# OPERATIONAL RANGE ASSESSMENT PROGRAM
# PHASE I QUALITATIVE ASSESSMENT REPORT
# CAMP GRAFTON
# DEVILS LAKE, NORTH DAKOTA

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Prepared for:

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# 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 Camp Grafton 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.

Camp Grafton encompasses approximately 14,584.87 non-contiguous acres (Camp Grafton North, Camp Grafton South and leased lands). Camp Grafton is a state owned and operated training site. There are 14,407.73 acres of operational ranges used for firing ranges, a demolition range, training and maneuver areas, and other ranges. Included in this amount are eight parcels of leased land, used as operational ranges, totaling 3,063.90 acres. Camp Grafton provides training opportunities for infantry, aviation, combat support and combat service support units.

The Camp Grafton area has been enduring a wet weather cycle from the mid-1990s to the present. As a result many of the surface water bodies have increased in size, in particular Devils Lake and Lake Coe, both of which impact Camp Grafton. Throughout the report parcels and ranges will be noted as being submerged due to the surface water bodies encroaching on the facility.

Camp Grafton North is located in Ramsey County, approximately three miles south of the city of Devils Lake, North Dakota, adjacent to the water body Devils Lake. The northern part of Camp Grafton is approximately 2,400 acres, including 177.14 acres of cantonment and non-range areas in the northwest corner of the installation. Of the 2,400 acres, approximately 1,515 acres are usable land and about 900 acres to the east, south and west are currently submerged under Devils Lake. Camp Grafton North was established on 6 July 1894.

Camp Grafton South is located in Eddy County, about 40 miles southeast of Devils Lake. Camp Grafton South is approximately 9,970 acres (including the two adjacent leased land parcels). Camp Grafton South was established in 1985 by the purchase and lease of contiguous and non-contiguous property. This camp provides adequate training areas for engineer training activities such as earth moving operations, demolitions, and bridge training. All of the live-fire ranges are located in the southern portion of Camp Grafton South.

As part of the Operational Range Inventory Sustainment (ORIS), an update to the Army Range Inventory Database-Geodatabase (ARID-GEO) was submitted to the U.S. Army Environmental Command in November 2006 (ARID-GEO [2006]). The ARID-GEO (2006) identified 36 operational range areas encompassing 14,407.73 acres. One additional operational range was identified during the site visit which was not identified in ARID-GEO (2006); this range was included in the assessment.

Primary MCOC sources identified at Camp Grafton consist of small and medium arms ranges, a demolition range, and training and maneuver areas. In general, MCOC from primary source areas potentially impact the soil media (e.g., impact berms).

MCOC can be released to groundwater (down gradient), surface water / sediment (downstream), off-range soil, or the food chain via a variety of release mechanisms. Release mechanisms for soil may include leaching from soil to groundwater or erosion and runoff to off-range surface soil or to nearby streams. Once potential MCOC are deposited in surface water / sediment, they have the potential to migrate downstream, recharge the shallow groundwater, or be taken up by aquatic plants or animals. Release mechanisms for surface water / sediment are natural stream flow and sediment transport. Surface water drainage at Camp Grafton North is south towards Devils Lake. Transport of MCOC via surface water drainage is unlikely at Camp Grafton South from the live-fire ranges due to rolling terrain and lack of permanent surface water pathways.

The main human receptors are users of groundwater from off-range wells and persons fishing in Devils Lake. The main ecological receptors are sensitive environments located off-installation, however it is unlikely that there is a surface water pathway connecting these receptors. Several water sampling events indicated either no detections or levels of MCOC close to background levels for munitions constituents of concern.

The 37 operational ranges at Camp Grafton are categorized as Unlikely (e.g., Referred, Inconclusive, or Unlikely).

**Unlikely – Five-Year Review**

Thirty-seven ranges at Camp Grafton are categorized as Unlikely, totaling 14,407.73 acres. These ranges consist of small arms, machine gun, and grenade ranges, demolition ranges, field training, aircraft and helicopter training, bridge training, and other 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 Camp Grafton**

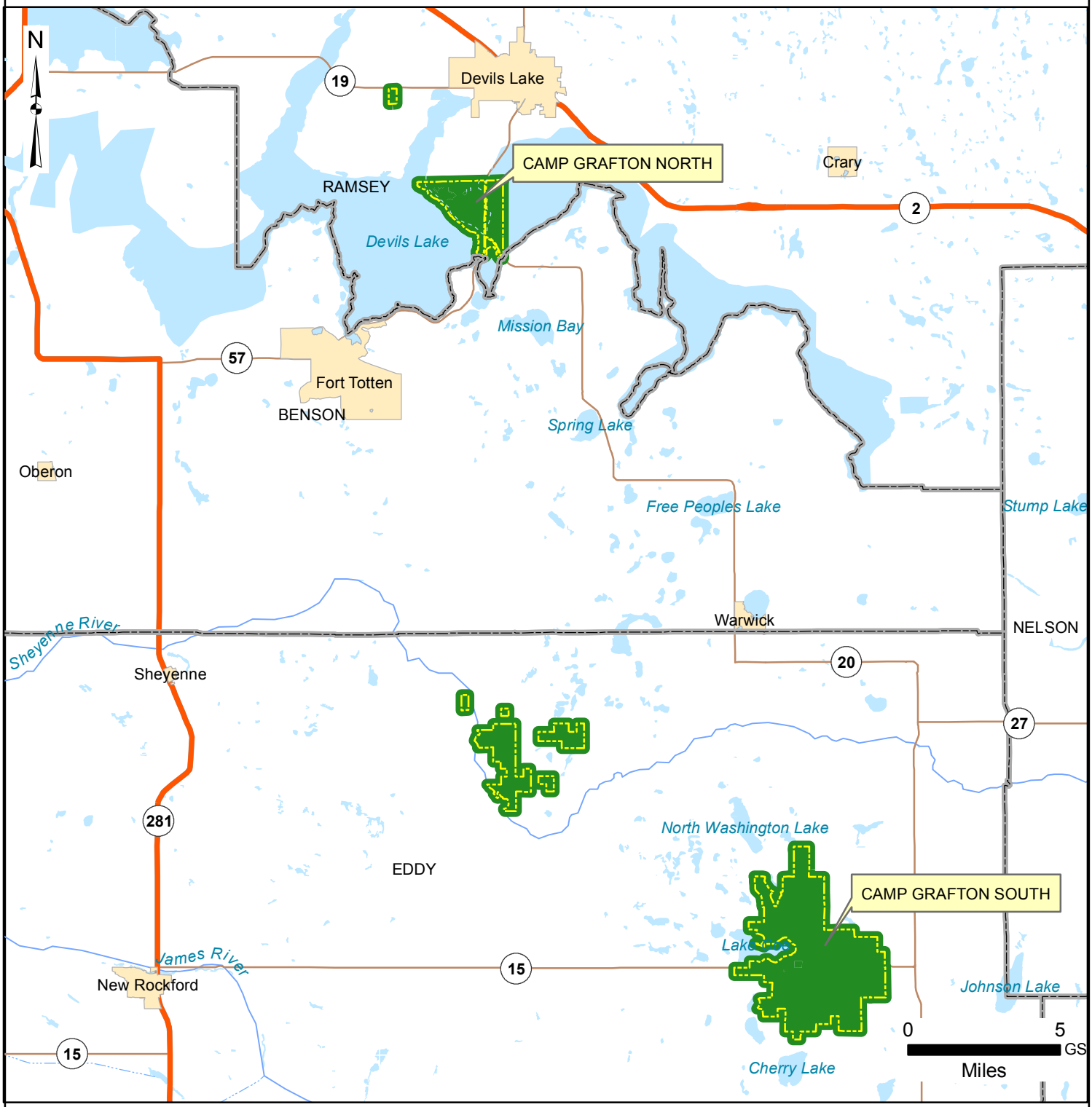
| Category | Total Number of Ranges and Acreage | Source(s) | Pathway(s) | Human Receptors | Ecological Receptors | Conclusions and Rationale |
|---|---|---|---|---|---|---|
| Unlikely | 6 operational ranges; 166.61 acres | Small arms berms, impact areas | Shallow groundwater to north and northeast | Residents down gradient | None | Re-evaluate during the five-year review. A potential source, pathway, receptor was identified, but sampling indicated no migration of MCOC off-range. |
| | 1 operational range; 3.02 acres | Small arms berms | No migration path identified | Not evaluated (no pathway identified) | | Re-evaluate during the five-year review. No pathway was identified. |
| | 30 operational ranges; 14,238.10 acres | No source – limited or no military munitions use | Not evaluated (no source identified) | | | Re-evaluate during the five-year review. No source was identified. |

# ABBREVIATIONS/ACRONYMS

| | |
|---|---|
| amsl | Above Mean Sea Level |
| ARID-GEO | Army Range Inventory Database-Geodatabase |
| ARNG | Army National Guard |
| 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.) |
| EPA | Environmental Protection Agency |
| GIS | Geographic Information System |
| 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.) |
| HE | High Explosives |
| HMX | Cyclotetramethylenetetranitramine |
| LS | Limited Source. |
| M | Munitions used. (This refers to range grouping; M designation always precedes applicable pathway.) |
| MCL | Maximum Contaminant Level |
| msl | Mean Sea Level |
| MCOC | Munitions Constituents of Concern |
| NDARNG | North Dakota Army National Guard |
| NG | Nitroglycerin |
| NGB | National Guard Bureau |
| NRCS | National Resources Conservation Service |
| 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.) |
| SWC | State Water Commission |
| 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 |
| USEPA | United States Environmental Protection Agency |
| WMA | Wildlife Management Area |
| WPA | Wildlife Protection Area |
| °F | Fahrenheit |

**Operational Range Assessment Program**
**Phase I Qualitative Assessment**
**Camp Grafton, ND**

# Figure 1-1
# General Camp Grafton Location




**Installation**
- Installation Boundary
- Operational Area

**Roads**
- Highway
- Major Road

**Hydrology**
- River/Stream
- Waterbody
- Water Boundary

**Administrative**
- County Boundary
- Urban Area

Data Sources:
ARID-GEO, 2006
ESRI, StreetMap USA, 2007

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