Appendix A - REMEDIAL ACTION REPORTS

Appendix A - Sample Remedial Action Report

Remedial Action Report

Record of Preparation, Review, and Approval

U Creosote Superfund Site

Operable Unit 2

Land Treatment of Contaminated Soils

This report has been prepared in accordance with EPA OSWER Directive 9320.2-09A and will be used, along with the Remedial Action Report for OU 1, as the basis for development of the site Final Close Out Report.

RA Report Prepared By:	**PRP Agent:** *Signature* *Name/Title/Company* *Date*
Approved By:	**EPA Region 4 Approving Official:** *Signature* *Name/Title* *Date*

Appendix A - Sample Remedial Action Report

This Sample Remedial Action Report is based on an actual Superfund site, but some information has been altered for illustrative purposes.

Content and format of actual Remedial Action Reports prepared may vary from this sample due to considerations such as project lead and support roles, availability of information, and site-specific conditions.

For more about preparing a Remedial Action Report, refer to OSWER Directive 9320.2-9A-P, "Close Out Procedures for National Priorities List Sites," EPA 540-R-98-016.

Appendix A - Sample Remedial Action Report

REMEDIAL ACTION REPORT

U CREOSOTE SUPERFUND SITE, LIVE OAK, FLORIDA

EPA CERCLIS ID NUMBER FLXXXXXXXXXX

LAND TREATMENT OF CONTAMINATED SOILS (OU 2)

I. INTRODUCTION

The U Creosote Superfund Site is located approximately two miles from the City of Live Oak, Suwanee County, Florida, at the intersection of Sawmill Road and Goldkist Road. Homes, businesses, light industry, a trailer park, a private airport, and a county storage yard are located within one-half mile of the site. Approximately 450 people live in the trailer park. Sinkholes and public and private wells lie within two miles of the site.

From 1948 to 1986, the ABC company operated the U Creosote site as a lumber treatment facility. Lumber treatment processes included the pressure-treatment of lumber products, mainly with creosote and occasionally with pentachlorophenol (PCP). Small rail cars were used to move lumber to two treatment cylinders. A mixture of either creosote and water or PCP and petroleum was used to treat the lumber. The treated lumber was dried on racks over bare soil and stored in an area north of the treatment cylinders.

Wastewater from the treatment cylinders was discharged to an oil-water separator. The creosote recovered from the oil-water separator was sent to a storage tank for reuse. If the creosote was determined to be off specification, it was sent to a spent creosote storage tank and properly disposed of at an off-site location at a later date. Wastewater from the oil-water separator discharged through a culvert and drainage ditch to an unlined three-acre lagoon located in the southwest corner of the site.

In 1989, a former owner of the facility notified Region 4 of the U.S. Environmental Protection Agency (EPA) that hazardous materials may have been handled at the site. In response, the Florida Department of Environmental Regulation (FDER) conducted sampling at the site in July 1990. The results showed that soil and sludge in the area of the treatment cylinders were contaminated with a number of organic compounds and that the treatment cylinders contained small amounts of solidified creosote and PCP. In addition, creosote was found in the lagoon and the storage tanks. No contamination was detected in the aquifer underlying the site. EPA proposed in December 1990 that the site be placed on the National Priorities List (NPL). The listing of the site became final in September 1991.

The potentially responsible parties (PRP) conducted a remedial investigation / feasibility study (RI/FS) at the site between 1992 and 1996 under the terms of a Federal administrative order on consent (AOC). Testing during that time confirmed that soils and sediments in the lagoon and drainage ditch were contaminated with polycyclic aromatic hydrocarbons (PAH). During the RI/FS, EPA and the PRPs agreed to address the site as two operable units (OU).

OU 1 included the lagoon and the former plant facility. Cleanup activities were completed in March 1996, under a Record of Decision (ROD) signed on July 25, 1995. The lagoon was drained, contaminated sludge and sediment was excavated, and wastewater was treated and discharged to a publicly owned wastewater treatment facility. Highly-contaminated sludge and soil were solidified on site.

A ROD for OU2 was signed March 8, 1996, which is the subject of this report.

II. OPERABLE UNIT BACKGROUND

The remedy described in the ROD for OU 2 included:

- On-site biodegradation of remaining, less-severely contaminated soils in a land treatment area constructed with a liner, internal drainage, and spray irrigation system;
- Activities necessary to the proper functioning of the land treatment process;

- After treatment, covering the land treatment area with clean fill and re-vegetating; and
- Five years of groundwater monitoring to verify that it remains uncontaminated.

The cleanup goals in the ROD were: Within two years from initial seeding, the land treatment process must reduce the concentration of TCIC to 100 mg/kg throughout the volume of the material treated. The goals were based upon a risk assessment that focused on attaining at least a 1×10^{-6} risk for ingestion of contaminated soil by a child. The risk assessment assumed a future industrial land use scenario, with no institutional controls. Cleanup goals were described by the total concentration of six carcinogenic indicator constituents of creosote -- benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenzo(a, h)anthracene, and indeno(1,2,3,c,d)pyrene – referred to as total carcinogenic indicator chemicals (TCIC). EPA selected the six of the approximately two hundred compounds that make up creosote because of their concentrations in sludge and soil at the site and their carcinogenic nature. The concentrations of TCIC in the soil to be treated ranged from 100 to 208 mg/kg.

The September 15, 1996, ROD amendment included:

- Soils contaminated at levels exceeding 100 mg/kg, but less than 5,000 mg/kg TCICs, were to be biodegraded in the on-site land treatment area.
- Soils found contaminated at levels exceeding 5,000 mg/kg TCICs were to be removed, stabilized, and disposed of at an EPA-approved hazardous waste disposal facility along with the solidified, OU 1 waste (7,500 yd^3).
- If the land treatment process did not attain the cleanup goals for the TCIC within two years, but quarterly monitoring showed substantial progress toward meeting the cleanup goals, EPA would consider extending the treatment period. However, if substantial progress could not be identified, EPA would consider alternative means of addressing the contaminated soils, such as capping, removal, incineration, solidification, or vitrification.
- Groundwater monitoring would begin upon completion of construction of the land treatment area.

Based on the original ROD and the ROD amendment, the remedial design was prepared for construction of the remedy. The design was completed in five months and approved by EPA September 15, 1998, for implementation of the remedial action.

III. CONSTRUCTION ACTIVITIES

Site Preparation

Site preparation activities included clearing, grubbing, and grading the land where the land treatment area was to be constructed; building a drainage swale around the land treatment area; preparing a temporary, central soil stockpile area consisting of several lined cells; and installing a perimeter fence with signs warning against exposure to hazardous material. Approximately four acres were cleared. An estimated 200 cubic yards of contaminated soil found to contain less than 5,000 mg/kg TCICs were excavated during the site preparation activities and stored in the central stockpile area along with previously excavated, contaminated soil.

Off-Site Disposal of the Solidified, OU 1 Waste

To dispose of the 7,500 cubic yards of solidified OU 1 waste, a suitable receiving facility in Emelle, Alabama, operated by Chemical Waste Management, Inc. (CWM), was identified. The waste was shipped off site to the facility in Emelle on December 1, 1996.

Construction of the Land Treatment System

A clay layer ranging from one to three feet in thickness was installed throughout the four-acre land treatment area. The clay was taken from a borrow pit located elsewhere on the site. The borrow pit was shaped and used as a 750,000-gallon retention pond for collecting water and leachate from the land treatment area. Compacted clay berms were placed around the land treatment area and around the soil stockpile area. Swales were installed outside the treatment area to intercept and redirect run-on.

The land treatment area was prepared with a one percent slope to the northwest corner, where the subsurface drainage system drained under the berm into a gravel-lined swale that led to the retention pond. The drainage system consisted of 12-inch-wide, flat, perforated pipe laterals, spaced every 50 feet in an east-to-west direction. The pipes connected to a south-to-north drainage trench containing cylindrical, perforated piping sloping to a sump in the northwest corner of the land treatment area. The entire subsurface drainage system was covered with a minimum of six inches of clean, sorted sand. Finally, a portable irrigation system, delivering water at 0.5 inches per hour to an area 70 feet in diameter, was installed at the retention pond, which recirculated the collected water and sprayed the water over the land treatment area.

System Operation

Land treatment was performed in three lifts, with a total of 8,100 yd^3 of soil treated: 3,300 yd^3 (Lift 1); 3,000 yd^3 (Lift 2); and 1,800 yd^3 (Lift 3). For site management and sampling purposes, the land treatment area was divided into eight half-acre, rectangular subplots. A composite sample was collected from each subplot each quarter, until the concentration of TCICs in the soil in the subplot was less than 100 mg/kg. An additional lift of soil from the stockpile area then was placed in the subplot. The process was repeated until all of the stockpiled soil had been placed in the land treatment area.

In general, the soil for each lift was placed 4 to 12 inches thick in the land treatment area and inoculated with PAH-degrading microorganisms. The inoculum, sprayed on the soil, was developed by growing seed cultures in mobile, on-site reactor tanks equipped with aeration and mixing equipment. The land treatment area was cultivated once every two weeks. An irrigation system was used to maintain a ten percent soil moisture content. The concentration of microorganisms in the soils at the land treatment area was found to be adequate to support biological activity, and no inoculum was applied for the second or third lift. Additionally, the total number of lifts applied to each subplot varied because several of the half-acre areas exceeded the TCIC concentrations of 100 mg/kg. Subsequently, no additional soil was placed in those subplots until the analytical results indicated less than 100 mg/kg.

Appendix A contains additional data on the characteristics, site conditions, and operating parameters for the system.

Approximately 50 cubic yards of construction debris were removed from the soil and buried on the site. After validation of the final sampling results and determination that the cleanup goals had been met, the site was backfilled with clean soil and seeded on September 1, 1998.

IV. CHRONOLOGY OF EVENTS

Date	Event
March 8, 1996	ROD for OU 2 signed.
August 3, 1996	Remedial Design (RD) submitted.
September 15, 1996	RD approved; ROD amendment signed.
October 3, 1996	Construction of the land treatment area began.

Date	Event
December 1, 1996	Solidified waste from OU1 transported and disposed of off site.
December 12, 1996	PRPs, EPA, and the State conduct pre-final inspection of the land treatment area.
January 12, 1997	PRPs, EPA, and the State conduct final inspection of the land treatment area.
January 19, 1997	Operation of land treatment area begun; first lift of soil applied to treatment subplots; sampling of soil in treatment plots begun.
January 20, 1997	Semiannual groundwater monitoring initiated .
June 12, 1997	Preliminary Close Out Report for site signed for site construction completion.
September 15, 1997	Second lift of soil applied to treatment subplots.
March 14, 1998	Third lift of soil applied to treatment subplots.
June 28, 1998	Final sampling of soil in treatment subplots and in other designated site areas conducted.
July 24, 1998	Final soil sampling results validated; cleanup goals achieved.
September 1, 1998	Land treatment area demobilized and re-vegetated.
September 22, 1998	PRPs, EPA, and the State conduct pre-certification inspection of the completed remedial action.
Ongoing	Semiannual groundwater monitoring.

V. PERFORMANCE STANDARDS AND CONSTRUCTION QUALITY CONTROL

Initial concentrations of PAHs in untreated, stockpiled soil ranged from 100 to 208 mg/kg. Upon completion of land treatment, the concentration of TCICs in soil ranged from 23 to 92 mg/kg.

All soil and sludge samples collected during operation of the land treatment area were analyzed for PAHs. EPA Method 8270 was used to measure the concentrations of PAHs in all samples. Composite samples were collected quarterly from eight subplots in the land treatment area over an 18-month operating period. Once the cleanup goal had been achieved in a subplot, that subplot was not monitored further until an additional lift of soil was applied to the subplot.

TABLE 1 - PERFORMANCE RESULTS COMPARED WITH REMEDIATION OBJECTIVES / CLEANUP GOALS

Remediation Objectives / Cleanup Goals	Performance Results
Reduce concentration of TCICs to 100 mg/kg.	Sampling conducted in June 1998 indicated that the concentration of TCICs was less than 100 mg/kg and ranged from 23 to 92 mg/kg in the eight subplots.
Attain desired cleanup goals within two years after startup of the land treatment operation.	Cleanup levels were attained within 18 months after startup of the land treatment operation.

TABLE 1 - PERFORMANCE RESULTS COMPARED WITH REMEDIATION OBJECTIVES / CLEANUP GOALS

Remediation Objectives / Cleanup Goals	Performance Results
Identify, remove, stabilize, and dispose (off site) of excavated OU 2 soils with TCIC levels greater than 5,000 mg/kg.	Sampling detected no soils with contamination above this specified level.
Dispose (off site) of 7,500 yd^3 of solidified, highly-contaminated soil and sludge.	7,500 yd^3 were removed from the site and disposed of in the CWM landfill in Emelle, Alabama.

Quality Assurance and Quality Control

The QA/QC program used throughout the operation of the land treatment area was outlined in the RD/RA work plan and Quality Assurance Project Plan (QAPP) approved by EPA. The program enabled EPA to determine that all analytical results reported were accurate and adequate to ensure satisfactory execution of the remedial action, in a manner consistent with the requirements of the ROD.

The RA contractor conducted sampling and analysis activities on the soils each quarter. EPA took split samples during three sampling events, including the final sampling event on June 28, 1998. EPA periodically conducted oversight of the PRP contractor's field sampling procedures. While deviations from the approved protocols were identified, none was sufficiently significant to cause rejection of the data. Matrix spike, duplicate, and blank samples were analyzed by the laboratory, and the resulting data provided to EPA. On the basis of the split sample data, the confirmatory sampling data were acceptable to EPA. The Florida Department of Environmental Regulation (FDER) also reviewed the data and found the data to be acceptable.

The QA/QC program is also being used for the semiannual sampling of groundwater.

VI. FINAL INSPECTION AND CERTIFICATION

Inspections

The pre-final inspection of the land treatment area construction was held on site December 12, 1996, in the presence of EPA, PRP, and FDER representatives. The FDER representative noted the need to fence the lagoon for the protection of the public, and a fence was constructed around the lagoon area.

The final inspection was conducted January 12, 1997. EPA, the PRPs, FDER, the Florida Department of Health and Rehabilitative Services (FDHRS), the Suwanee County Coordinator, and the Mayor of Live Oak were present. Representatives verified by review of the manifest that the 7,500 cubic yards of solidified OU 1 waste had been properly transported and disposed off site at the CWM landfill in Emelle, Alabama. No punch-list items were identified, and land treatment of the stockpiled contaminated soil was authorized to begin immediately.

Observations, inspections, and testing during operation of the land treatment process found no significant operational problems affecting the performance of the remedial action. A business east of the site reported experiencing nuisance smells after the contaminated soils in the land treatment area were tilled. In response, an effort was made to till when the wind direction was away from the businesses to the east of the site. No further comments about odors were received during the land treatment operation.

Health and Safety

No health and safety problems were encountered during construction or operation. Modified Level D personal protective equipment (PPE) was required for all site personnel who came into direct contact with the contaminated soil. The equipment included coveralls, safety boots, nitrile gloves, and particulate masks.

Certification of Completion

A pre-certification inspection of the completed remedial action was conducted on September 22, 1998, by representatives of the PRPs, EPA and the FDER. On October 17, 1998, the PRPs provided a written report that the remedial action has been fully performed and the Performance Standards of the Consent Decree have been attained.

VII. OPERATION AND MAINTENANCE

The land treatment area was seeded in September 1998. The vegetative cover will be reseeded in Spring 1999 as necessary.

The semiannual groundwater monitoring program began in January 1997. No TCICs have been detected as of the July 1998, sampling; however, naphthalene has been detected persistently at low levels in groundwater monitoring well No. 7. The levels of naphthalene are below any action level. As specified in the ROD, the PRPs will continue semi-annual monitoring of groundwater through 2002 to confirm that groundwater will not be adversely impacted by the land treatment activities.

VIII. SUMMARY OF PROJECT COSTS

Table 2 provides a summary of the costs for each major cost element and a comparison of the actual project costs with the ROD estimate of project costs. Unit costs for soil treatment were $45/yd^3 for 8,100 yd^3 of soil treated. Based on an average soil density of 1.2 tons/yd^3, the unit cost for this application was $36/ton for 9,700 tons of soil treated. Appendix A provides an annotated breakout of the actual costs.

TABLE 2 - COST SUMMARY

Cost Item	ROD Estimate (1996 $$)	ROD Estimate (1998 $$)[1]	Actual Cost (1998 $$)
RA Capital Cost	$266,000	$306,000	$227,437
RA Operating Cost	258,000	295,000	129,325
Total RA Cost	524,000	600,000	356,762
Projected O & M Cost[2]			21,000
Difference between total project cost and total ROD cost estimate[3]	-$243,238 or -41%		

[1] = ROD Cost was adjusted from 1996 $$ to 1998 $$ using 7% annual inflation rate.

[2] = Ground water monitoring was not included in original ROD.

[3] = Difference between project cost and ROD estimate is largely attributable to 18 months of actual treatment instead of 24 months planned in the ROD.

IX OBSERVATIONS AND LESSONS LEARNED

- The project cost 41% less than the ROD estimate, largely due to reduced labor and materials costs associated with achieving cleanup goals in 18 instead of 24 months. Use of an on-site laboratory also contributed to savings.
- The land treatment application was found to be more effective at remediating soils on the site when the soils were tilled once every two weeks, rather than once every four weeks, as was originally planned.

- Application of fertilizers to the soils at the site proved to be unnecessary because of the naturally high concentrations of inorganic nitrogen and phosphorous in the soil.
- The relatively mild year-round temperatures at the site provided a beneficial growing environment for the inoculum of PAH-degrading microorganisms. Consequently, relatively high numbers of microorganisms remained in the soil, thus reducing the need for repeated soil inoculations.
- Soils at the site were difficult to till after heavy rains. Natural drying of the soil took an average of two weeks before tractors could be operated on the land treatment area.
- Precautionary measures to avoid nuisance odors on neighboring properties may be necessary in land treatment remedies.

X. CONTACT INFORMATION

The PRPs used the following contractor for the RA:

Primary Contact Name and Title

Company Name

Address

Phone Number

The EPA used the following contractor for oversight of the RA:

Company Name *Contract Number* _____

Address *Work Assignment Number* _____

Phone Number

The following companies analyzed samples:

For the PRPs: *Company Name*

Address

Phone Number

For the EPA: *Contract Number*

Company Name

Address

Phone Number

The project manager for the PRPs was:

Name

Company Name

Address

Phone Number

The project manager for the EPA was:

Name

U.S. EPA Region __

Address

Phone Number

APPENDIX A -- REMEDIAL ACTION REPORT
U CREOSOTE, LIVE OAK, FL (OU 2)

The specific parameters presented in Appendix A were prepared in accordance with the "Guide to Documenting and Managing Cost and Performance Information for Remediation Projects," EPA 542-B-98-007. Regions are encouraged to use the recommended procedures outlined in this Guide for documenting cost and performance information as part of the Remedial Action Report.

TABLE 1 - CHARACTERISTICS AND SITE CONDITIONS

Parameter	Site Conditions	Measurement Procedure / Comment*
Environmental Setting		
Air temperature (°F)	71 (average for 1997) 72 (average for 1998)	NA
Humidity (%)	76 (average for 1997)	NA
Barometric pressure (inches of mercury)	30.07 (average for 1997)	NA
Average rainfall (inches)	50.39 (1997) 43.53 (1998)	NA
Soil Types		
Soil classification	Mixture of lagoon contents; lagoon had a clay bottom and sandy contents, which ranged from silty clay to fine sand	Because the medium treated was a mixture of lagoon contents, it did not lend itself to a formal classification analysis.
Aggregate Soil Properties		
pH	6.9	The value listed represents an average measured during one of the sampling events; EPA Method SW-846/9045 was used to measure the pH of the soil.
Total organic carbon	16,000 mg/kg	The value listed represents an average measured during one of the sampling events; EPA Method SW-846/9060 was used to measure the total organic carbon in the soil.
Quantity of soil treated	8,100 yd^3 (total for 3 lifts)	NA

* NA - not applicable. Measurement procedures are reported only for those parameters where different procedures are available.

TABLE 2 - OPERATING PARAMETERS

Parameter	Site Conditions	Measurement Procedure / Comment*
System Parameters		
Soil mixing rate / frequency	Soil placed in the subplots was tilled every two weeks.	Mixing rate or frequency is the rate of tilling for land treatment.
Soil moisture content (%)	12.4 - 22.8 (Lift 1) 12.9 - 21.1 (Lift 2) 8.5 - 14.7 (Lift 3)	Soil moisture was measured using the gravimetric ASTM standard D 2216-90, *Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock*.
pH	6.6 - 7.2 (Lift 1) 6.8 - 7.5 (Lift 2) 6.4 - 7.0 (Lift 3)	Values shown represent the ranges of pH for each lift. EPA Method SW-846/9045 was used to measure the pH content.
Residence time (months)	9 - 15 (Lift 1) 6 - 10 (Lift 2) 4 (Lift 3)	Ranges are given for each lift because of the variations by subplot.
Soil temperature (°F)	13 - 99 (Lift 1) 13 - 102 (Lift 2) 29 - 102 (Lift 3)	NA
Biological Activity		
Carbon/Total Kjeldahl Nitrogen	8.8 - 15.4 (Lift 1) 8.8 - 78 (Lift 2) 6 - 67 (Lift 3)	Values represent the ratio of Carbon to Total Kjeldahl Nitrogen in the soil at the time of measurement for each lift. Ranges are shown for the eight treatment subplots. EPA Methods 415.1 (Modified) and 351.1 (Modified) were used.
Hydrocarbon degradation (mg/kg/month)	13 - 58 (Lift 1) No values were determined for Lifts 2 and 3.	Calculation of hydrocarbon degradation was based on the difference between the initial and final TCIC concentrations in the first lift and dividing that value by the amount of time required for treatment of soil in that cell in the first lift. The values shown represent the range measured for the eight treatment subplots.

TABLE 2 - OPERATING PARAMETERS

Parameter	Site Conditions	Measurement Procedure / Comment*
PAH degraders (cfu/gm)	$1.0x10^5$ - $5.0x10^7$ (Lift 1) $7.0x10^2$ - $4.5x10^6$ (Lift 2) No values were determined for Lift 3.	"Replica Plating Method for Estimating Phenanthrene-Utilizing and Phenanthrene-Cometabolizing Microorganisms," Shiaris, M., Cooney, J., *Applied and Environmental Microbiology*, February 1983, Vol. 45, No. 2, pp. 706-710.
Total heterotrophs (cfu/gm)	$7x10^5$ - $9.9x10^7$ (Lift 1) $6.3x10^5$ - $6.6x10^7$ (Lift 2) $7.0x10^4$ - $1.1x10^7$ (Lift 3)	"Agar-Plate Method for Total Microbial Count," F. Clark, *Methods of Soil Analysis*, Vol. 2, pp. 1460-1465.

*NA - not applicable. Measurement procedures are reported only for those parameters where different procedures are available.

TABLE 3 - DETAIL OF PROJECT COSTS

Cost Element	Cost (1998 $$)
RA Capital Costs:	
Mobilization / Demobilization	$33,769
Site Work / Preparation	
Clearing and grading	16,357 ($4,090/acre x 4 acres)
Excavation (of soil)	7,655 ($0.95/$yd^3$ x 8,100 yd^3)
Fencing	21,666
Site restoration	8,445
Equipment and Appurtenances	
Installation of clay layer	39,931 ($5.70/$yd^3$ x 7,000 yd^3)
Shape retention pond	5,658
Installation of subsurface drainage	48,216
Construction of perimeter containment berms	11,305 ($5.65/ft x 2,000 ft)
Installation of run-on drainage swales	5,928 ($1.98/ft x 3,000 ft)
Installation of irrigation system	15,802
Rental of tractor and tiller	10,653
Non-Process Equipment	
Purchase of Level D personal protective equipment	2,052
Total Capital Cost	**227,437**

APPENDIX A -- REMEDIAL ACTION REPORT
U CREOSOTE, LIVE OAK, FL (OU 2)

TABLE 3 - DETAIL OF PROJECT COSTS

Cost Element	Cost (1998 $$)	
RA Operating Costs (January 19 - July 24, 1998):		
Direct Labor		
Operation of tiller and sprayer	15,232	
Direct Materials (includes utility and fuel costs)		
Diesel fuel / fertilizer / inoculum seed cultures	3,251	
Spread contaminated soil	38,551 ($4.76/$yd^3$ x 8,100 yd^3)	
Equipment Overhead		
Maintenance / repair of site vehicles	4,292	
Analytical (related to technology performance, not compliance monitoring)		
Use of on-site laboratory	64,700	
Disposal of Residuals		
Highly contaminated sludge	3,299 (7,500 yd^3)	
Total RA Operating Costs		**129,325**
Total RA Cost		**356,762**
Projected O & M Cost (Sept. 1998 - Sept. 1994)		
Semiannual groundwater monitoring (five-year total)	21,000	
Total Projected O & M Costs		**21,000**

Appendix B - PRELIMINARY CLOSE OUT REPORTS

These Sample Preliminary Close Out Reports are based on an actual Superfund sites, but some information has been altered for illustrative purposes.

Content and format of actual Preliminary Close Out Reports prepared may vary from these samples due to considerations such as project lead and support roles, availability of information, and site-specific conditions.

For more about preparing a Preliminary Close Out Report, refer to OSWER Directive 9320.2-9A-P, "Close Out Procedures for National Priorities List Sites," EPA 540-R-98-016.

Appendix B - Sample Preliminary Close Out Reports

Preliminary Close Out Report

Waste-Be-Gone Disposal Corp. Site

Dumpsburg, Refuse County, Iowa

I. INTRODUCTION

This Preliminary Close Out Report documents that the U.S. Environmental Protection Agency (EPA) completed construction activities at the Waste-Be-Gone Disposal Corp. site in accordance with *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P). EPA and the Iowa Department of Environmental Protection (State) conducted a pre-final inspection on June 2, 1999, and determined that the contractors have constructed the remedy in accordance with remedial design (RD) plans and specifications, and no further response is anticipated. EPA and the State have initiated the activities necessary to achieve performance standards and site completion.

II. SUMMARY OF SITE CONDITIONS

Background

The Waste-Be-Gone Disposal Corp. site is a 40-acre facility located in Dumpsburg, Refuse County, Iowa. The site is in a rural area in the south central portion of the State, near the Missouri border. Approximately 180 persons live and work within one mile of the site. The majority of this population lives to the east of the site and obtains drinking water from a public supply. The nearest residential area, a small subdivision of 28 persons, is approximately one-half mile to the east.

Waste-Be-Gone Disposal has operated the site as a disposal facility since 1965. Originally, the facility accepted only solid waste from residential sources. However, the facility accepted small quantities of pesticides and other organic wastes generated by the local agricultural industry from 1969 to 1971. Site records indicate that the majority of pesticides and organic wastes were disposed of in the southeastern portion of the site. Additionally, site operators occasionally sprayed waste oil on the dirt access roads as a dust suppressant.

Through initial investigations of the site, EPA determined that the following contaminants of concern were present in surface soil, with lower concentrations of these contaminants found in underlying soil areas:

- Pesticides (including aldrin, 0.35 milligrams per kilogram (mg/kg); chlordane, 70 mg/kg; dichlorodiphenyl trichloroethane (DDT), 211 mg/kg; and toxaphene, 712 mg/kg);
- Solvents (including acetone, 100 mg/kg, and toluene, 75 mg/kg); and
- Metals (including arsenic, 537 mg/kg).

These soil contaminants posed the greatest risk to human health through dermal contact. Concentrations of contaminants in the ground water beneath the site have been, and continue to be, below health-based levels, and therefore, do not pose a threat.

EPA proposed the site to the National Priorities List (NPL) on December 30, 1987 (47 FR 58476), and added it to the final list on September 8, 1988 (48 FR 40674).

Remedial Construction Activities

On June 28, 1991, the Regional Administrator signed a Record of Decision (ROD) documenting the remedial action (RA) for Operable Unit 1 (OU1), which included implementing institutional controls and installing ground water monitoring wells and performing sampling and analysis as an interim remedy. A second ROD on November 9, 1995,

selected the following remedy to address OU2:

- Sampling and analysis of soil to define the estimated lateral and vertical extent of contamination;
- Excavating highly contaminated surface soil, primarily from the southeastern portion of the site, which exceeds health-based performance standards specified in the ROD;
- Treating the contaminated soil on-site using soil washing followed by solidification / stabilization technologies and consolidating treatment residuals in the main landfill area;
- Backfilling the excavated areas with clean impermeable fill, regrading, and revegetating;
- Placing a multi-media Resource Conservation and Recovery Act (RCRA) cap on the landfill with subsequent revegetation;
- Implementing site access and groundwater use restrictions; and
- Continuing groundwater monitoring.

Health-based performance standards specified in the ROD are: aldrin, 0.25 mg/kg; chlordane, 5 mg/kg; DDT, 10 mg/kg; toxaphene, 3 mg/kg; acetone, 10 mg/kg; toluene, 1 mg/kg; and arsenic, 50 mg/kg. The selected remedy eliminates the principal threat posed by the site by reducing the toxicity and mobility of the highly contaminated materials through treatment, thereby reducing the potential for exposure to pesticides, solvents, and metals detected in surficial soils.

Before beginning the RD, EPA sampled and analyzed surface and subsurface soil primarily in the southeastern portion of the site and along site access roads. The analytical results indicated that approximately 1,375 cubic yards of highly contaminated soil from the southeastern portion of the site and 800 cubic yards from the site access roads would require excavation, treatment, and consolidation within the main landfill area.

On August 21, 1996, EPA processed a work assignment to the Remedial Action Contractor (RAC) to develop a work plan for the RD. The RAC responded with the final work plan on September 4, 1996. The RAC completed the RD on February 10, 1997.

EPA awarded an RA contract on March 23, 1998. EPA and the State conducted remedial activities as planned, and no additional areas of contamination were identified. Next, EPA conducted a pre-final inspection on June 2, 1999, in conjunction with the State, and developed a list of outstanding contract items. The RA activities were performed according to design specifications set forth in the 1997 RD package, including:

- Sampling and analyzing soils to define the area of contamination;
- Constructing on-site treatment systems for soil washing followed by solidification / stabilization;
- Excavating and treating contaminated soils and backfilling the excavated area;
- Consolidating treatment residues in the landfill;
- Regrading, capping, and revegetating the landfill; and
- Constructing a chain-link fence around the perimeter of the site with a locked gate to restrict the access of unauthorized persons and equipment, and posting appropriate warning signs.

During pilot-scale treatability tests, EPA monitored air quality and took dust suppression measures to ensure that contaminated materials did not become an airborne threat. EPA also continued to monitor the groundwater. Contaminant concentrations analyzed within these media did not exceed health-based or regulatory standards.

Remaining activities to be completed by the EPA contractor include periodic adjustments and / or modifications to the constructed remedy to maintain optimum performance, as well as demobilization of on-site facilities no longer required to conduct the remedial action. EPA and the State have not yet concurred on the operational and functional (O&F) period.

No activities using removal authority were conducted at this site.

The Refuse County Recreation Department is investigating the possibility of placing a sports complex on the site. The site appears suitable for this use; however, a source of funds for constructing and operating the complex has not been identified.

III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

EPA and the State reviewed the remedial action contract and construction for compliance with quality assurance and quality control (QA/QC) protocols. Construction activities at the site were determined to be consistent with the ROD, RD plans and specifications, and RD/RA statement of work issued to the RACs contractor.

The subcontractor for construction adhered to the approved construction quality control plan (CQCP). The construction quality assurance plan (CQAP) incorporated all EPA and State requirements. All confirmatory inspections, independent testing, audits, and evaluations of materials and workmanship were performed in accordance with the construction drawings, technical specification and CQAP. Construction quality assurance was performed by the RAC contractor firm, which maintained a constant on-site presence. The EPA RPM and State regulators visited the site approximately three times per month during construction activities to review construction progress and evaluate and review the results of QA/QC activities. Deviations or non-adherence to QA/QC protocols, drawings, or specifications were properly documented and resolved.

The Quality Assurance Project Plan (QAPP) incorporated all EPA and State QA/QC procedures and protocol. EPA analytical methods were used for all confirmation and monitoring samples during RA activities. Procedures and protocol followed for soil sample analysis during the RA were conducted using a laboratory under contract to the Contract Laboratory Program (CLP). The air sample analysis followed the EPA protocols in the *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*. EPA and the State determined that analytical results are accurate to the degree need to assure satisfactory execution of the RA.

IV. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

The following activities remain for the Waste-Be-Gone Disposal site:

Task	Estimated Completion	Responsible Organization
1) Approve O&M Plan	06/30/00	EPA/State
2) Complete Final Inspection	06/02/01	EPA/State
3) Determine Remedy O&F	06/02/01	EPA/State
4) Approve RA Report	08/02/01	EPA/State
5) Five-Year Review	03/30/03	EPA
6) Approve Final Close Out Report	04/01/03	EPA
7) Deletion From NPL	09/30/03	EPA

V. SUMMARY OF REMEDIATION COSTS

The original cost estimate to implement the remedial action described in the ROD for operable unit 2 (OU2) was $14 million (net present worth). Costs were estimated for an anticipated 30-year O & M time period and a discount rate of 7% was used in the ROD estimate. More detailed cost estimate documentation can be found in the Feasibility Study for OU2.

The bid price for the project was $15 million. This was due to the need for additional aquifer and plume data to optimize the design of the extraction well system. An additional 30 monitoring wells at 19 locations were needed because the RI data was inadequate to design the selected remedial action.

At the time that this Preliminary Closeout Report was prepared, all of the project costs have not yet been reported for OU2. The ROD estimate for the capital costs of OU1 was $3 million. The final RA cost for OU1 is $3.6 million (more detailed RA cost information can be found in the RA report for OU1). For OU2, approximately $15 million has been expended to date for RA construction, with another $1 million anticipated due to lagging costs and shakedown period refinements. Final RA costs for OU2 will be documented in the RA report. RA cost growth from the bid estimate of $15 million to the anticipated final RA costs of $19 million is due to change orders associated with an unanticipated increase in the total volume of contaminated soil requirement excavation and treatment. Annual O & M expenditures have increased from the $400,000 originally estimated in the ROD to $500,000 due to an increase in the number of monitoring wells that need to be sampled.

VI. FIVE-YEAR REVIEW

Hazardous substances will remain at the site above levels that allow unlimited use and unrestricted exposure after the completion of the remedial action. Pursuant to CERCLA section 121(c) and as provided in the current guidance on Five Year Reviews: OSWER Directive 9355.7-02, *Structure and Components of Five-Year Reviews*, May 23, 1991, OSWER Directive 9355.702A, *Supplemental Five-Year Review Guidance*, July 26, 1994, and the *Second Supplemental Five-Year Review Guidance*, December 21, 1995, EPA must conduct a statutory five-year review. The Five-Year Review Report will be completed prior to March 2003 (five years after RA onsite mobilization).

(Signature) *(Date)*

Director, Waste Management Division Date

Appendix B - Sample Preliminary Close Out Reports

Preliminary Close Out Report

Miller & Metal Smelting Corp. Site

Meltstown, Slag County, Colorado

I. INTRODUCTION

This Preliminary Close Out Report documents that the U.S. Environmental Protection Agency (EPA) completed all construction activities for the Miller's Metal Smelting Corp. site in accordance with *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P). EPA and the Colorado Department of Health (State) conducted a pre-final inspection on May 16, 1995, and determined that the potentially responsible parties (PRPs) constructed the remedy in accordance with remedial design (RD) plans and specifications. The PRPs have initiated activities necessary to achieve performance standards and site completion.

II. SUMMARY OF SITE CONDITIONS

Background

The Miller's Metal Smelting Corp. site is a 75-acre lead smelter in Meltstown, Slag County, Colorado. This site is just south of Midcounty Road and east of Evergreen Street. Approximately 230 persons live and work within a one-mile radius of the site. The majority of this population lives to the west of the site near Meltstown, and most obtain drinking water from a public supply. Six private wells are located within one mile of the site.

Miller's Metal Smelting acquired the facility in 1956 from Carpenter Refining Corp. and operated it until 1981. The facility had served as a primary lead smelter since the turn of the century. Throughout this time, ore typically was brought to the smelter via rail cars and stored in several on-site facilities. Waste generated from the smelting process included: a hot speiss from the dross plant which was pumped into the unlined speiss pond, process waste water that was sent to Simpson Pond, and fugitive air emissions from the smelter stack.

Contaminants of concern at the Miller's Metal Smelting site include arsenic, cadmium, and lead. The site posed potential threats to human health and the environment through dermal contact or ingestion of contaminated soil, sediment, groundwater, and surface water, as well as inhalation of airborne contaminated-particulate matter.

EPA proposed the site to the National Priorities List (NPL) on September 8, 1988 (53 FR 40674), and added it to the final list on September 21, 1989 (54 FR 37070).

Remedial Construction Activities

On December 31, 1992, the Regional Administrator signed a Record of Decision (ROD) selecting the following remedy:

- Replacing the process ponds with steel tanks; installing secondary containment for the tanks; and treating the process waste water via co-precipitation prior to storage in the steel tanks;
- Excavating and disposing off-site approximately 150,000 cubic yards of contaminated soil and sediments, followed by sampling;
- Pumping and treating contaminated groundwater via co-precipitation for approximately 10 years, with groundwater monitoring; and
- Conducting surface water monitoring for 10 years after completion of the remedial action (RA).

The ROD specified cleanup levels for soils and sediments, wastewater, and groundwater. For soils and sediments contaminated with arsenic, cadmium, and lead, the ROD specified excavation to a depth of 18 inches or until the 10^{-6} risk level is achieved. The cleanup levels for wastewater, containing arsenic, cadmium, and lead, were 0.02 milligrams

per liter (mg/l) for arsenic; 0.01 mg/l for cadmium; and 0.004 mg/l for lead. Lastly, the ROD specified cleanup levels for groundwater, reducing levels of arsenic, cadmium, and lead to maximum contaminant levels of 0.05 mg/l, 0.01 mg/l, and 0.05 mg/l, respectively.

In a consent decree signed with EPA, the PRPs agreed to perform the remedial design / remedial action (RD/RA). The RD was conducted in conformance with the approved ROD. The RA was initiated on November 2, 1993, when the PRP awarded the RA contract. The contractor conducted remedial activities as planned, and no additional areas of contamination were identified. EPA and the State conducted a pre-final inspection on May 16, 1995, which included a description and schedule for correcting minor construction contract items by the contractor. These "punch" list items included re-establishing the turf around the pumphouse; installation of fire extinguishers, and removal of the construction trailer. EPA and the State determined that the following RA activities were constructed and/or completed according to the ROD design specifications:

- Removing and treating process waste waters via co-precipitation, as well as installing storage tanks and containment systems;
- Excavating and disposing off-site contaminated soil and sediments, followed by sampling to characterize the excavated area;
- Backfilling the excavated area with clean soil; and
- Pumping and treatment of contaminated groundwater via co-precipitation.

The contractor began pumping and treating the contaminated groundwater via co-precipitation and will continue this process for an estimated 10 years. Remaining activities to be completed by the contractor include any periodic adjustments and / or modifications to the constructed remedy to maintain optimum performance. EPA and the State have approved the operations and maintenance (O&M) plan.

No activities were conducted using removal authority at this site.

No reuse is currently planned for the site.

III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

EPA and the State reviewed the remedial action contract and construction for compliance with quality assurance and quality control (QA/QC) protocols. Construction activities at the site were determined to be consistent with the ROD, RD plans and specifications, and RD/RA statement of work in the consent decree.

The PRP construction contractor adhered to the approved construction quality control plan (CQCP). The construction quality assurance plan (CQAP) incorporated all EPA and State requirements. All confirmatory inspections, independent testing, audits, and evaluations of materials and workmanship were performed in accordance with the construction drawings, technical specification and CQAP. Construction quality assurance was performed by an independent firm retained by the PRP. The EPA RPM and State regulators visited the site approximately twice per month during construction activities to review construction progress and evaluate and review the results of QA/QC activities. Deviations or non-adherence to QA/QC protocols, drawings, or specifications were properly documented and resolved.

The Quality Assurance Project Plan (QAPP) incorporated all EPA and State QA/QC procedures and protocol. EPA analytical methods were used for all confirmation and monitoring samples during RA activities. Sampling of soil, sediments, and water followed the EPA protocol *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods.* EPA and the State determined that analytical results are accurate to the degree need to assure satisfactory execution of the RA.

IV. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

The following activities will be completed according to the following schedule:

Task	Estimated Completion	Responsible Organization
Complete Punch List Items	09/15/95	PRP
Complete Final Inspection	01/15/97	EPA/State
Determine Remedy O&F	01/15/97	EPA/State/PRPs
Approve Interim RA Report	03/15/97	EPA/State/PRPs
Five-Year Review	05/30/00	PRP
Complete Surface Water Monitoring	10/01/05	PRP
2nd Five-Year Review	05/30/05	PRP
Complete Ground Water Pump & Treat	12/31/05	PRP
Pre-Certification Inspection	01/05/06	EPA/State/PRP
Approve Final RA Report	01/31/06	EPA
Approve Final Close Out Report	03/30/06	EPA
Delete Site	06/30/06	EPA

V. SUMMARY OF REMEDIATION COSTS

The original cost estimate to implement the remedial action described in the ROD was $17.5 million. The PRPs reported that the construction contract award amount was $20.3 million and the estimated final construction cost is $22.8 million. The increase in cost from ROD to RA award is attributed to an improved definition of the scope of the project in going from the RI/FS to the final design of the project. The cost growth during construction was caused mainly by an increase in the estimated quantity of contaminated soil that was excavated and shipped off-site for disposal.

The ROD estimate for annual maintenance costs was $650,000. The actual annual cost of maintenance is reported by the PRPs to be approximately $720,000, well within the accuracy of the ROD estimate. EPA's oversight cost for the construction was $340,000, and $27,000 a year for the oversight of annual maintenance activities.

VI. FIVE-YEAR REVIEW

Upon completion of this remedy, no hazardous substances will remain on-site above levels that prevent unlimited use an unrestricted exposure. However, because this remedy will require greater than five years to achieve these levels, pursuant to CERCLA section 121(c) and as provided in the current guidance on Five Year Reviews [OSWER Directive 9355.7-02, *Structure an components of Five-Year Reviews*, May 23, 1991, OSWER Directive 9355.702A, *Supplemental Five-Year Review Guidance*, July 26, 1994, and the *Second Supplemental Five-Year Review Guidance*, December 21, 1995], EPA must conduct a policy five-year review. Therefore, the Five-Year review will be completed prior to May 2000 (five years after construction completion date).

Director, Waste Management Division

Date

Appendix C - FINAL CLOSE OUT REPORT

This Sample Final Close Out Report was based on an actual Superfund site, but some information has been altered for illustrative purposes.

Content and format of actual Final Close Out Reports prepared may vary from these samples due to considerations such as project lead and support roles, availability of information, and site-specific conditions.

For more about preparing a Final Close Out Report, refer to OSWER Directive 9320.2-9A-P, "Close Out Procedures for National Priorities List Sites," EPA 540-R-98-016.

Appendix C - Sample Final Close Out Report

Final Close Out Report

Metal Waste Products Inc. Site

Wasteville, Hazard County, California

I. INTRODUCTION

This Final Close Out Report documents that the U.S. Environmental Protection Agency (EPA) completed all response actions for the Metal Waste Products, Inc. site in accordance with *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P).

II. SUMMARY OF SITE CONDITIONS

Background

The Metal Waste Products, Inc. site covers 9 acres in Wasteville, Hazard County, California. The site is situated in an industrial area of town, approximately 2,000 feet downstream from the confluence of the American and Sacramento Rivers. Approximately 400 feet northwest and upstream of the site, is the surface water intake supplying water for up to 145,000 people in Wasteville. Concern for impact on this water supply was the primary reason the site was proposed for the National Priorities List (NPL) on December 30, 1982.

Between 1950 and 1965, the company salvaged all grades and types of metal, including railroad cars, army tanks, batteries, and some electrical transformers. The total quantities of hazardous or non-hazardous materials handled or disposed of at this site are unknown. In 1965, the State of California purchased the site as easement for the pending construction of Interstate 5 (I-5). By 1967, I-5 and the realigned Main Street covered 6.7 acres of the original 9-acre site.

Remedial Investigation / Feasibility Study

Between 1981, when the site first came to the attention of the California Department of Health Services (DHS), and 1985, the 2.3 acres not covered by roadway structures and adjacent areas were sampled seven times. EPA performed a remedial investigation (RI) between June 1983 and June 1984. Lead, copper, and zinc were detected in the top foot of soil throughout the 2.3 acres at levels significantly higher than State criteria. Specifically, the maximum concentrations detected in the 27 surface samples from the 2.3 acres were 13,600 parts per million (ppm) lead, 3,450 ppm copper, and 19,700 ppm zinc. Of 48 subsurface samples from the 2.3-acre area, contamination was detected at only four locations at depths ranging from 3 to 10 feet below ground level. The final RI report summarized all site analyses results.

On February 14, 1985, EPA released a draft of the Feasibility Study (FS) for a three-week public comment period. The FS provided an in-depth summary and discussion of site sampling activities, a public health assessment, and an analysis of remedial alternatives. The FS concluded that no action at the site could result in a potential health threat to the public through dermal contact with soil contaminated with lead. The FS then provided a detailed analysis of capping, excavation and off-site removal, encapsulation, and no action remedial alternatives. No activities using removal authority were conducted at this site.

ROD Findings

On May 9, 1985, consistent with the Remedy Delegation Report of March 8, 1985, the Regional Administrator approved a Record of Decision (ROD), which selected excavation and off-site disposal of all soil contaminated with lead above background levels (200 ppm). This ROD was amended on October 4, 1985, based on recent guidance allowing clean site closure action levels to exceed background levels where EPA can demonstrate that the residual contamination would pose no threat to human health or the environment. Based on cleanup objectives at other

Federal and State hazardous waste sites, as well as recommendations from the U.S. Centers for Disease Control, the 500-ppm lead cleanup level was determined to be protective of health and the environment at the site.

Design Criteria

On June 10, 1985, EPA issued an Interagency Agreement for $72,500 to the USACE to perform the remedial design. The Fund-lead RD was completed on August 28, 1985. The project was also a Fund-lead construction.

Between April 1985 and September 1985, EPA and the State negotiated a State Superfund Contract (SSC). The SSC was reviewed and revised five times before a final contract was signed on April 1, 1986. The SSC provided that the State pay 10% of the remedial action costs and assume responsibility for all of the operation and maintenance (O&M) requirements, as required by CERCLA.

Between October 1985 and March 1986, USACE held three open bid periods on the remedial action construction contract. The contract award was delayed primarily because of difficulties in implementing the previously untested EPA Off-Site Disposal Policy (*Procedures for Planning and Implementing Off-Site Response Actions,* EPA Memorandum, May 6, 1985). USACE awarded a contract on July 17, 1986, to U.S. Cleanup Contractors. The contractor identified an off-site disposal facility in compliance with the Superfund off-site policy.

Remedial Construction Activities

On August 18, 1986, EPA held a public meeting and gave a presentation to the City of Wasteville Toxics Commission on pending cleanup activities. EPA issued a Notice to Proceed to the contractor on August 20, 1986. After thorough review, the final work plan was approved October 15, 1986. On-site activities (specifically, background air monitoring and site mobilization) began on October 5, 1986. On November 20, 1986, EPA held a well-attended on-site press conference.

Excavation of contaminated soil began October 5, 1986, and the first off-site shipment of contaminated soil occurred December 2, 1986. During the on-site stockpiling of material in October and November of 1986, the contractor discovered the first of many unanticipated subsurface objects. These items included concrete foundations and footings, gas cylinders, drums, and sewer lines.

The contractor sampled all material discovered to identify any hazardous materials, except for concrete which was taken directly to the approved disposal facility. Any material found to contain lead at levels greater than 500 ppm or any RCRA priority pollutant at levels higher than *de minimus* levels was also removed to the approved facility. In all, the contractor removed approximately 11,000 tons of contaminated material, over twice the amount originally estimated in the ROD. Following the removal of all contaminated soil and debris, the site was covered with three feet of clean fill material, regraded to ensure proper drainage, and hydro seeded to prevent soil erosion.

The contractor completed remedial construction in early May 1987 and EPA, USACE, and DHS held a pre-final inspection on May 27, 1987. Establishing vegetation required an additional 60 days before the construction contract could be termed completed. On July 26, 1987, USACE conducted the final inspection in conjunction with State and EPA representatives and determined that the remedial action had been successfully executed.

On March 30, 1988, USACE submitted a Remedial Action Report signifying successful completion of construction activities.

Community Relations Activities

The water supply was the object of considerable public interest in Wasteville. As a result, the Region's community relations staff conducted an active campaign to ensure that the residents were well-informed about the activities at the site. Community relations activities included: public meetings, an on-site press conference, routine publication of progress fact sheets, and a final close-out meeting and site tour when site construction activities were completed.

III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

EPA, the USACE, and the State reviewed the remedial action contract and construction for compliance with quality assurance and quality control (QA/QC) protocols. Construction activities at the site were determined to be consistent with the ROD and the RD plans and specifications.

The construction contractor adhered to the approved construction quality control plan (CQCP). The construction quality assurance plan (CQAP) incorporated all USACE and EPA requirements. All confirmatory inspections, independent testing, audits, and evaluations of materials and workmanship were performed in accordance with the construction drawings, technical specification and CQAP. Construction quality assurance was performed by the USACE. The EPA RPM and State regulators visited the site approximately three times per month during construction activities to review construction progress and evaluate and review the results of QA/QC activities. Deviations or non-adherence to QA/QC protocols, drawings, or specifications were properly documented and resolved.

All procedures and protocol followed for groundwater, soil and air sample analysis during the remedial action are well documented. Only EPA analytical methods, or where no EPA methods existed, other Federally approved methods were used (such as National Institute of Occupational Safety and Health methods for the analysis of airborne contaminants). The soil and groundwater samples were analyzed by a laboratory under contract to the Contract Laboratory Program (CLP). The EPA Field Investigation Team (FIT) and the EPA Environmental Monitoring Systems Laboratory sampled and analyzed the air samples. EPA, USACE, and the State determined that analytical results are accurate to the degree need to assure satisfactory execution of the RA.

IV. MONITORING RESULTS

The contract for the remedial action detailed a rigorous sampling and analysis program for the remedial action. Specifically, sampling was required and implemented to: 1) protect the off-site public, 2) protect on-site workers, and 3) confirm compliance with RA objectives. The sampling program included:

- Daily perimeter air monitoring for total particulates, respirable particulates, total lead;
- Daily personnel air sampling of exclusion-zone workers for copper, lead, and zinc;
- Random instantaneous on-site and perimeter air sampling for total particulates;
- Confirmatory soil sample(s) for all site contaminants, wherever additional contamination was suspected or known to occur;
- Complete sampling of backfill soil for all site contaminants; and
- Ground-water samples for all site contaminants.

The contractor excavated and removed additional soil to the approved disposal facility wherever lead was detected at a level above 500 ppm or any site contaminant was detected at a level higher than acceptable risk standards. Overall, contaminated soil was excavated to depths greater than one foot from over 50 percent of the 2.3-acre site, resulting in the removal of 11,000 cubic yards of material. Subsequent sampling confirmed that this quantity was sufficient to ensure that all contamination was removed from the site, and that the cleanup level for lead of 500 ppm specified in the ROD was achieved.

The Final Technical Report and Contractor Quality Control Summary Report contains documentation of the complete results and accuracy of the confirmatory sampling program.

V. SUMMARY OF OPERATION AND MAINTENANCE

The cleanup of the site complies with the "clean closure" requirements, consistent with the Resource Conservation and Recovery Act of 1976, as amended, 40 CFR section 264.111. Site operation and maintenance (O&M) activities to be performed include annual inspections of the site to ensure erosion control measures are effective, routine mowing, and maintenance of the perimeter fence. Per the SSC, the State has assumed all responsibility for O&M.

VI. SUMMARY OF REMEDIATION COSTS

The original cost estimate to implement the remedial action described in the amended ROD (10/4/85) was $2 million. The construction contract award amount was $1.95 million. Due to the 21 above noted change orders, the final remedial action cost totaled $3,991,315. This cost increase is attributable to the discovery of many unanticipated subsurface objects. A breakdown of the final costs can be found in the Remedial Action Report for this project. The ROD estimated annual maintenance costs of $10,000, as compared with State actual costs of $13,000.

VII. PROTECTIVENESS

This site meets all the site completion requirements as specified in OSWER Directive 9320.2-09-A-P, *Close Out Procedures for National Priorities List Sites*. Specifically, confirmatory sampling verifies that the site has achieved the ROD cleanup objective, that all lead has been removed to levels below 500 ppm, and that all cleanup actions specified in the ROD have been implemented. Furthermore, EPA has removed all other contamination detected to acceptable risk levels. Confirmatory ground-water sampling and backfilling the site with clean soil provide further assurance that the site no longer poses any threats to human health or the environment. The only remaining activity to be performed is O&M that the State has guaranteed. A bibliography of all reports relevant to the completion of this site under the Superfund program is attached.

VIII. FIVE-YEAR REVIEW

As a matter of policy, EPA has decided to conduct a Five-Year review at this site. The review will be conducted pursuant to CERCLA 121 (c) and as provided in the current guidance on Five Year Reviews: OSWER Directive 9355.7-02, *Structure and Components of Five-Year Reviews*, May 23, 1991, OSWER Directive 9355.702A, *Supplemental Five-Year Review Guidance*, July 26, 1994, and the *Second Supplemental Five-Year Review Guidance*, December 21, 1995. The Five-Year Review Report will be completed by October 1996.

Approved By:

_____

Regional Administator

IX. BIBLIOGRAPHY

[Include complete citations of all documents relevant to the cleanup of the site.]

Appendix D - NOTICES OF INTENT TO DELETE

These Notice of Intent to Delete Samples are based on an actual Superfund sites, but some information has been altered for illustrative purposes.

Content and format of an actual Notice of Intent to Delete may vary from these samples due to considerations such as project lead and support roles, availability of information, and site-specific conditions.

For more about preparing a Notice of Intent to Delete, refer to OSWER Directive 9320.2-9A-P, "Close Out Procedures for National Priorities List Sites," EPA 540-R-98-016.

Appendix D - Sample Notices Of Intent To Delete

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 300

National Oil and Hazardous Substances Pollution Contingency Plan; National Priorities List

AGENCY: Environmental Protection Agency.

ACTION: Notice of Intent to Delete the Aztec Mountain Mine from the National Priorities List.

SUMMARY: The Environmental Protection Agency (EPA) Region 10 announces the intent to delete the Aztec Mountain Mine site (``the site'') from the National Priorities List (NPL) and requests public comment on this proposed action. The NPL constitutes Appendix B of 40 CFR part 300 which is the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), which EPA promulgated pursuant to section 105 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended. EPA and the State of Washington Department of Ecology (Ecology) have determined that the remedial action for the site has been successfully executed.

DATE: Comments concerning the proposed deletion of this Site from the NPL may be submitted on or before (INSERT DATE 30 DAYS FROM PUBLICATION IN THE FEDERAL REGISTER).

ADDRESSES: Comments may be mailed to: [RPM Name], U.S. Environmental Protection Agency, Region ___, [Street Address], [Mailstop], [City, State Zip Code]

Comprehensive information on this site is available through the Region 10 public docket which is available for viewing by appointment only. Appointments for copies of the background information from the Regional public docket should be directed to the EPA Region 10 Docket office at the following address: SUPERFUND Records Center U.S. Environmental Protection Agency, Region 10, [Street Address], [Mailstop], [City, State Zip Code]

The deletion docket is also available for viewing at the following location:

FOR FURTHER INFORMATION CONTACT: [RPM Name], U.S. Environmental Protection Agency, [Street Address], [Mailstop], [City, State Zip Code], [(XXX) XXX-XXXX or 1-800-XXX-XXXX.]

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Introduction

The U.S. Environmental Protection Agency (EPA) Region 10 announces its intent to delete the Aztec Mountain Mine site in [County, State], from the National Priorities List (NPL) and requests public comment on this proposed action. The NPL constitutes Appendix B of 40 CFR part 300 which is the Oil and Hazardous Substances Pollution Contingency Plan (NCP), which EPA promulgated pursuant to section 105 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended. EPA identifies sites that appear to present a significant risk to public health, welfare, or the environment and maintains the NPL as the list of these sites. EPA and the State of Washington Department of Ecology (Ecology) have determined that the remedial action for the site has been successfully executed.

EPA will accept comments on the proposal to delete this site for thirty (30) days after publication of this document in Federal Register.

Section II of this document explains the criteria for deleting sites from the NPL. Section III discusses the procedures EPA is using for this action. Section IV discusses the Aztec Mountain Mine site and explains how the site meets the deletion criteria.

II. NPL Deletion Criteria

Section 300.425(e)(1) of the NCP provides that releases may be deleted from, or recategorized on the NPL where no further response is appropriate. In making a determination to delete a release from the NPL, EPA shall consider, in consultation with the state, whether any of the following criteria have been met:

(i) Responsible parties or other persons have implemented all appropriate response actions required; or

(ii) All appropriate Fund-financed responses under CERCLA have been implemented, and no further response action by responsible parties is appropriate; or

(iii) The Remedial Investigation has shown that the release poses no significant threat to public health or the environment and, therefore, remedial measures are not appropriate.

Even if a site is deleted from the NPL, where hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and restricted exposure, EPA's policy is that a subsequent review of the site will be conducted at least every five years after the initiation of the remedial action at the site to ensure that the site remains protective of public health and the environment. If new information becomes available which indicates a need for further action, EPA may initiate additional remedial actions. Whenever there is a significant release from a deleted site from the NPL, the site may be restored to the NPL without application of the Hazard Ranking System.

In the case of this site, the selected remedy is protective of human health and the environment. Consistent with the State Superfund Contract, Ecology has agreed to take over operation and maintenance of the site and conduct an annual inspection. EPA has conducted the first five-year review of the final remedy, and will also perform future five-year reviews.

III. Deletion Procedures

The following procedures were used for the intended deletion of this site: (1) All appropriate response under CERCLA has been implemented and no further action by EPA is appropriate; (2) [State] has concurred with the proposed deletion decision; (3) a notice has been published in the local newspapers and has been distributed to appropriate federal, state, and local officials and other interested parties announcing the commencement of a 30-day public comment period on EPA's Notice of Intent to Delete; and (4) all relevant documents have been made available in the local site information repositories.

Deletion of the site from the NPL does not itself create, alter, or revoke any individual's rights or obligations. The NPL is designed primarily for informational purposes and to assist Agency management. As mentioned in section II of this notice, Sec. 300.425(e)(3) of the NCP states that the deletion of a site from the NPL does not preclude eligibility for future response actions.

For deletion of this site, EPA's Regional Office will accept and evaluate public comments on EPA's Notice of Intent to Delete before making a final decision to delete. If necessary, the Agency will prepare a Responsiveness Summary to address any significant public comments received.

A deletion occurs when the Regional Administrator places a final notice in the Federal Register. Generally, the NPL will reflect deletions in the final update following the Notice. Public notices and copies of the Responsiveness Summary will be made available to local residents by the Regional Office.

IV. Basis of Intended Site Deletion

The following site summary provides the Agency's rationale for the proposal to delete this site from the NPL.

Site Background and History

Aztec Mountain Mine is an abandoned heap-leach mining operation located approximately six air miles northwest of Greenville, in Western County, Washington. The site consists of five acres of range land on a 358-acre tract of privately owned land. The site was placed on the NPL in 1984 due to concerns about a cyanide-contaminated leachate pond, saturated mine tailings, and the potential for arsenic and cyanide contamination of the regional ground water aquifer.

The risk assessment identified arsenic and cyanide as the primary contaminants of concern. The Remedial Investigation (RI) identified and evaluated three potential sources of contaminants at the site: the heap leach pile, the unprocessed rock, and the mine drainage water. Potential exposure pathways for contaminants were identified as: On- site soils, on-site surface water, on-site ground water in a shallow aquifer, and off-site ground water in the region. During the RI, the highest arsenic levels found were in the mined material (1080 mg/kg) and in the water from a stock water tank (95 up/l). Both arsenic and cyanide were also found in the perched shallow aquifer just at the edge of the heap leach pile.

The Feasibility Study screened twenty-three various methods of cleaning up the site. From this list, eight alternatives were developed and evaluated against criteria listed in the NCP. Alternatives ranged from capping on-site to treatment and off-site disposal.

Response Actions

The Record of Decision (ROD) for Aztec Mountain Mine was signed on March 27, 1990, and included a number of construction elements to implement the Remedial Action. In October 1994, EPA completed an Explanation of Significant Differences (ESD) to document changes in the Remedial Action due to unforeseen conditions encountered at the site during implementation of the selected remedy. The remedial action at the site ultimately included:

--Consolidating and contouring contaminated mine waste overburden and tailings,

--Covering and capping the site with a soil and clay cap,

--Fencing the site to protect the cap and allow seeded grass cover to develop,

--Closure of the mine entrance and diversion of the mine drainage so that it flows away from the site, and

--Deed restrictions on property to protect the cap.

Construction was completed during 1992 and the deed restrictions were finally obtained in December 1996.

The five-year review inspection occurred on May 27, 1997, and determined that the remedial objectives have been achieved. The constructed remedy is performing as designed and is controlling the risks to human health and the environment as specified in the ROD and ESD. The cap was in excellent shape with no evidence of subsidence, erosion, or animal burrows. The grass cover is well established and provides thorough coverage of the cap; minimal weeds and woody vegetation were growing on the cap. The mine entrance and mine vent were both closed and covered with rocks.

Cleanup Standards

The remedial action cleanup activities at the Aztec Mountain Mine site are consistent with the objectives of the NCP and will provide protection to human health and the environment. The cleanup standards for the heap leach pile and mine dump materials and the surrounding soils are 200 mg/kg for arsenic and 95 mg/kg for total cyanide. According to the data obtained during the construction work, the cyanide in the soils is below detection (0.5 mg/kg), and the concentrations of arsenic that remain in the areas that were cleaned up are less than 100 mg/kg. Risks at the site have been reduced below the Hazard Index of 1.0 or health based levels; and for arsenic, a human carcinogen, the cancer risk factor has been reduced below one in ten thousand.

The major source of contaminants identified in the ROD, the rock material from the mining operations (heap and mine dump), has been addressed. The mine drainage was reevaluated in the Explanation of Significant Differences and it was determined that the mine drainage did not pose an ecological threat. According to the risk assessment and amended risk assessment, the inhalation and ingestion of the contaminated soils were the major routes of exposure. The arsenic-laden waste rock from the mine was contained and capped. The cleanup also reduced the impacts to the ground water by diverting the run-on water away from the capped mine waste and by limiting potential leachate generation.

Operation and Maintenance

The site is designed to require very little maintenance. The area is remote and the semi-arid climatic conditions suggest that only minimal maintenance is expected. The mined rock material under the cover is not expected to settle which is often the major cause of cap disturbance. The rainfall is low with an annual average precipitation of 11 inches/year which is primarily as snow and spring rain. It is expected that Ecology personnel, per the State Superfund Contract, will be able to provide the annual maintenance with a minimal amount of work.

Five-Year Review

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund) requires a five-year review of all sites with hazardous substances remaining above the health-based levels for unrestricted use of the site. Since the cleanup of the Aztec Mountain Mine site utilized containment of the hazardous materials as the method to reduce the risk, the five-year review process will be used to insure that the cap is still intact and blocking exposure pathways for human health and the environment. As indicated above, EPA has conducted the first statutory five-year review and has determined that the remedy selected for Aztec Mountain Mine remains protective of human health and the environment. For future five-year reviews, EPA will review Ecology's annual reports on the operation and maintenance at the site and perform a five-year review inspection. EPA plans to complete the next Five-Year Review prior to May 27, 2002.

Community Involvement

EPA published its Community Relations Plan in December 1987, after interviews with local residents and officials. An information repository was established at the County Courthouse and all of the documents used to make the decision were placed there before the final Record of Decision was signed. All other reports and fact sheets were sent to the repository as they were completed. Those individuals on the mailing list were informed by fact sheet prior to construction activities on-site. No public meetings have been requested thus far.

Applicable Deletion Criteria

One of the three criteria for site deletion specifies that EPA may delete a site from the NPL if ``all appropriate Fund-financed response under CERCLA has been implemented, and no further response action by responsible parties is appropriate.'' 40 CFR 300.425(e)(1)(ii). EPA, with the concurrence of the State of Washington through the Department of Ecology, believes that this criterion for deletion has been met. Subsequently, EPA is proposing deletion of this site from the NPL. Documents supporting this action are available from the docket.

State Concurrence

In a letter dated June 17, 1997, the Washington Department of Ecology concurs with the proposed deletion of the Aztec Mountain Mine Superfund site from the NPL.

Dated: July 17, 1997.

John Doe, Acting Regional Administrator, U.S. EPA Region 10.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 300

National Oil and Hazardous Substances Pollution Contingency Plan National Priorities List

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of intent to delete the SF Industries Landfill Site from the National Priorities List

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SUMMARY: The Environmental Protection Agency (EPA) Region II announces its intent to delete the SF Industries Landfill Site (Site) from the National Priorities List (NPL) and requests public comment on this action. The NPL constitutes Appendix B of 40 CFR part 300 which is the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), which EPA promulgated pursuant to section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C 9601 et seq. EPA and the New Jersey Department of Environmental Protection (NJDEP) have determined that the Site poses no significant threat to public health or the environment and, therefore, further remedial measures pursuant to CERCLA are not appropriate.

DATES: Comments concerning the proposed deletion of this Site for the NPL may be submitted on or before [Insert date 30 days from publication in the Federal Register.]

ADDRESSES: Comments may be mailed to: [RPM Name], Remedial Project Manager, U.S. Environmental Protection Agency, Region 2, [Mailcode] [Street, City, State Zip Code]

The deletion docket and other comprehensive information on this Site is available for viewing at the SF Industries Landfill Site information repository at the following location: Town of Terraville Municipal Building, [Street Address, City, State Zip Code] (XXX) XXX-XXXX.

FOR FURTHER INFORMATION CONTACT: [RPM Name], Remedial Project Manager, U.S. Environmental Protection Agency, Region [___], [Mailcode] [Street, City, State Zip Code], (XXX) XXX-XXXX.

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Introduction

EPA Region II announces its intent to delete the SF Industries Landfill Site, which is located in Terraville, Terra County New Jersey, from the NPL, which constitutes Appendix B of the NCP, 40 CFR part 300, and requests comments on this deletion. EPA identifies sites that appear to present a significant risk to public health, welfare, or the environment and maintains the NPL as the list of these sites. As described in Sec. 300.425(e)(3) of the NCP, sites deleted from the NPL remain eligible for remedial actions in the unlikely event that conditions at the site warrant such action.

EPA will accept comments on the proposal to delete this Site for thirty (30) days after publication of this document in the Federal Register.

Section II of this notice explains the criteria for deleting sites from the NPL. Section III discusses the procedures that EPA is using for this action. Section IV discusses the Site and explains how the Site meets the deletion criteria.

II. NPL Deletion Criteria

Section 300.425(e) of the NCP provides that sites may be deleted from the NPL where no further response is appropriate. In making a determination to delete a site from the NPL, EPA in consultation with NJDEP, shall consider whether any of the following criteria have been met:

(i) Responsible parties or other parties have implemented all appropriate response actions required; or

(ii) All appropriate responses under CERCLA have been implemented, and no further action by responsible parties is appropriate; or

(iii) The remedial investigation has shown that the release of hazardous substances poses no significant threat to public health or the environment and, therefore, remedial measures are not appropriate.

Even when a site is deleted from the NPL, where hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and restricted exposure, EPA is required, by statute or policy, to conduct a subsequent review of the site at least every five years after the initiation of the remedial action at the site to ensure that the site remains protective of public health and the environment. If new information becomes available which indicates a need for further action, EPA may initiate additional remedial actions. Whenever there is a significant release from a deleted site from the NPL, the site may be restored to the NPL without application of the Hazard Ranking System.

III. Deletion Procedures

The following procedures were used for the intended deletion of this Site: (1) EPA Region II issued a Record of Decision (ROD) which documented the remedial action activities; (2) all appropriate responses under CERCLA have been implemented as documented in the Final Close-Out Report dated September 25, 1997; (3) the NJDEP concurred with the proposed deletion; (4) a notice has been published in the local newspaper and has been distributed to appropriate Federal, State and local officials and other interested parties announcing the commencement of a 30-day public comment period on EPA's Notice of Intent to Delete; and (5) all relevant documents have been made available for public review in the local Site information repository.

Deletion of sites from the NPL does not itself create, alter, or revoke any individual's rights or obligations. The NPL is designed primarily for informational purposes and to assist Agency management of Superfund sites. As mentioned in section II of this document, Sec. 300.425 (e)(3) of the NCP states that the deletion of a site from the NPL does not preclude eligibility for future response actions.

For deletion of this Site, EPA's Regional Office will accept and evaluate public comments before making a final decision to delete. If necessary, the Agency will prepare a Responsiveness Summary to address any significant public comments received.

A deletion occurs when the Regional Administrator places a final notice in the Federal Register. Generally, the NPL will reflect deletions in the final update following the notice. Public notices and copies of the Responsiveness Summary will be made available to local residents by the Regional Office.

IV. Basis for Intended Site Deletion

The following summary provides the Agency's rationale for the proposal to delete this Site from the NPL.

Site Background and History

The Site is located along New Road, approximately one-half mile northwest of U.S. Route 1, in Terra County, New Jersey. The landfill occupies an area of approximately 68 acres. A significant portion of the land surrounding the Site is wooded. It is owned by SF Industries (SFI) of Terraville. SFI (Site), which operated for more than 20 years as a solid waste landfill, accepted municipal refuse, pesticides, chemical wastes and hazardous wastes.

In June 1980, EPA conducted an investigation of the Site. The sampling results revealed elevated levels of volatile organic compounds in several on-site monitoring wells, as well as on-site surface water sampling locations.

The data from this sampling effort resulted in the Site being proposed for the Superfund NPL on December 30, 1982, and the Site was included on the NPL on September 8, 1983.

In April 1982, SFI and EPA entered into an agreement concerning the remedial efforts to be performed. The agreement was in the form of a Resource Conservation and Recovery Act (RCRA) Administrative Order on Consent (Index No. RCRA-7003XXXXX) which outlined the remedial approach.

Response Actions

The remedial action activities, initiated in February 1983, consisted of the construction of a leachate collection/treatment system, slurry wall, multi-layer cap and gas venting system. The remedial action was completed in September 1985. EPA issued a Record of Decision on September 30, 1987, which affirmed that the remedial action undertaken was consistent with CERCLA, as amended, and to the extent practicable, the NCP.

Cleanup Goals

The May 1993 EPA-approved Post-Remedial Environmental Monitoring Program (PREMP) Work Plan was designed to assess the effectiveness of the completed Remedial Action and evaluate off-Site migration of contaminants. The PREMP was conducted from May 1993 to January 1994 and included the collection of twenty-seven groundwater samples, thirty-four soil samples, eight surface water samples and twelve sediment samples. Post-remedial environmental monitoring indicated that volatile organic compounds (VOCs), semi-VOCs, and inorganic contaminant concentrations have decreased in surface water, groundwater, sediment and soil samples. Therefore, the results from this investigation document the effectiveness of the remedy and indicate there is no significant off-Site migration of contaminants. Although minimal groundwater contamination was detected in the southeastern portion of the Site in the area of monitoring well R-10, regulating the leachate collection system to induce inward gradients appears to have significantly reduced contamination. As part of the overall Site Operation and Maintenance Plan activities, EPA has required SFI to periodically evaluate the effectiveness of the leachate collection system and routinely monitor well R-10 and downgradient surface water quality to ensure the effectiveness of the remedy. The multi-layered cap has effectively reduced infiltration, as indicated by the significant reduction in the amount of leachate generation over time.

The leachate collection system and slurry wall have reduced leachate levels within the landfill, resulting in inward hydraulic gradients over much of the Site. Historically, leachate was pre-treated to reduce iron concentrations in the effluent. SFI has been notified by the Sunny Brook Regional Sewage Authority (SBRSA) of a change in SFI's license classification from a Class 1 to Restricted Industrial User. SFI is no longer required to treat for iron. SFI discharges directly to the sanitary sewer line while still monitoring monthly per the requirements of the license issued by the SBRSA. Also, the gas venting system is operating in accordance with the existing NJDEP Air Pollution Control Program permit and a series of perimeter gas monitoring probes are periodically monitored.

The cleanup of the Site was performed in compliance with "clean closure" requirements and consistent with the Resource Conservation and Recovery Act of 1976, as amended, CERCLA, as amended, and to the extent practicable, the NCP.

Operation and Maintenance

Pursuant to the 1989 Administrative Order, SFI has committed to performing Operation and Maintenance (O&M) activities at the Site. In August 1997, EPA approved the Site O&M Plan, which defines the long-term O&M activities for the Site. The O&M Plan addresses those activities required for controlling the groundwater gradient in the area of monitoring well R-10, maintaining the effectiveness of the response action, and monitoring Site conditions to determine the occurrence of any environmental threat. O&M activities include periodic inspections and monitoring, certain institutional controls, periodic leachate collection and treatment measures, or any other activities necessary to ensure the continued protection of public health and the environment.

Project Managers from EPA and SFI conducted a Five-Year Review on September 12, 1995. The purpose of this inspection was to determine the current status of the Site and the adequacy of the Site cleanup and that the remedial action remains protective of human health and the environment. The remedial action, completed since September 1985, remains in place and is operating and functioning as designed, and the site is protective of human health and the environment. Another Five-Year review will be completed by September 2000.

Major Community Involvement Activities

A public availability session was conducted by EPA in August 1987 to discuss with the community the remedial actions implemented and the post-remedial environmental monitoring program. Public comments were received and addressed in the Responsiveness Summary portion of the September 30, 1987, Record of Decision.

Applicable Deletion Criteria/State Concurrence

All the completion requirements for this Site have been met as described in the Final Close-Out Report (COR) dated September 25, 1997. The Final COR documents the effectiveness of the post-remedial environmental monitoring and that the remedy (slurry wall, multi-layered cap, leachate collection system, gas venting system and installation of a Site security fence) remains protective. Site O&M activities will be performed by SFI, with EPA oversight.

In a letter dated October 21, 1997, NJDEP concurred with EPA that all appropriate Fund-financed responses under CERCLA at the Site have been completed, and that no further construction activities by responsible parties is necessary except for operation and maintenance requirements. EPA will be providing oversight of all operation and maintenance activities. Consequently, EPA is proposing deletion of this Site from the NPL. Documents supporting this action are available in the docket.

Dated: November 12, 1997.

John Doe,

Acting Regional Administrator.

Appendix E - LOCAL NOTICE OF INTENT TO DELETE

This local Notice Sample is based on an actual Superfund site, but some information has been altered for illustrative purposes.

Content and format of an actual local Notice of Intent to Delete may vary from this sample due to considerations such as project lead and support roles, availability of information, and site-specific conditions.

For more about preparing a local Notice, refer to OSWER Directive 9320.2-9A-P, "Close Out Procedures for National Priorities List Sites," EPA 540-R-98-016.

Appendix E - Sample Local Notice of Intent to Delete

The U.S. Environmental Protection Agency (EPA) announces the deletion of the ABC Recycling Co. site in Wasteland, Idaho, from the National Priorities List (NPL), which is Appendix B of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). EPA requests comments on this deletion. EPA and the State have determined that all appropriate Fund-financed responses under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, have been implemented and that no further cleanup by responsible parties is appropriate. Moreover, EPA and the State have determined that remedial actions conducted at the site to date have been protective of public health, welfare, and the environment. However, this deletion does not preclude future actions under Superfund.

The public is invited to comment on the proposed decision to delete this site from the NPL. The public comment period will begin on January 1, 1999, and extend for 30 days. Written comments must be postmarked no later than January 30, 1999, and should be addressed to:

Name: Jane Doe

Address: U.S. Environmental Protection Agency, Region 10

Region 10 Docket Office

1200 Sixth Avenue

Seattle, WA 98101

Oral comments will also be received through this date and should be directed to Susan Johnson at (206) 555-1111.

A local repository has been established to provide detailed information concerning this site at the following address:

Name: John Doe

Address: Local Superfund Information Repository

111 Main Street

Wasteland, ID 84601

Appendix F - NOTICE OF DELETION

These Notice of Deletion Sample is based on an actual Superfund site, but some information has been altered for illustrative purposes.

Content and format of an actual Notice of Deletion may vary from this sample due to considerations such as project lead and support roles, availability of information, and site-specific conditions.

For more about preparing a Notice of Deletion, refer to OSWER Directive 9320.2-9A-P, "Close Out Procedures for National Priorities List Sites," EPA 540-R-98-016.

Appendix F - Sample Notice of Deletion

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 300

National Oil and Hazardous Substances Pollution Contingency Plan; National Priorities List Update

AGENCY: Environmental Protection Agency.

ACTION: Notice of deletion of the SF Industries Landfill Superfund site from the National Priorities List.

SUMMARY: The U.S. Environmental Protection Agency (EPA) announces the deletion of the SF Industries Landfill Site in [City, County, State] from the National Priorities List (NPL). The NPL is Appendix B of 40 CFR part 300 which is the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), which EPA promulgated pursuant to section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended,. EPA and the State of New Jersey have determined that the Site poses no significant threat to public health or the environment and, therefore, no further remedial measures pursuant to CERCLA are appropriate.

EFFECTIVE DATE: (INSERT DATE NOTICE IS PUBLISHED).

FOR FURTHER INFORMATION CONTACT: [RPM Name], Remedial Project Manager, U.S. Environmental Protection Agency, Region___,[Street Address, Mailcode, City, State Zip Code] (XXX)XXX-XXXX.

SUPPLEMENTARY INFORMATION: The site to be deleted from the NPL is:

SF Industries Landfill Site, Terraville, Terra County, New Jersey.

A Notice of Intent to Delete for this Site was published in the Federal Register on November 20, 1997 (62 FR 60058). The closing date for comments on the Notice of Intent to Delete was December 22, 1997. No comments were received therefore, EPA has not prepared a Responsiveness Summary.

EPA identifies sites that appear to present a significant risk to public health, welfare, or the environment and it maintains the NPL as the list of those sites. Any site deleted from the NPL remains eligible for Fund-financed remedial actions in the unlikely event that conditions at the site warrant such action. Section 300.425(e)(3) of the NCP states that Fund-financed actions may be taken at sites deleted from the NPL. Deletion of a site from the NPL does not affect responsible party liability or impede agency efforts to recover costs associated with response efforts.

List of Subjects in 40 CFR Part 300

Environmental protection, Air pollution control, Chemicals, Hazardous substances, Hazardous waste, Intergovernmental relations, Penalties, Reporting and record keeping requirements, Superfund, Water pollution control, and Water supply.

Dated: February 2, 1998.

John Doe,

Acting Regional Administrator.

Appendix F - Sample Notice of Deletion

For the reasons set out in the preamble, 40 CFR part 300 is amended as follows:

PART 300--[AMENDED]

1. The authority citation for part 300 continues to read as follows:

Authority: 42 U.S.C. 9601-9657; 33 U.S.C. 1321(c)(2); E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p.351; E.O. 12580, 52 FR 2923, 3 CFR, 1987 Comp., p.193.

Appendix B--[Amended]

2. Table 1 of Appendix B to part 300 is amended by removing the entry for the SF Industries Landfill site in Terraville, Terra County, New Jersey.

Appendix G - PARTIAL SITE DELETION DATA COLLECTION FORM

Appendix G - Partial Site Deletion Data Collection Form

Partial NPL Site Deletion Data Collection Form

(Version 1.0, March 1996)

Site Name: _____

CERCLIS ID#: _____

Name of Deleted Portion: _____

Region: _____ State: _____

This form should be completed for all proposed deletions of portions of NPL sites. Include this form as part of the Notice of Intent to Delete (NOID) submitted to EPA

State, Tribal, and Site Identification Center

U.S. Environmental Protection Agency

Appendix G - Partial Site Deletion Data Collection Form

Partial NPL Site Deletion Data Collection Form

General Form Instructions

The Partial NPL Site Deletion Data Collection Form is designed to standardize partial site deletion information for input into the Superfund NPL Assessment Program (SNAP) data base. This data base serves as a repository for general information about NPL sites and is used to respond to queries about NPL sites from a variety of sources including the general public, the media, other government agencies, and members of Congress. The primary source materials for completing this form are the Notice of Intent for Partial Deletion (NOID), site information supporting the decision to delete this portion of the site, and electronic locational data. Requirements for submitting electronic locational data are included in EPA's Locational Data Policy.

As you complete the Partial NPL Site Deletion Data Collection Form, keep the following points in mind.

< A map clearly showing the entire site and that portion to be deleted (including scale);

< Site coordinates (latitude and longitude) for at least three reference points on the map.

< Landmarks, such as roads, water bodies, waste operations, or residential areas (these facilitate reading the map).

< Contacts for both the partial deletion decision and the electronic data.

The above materials are to be provided in both hard and electronic copy. Electronic files in ARC/INFO, MapInfo, GIS+, or those mentioned below are acceptable. If mapping information is not available in these packages, the Center should be contacted to determine how to submit the electronic information.

Electronic files submitted with the partial deletion package should:

< Include all vector / raster layers for the site necessary to recreate a map;

< Include all attribute information associated with the data layers;

< Be delivered in one of the following formats:

1. ARC/INFO native or export (.E00) format,
2. ArcView shape files
3. MapInfo native MapInfo Interchange Format (MIF), MapInfo Boundary Interchange File (MBI), or MapInfo Map Interchange Format (MMI)
4. GIS+ native
5. AutoCAD DXF format
6. ASCII delimited file (include data structure and format for recreation)

If electronic files are to be delivered in a format other than one of those identified in the list above, obtain prior approval from EPA Headquarters. To facilitate the integration of data into these systems it is important that coding of geographic coordinates and associated attributes be standardized.

The site map must be dated. The date is to reflect the delineation of the boundaries of the site as of the date prepared, including the portion to be deleted. Geographic coordinates of points describing a specific object (e.g., operable unit or portion of the site to be deleted) should be included.

Additional Information

A printout of locational data fields for each data layer in the electronic files should be provided with the electronic files. The printout should include:

1. Projection of data - Map projections allow areas on the surface of the Earth (a spheroid) to be represented on a map (a flat surface) while minimizing distortion. This information is important because it represents the geometric accuracy of the data and it is critical in determining the measurement accuracy.

2. Units of Measure - Map units are the units in which the coordinates of the spatial data represented in your image are stored. They may be in kilometers, inches, feet, etc.

3. Projection Spheroid -Defines the shape of the spheroid for calculating the transformation of coordinates from a particular shape.

4. Projection Zone (i.e. UTM 11 or State Plane Zone 1101 Maryland East) - Identify the map projection or coordinate system used in creating the map. Map projections allow areas on the surface of the Earth (a spheroid) to be represented on a map (a flat surface).

5. Horizontal Datum - A datum is a set of parameters defining a coordinate system, and a set of control points whose geometric relationships are known, either through measurement or calculation.

6. False Northing / False Easting - Any offset on the x and / or y axis applied to coordinates of the data.

7. Source - Describe the source of the geographic data used in creating the file.

8. Source Scale - Map scale is the relationship between the dimensions of a map and the dimensions of the Earth. It is usually expressed as a ratio between a distance on the map and a distance on the Earth, like 1:63,360.

9. Point-Line-Area - Predominant feature type of data (i.e., a point feature may represent a monitor well or a benchmark, a line feature may represent a street, a polygon feature may represent a body of water or an area of contamination).

10. Method of collection - Describe the methodology used in collecting the data (i.e., scanning, manual, digitizing, GPS, etc.).

11. Description and structure of data and any attribute information.

Although not required, the following additional locational data is useful:

1. Accuracy value & unit

2. Xmin, Ymin, Xmax, Ymax of data layer

3. Precision of Data

4. Source Projection

5. Source Units of Measure

6. Source Projection Spheroid

7. Source Horizontal Datum

For questions on completing this form, contact Ms. Terry Keidan at EPA Headquarters via lanmail or phone (703) 603-8852, fax (703) 603-9104.

Appendix G - Partial Site Deletion Data Collection Form

Partial Site Deletion Data Collection Form

Site Name: Page #

1. Basic Identifying Information

1.1 Site Name (as entered in CERCLIS): _____

1.2 CERCLIS ID Number: _ _ _ _ _ _ _ _ _ _ _ _

1.3 NPL Site Location: City: _____ State: _____

County: _____ Zip Code: _____

1.4 Name Given to Deleted Portion of the Site: _____

1.5 Is this the first, second, third, etc. partial deletion at the site? (Enter the deletion number): _____

1.6 Name of Person(s) Completing Form: _____

Affiliation (agency / company): _____

Phone Number: _____

1.7 Name of Person(s) Completing Electronic Locational Data: _____

Affiliation (agency / company): _____

Phone Number: _____

1.8 **BRIEF PARTIAL DELETION NARRATIVE**. Provide a brief narrative describing the location and extent of the release to be deleted. Include a discussion of the locational data and method(s) used to delineate the deleted release. Attach additional pages if necessary.

Partial Site Deletion Data Collection Form

Site Name: Page #

1.9 **PARTY REQUESTING DELETION**. Which party or parties requested the partial deletion (check all that apply):

~ Developer

~ Property Owner / Operator

~ City / Municipality

~ State

~ Citizen group

~ Other Interest group

~ Individual

~ EPA

~ Other Federal program (specify) _____

~ Other (specify) _____

~ Unknown

1.10 **REASON FOR PARTIAL DELETION**. Which reason or reasons best justify the partial deletion (check all that apply):

~ Contamination not found

~ Cleaned up

~ Deferred to RCRA

~ Deferred to other Agency (specify) _____

~ Incorrectly included in site boundaries

~ Other (specify) _____

2. Partial Deletion Package Contents

2.1 Which of the following items has been provided in the partial deletion package?

Electronic	Hard Copy	
~	~	Notice of Intent to Delete (NOID)
~	~	Map of the entire site and deleted portion (scale included)

Partial Site Deletion Data Collection Form

Site Name: Page #

2.2 Which locational data fields have been provided in both electronic and printout form? (Check only the fields that apply)

Electronic	Printout	
~	~	Projection of data
~	~	Units of measure
~	~	Projection spheroid
~	~	Projection zone (i.e., UTM 11 or State Plane Zone 1101 Maryland East)
~	~	Horizontal Datum
~	~	XShift / YShift
~	~	Source
~	~	Source Scale
~	~	Point-Line-Area
~	~	Method of collection
~	~	Description and structure of data and any attribute information
~	~	Accuracy value and unit
~	~	Xmin, Ymin, Xmax, Ymax of data layer
~	~	Precision of data
~	~	Source projection
~	~	Source units of measure
~	~	Source projection spheroid
~	~	Source horizontal datum

2.3 In what format(s) were the partial deletion electronic files submitted? (Check all that apply.)

~ ARC/INFO native or export (.E00)

~ ArcView shape files

~ MapInfo native Map Info Interchange Format (MIF)

~ MapInfo Boundary Interchange (MBI)

~ MapInfo Map Interchange (MMI)

~ GIS+ native

~ AutoCAD DXF

~ ASCII delimited file (include data structure and format for re-creation)

Partial Site Deletion Data Collection Form

Site Name: Page #

2.4 **NPL SITE COORDINATES**. Coordinates of the entire site should be provided in the form of polygons, starting with the northern-most coordinate and moving clockwise (in degrees, minutes, seconds, and thousandths of seconds):

1. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
2. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
3. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
4. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
5. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
6. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
7. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude

If thousandths of seconds are unknown, use "0" as a default value. If necessary, refer to Appendix E of EPA's 1991 PA guidance document for directions on how to determine coordinates.

2.5 **DELETED PORTION COORDINATES**. Coordinates of the deleted portion of the site should be provided in the form of polygons, starting with the northern-most coordinate and moving clockwise (in degrees, minutes, seconds, and thousandths of seconds):

1. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
2. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
3. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
4. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
5. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
6. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude
7. ___º___'___.___ ___ ___ " North Latitude ___º___'___.___ ___ ___ " West Longitude

If thousandths of seconds are unknown, use "0" as a default value. If necessary, refer to Appendix E of EPA's 1991 PA guidance document for directions on how to determine coordinates.

2.6 What method was used to identify the NPL site and deleted portion coordinates? _____

_____

3. Dates

3.1 Date this Form Was Completed: _____ (mm/dd/yy)

3.2 Date Partial Deletion Proposed in FR: _____ (mm/dd/yy)

3.3 Date Partial Deletion Finalized in FR: _____ (mm/dd/yy)

Appendix H - NOTICE OF INTENT OF PARTIAL DELETION

These Notice of Intent to Partially Delete Samples are based on an actual Superfund sites, but some information has been altered for illustrative purposes.

Content and format of an actual Notice of Intent to Partially Delete may vary from these samples due to considerations such as project lead and support roles, availability of information, and site-specific conditions.

For more about preparing a Notice of Intent to Partially Delete, refer to OSWER Directive 9320.2-9A-P, "Close Out Procedures for National Priorities List Sites," EPA 540-R-98-016.

Appendix H - Sample Notice of Intent of Partial Deletion

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 300

National Oil and Hazardous Substances Pollution Contingency Plan; National Priorities List

AGENCY: Environmental Protection Agency.

ACTION: Notice of intent for partial deletion of the Bluelake Site from the National Priorities List.

SUMMARY: The United States Environmental Protection Agency (EPA) Region10 announces its intent to delete the soil unit of the Bluelake Site located in Bluelake County, Washington, from the National Priorities List (NPL) and requests public comment on this action. The NPL constitutes Appendix B to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, which EPA promulgated pursuant to Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This partial deletion of the Bluelake Site is proposed in accordance with 40 CFR 300.425(e) and the Notice of Policy Change: Partial Deletion of Sites Listed on the National Priorities List. 60 Federal Register 55466 (Nov. 1, 1995).

This proposal for partial deletion pertains to the soil unit and includes all contaminated soil / sludge on the Speedy Cleaners (a dry cleaner) property, which was the source of the soil and ground-water contamination at the Bluelake Site. A plume of contaminated ground water, resulting from former disposal practices at the dry cleaner, is treated via air stripping at the Bluelake Water District production wells. The ground-water unit will remain on the NPL, and treatment via air stripping will continue at the Bluelake Water District production wells. EPA bases its proposal to delete the soil unit at the Bluelake Site on the determination by EPA and the State of Washington Department of Ecology (Ecology), that all appropriate actions under CERCLA have been completed to protect human health, welfare and the environment related to soil contamination at the site.

DATES: EPA will accept comments concerning its proposal for partial deletion for thirty (30) days after publication of this document in the Federal Register and a newspaper of record.

ADDRESSES: Comments may be mailed to: [RPM Name], Superfund Site Manager, U.S. EPA, Region [___] [Mailcode], [Street Address, City, State, Zip Code] 1-800-XXX-XXXX or (XXX) XXX-XXXX.

INFORMATION REPOSITORIES: Comprehensive information on the Bluelake Site as well as information specific to this proposed partial deletion is available for review at EPA's Region [___]office in [City, State], and at the information repositories listed below. Since this site predates the Superfund Amendments and Reauthorization Act (SARA), no Administrative Record exists; however, the Site File and the Deletion Docket for this partial deletion are maintained at EPA Region [__]'s Regional Office Superfund Records Center, [Street Address, City, State, Zip Code]. The Record Center's hours of operation are 8:30-4:30 p.m., Monday-Friday, and the Records Center staff can be reached at (XXX) XXX-XXXX.

Other information repositories where the Deletion Docket is available for public review include: Bluelake Library, [Street Address, City, State, Zip Code]; Bluelake County Public Library, [Street Address, City, State, Zip Code].

FOR FURTHER INFORMATION CONTACT: [RPM Name] (XXX) XXX-XXXX.

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Introduction

The United States Environmental Protection Agency (EPA) Region 10 announces its intent to delete a portion of the Bluelake Site, located in Bluelake County, Washington, from the National Priorities List (NPL), which constitutes Appendix B of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, and requests comments on this proposal. This proposal for partial deletion pertains to the soil unit, and includes all contaminated soil / sludge on the Speedy Cleaners (a dry cleaner) property, which was the source of the soil and ground-water contamination at the site. A plume of contaminated ground water, resulting from former disposal practices at the dry cleaner, is treated via air stripping at the Bluelake Water District production wells. The primary contaminant in soil was perchloroethylene (PERC). The soil unit was confined to an area on the Speedy Cleaners property. The site boundary, including the plume of contaminated ground water, is predominantly residential to the north of the Burlington Northern Railroad tracks and commercial / light industrial along the Pacific Highway. Bluelake Water District's two production wells are located on a fenced site immediately south of Speedy Cleaners, across Interstate 5. Residential property lies to the east, and AFB Air Force Base to the southeast of the wells.

In July 1981, EPA sampled drinking water wells in the Bluelake area for contamination by volatile organic compounds. The tests indicated that the Bluelake Water District production wells, H1 and H2, were contaminated with trichloroethylene (TCE), tetrachloroethylene (PERC), and cis-1,2 dichloroethylene (cis-1,2 DCE). In August 1981, the Bluelake Water District took these wells temporarily out of production and notified its customers of the problem. EPA installed 24 monitoring wells, and contaminated surficial soil in the source area was excavated. Following the shutdown of the wells, the State of Washington Department of Ecology (Ecology) and EPA conducted several investigations and cleanup activities. Soil on the Speedy Cleaners property was contaminated with PERC, a solvent that Speedy Cleaners used in their dry cleaning process. Ecology determined that solvents used in the dry cleaning process were dumped onto the ground and into three on-site, bottomless septic tanks, causing the soil contamination. Ecology sampled septic tanks on the Speedy Cleaners property between October 1981 and January 1983. The Bluelake Site was listed on the NPL on September 8, 1983.

In April 1983, Ecology issued an enforcement order requiring Speedy Cleaners to cease dumping solvent-containing materials into the septic system. A stipulated agreement for remedial action was reached between Ecology and Speedy Cleaners in September, 1983. Speedy Cleaners agreed to discontinue their prior solvent disposal practices, install a system for reclaiming cleaning solvents, and send drummed waste water and sludge to a suitable off-site disposal facility. The contents of the septic tanks were removed and the tanks backfilled to reduce the potential for further contamination during the EPA remedial action. Speedy Cleaners successfully fulfilled the terms of the agreement.

In May 1984, EPA completed a focused feasibility study identifying an interim remedial action (IRM) needed to address those contaminant problems posing the most immediate threat at the site.

EPA's contractor conducted a remedial investigation from August 1984 to July 1985 to further determine the extent of ground-water contamination at the site, test the soil at Speedy Cleaners for remaining contaminants, and determine whether other sources were contributing to the ground-water problem.

Appendix H - Sample Notice of Intent of Partial Deletion

The dry cleaning operation's discharge of solvents into its bottomless (i.e. permeable) septic system and the disposal of other wastes containing solvents onto the ground outside their building were suspected of causing the soil and ground-water contamination. It was later confirmed that contamination had resulted from effluent discharges from septic tanks behind the Speedy Cleaners building and sludge disposal on the ground surface. Ecology found that supernatant (liquid overlying material deposited by settling or precipitation) in the dry cleaner's septic system contained 550 parts per billion (ppb) PERC and 29 ppb TCE.

The feasibility study for the Bluelake site was published in July 1985, and the ROD was signed shortly thereafter on September 30, 1985. An amended ROD was signed on November 14, 1986. All of the selected remedies and administrative restrictions in the September 30, 1985 ROD for the aquifer unit remained the same.

In 1987, the Soil Vapor Extraction System (SVES) was installed within the contaminated area to extract PERC from the shallow unsaturated soil at the site. Soil sampling in 1990 indicated elevated concentrations of PERC at about 12 feet below the surface. Based on concerns that the SVES would not be able to reduce PERC concentrations below the 500 ppb cleanup level, EPA excavated the contaminated sludge and soil from the area, and disposed of it off-site. On-site soil remediation activities were completed in July 1992, including the dismantling and decommissioning of the SVES. Subsequent sampling confirmed that attainment of the 500 ppb soil cleanup goal had been achieved.

On September 15, 1992, EPA published an Explanation of Significant Difference(ESD) which identified cleanup goals for the site contaminants. The groundwater cleanup levels are 5.0 ppb for PERC and TCE, and 70 ppb for cis-1,2 DCE consistent with the federal maximum contaminant levels (MCLs). These concentrations are also the cleanup standards under the State of Washington Model Toxics Control Act (MTCA). The soil cleanup level for PERC was set at 500 ppb, in compliance with State requirements (based on protection of ground water), is within EPA's acceptable risk range of 10^{-4} to 10^{-6}, and is protective of ground water.

The ESD also documented additional revisions needed in order to comply with the original ROD, amended ROD and regulatory requirements. The additional issues requiring revision were: (1) further remedial action necessary to remove the source of the contamination at the site, and (2) elimination of the requirement to implement institutional controls on land and ground-water use.

The institutional controls requirement on soil, as called for in the ROD and amended ROD, was addressed in the ESD as follows:

-- The success of the final soil remedial action eliminated the need for institutional controls on land use.

No further action is necessary to protect human health and the environment in relation to soil contamination at the Site.

EPA proposes to delete the soil unit because all appropriate CERCLA response activities have been completed in those areas where soil contamination exceeded the cleanup level. However, response activities at the groundwater unit are not yet complete, and the site will remain on the NPL and is not the subject of this partial deletion.

The NPL is a list maintained by EPA of sites that EPA has determined present a significant risk to human health, welfare, or the environment. Sites on the NPL may be the subject of remedial actions financed by the Hazardous Substance Superfund (Fund). Pursuant to 40 CFR Sec. 300.425(e) of the NCP, any site or portion of a site deleted from the NPL remains eligible for Fund-financed remedial actions if conditions at the site warrant such action.

EPA will accept comments concerning its intent for partial deletion for thirty (30) days after publication of this notice in the Federal Register and a newspaper of record.

II. NPL Deletion Criteria

The NCP establishes the criteria that EPA uses to delete sites from the NPL. In accordance with 40 CFR Sec. 300.425(e), sites may be deleted from the NPL where no further response is appropriate to protect human health or the environment. In making such a determination pursuant to section 300.425 (e), EPA will consider, in consultation with the State, whether any of the following criteria have been met:

Section 300.425(e)(1)(i). Responsible parties or other persons have implemented all appropriate response actions required; or

Section 300.425(e)(1)(ii). All appropriate Fund-financed response under CERCLA has been implemented, and no further response action by responsible parties is appropriate; or

Section 300.425(e)(1)(iii). The remedial investigation has shown that the release poses no significant threat to human health or the environment and, therefore, taking of remedial measures is not appropriate.

Deletion of a portion of a site from the NPL does not preclude eligibility for subsequent Fund-financed actions at the area deleted if future site conditions warrant such actions. Section 300.425(e)(3) of the NCP provides that Fund-financed actions may be taken at sites that have been deleted from the NPL. A partial deletion of a site from the NPL does not affect or impede EPA's ability to conduct CERCLA response activities at areas not deleted and remaining on the NPL. In addition, deletion of a portion of a site from the NPL does not affect the liability of responsible parties or impede agency efforts to recover costs associated with response efforts.

III. Deletion Procedures

Deletion of a portion of a site from the NPL does not itself create, alter, or revoke any person's rights or obligations. The NPL is designed primarily for informational purposes and to assist Agency management.

The following procedures were used for the proposed deletion of the soil unit at the Bluelake Site:

(1) EPA has recommended the partial deletion and has prepared the relevant documents.

(2) The State of Washington through the Washington Department of Ecology concurs with this partial deletion.

(3) Concurrent with this national Notice of Intent for Partial Deletion, a notice has been published in a newspaper of record and has been distributed to appropriate federal, State, and local officials, and other interested parties. These notices announce a thirty (30) day public comment period on the deletion package, which commences on the date of publication of this notice in the Federal Register and a newspaper of record.

(4) EPA has made all relevant documents available at the information repositories listed previously.

This Federal Register document, and a concurrent notice in a newspaper of record, announce the initiation of a thirty (30) day public comment period and the availability of the Notice of Intent for Partial Deletion. The public is asked to comment on EPA's proposal to delete the soil unit from the NPL. All critical documents needed to evaluate EPA's decision are included in the Deletion Docket and are available for review at the EPA Region 10 information repositories.

Upon completion of the thirty (30) day public comment period, EPA will evaluate all comments received before issuing the final decision on the partial deletion. EPA will prepare a Responsiveness Summary for comments received during the public comment period and will address concerns presented in the comments. The Responsiveness Summary will be made available to the public at the information repositories listed previously. Members of the public are encouraged to contact EPA Region 10 to obtain a copy of the Responsiveness Summary. If, after review of all public comments, EPA determines that the partial deletion from the NPL is appropriate, EPA will publish a final notice of partial deletion in the Federal Register. Deletion of the soil unit does not actually occur until the final Notice of Partial Deletion is published in the Federal Register.

IV. Basis for Intended Partial Site Deletion

The following provides EPA's rationale for deletion of the soil unit from the NPL and EPA's finding that the criteria in 40 CFR Sec. 300.425(e) are satisfied.

Background

The Bluelake Site is located in Bluelake County, Washington and includes property upon which a business known as Speedy Cleaners has operated for several years. The regional aquifer is contaminated within about a 2,000-foot radius down gradient from the Speedy Cleaners.

The area is predominantly residential to the north of the Burlington Northern Railroad tracks, and commercial / light industrial along the Pacific Highway. Bluelake Water District has two of its production wells (H1 and H2) on a fenced site immediately south of Speedy Cleaners, across Interstate 5. Residential property lies to the east, and AFB Air Force Base to the southeast of the wells. In July 1981, EPA sampled drinking water wells in the Bluelake area for contamination by volatile organic compounds. The tests indicated that the Bluelake Water District production wells, H1 and H2, were contaminated with trichloroethylene (TCE), tetrachloroethylene (PERC), and cis-1,2 dichloroethylene (cis-1,2 DCE). In August 1981, the Bluelake Water District took these wells temporarily out of service and notified its customers of the problem. EPA installed 24 monitoring wells, and contaminated surficial soil in the source area was excavated. Following the shutdown of the wells, Ecology and EPA conducted several investigations and cleanup activities. Soil on the Speedy Cleaners property was contaminated with PERC, a solvent they used in their dry cleaning process. Ecology determined that solvents used in the dry cleaning process were dumped onto the ground and into three on- site, bottomless septic tanks, causing contamination of the soil. Ecology sampled septic tanks on the Speedy Cleaners site between October 1981 and January 1983. In April 1983, Ecology issued an enforcement order requiring Speedy Cleaners to cease dumping solvent-containing materials into the septic system. The contents of the septic tanks were later removed and the tanks backfilled to reduce the potential for further contamination during the EPA remedial action.

In May 1984, EPA completed a focused feasibility study identifying an interim remedial action (IRM) needed to address those contaminant problems posing the most immediate threat at the site. The objectives of the IRM were to: (1) Restrict the spread of contamination within the aquifer; (2) restore normal water service to the area; (3) and, initiate ground-water treatment as quickly as possible. By November 15, 1984, two air strippers had been installed to treat wells H1 and H2 and were fully operational following implementation of the IRM.

EPA's contractor conducted a remedial investigation from August 1984 to July 1985 to further determine the extent of ground-water contamination at the site, test the soil at Speedy Cleaners for remaining contaminants, and determine whether other sources were contributing to the ground-water problem. The field work conducted during the RI included:

-- Installation of nine deep and three shallow monitoring wells to provide a comprehensive picture of the ground-water regime (e.g. flow patterns, hydraulic connections between layers); determine the nature / extent of ground-water contamination; and, identify possible sources of the contamination.

-- Excavation of the waste line at Speedy Cleaners and drilling of seven soil borings to determine the extent / character of remaining sources of contamination at Speedy Cleaners, and to determine if other sources besides Speedy Cleaners exist.

-- Collection of samples for field and laboratory analysis to determine the extent / concentration of soil and aquifer contamination within the study area.

The dry cleaning operation's discharge of solvents into its bottomless (i.e. permeable) septic system and the disposal of other wastes containing solvents onto the ground outside their building were suspected of causing the soil and ground-water contamination. It was later confirmed that contamination had resulted from effluent discharges from septic tanks behind the Speedy Cleaners building and sludge disposal on the ground surface.

Ecology found that supernatant (liquid overlying material deposited by settling or precipitation) in the dry cleaner's septic system contained 550 parts per billion (ppb) PERC and 29 ppb TCE.

Data for the two production wells (H1 and H2) ranged from 100 to 500 ppb PERC prior to initiating the ground-water treatment. Contaminant concentrations decreased rapidly after several days of pumping, and have continued to decrease. Maximum and mean concentrations in other ground-water monitoring wells within the study area prior to treatment were: PERC-922 ppb and 16 ppb, respectively, and: TCE-57 ppb and 3 ppb, respectively. The only detected concentration for cis-1,2 DCE was 85 ppb in a monitoring well upgradient of the production wells.

The RI indicated that PERC contamination in soil was highest where solvent-contaminated wastes were intentionally disposed on the ground surface. Except for several small pockets of contamination, most of the PERC from the soil borings and test pit was located in the upper 12 to 13 feet of soil in the immediate vicinity of the dry cleaner's septic tanks and drain field. Where it was detected, PERC concentrations ranged from 11 to 3,800 ppb. The average PERC concentration in soil was 500 ppb. Maximum TCE and cis-1,2 DCE concentrations in soil were 5 ppb and 4 ppb, respectively.

The feasibility study for the Bluelake site was published in July 1985, and the ROD was signed shortly thereafter on September 30, 1985. The remedy selected in the ROD consisted of the following major elements:

-- Continued operation of the H1-H2 production wells' treatment system to cleanup the aquifer. Installation of higher efficiency equipment or modification of existing energy reducing equipment used in the treatment system.

-- Installation of additional monitoring wells, upgrading of existing wells, and continuation of routine sampling and analysis of the aquifer to monitor progress and provide early warning of potential new contaminants.

-- Excavation and removal of contaminated septic tanks and drain field piping to avoid the possible spread of contamination via uncontrolled excavation (i.e., future property development). The septic tanks were found to be bottomless, and, therefore, they were not removed.

-- Placement of administrative restrictions on the installation and use of ground-water wells and on excavation into the contaminated soils to minimize the potential for use of contaminated ground water and reduce the risks associated with uncontrolled excavation.

An amended ROD was signed on November 14, 1986. All of the selected remedies and administrative restrictions in the September 30, 1985 ROD for the aquifer unit remained the same. Additions or modifications to the soil unit cleanup were as follows:

-- Installation of an SVES covering the area of soil contamination over and around the historical drain field on-site to extract PERC from the remaining contaminated soil.

-- Reduction in the amount of septic tank contents to be removed and treated off-site. At that time, the capability of off-site disposal consistent with the CERCLA off-site policy was not available within Region [___] for the proposed 900 cubic yards of soil requiring removal, as called for in the original ROD. Therefore, contaminated solids and any water were removed from the septic tanks and disposed off-site. The remainder of the contaminated soil within the septic tanks and around the historical drain field was treated via SVES. During implementation of the remedy in the original ROD, the septic tanks were found to be bottomless, were left in place, and the soil treated via SVES.

-- Soil and vapor testing continued until soil treatment was deemed complete.

Final Response Actions

In 1987, soils were excavated from inside and around the three septic tanks to remove the source of PERC contamination. An SVES was installed within the contaminated area to extract PERC from the shallow unsaturated soil at the site. Soil sampling in 1990 indicated elevated concentrations of PERC at about 12 feet below the surface.

Cleanup goals for the site contaminants were identified in an Explanation of Significant Differences (ESD) published on September 15, 1992. EPA published ground-water cleanup levels at 5.0 ppb for PERC and TCE, and 70 ppb for cis-1,2 DCE consistent with the federal maximum contaminant levels (MCLs). These concentrations are also the cleanup standards under the State of Washington Model Toxics Control Act (MTCA). The soil cleanup level for PERC was set at 500 ppb, in compliance with [cite regulations] requirements (based on protection of ground water), is within EPA's acceptable risk range of 10^{-4} to 10^{-6}, and is protective of ground water.

The ESD also documented additional revisions needed in order to comply with the original ROD, amended ROD and regulatory requirements. The additional issues requiring revision were: (1) further remedial action necessary to remove the source of the contamination at the site, and (2) elimination of the requirement to implement institutional controls on land and ground-water use.

The institutional controls requirement on soil, as called for in the ROD and amended ROD, was addressed in the ESD as follows:

-- The success of the final soil remedial action eliminated the need for institutional controls on land use.

Based on concerns that the SVES would not be able to reduce PERC concentrations below the cleanup level, EPA excavated the contaminated sludge and soil from the area, and disposed of it off-site. On-site soil remediation activities were completed in July 1992, including the dismantling of the SVES. Subsequent sampling confirmed that the attainment of the 500 ppb soil cleanup goal was achieved. No further action is necessary to protect human health and the environment in relation to soil contamination at the Site. EPA proposes to delete the soil unit because all appropriate CERCLA response activities have been completed in those areas where soil contamination exceeded cleanup levels.

All of the response actions at the soil unit were conducted using funds from the Hazardous Substance Superfund.

Community Relations Activities

Community interest in this site has been low. Most residents seem confident that the water they receive is safe. Most of the citizens concerned about contamination were not served by drinking water supply wells H1 and H2, but by other wells which they feared might be affected by the contamination at the site. There has been little press interest since the Bluelake Water District production wells, H1 and H2, were returned to use.

A major goal of the Community Relations Section was to inform residents of the status of the remedial activities. EPA sent letters to property owners and well-drillers advising them not to drink from private wells or drill new wells in the zone of contamination. EPA has mailed fact sheets to local residents since 1984, most recently in September, 1992.

Current Status

Final on-site soil remediation activities were completed in July 1992. Contaminated sludge and soil was excavated to a maximum depth of 18 feet. Attainment of the 500 ppb soil cleanup level has been achieved.

While EPA does not believe that any future response actions in the soil unit will be needed, if future conditions warrant such action, the proposed deletion area of the Bluelake Site remains eligible for future Fund-financed response actions. Furthermore, this partial deletion does not alter the status of the groundwater unit of the Bluelake Site which is not proposed for deletion and remains on the NPL.

Appendix H - Sample Notice of Intent of Partial Deletion

In a letter dated September 5, the State of Washington through its Department of Ecology, has concurred on EPA's final determination regarding the partial deletion.

Dated: September 17, 1996.

John Doe, Regional Administrator, U.S. Environmental Protection Agency, Region 10.

Appendix I - NOTICE OF PARTIAL DELETION

This Notice of Partial Deletion Sample is based on an actual Superfund site, but some information has been altered for illustrative purposes.

Content and format of an actual Notice of Partial Deletion may vary from this sample due to considerations such as project lead and support roles, availability of information, and site-specific conditions.

For more about preparing a Notice of Partial Deletion, refer to OSWER Directive 9320.2-9A-P, "Close Out Procedures for National Priorities List Sites," EPA 540-R-98-016.

Appendix I - Sample Notice of Partial Deletion

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 300

National Oil and Hazardous Substances Pollution Contingency Plan; National Priorities List

AGENCY: Environmental Protection Agency.

ACTION: Notice of partial deletion of the Prewitt Abandoned Refinery Superfund Site from the National Priorities List.

SUMMARY: The United States Environmental Protection Agency (EPA) Region 6 announces the deletion of the surface portion of the Prewitt Abandoned Refinery Superfund Site (the Site) from the National Priorities List (NPL). The NPL, promulgated pursuant to section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 U.S.C. 9605, is codified at Appendix B of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR part 300. This partial deletion is consistent with the EPA's Notice of Policy Change: Policy Regarding Partial Deletion of Sites Listed on the National Priorities List. 60 Federal Register 55466 (November 1, 1995). This partial deletion pertains to the surface portion, which includes all surface soils, and also includes the former separator area. This partial deletion does not pertain to the subsurface portion of the Site including without limitation ground water and subsurface soils. The subsurface portion of the Site will remain on the NPL, and response activities will continue at that portion. With the concurrence of the State of New Mexico through the New Mexico Environment Department (NMED), and with the concurrence of the Navajo Nation through the Navajo Nation Superfund Office (NSO), the EPA has determined that responsible parties have implemented all appropriate response actions required at the surface portion of the Site (neither the CERCLA-required five-year reviews, nor operation and maintenance of the constructed remedy is considered further response action for these purposes), that all appropriate Hazardous Substance Response Trust Fund (Fund) financed response actions under CERCLA have been implemented at the surface portion of the Site, and that no further response action by responsible parties is appropriate for the surface portion of the Site. Moreover, the EPA, with State of New Mexico concurrence through the NMED, and with Navajo Nation concurrence through the NSO, has determined that Site investigations show that the surface portion of the Site now poses no significant threat to public health or the environment; consequently, pursuant to CERCLA section 105, and 40 CFR 300.425(e), the surface portion of the Site is hereby deleted from the NPL.

EFFECTIVE DATE: (INSERT DATE NOTICE IS PUBLISHED)

FOR FURTHER INFORMATION CONTACT: [RPM Name], Remedial Project Manager, (XXX) XXX-XXXX, United States Environmental Protection Agency, Region [___], Mail Code: [_____] [Street Address, City, State Zip Code]. Information on the Site is available at the local information repository located at: Prewitt Fire House, PO Box 472, Prewitt, New Mexico 87045, (505) 876-4068. Requests for comprehensive copies of documents should be directed formally to the Regional Superfund Management Branch, care of [Name], (XXX) XXX-XXXX, EPA Region [___], Mail Code:[_____], [Street Address, City, State Zip Code].

SUPPLEMENTARY INFORMATION: The site to be partially deleted from the NPL is the Prewitt Abandoned Refinery Superfund Site located near the town of Prewitt, in McKinley County, New Mexico. This partial deletion pertains to the surface portion of the Site, which consists of all surface soils and the former separator area. This partial deletion does not pertain to the subsurface portion of the Site including without limitation ground water and subsurface soils. This Partial Deletion is in accordance with 40 CFR 300.425(e) and the Notice of Policy Change: Partial Deletion of Sites Listed on the National Priorities List, 60 Federal Register 55466 (Nov. 1, 1995). A Notice of Intent for Partial Deletion was published on October 6, 1997 (62 FR 52074).

Appendix I - Sample Notice of Partial Deletion

The closing date for comments on the Notice of Intent for Partial Deletion was November 5, 1997. The EPA received two comment letters, both of which supported the partial deletion.

The EPA identifies sites which appear to present a significant risk to public health, welfare, or the environment and it maintains the NPL as the list of those sites. Sites on the NPL may be the subject of Fund-financed remedial actions. Section 300.425(e)(3) of the NCP, 40 CFR 300.425(e)(3), states that Fund-financed actions may be taken at sites deleted from the NPL in the unlikely event that conditions at the site warrant such action. Deletion of a site from the NPL does not affect responsible party liability or impede EPA efforts to recover costs associated with response efforts.

Lists of Subjects in 40 CFR Part 300

Environmental protection, Air pollution control, Chemicals, Hazardous substances, Hazardous waste, Intergovernmental relations, Penalties, Reporting and record keeping requirements, Superfund, Water pollution control, Water supply.

Dated: January 8, 1998.

Lynda F. Carroll, Acting Regional Administrator (6RA), Region 6.

For the reasons set out in the preamble, 40 CFR part 300 is amended as follows:

PART 300--[AMENDED]

1. The authority citation for Part 300 continues to read as follows:

Authority: 33 U.S.C. 1321(c)(2); 42 U.S.C. 9601-9657; E.O. 12777, 56 FR 54757, 3 CFR 1991 Comp., p. 351; E.O. 12580, 52 FR 2923, 3 CFR 1987 Comp., p. 193.

[[Page 4398]]

2. Table 1 of Appendix B to part 300 is amended by revising the entry for ``Prewitt Abandoned Refinery'' by adding a note ``P'' so that it reads as follows:

Appendix B--[Amended]

Table 1.--General Superfund Section

State	Site Name	City / County	Notes <SUP>(a)
*	*	*	*
NM	Prewitt Abandoned Refinery	Prewitt	P
*	*	*	*

P=Sites with partial deletion(s).

Appendix J - SUPERFUND ACRONYMS LIST

Appendix J - Superfund Acronyms List

CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended
CFR:	Code of Federal Regulations
COR:	Close Out Report
EPA:	Environmental Protection Agency
ESD:	Explanation of Significant Difference
FCOR:	Final Close Out Report
FR:	Federal Register
GIS:	Geographical Information System
HQ:	EPA Headquarters
HRS:	Hazard Ranking System
LTRA:	Long-Term Response Action
MCL:	Maximum Contaminant Level
NCP:	National Oil and Hazardous Substances Pollution Contingency Plan
NOD:	Notice of Deletion
NOID:	Notice of Intent to Delete
NOIPD:	Notice of Intent of Partial Deletion
NPL:	National Priorities List
O&M:	Operations and Maintenance
ORC:	Office of Regional Counsel
OSWER:	Office of Solid Waste and Emergency Response
OU:	Operable Unit
PA:	Preliminary Assessment
PCOR:	Preliminary Close Out Report
POLREP:	Pollution Report
PRP:	Potentially Responsible Party
QA/QC:	Quality Assurance / Quality Control
RA:	Remedial Action
RCRA:	Resource Conservation and Recovery Act of 1976, as amended
RD:	Remedial Design
RI:	Remedial Investigation
RI/FS:	Remedial Investigation / Feasibility Study
ROD:	Record of Decision

Appendix J - Superfund Acronyms List

RP:	Responsible Party
RPM:	Remedial Project Manager
SARA:	Superfund Amendments and Reauthorization Act of 1986
SI:	Site Inspection
USACE:	United States Army Corps of Engineers

Appendix K - GLOSSARY

Appendix K - Glossary of Environmental Terms

Code of Federal Regulations (CFR): Document that codifies final regulations having general applicability and legal effect that have previously appeared in the Federal Register.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A Federal law passed in 1980 that established Federal authority for responding to the release of hazardous substances into the environment including creating a Federal fund to finance responses and imposing liability for releases on the responsible parties. CERCLA was amended in 1986 by the Superfund Amendments and Reauthorization Act.

Final Close Out Report: A 'stand alone' report documenting compliance with the statutory requirements of CERCLA and providing a consolidated record of all remedial activities at all of a site's operable units.

Final Pollution Report (POLREP): The document that signifies that a removal has been completed (i.e., when all objectives outlined in the Action Memorandum and any addenda, such as removal and transport of wastes off site, waste disposal, and demobilization have been accomplished).

Hazard Ranking System (HRS): A scoring system developed as part of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) used to evaluate potential relative risks to public health and the environment from releases or threatened releases of hazardous substances. EPA and States use the HRS to calculate a site score based on an actual or potential release of hazardous substances from a site through air migration, surface water migration, groundwater migration, or soil exposure pathways. This score is used to decide if a hazardous waste site should be placed on the National Priorities List (NPL).

Hazardous Substance: Under CERCLA section 101(14), any element, compound, mixture, solution, or substance that, when released to the environment, may present substantial danger to public health / welfare or the environment. The term also includes substances designated as hazardous or toxic under the Clean Air Act, the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1986, the Resource Conservation and Recovery Act, as amended and the Toxic Substances Control Act. The term does not encompass petroleum, including crude oil, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel.

Local Notice of Intent to Delete: A notice published in a local newspaper of general circulation, announcing the Agency's intent to delete a site from the NPL. It also announces a 30-day public comment period, among other things, and identifies the location of the local repository.

Long-Term Response Action (LTRA): A ground or surface water restoration remedy site that requires on-site treatment before the cleanup levels specified in the ROD are achieved.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The regulation for Federal response actions under CERCLA, commonly referred to as the National Contingency Plan, or NCP. The NCP sets forth the Hazard Ranking System and establishes procedures and standards for responding to releases of hazardous substances. The plan has been codified in Title 40 CFR Part 300.

National Priorities List (NPL): EPA's list of the most serious uncontrolled hazardous waste sites identified for possible long-term remedial response. This list is based primarily on the score a site receives on the Hazard Ranking System. EPA is required to update the NPL at least once a year.

Notice of Deletion (NOD): A notice published in the Federal Register announcing a site's deletion from the NPL.

Notice of Intent to Delete (NOID): A notice published in the Federal Register announcing the Agency's intent to delete a site from the NPL. This notice provides information about the site and associated cleanup activities, and provides the public with a 30-day public comment period.

Operable Unit (OU): A term for each of a number of discrete activities undertaken as part of a Superfund site cleanup. An example of an operable unit would be removing drums and tanks from a surface of a site.

Operation and Maintenance (O&M): Activities conducted at a site after a Superfund site action is completed to ensure that the action is effective and operating properly.

Potentially Responsible Party (PRP): Any individual(s) or company(s) (such as owner, operator, transporter, or generator) potentially responsible for, or contributing to, contamination at a CERCLA site. Whenever possible, EPA requires PRPs, through administrative and legal actions, to clean up hazardous waste sites that they have contaminated.

Preliminary Assessment (PA): The process of collecting and reviewing existing information about a known or suspected hazardous waste site or release. EPA uses this information to determine if the site requires further study. If further study is needed, a site inspection is performed.

Preliminary Close Out Report: A report, documenting the completion of the physical remedy construction at a site, that is prepared after work at the final operable unit is complete. To name a few, it summarizes the release at the site, site conditions, construction activities, and any response actions.

Quality Assurance / Quality Control (QA/QC): A system of procedures, checks, audits, and corrective actions to ensure that all EPA research design and performance, environmental monitoring and sampling, and other technical reporting activities are of known and documented quality.

Record of Decision (ROD): A public document that explains which cleanup alternative(s) will be used at National Priorities List sites. The ROD is based on information and technical analysis generated during the remedial investigation / feasibility study and consideration of public comments.

Remedial: Taken instead of or in addition to a removal action, a remedial response is the permanent remedy taken at a site; it seeks to prevent or minimize the release of hazardous substances and to prevent further migration. Remedial actions may include storage, confinement, perimeter protection, neutralization, cleanup, recycling, repair of leaking containers, bioremediation, and incineration.

Remedial Action Report: The Remedial Action Report documents the activities that occur under each specific remedial action operable unit at a site. It also provides documentation that a particular operable unit has met its objectives, and certifies that all items in the settlement agreement and any incorporated documents have been met.

Remedial Design (RD): A phase of remedial action that follows the remedial investigation / feasibility study and includes development of engineering drawings and specifications for a site cleanup.

Remedial Investigation / Feasibility Study (RI/FS): Two distinct but related studies. They are usually performed at the same time, and together are referred to as the RI/FS. They are intended to: (1) gather the data necessary to determine the type and extent of contamination at a CERCLA site listed on the National Priorities List (2) establish criteria for cleaning up the site; (3) identify and screen cleanup alternatives for remedial action; and (4) analyze in detail the technology and costs of the alternatives.

Remedial Project Manager (RPM): The EPA or state official responsible for overseeing remedial action at a site.

Removal Action (RA): The cleanup or removal of released hazardous substances from the environment or the taking of other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare when immediate action is considered to be necessary. In addition to physically removing hazardous substances from the site, removal actions may include measures to limit access to the site and the provision of alternative water supplies and temporary housing.

Resource Conservation and Recovery Act (RCRA): An amendment to the Solid Waste Disposal Act, addressing the safe management of the hazardous and non-hazardous municipal and industrial waste generated nationwide. This act governs hazardous waste treatment, storage and disposal facilities, and was amended in 1984 by the Hazardous and Solid Waste Amendments.

Site Inspection (SI): An investigatory phase following a preliminary assessment in which more extensive

information is collected through site sampling. The collected information is used to score a site under the Hazard Ranking System to determine whether the site will be placed on the National Priorities List.

Superfund: The common name used for the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended in 1986 and the EPA activities implementing the Act.

Superfund Amendments and Reauthorization Act (SARA): Amendments to CERCLA enacted on October 17, 1986, that expanded the size of the cleanup fund, established cleanup standards and deadlines for response actions, and addressed cleanup of Federal facilities.

Trust Fund: Commonly referred to as "Superfund," this is a fund established by CERCLA to pay for the cleanup of hazardous waste sites and for the costs of legal action necessary to force those responsible for creating the sites to clean them up or pay for clean up costs.