

10.0 THE SELECTED REMEDY

The selected remedy for OU 13 includes two remedial alternatives; Removal - Disposal and No Action. No further action is necessary for much of OU 13 because there is no unacceptable risk to human health or the environment.

Removal - Disposal is the selected remedy for areas within OU 13 that exceed remediation goals. These areas have been identified to include:

- FLDD
- FLDD Wetland
- EBGB (from Pennsylvania Road to the Ski Chalet)
- NDA Drainageways (north and south)
- Ditch G06
- UTS Wetland (northern portion)

The State Fish Advisory, currently in effect, will continue to be enforced until the fish are determined to be acceptable for consumption. Areas covered by the advisory include Chapman Pit, Green Pond, Greenlaw Brook, and the LMR and its tributaries from the Madawaska Dam Reservoir south to the Aroostook River.

The No Action alternative has been selected for the LMR because there is no unacceptable risk associated with surface soil, sediment, and surface water. The No Action alternative will include an environmental monitoring program and five-year site reviews to assess whether human health and the environment continue to be adequately protected.

No further action is necessary at the other areas within OU 13 because there is no unacceptable risk to human health or the environment.

10.1 REMEDIATION GOALS

The USAF has established, with concurrence of the regulatory agencies, site-specific remediation goals (RGs) that will be protective of human health and the environment. RGs were established based on USEPA Risk Assessment Guidance for Superfund (USEPA, 1991), LAFB Risk Assessment Methodology (HAZWRAP,1994), and MEDEP Risk Assessment Guidance (MEDEP, 1994). RGs

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and the compounds for which they have been established are listed in Tables 10-1 through 10-7.

10.2 DESCRIPTION OF REMEDIAL COMPONENTS

The following subsections describe the Removal - Disposal and No Action alternatives developed by the USAF for OU 13.

10.2.1 Removal - Disposal

The following paragraphs describe the Removal - Disposal alternative the USAF developed for areas that exceed remediation goals. These areas have been identified to include the FLDD, FLDD Wetland, EBGB (from Pennsylvania Road to the Ski Chalet), north and south NDA Drainageways, Ditch G06, and UTS Wetland (northern portion). Implementation of the selected alternative will include the following activities:

- pre-design studies to delineate the extent of remediation for design purposes;
- pre-design wetland mitigation studies (i.e., wetland delineations and function-value assessments) to evaluate the impacts resulting from remedial activities;
- site preparation and mobilization;
- cutting and clearing;
- stormwater management;
- sediment excavation;
- sediment disposal at LF-3; some material may require disposal at off-base facilities;
- backfilling the excavations with material that closely matches the excavated material;

TABLE 10-4
SEDIMENT REMEDIATION GOALS¹
EAST BRANCH GREENLAW BROOK

OPERABLE UNIT 13 RECORD OF DECISION
LORING AIR FORCE BASE

CONTAMINANT OF CONCERN ²	MAXIMUM DETECTED CONCENTRATION ³ (mg/kg)		PROTECTION OF HUMAN HEALTH ⁴ (mg/kg)		PROTECTION OF ECOLOGICAL RECEPTORS ⁵ (mg/kg)		REMEDATION GOAL ⁶ (mg/kg)	
	STREAM	PALUSTRINE	STREAM	PALUSTRINE	STREAM	PALUSTRINE	STREAM	PALUSTRINE
Total PAHs	54	NS	**	**	35	230	35 (ECO)	230 (ECO)
Total 4,4'-DDT/DDD/DDE	0.372	NS	77	125	0.280	0.370	0.280 (ECO)	0.370 (ECO)
Aroclor-1260	10	NS	2.5	5.5	1	14	1 (ECO)	5* (HH)
Total Chlordanes	0.110	NS	18	29	0.480	0.320	0.480 (ECO)	0.320 (ECO)
Lead	126	NS	690	690	218	155	218 (ECO)	155 (ECO)

Notes:

- 1 Stream sediment remediation goals are based on human and ecological exposure to sediment within the boundaries of the existing stream channel plus sediment in the overbank areas out to 20 feet from the existing stream banks. Palustrine sediment remediation goals are based on human and ecological exposure to sediment in the overbank areas more than 20 feet from the existing stream channel.
 - 2 Ecological risk-based concentrations were derived for the primary risk contributors only (i.e., those accounting for >90% of the overall hazard index).
 - 3 Maximum concentration is only for the sample locations in the area proposed for remediation and includes 1993 and later analytical data. Maximum concentrations of total PAHs, total 4,4'-DDT/DDD/DDE, and total chlordanes are the sum of the maximum concentrations of the individual compounds.
 - 4 The lesser value of a carcinogenic risk-based concentration calculated with the cancer risk set at 1×10^{-6} and a noncarcinogenic risk-based concentration with the hazard quotient set at 1. Development of human health risk-based concentrations is documented in Appendix A.1 of the OU 13 FS (ABB-ES, 1997a).
 - 5 Development of ecological risk-based concentrations is documented in Appendix A.2 of the OU 13 FS (ABB-ES, 1997a).
 - 6 Remediation goals represent the lower of the human health and ecological criteria.
- mg/kg = milligrams per kilogram
 DDT = dichlorodiphenyltrichloroethylene
 DDD = dichlorodiphenyldichloroethane
 DDE = dichlorodiphenyldichloroethylene
 ECO = Remediation goal is ecological risk-based concentration.
 HH = Remediation goal is human health risk-based concentration.
 NS = No samples were collected for this medium in this habitat.
 PAHs = polynuclear aromatic hydrocarbons
 * = Operationally, 5 mg/kg is used rather than the risk-based value of 5.5 mg/kg.
 ** = Development of human-health risk-based concentrations for total PAHs is unnecessary; no noncarcinogenic risk on site was attributed to noncarcinogenic effects from PAHs.

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FINAL

Loring Air Force Base

**Operable Unit 13 (OU 13)
Record of Decision**

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Prepared for:

**Air Force Base Conversion Agency
Loring Air Force Base, Maine
(207) 328-7109**

Prepared by:

**Service Center: Hazardous Waste Remedial Actions Program
Oak Ridge, Tennessee 37831-7606**

**Contractor: ABB Environmental Services, Inc.
Portland, Maine 04101**

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