APPENDIX A
GLOSSARY OF ENVIRONMENTAL RESTORATION TERMS

The following definitions were taken primarily from *Superfund/Oil Program Implementation Manual FY 2001, Appendix B: Response Actions* (OSWER Publication 9200.3-14-1F-P).

Cleanup Goals Achieved This measure is used to indicate when cleanup goals have been achieved for groundwater and surface water restoration, including monitored natural attenuation. It is necessary to track achievement of cleanup goals for these remedies because the goals will not have been achieved at the time that remedial action (RA) has been completed. Cleanup Goals Achieved has been accomplished once the final RA report has been approved in writing.

Feasibility Study The primary objective of a feasibility study (FS) is to ensure that appropriate remedial alternatives are developed and evaluated such that an appropriate remedy may be selected. A FS involves the identification and detailed evaluation of potential remedial alternatives. This process begins with the formulation of viable alternatives, which involves defining remediation objectives/cleanup goals, general response actions, volumes or area of media to be addressed, and potentially applicable technologies. Following a preliminary screening of alternatives, a reasonable number of appropriate alternatives undergo a detailed analysis using the nine evaluation criteria in the National Contingency Plan (NCP). During a remedial investigation/feasibility study (RI/FS), information is gathered to support an informed decision regarding the remedy (if any) that is most appropriate for a given site or an operable unit within a site. Interim or early actions to initiate risk reduction activities can be undertaken throughout the RI/FS process.

Long-Term Response Action Long-term response action (LTRA) is defined as the Fund-financed operation of groundwater and surface water restoration measures, including monitored natural attenuation, for the first ten years of restoration. The Fund continues to pay up to 90 percent of the costs during the LTRA period, then the State funds the entire operation after the ten year period has expired. LTRA begins on the date that the designated Regional official approves the interim RA report in writing. LTRA is complete after 10 years, after a technical impracticability determination has been made, or after cleanup goals have been achieved and documented in a final RA report, whichever occurs first. LTRA transitions to O&M if cleanup goals have not been achieved, or if continued monitoring will be required, once ten years have expired. The term LTRA does not apply to groundwater and surface water restoration measures conducted under other financing mechanisms, groundwater or surface water containment measures, groundwater or surface water measures initiated for the primary purpose of providing a safe drinking water supply, or groundwater monitoring.

Natural Resource Trustees

Natural Resource Trustees are authorized by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) to assist EPA in characterizing the nature and extent of site-related contamination and impacts. The Trustees also act on behalf of the public to determine whether environmental restoration is needed in light of the response actions at a given site.

Operable Unit

The NCP defines an operable unit (OU) as a "discrete action that comprises an incremental step toward comprehensively addressing site problems. This discrete portion of a remedial response manages migration, or eliminates or mitigates a release, threat of a release, or pathway of exposure" (NCP §300.5). Hence, an OU can be a certain geographic portion of a site or can address an environmental medium at the site (e.g., groundwater, soil). OUs may also be comprehensive but temporary remedies (e.g., temporary caps across a site) that provide interim protection of human health and the environment before final remediation. The cleanup of a site can be divided into a number of OUs, depending on the complexity of the problems associated with the site.

Operational and Functional

For many sites, the completion of RA also marks the completion of the operational and functional (O&F) period. O&F activities are conducted after physical construction of the remedy is complete to ensure that it is functioning properly and operating as designed. The NCP provides a maximum timeframe of one year for performing O&F activities; however, EPA may extend the one-year period, as appropriate. O&F activities may be conducted for containment, groundwater restoration, and surface water restoration remedies in order to ensure that the remedy functions properly and operates as designed. Monitored natural attenuation remedies do not go through an O&F determination. The O&F period is part of the RA and occurs during the last year of the RA. Formal O&F determinations are made primarily for Fund-financed projects, since O&F governs when O&M or LTRA begins. O&F is considered complete on the date that the designated Regional official approves the interim RA report (for sites with groundwater or surface water restoration remedies) or final RA report in writing.

Operation and Maintenance

Operation and maintenance (O&M) are the activities required to maintain the effectiveness or the integrity of the remedy. In the case of Fund-financed measures, O&M activities are required to restore groundwater or surface waters, and to continue the operation of such measures beyond the LTRA period until the cleanup goals have been achieved. Except for Fund-financed groundwater or surface water restoration actions covered under NCP §300.435(f)(4), O&M measures are initiated after the remedy has achieved the remediation objectives and/or cleanup goals listed in the ROD, and the remedy has been determined to be O&F. O&M typically starts on the date that the designated Regional official approves the final

RA report. In the case of Fund-financed LTRA that continues for a full ten years without achieving the cleanup goals, O&M starts upon completion of LTRA. In the case of Federal facility-lead groundwater and surface water restorations, including monitored natural attenuation, O&M starts on the date that the designated Regional official approves the interim RA report in writing. O&M completion is defined, where appropriate, as the date that the remediation objectives/cleanup goals or conditions specified has been met with respect to O&M. O&M may be completed when the cleanup goals have been achieved, or it may be indefinite, as in the case of a landfill cap.

Potentially Responsible Party

Under CERCLA §104, a person or entity potentially responsible for a release of hazardous substances, pollutants, or contaminants into the environment (i.e., a potentially responsible party [PRP]), may also be allowed to conduct certain response actions in accordance with CERCLA §122, if the lead agency determines that party is qualified and otherwise capable. For a PRP-lead RI/FS response action, either EPA or the State serves as the lead agency and oversees the PRP's work and development of the proposed plan and the ROD. The lead agency determines whether the PRP, or the PRP's contractor, is qualified and capable of doing the work. PRPs may participate in the remedy selection process by submitting comments on the proposed plan or other information contained in the administrative record file during the formal public comment period that is held before the final remedy selection. However, PRPs generally should not be permitted to write proposed plans, RODs, or any amendments to those.

Potentially Responsible Party Long-Term Response

Potentially responsible party long-term response (PRP LR) is a type of O&M. In the past, the term LTRA has been used to describe PRP-lead groundwater and surface water restoration measures, including monitored natural attenuation. However, PRP-lead groundwater and surface water restoration measures, including monitored natural attenuation, are covered by a separate action, PRP LR. Because PRP LR is a specific type of O&M, the ten-year timeframe does not apply. LTRA begins on the date that the designated Regional official approves the interim RA report in writing. PRP LR is complete after a technical impracticability determination has been made, or cleanup goals have been achieved and documented in a final RA report, whichever occurs first. The term PRP LR does not apply to groundwater and surface water restoration measures conducted under other leads, to groundwater or surface water containment measures, groundwater or surface water measures initiated for the primary purpose of providing a safe drinking water supply, or to groundwater monitoring.

Record of Decision The record of decision (ROD) documents the remedy selection and the RA plan for a site or an operable unit and serves the following three basic functions: it certifies that the remedy selection process was carried out in accordance with CERCLA and with the NCP; it describes the technical parameters of the remedy, specifying the methods selected to protect human health and the environment including treatment, engineering, and institutional control components, as well as remediation objectives/cleanup goals; and, it provides the public with a consolidated summary of information about the site and the chosen remedy, including the rationale behind the selection. While the ROD should provide a comprehensive description of site conditions, the scope of the action, the selected remedy, remediation objectives/cleanup goals, and the reason for selecting the remedy, it is only one part of the administrative record file, which contains the full details of site characterization, alternatives evaluation, and remedy selection.

Regional Contingency Plan Each EPA Region is responsible for developing regional contingency plans "to coordinate timely, effective response by various Federal agencies and other organizations to discharges of oil or releases of hazardous substances, pollutants, or contaminants" (40 CFR 300.210 (b)). Each plan includes information on facilities and resources within the Region that may be useful in responses. To the extent possible, regional contingency plans must follow the format of the NCP and be coordinated with the appropriate state emergency response plans.

Remedial Action A remedial action (RA) is the implementation of the remedy selected in the ROD. A RA is complete when the remediation objectives and/or cleanup goals stated in the ROD have been achieved, and the remedy has been determined to be O&F.

Remedial Design Remedial design (RD) is an engineering phase during which additional technical information and data identified are incorporated into technical drawings and specifications developed for the subsequent RA. These specifications are based on the detailed description of the selected remedy and on the remediation/cleanup criteria provided in the ROD.

Remedial Investigation A remedial investigation (RI) involves collecting the data necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives. In general, the RI consists of the following actions: determining the nature and extent of the contamination at the site or operable unit; assessing risks to human health and the environment from this contamination; and, conducting treatability tests to evaluate the potential performance and cost of the treatment technologies being considered to address these risks. In characterizing the site, the lead agency or PRP identifies the source of contamination, the potential routes of migration, and the current and the potential human

and environmental receptors. During a RI/ FS, information is gathered to support an informed decision regarding the remedy (if any) that is most appropriate for a given site or an operable unit within a site. Interim or early actions to initiate risk reduction activities can be undertaken throughout the RI/FS process.

Revised Model CERCLA RD/RA Consent Decree

The Revised Model CERCLA RD/RA Consent Decree, published July 1995, superseded the 1991 interim model. The Model Consent Decree serves as a template for binding settlement agreements that serve as determinations of responsibility under CERCLA and the NCP.