10.0 STATUTORY DETERMINATIONS

A description of how the selected remedy meets statutory requirements, compliance with the requirements of CERCLA, and consistency with the NCP is presented in this section.

10.1 Consistency with the Statutory Requirements of CERCLA in Section 121

The statutory requirements of CERCLA Section 121, as described below, and the statutory preference for treatment are met through implementation of the selected remedy.

10.1.1 Protection of Human Health and the Environment

The selected remedy will result in the remediation of the Offpost OU groundwater consistent with remedial action objectives and containment system remediation goals established for the site. Contaminated groundwater in the North and Northwest Plume Groups will be addressed by implementing the selected remedy through groundwater extraction, treatment, and recharge.

The ground water remedial actions proposed under Alternatives N-4 and NW-2 will permanently address the primary threat to human health and the environment for the Offpost Study Area through carbon adsorption treatment to reduce the toxicity, mobility, and volume of contaminated groundwater Contaminant levels in Offpost Study Area groundwater will be reduced to or below groundwater containment system remediation goals following treatment. Reduction of groundwater contaminant concentrations to these goals will further reduce the groundwater cumulative excess cancer risk toward 10^{-6}. Following groundwater remedial action, the HI for noncarcinogens will be less than 1.

It should be recognized, however, that studies conducted at other sites (by EPA and others) have indicated that it may not always be possible to reach groundwater containment system remediation goals because of the limitations of the technology used to assess groundwater hydrogeological properties, the technology used to estimate aquifer remediation time frames, and the technology used to extract and recharge groundwater. If it becomes apparent during operation of the groundwater

treatment systems that groundwater contaminant levels are remaining constant at levels higher than the Offpost OU groundwater containment system remediation goals, the selected remedy provides for improvements to the proposed remedial systems as necessary. An alternative water supply will be provided to any user of a domestic well in accordance with the provisions in Section 7.1. Institutional controls that are part of this remedy are intended to prevent the future domestic use of groundwater exceeding the containment system remediation goals.

Of the alternatives evaluated for cleaning up the groundwater, the selected remedy provides the highest degree of protection of human health without adverse impact to the environment. No unacceptable short-term risks will be caused by implementing this remedy.

Potential ecological impacts during remediation will be continually evaluated. Maintenance of existing habitats and ecosystems are important. Although the Federal Endangered Species Act, the Migratory Bird Treaty Act, and the Bald Eagle Protection Act were not considered as ARARs, the FFA requires their application. Remediation goals consistent with the substantive requirements of these Acts are being met and will be assured through close interaction with the U.S. Fish and Wildlife Service. In coordination with the U.S. Fish and Wildlife Service, it was agreed that screening levels, developed to ensure compliance with enforceable remediation levels, meet the requirements of the federal Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. These screening levels were not exceeded in the Offpost OU. These levels are presented in the Final Offpost Operable Unit Endangerment Assessment/Feasibility Study in Table 3.3.3-1 (Toxicity Reference Values for Avian and Terrestrial Vertebrate Species of Concern Identified at Rocky Mountain Arsenal) of Volume II and Table H5-1 (Maximum Allowable Tissue Concentration [MATC] Values for the Offpost EA Ecological Assessment) of Appendix H in Volume IV. If the screening levels are exceeded or effects are observed in the future, enforceable remediation levels will be developed consistent with CERCLA, the Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act.

10.1.2 Compliance With Applicable or Relevant and Appropriate Requirements

Under Section 121 (d)(l) of CERCLA, remedial actions must attain standards, requirements, limitations, or criteria that are applicable or relevant and appropriate under the circumstances of the release at a site. ARARs would be met or exceeded upon completion of the selected remedy at the Offpost OU.

Chemical-specific ARARs

Groundwater containment system remediation goals are based on chemical-specific ARARs for those chemi cals having promulgated standards and on HBC for those chemicals without ARARs (Tables 7.1, 7.2, and 7.3). The preferred sitewide alternative is expected to attain or exceed chemical-specific ARARs. A summary of the chemical-specific and other ARARs that have been assessed to be applicable or relevant and appropriate is presented in Table 10.1.

Action-specific ARARs

The selected remedy will comply with action-specific ARARs. A summary of the action-specific ARARs that have been assessed to be applicable or relevant and appropriate is presented in Table 10.2.

Location-specific ARARS

The selected remedy will comply with location-specific ARARs. A summary of the location-specific ARARs that have been assessed to be applicable or relevant and appropriate is presented in Table 10.3

10.1.3 Cost Effectiveness

The selected remedy is cost-effective in mitigating the risks posed at the site by contaminated groundwater. Cost-effectiveness is determined by evaluating three of the five balancing criteria to determine overall effectiveness: long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; and short-term effectiveness. Overall effectiveness is then compared to cost to ensure that the remedy is cost-effective.

The selected remedy for groundwater provides the best overall effectiveness of all alternatives considered proportional to its cost. The selected remedy will greatly reduce the toxicity, mobility, and volume of groundwater exceeding containment system remediation goals. Also the implementation of this remedy will result in long-term effectiveness by reducing residual carcinogenic risks through permanent treatment.

Through the groundwater monitoring program, the Army can more accurately assess the contaminant removal rates as a function of time, using the full-scale data available during operation of the Offpost Groundwater Intercept and Treatment System, the NBCS, and the NWBCS. The analysis of this data will allow for cost-effective decisions regarding any future improvements that may be required for the remedial systems.

10.1.4 Utilization of Permanent Solutions to the Maximum Extent Practicable

The selected remedy for the Offpost OU represents the maximum extent to which permanent solutions and treatment technologies can be used in a cost-effective manner to remediate groundwater at the site. Of those alternatives that are protective of human health and the environment and comply with ARARs, the selected remedy (Alternatives N-4 and NW-2) will provide the best balance of trade-offs in terms of long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; cost; the statutory preference for treatment as a principal element; and state and community acceptance.

10.2 Consistency with the National Contingency Plan

The NCP requires that the following two features be present in the remedy selection process:

- The nine criteria used to evaluate alternatives in the detailed analysis are used to select a remedy.
- Selected Superfund remedies must employ the nine criteria to make the following four determinations:

  Each remedial action selected shall be protective of human health and the environment.

Onsite remedial actions selected in a ROD must attain ARARs or provide grounds for invoking a waiver.

Each remedial action selected shall be cost effective, provided that it first satisfies the threshold criteria (defined in Section 8.0).

Each remedial action shall use permanent solutions to the maximum extent practicable.

The preferred sitewide alternative is fully consistent with the NCP, as is the selection process used to arrive at the preferred alternative. Alternatives were developed and screened, and the detailed analysis of alternatives was performed in a manner consistent with the NCP.

10.3 Summary

The preferred sitewide alternative for remediation of the Offpost OU is the combination of Alternatives N-4 and NW-2. The preferred alternative was selected in accordance with the requirements of CERCLA and the NCP. The remedial actions that compose the sitewide preferred alternative will permanently address the principal threats through groundwater extraction and treatment to reduce the toxicity, mobility, or volume of contaminants for protection of human health and the environment.

Although the requirements for provision of an alternate water supply and hookup to the SACWSD are part of the Onpost remedy, these actions will also significantly reduce the potential for exposure to offpost groundwater.