	Small arms ranges	No potential pathways identified	Not evaluated (no potential pathway identified)		Re-evaluate during the five-year review.
	144 operational ranges; 57,715 acres	No source – limited or no military munitions use	Not evaluated (no potential source identified)			Re-evaluate during the five-year review.

ABBREVIATIONS/ACRONYMS

AFB	Air Force Base
ARID-GEO	Army Range Inventory Database - Geodatabase
ARNG	Army National Guard
ASP	Ammunition Supply Point
cal.	Caliber
Carc	Carcinogen
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	Conceptual Site Model
DNT	Dinitrotoluene
DoD	Department of Defense
DODI	Department of Defense Instruction
DODIC	Department of Defense Identification Code
DPCA	Director of Personnel and Community Activities
DPM	Defense Priority Model
DPTMS	Directorate of Plans, Training, Mobilization and Security
FY	Fiscal Year
GIS	Geographic Information System
HE	High Explosives
HMX	Cyclotetramethylenetetranitramine
HRS	Hazard Ranking Score
I-5	Interstate 5
I Corps	First Corps
IRP	Installation Restoration Program
LS	Limited Source
LTM	Long Term Monitoring
MAMC	Madigan Army Medical Center
MC	Munitions Constituents
MCOC	Munitions Constituents of Concern
mgd	Million Gallons Per Day
mg/L	Milligram Per Liter
MGW	Munitions used. Groundwater pathway identified.
MGW (H/E)	Munitions used. Groundwater pathway identified (human and ecological receptors).
mm	Millimeter
MMRP	Military Munitions Response Program
MPU	Munitions used. Pathway unlikely.
MQL	Method Quantitation Limit
MROD	Mount Rainier Ordnance Depot
MSW	Munitions used. Surface water pathway identified.
MSW (H/E)	Munitions used. Surface water pathway identified (human and ecological receptors).
MSWGW	Munitions used. Surface water and groundwater pathways identified.
MSWGW (H/E)	Munitions used. Surface water and groundwater pathways identified (human and ecological receptors).
MTCA	Model Toxic Control Act
NFA	No Further Action

Noncarc	Noncarcinogen
NPL	National Priorities List
OB/OD	Open Burn / Open Detonation
ORAP	Operational Range Assessment Program
PETN	Pentaerythritoltetranitrate
PRG	Preliminary Remediation Goal
RBC	Risk-Based Concentration
RCRA	Resource Conservation and Recovery Act
RDX	Cyclotrimethylenetrinitramine
RFMSS	Range Facility Management Support System
TNT	Trinitrotoluene
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
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
WA	Washington
WWII	World War II
ºF	Degrees Fahrenheit
µg/L	Micrograms Per Liter



Operational Range Assessment Program
Phase I Qualitative Assessment
Fort Lewis, WA

Figure 1-1
General Location of Fort Lewis

Data Sources:
AEC, ARID-GEO April 2006
ESRI StreetMap USA 2005

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