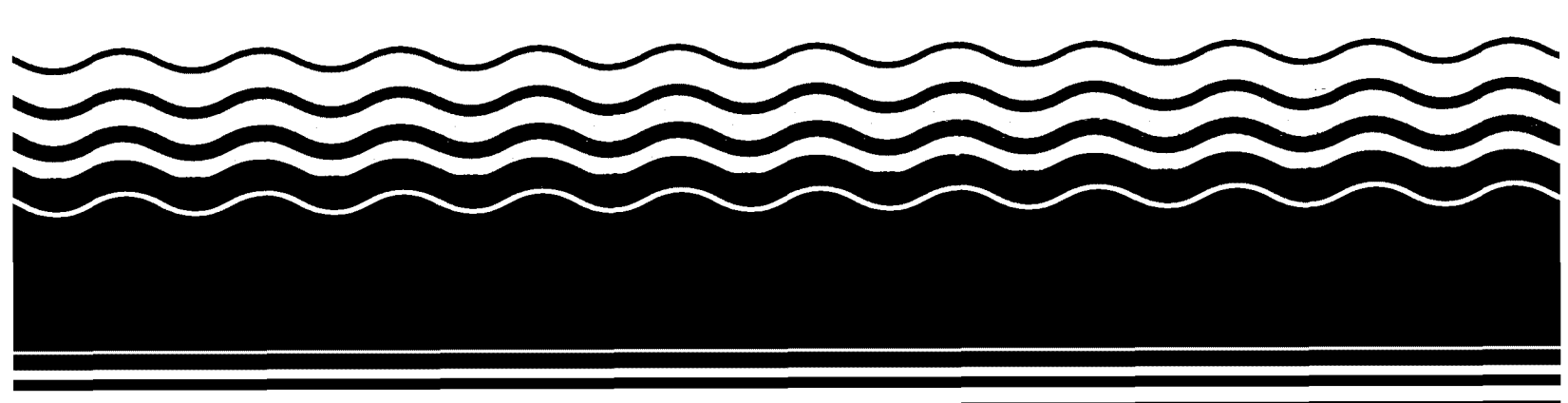


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EPA/ESD/R09-94/128
March 1995**

**EPA Superfund
Explanation of Significant Difference
for the Record of Decision:**

**Selma Pressure Treating
Company, Selma, CA
10/26/1993**



SELMA PRESSURE TREATING COMPANY SUPERFUND SITE

Final
EXPLANATION OF SIGNIFICANT DIFFERENCES
From the 1988 Record of Decision

I. Introduction

On September 24, 1988, the United States Environmental Protection Agency (EPA) signed a Record of Decision (ROD) for the final remedial actions at the Selma Pressure Treating Company Superfund site, located in Selma, California. The EPA is the lead agency for the investigation and clean up of the site; the primary state agency is the California Environmental Protection Agency, Department of Toxic Substances Control.

Since 1988, the EPA has been conducting treatability studies, collecting additional field data, and preparing design plans and specifications for construction of the remedy. In the course of conducting these additional studies and preparing detailed designs, the EPA in consultation with other regulatory agencies has modified certain aspects of the remedial actions and clean up levels. The purpose of this document is to explain the significant differences that have come about since the ROD was written in 1988. These differences, though significant, are not a fundamental alteration of the remedy described in the ROD.

Under Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §9617, and pursuant to 40 C.F.R. Section 300.435(c)(2)(i) (55 Fed.Reg. 8666, 8852 (March 8, 1990)), EPA is required to publish an Explanation of Significant Differences (ESD) whenever a significant (but not fundamental) change is made to a final remedial action plan as described in a ROD.

This document provides a brief background of the Selma site, a summary of the remedy selected in the ROD, a description of the changes to the ROD that EPA is now making (including how the changes affect the remedy originally selected by the EPA in the 1988 ROD), and an explanation of why the EPA is making these changes to the ROD.

The EPA is issuing this ESD to clarify certain aspects of the clean up standards for the site, to explain changes in certain remedial action details described in the ROD, and to document compliance with Land Disposal Restrictions under the Resource Conservation and Recovery Act through a Treatability Variance.

This ESD:

(A) changes the term "clean up goal" to "clean up standard" wherever it is used in the ROD;

(B) revises the clean up standard for arsenic in surface soils from 50 mg/kg to 25 mg/kg, a more stringent standard;

(C) sets a clean up standard for pentachlorophenol in ground water at 1 ppb to comply with a new, more stringent drinking water Maximum Contaminant Level (MCL) and sets a clean up standard for pentachlorophenol in soil at 17 ppm;

(D) identifies additional areas of soil contamination that require excavation and treatment, and revises the total volume and on site disposal location;

(E) modifies the implementation of the ground water extraction and reinjection system to reflect a more phased, observational approach for the siting and design of the wells, with an initial phase consisting of 4 extraction and 6 reinjection wells; and

(F) documents compliance with RCRA Land Disposal Restrictions through a Treatability Variance for the contaminated soil.

As required by 40 C.F.R. Section 300.825(a)(2), the ESD will become part of the Administrative Record file for the Selma site. This file is available for public review during normal business hours in the EPA Region 9 Superfund Record Center, 75 Hawthorne Street, San Francisco, California, 94105.

II. Summary of Site History, Contamination Problems, and Selected Remedy

Site History

The Selma site is located in Fresno County, California, about 15 miles south of Fresno and adjacent to the southern city limits of Selma. The site comprises approximately 18 acres, including a 4 acre wood treatment facility and 14 acres of adjacent vineyards that were used for site drainage. Zoned for heavy industrial use, the site is located in a transition zone between agricultural, residential, and industrial areas. There are 12 residences and businesses within 1/4 mile of the site.

The company that originally operated at the site, Selma Pressure Treating Company, ceased operation and filed for bankruptcy in 1981. There is another wood treating company, Selma Treating Company, currently leasing the land and operating on the site.

The wood preserving process originally employed at the site involved dipping wood into a mixture of pentachlorophenol and oil, and then drying the wood in open racks to let the excess liquid drip off. A new facility was constructed in 1965, and the company converted to a pressure treating process which consisted of conditioning the wood and impregnating it with chemical

preservatives. Known chemical preservatives used at the site include Fluor-chromium-arsenate-phenol, chromated copper arsenate, pentachlorophenol, copper-8-quinolinolate, LST concentrate, and Woodtox 140 RTU.

Prior to 1982, discharge practices included: (1) runoff into drainage and percolation ditches, (2) drainage into dry wells, (3) spillage onto open ground, (4) placement into an unlined pond and a sludge pit, and (5) discharges to the adjacent vineyards.

Contamination Problems

Efforts by regulatory agencies to get the company to comply with clean up orders were unsuccessful and the company went bankrupt in 1981. EPA placed the site on the National Priorities List of hazardous waste sites in 1983.

A Remedial Investigation/Feasibility Study was conducted by the EPA to characterize the areas of contamination and develop clean up alternatives for the site. The investigations revealed several areas of soil contamination and a plume of contaminated ground water emanating from the site. Elevated levels of the heavy metals arsenic, chromium and copper were found in both surface and subsurface soils. Soil analyses also showed elevated levels of the organic compounds pentachlorophenol (PCP) and dioxin/furan. While there were several contaminants at elevated levels in the soil, chromium was the only contaminant found to be significantly elevated in the ground water.

Additional soil and groundwater studies were conducted after the ROD was signed to provide more detailed characterization for the design of the remedial actions. The supplemental investigation of the soils provided a more accurate delineation of the areas of contamination and identified additional areas needing remediation. The supplemental ground water investigations provided a more accurate picture of the extent of contamination and the pumping characteristics of the aquifer, and revealed that the ground water table had dropped to below the elevations where the highest levels of chromium had been found during the original investigation. Sampling and analysis of the ground water utilizing more sensitive protocols also revealed that PCP may be present in levels exceeding a new, more stringent drinking water MCL of 1 ppb, promulgated after the ROD was prepared (the previously proposed MCL for PCP had been 37 ppb).

Remedy Selected in the 1988 ROD

The remedy selected in the original Record of Decision is composed of two components, one for contaminated soils and one for contaminated ground water. The soil remediation component consists of excavating the contaminated soil, treating it on site with a fixative agent, and then backfilling and compacting the fixed

material on site. fixed areas of soil were then to be covered with a RCRA cap. For remediation of the contaminated ground water, the ROD calls for extraction and treatment of it in an on site facility utilizing a conventional precipitation, coagulation, and flocculation process, with either reinjection or off site disposal of the treated effluent, and disposal of sludge at an approved off site landfill. Institutional controls were also required to prevent future activities or developments on the site that could impact the integrity and maintenance of capped materials or create opportunities for increased exposures such as those that would occur in a residential area.

The ROD defined clean up goals for the soil and ground water components in terms of organic and heavy metal contaminants that, according to the risk assessment, would act as indicator contaminants and drive the clean up. For soils the two driving organic and heavy metal contaminants were found to be dioxin/furan, with a clean up goal of 1 ppb by TCDD equivalents, and arsenic with a clean up goal of 50 ppm. For ground water the ROD set a single clean up goal of 50 ppb for total chromium, which was the MCL at the time.

Criteria were also established for treatment of the excavated soil prior to redispisal. Treated soil was required to meet RCRA requirements. The maximum concentration of arsenic and chromium in treated soil, using EP toxicity testing, was 5 mg/l under 40 C.F.R. Part 261.24, and 37 ppm for PCP using a total waste analysis under 40 C.F.R. Part 268.

III. Description of the Significant Differences and the Basis for Those Differences

This ESD clarifies and modifies several portions of EPA's 1988 ROD for the Selma site. To the extent that this ESD differs from the ROD, the ESD supersedes the ROD.

The fundamental nature of the remedial actions for the Selma site have not changed; contaminated soils are still to be excavated, treated with a fixative agent, disposed of on site, and capped in accordance with RCRA standards. Ground water is still to be extracted, treated using conventional precipitation to remove chromium contamination, and reinjected into the aquifer.

Certain aspects of the remedy have been modified as a result of 1) additional data gathered subsequent to the ROD; 2) changes in Federal and State promulgated standards for contaminants found at the site; 3) reconsideration during the design phase of certain aspects of technical and material handling; and 4) clarification of the applicability of RCRA Land Disposal Restrictions for soil and debris. The significant changes from the ROD, and the rationale for those changes, are as follows.

A. Clean up Standards

This ESD uses the term "clean up standard" rather than "clean up goal". This ESD changes the term "clean up goal" to "clean up standard" wherever it occurs in the 1988 ROD.

B. Clean up Standard for Arsenic in Surface Soils

The clean up standard for arsenic in surface soils identified in the ROD, 50 ppm, was selected to be protective of all direct contact exposure scenarios except on site residential development. The ROD further required implementation of institutional controls to prevent future on site residential development.

Upon subsequent consultation with the California Environmental Protection Agency and review of other RODs from throughout the U.S. that have subsequently set arsenic clean up standards for direct contact exposure scenarios, EPA has determined that a lower clean up standard for arsenic is appropriate, and would not rely on institutional controls to assure adequate health protection. Therefore, a new clean up standard of 25 ppm has been established for arsenic in surface soils at the Selma site. All surface soils (down to a depth of five feet) containing arsenic in excess of 25 ppm shall be excavated, treated, and disposed of beneath a RCRA cap.

C. Clean up Standard for Pentachlorophenol in Ground Water

The 1988 ROD did not identify a specific clean up standard for PCP in ground water, since it had not been detected in ground water at levels any where near the MCL proposed at the time the ROD was signed, 200 ppb. Subsequent revisions to the drinking water MCLs have resulted in the PCP level being lowered to 1 ppb. PCP has been detected in ground water on or near the site in levels elevated above 1 ppb. Therefore, this ESD establishes a clean up standard of 1 ppb for PCP in ground water at the Selma site, and requires that the treated effluent from the ground water treatment plant meet the same standard before it is reinjected or otherwise discharged.

The new, stricter MCL for PCP came about due to new evidence on the potential carcinogenicity of the compound. Based on this information, EPA and California DTSC re-evaluated the need for a soil clean up standard for PCP; based on our risk analyses, a new soil clean up standard of 17 ppm has been selected to assure that direct human exposures to soil at the site do not exceed the acceptable risk range prescribed in the NCP, and to assure that residual levels remaining at the site do not have the potential to cause ground water contamination.

It should be noted that the federal MCL for chromium was changed in July 1992, from 50 ppb to 100 ppb. Since the California

State MCL has not been relaxed, we have retained the same clean up standard for chromium in ground water that was selected in the ROD, 50 ppb. Should the State MCL be revised to match the federal MCL, the clean up standard for chromium in ground water at the Selma site will also be adjusted to 100 ppb.

D. Additional Areas of Soil Contamination to be Excavated

The 1988 ROD identified four areas where contaminated soil exceeded clean up standards and required clean up. At the time of the ROD, the total volume of soils requiring remediation was estimated at 16,100 cubic yards, and the treated soils were to be backfilled into the areas from which they were excavated.

Subsequent soil investigations provided more precise volume estimates and identified additional areas where contaminated soil exceeds clean up standards and requires excavation and treatment. The revised list of areas requiring excavation are identified in Table A. The new estimate for the total volume of contaminated soil to be excavated is now 11,500 cy. Also, rather than returning treated soils to the areas where they were excavated, all treated soils will now be consolidated into a single unit on the site, under a single RCRA cap.

E. Changes in the Design of the Ground Water Extraction, Treatment, and Disposal System

The ROD described the ground water remediation both in concept (i.e. extraction of ground water exceeding MCLs, treatment, and disposal either by reinjection or off site discharge), and in detail (construction of 25 extraction wells, 50 feet deep, pumped at a cumulative total of 1,040 gallons per minute). Although the concept remains the same (with the addition of the 1 ppb clean up standard for PCP identified in paragraph C above), the design of the extraction and treatment system has been modified. Rather than installing 25 wells, the ground water extraction system will be developed in phases, with the first phase consisting of 4 wells, screened at a depth of 70 feet. The treatment plant will be constructed to an effective design capacity of 250 gpm, and will be expandable. Treated effluent will be discharged back into the aquifer through 8 injection wells. Based on information gathered from the operation of this initial phase of ground water extraction, treatment, and reinjection, additional wells will be installed and/or additional treatment plant capacity will be constructed, as appropriate.

F. Documentation of Compliance with Land Disposal Restrictions through a Treatability Variance for Contaminated Soil

As described in the original Record of Decision, RCRA Land Disposal Restrictions (40 C.F.R. Part 268) are applicable to the

TABLE A
CONTAMINATED
SOILS EXCAVATION***

Area	Location	Length (feet)	Width (feet)	Depth (feet)	Soils Volume (cubic yards)
A	West half of South Percolation	335 ft	14 ft	10 ft	1740 cy
B	East half of South Percolation	135 ft	14 ft	10 ft	700 cy
C	Unlined Waste Disposal Pond	122 ft	70 ft	*10 ft	3160 cy
D	West half of North Percolation Ditch	235 ft	14 ft	25 ft	3050 cy
E	East half of North Percolation Ditch	185 ft	14 ft	10 ft	960 cy
F	Wood Treatment Area	N/A	" π (25 ft) ²	5 ft	360 cy
G	Cal Trans Ditch	141 ft	14 ft	1 ft	75 cy
H	Southeast Disposal Area	H1	N/A	" π (25 ft) ²	5 ft
		H2	N/A	" π (25 ft) ²	5 ft
		H3	N/A	" π (25 ft) ²	10 ft
TOTAL					***11,500 cy

- * Average Depth
 ** Circular Surface Area
 *** Does not include "Possible Contaminated Soils", which, as shown in the Plans, must also be excavated.

remedial actions for contaminated soil at the Selma site. However, the ROD did not appropriately identify the means by which the remedial actions will comply with the LDRs. The ROD inaccurately stated that the contaminated soil is considered to be a K001 listed waste under 40 C.F.R. Part 261.32. K001 is a class of listed wastes under RCRA consisting of sludges and tank bottoms from treatment processes for wood preservative wastes. The soil at the Selma site became contaminated from dripping, spillage, and the direct discharge of spent wood treating solutions onto the property. The levels of contamination exceed the threshold for RCRA characteristic wastes. Therefore, the Selma soil is a characteristic, rather than a listed RCRA waste.

Because the contaminated soil at the Selma site is a characteristic RCRA waste, treatment must comply with Land Disposal Restrictions. Often, Superfund wastes differ significantly from the waste used to set the LDR treatment standard (LDR treatment standards are generally based on treating less complex matrices of industrial process wastes, rather than contaminated soil and debris). Since treatment standards have not yet been promulgated for soil and debris, there is a presumption that Superfund response actions involving the placement of soil and debris will utilize a Treatability Variance to comply with the LDRs.

The selected remedy for contaminated soils at the Selma site will comply with the LDRs through a Treatability Variance under 40 C.F.R. Part 268.44. This Variance will result in the use of a fixation/solidification technology to attain the Agency's interim treatment level range for the contaminated soil at the site. The treatment level range established through a Treatability Variance for each constituent as determined by the indicated analyses are:

Pentachlorophenol	90 - 99% reduction (TWA)
Chromium	95 - 99.9% reduction (TCLP)
Arsenic	90 - 99.9% reduction (TCLP)

Based on treatability studies conducted on the contaminated soil from the Selma site, it is anticipated that full scale operation of the selected technology will comply with these standards.

IV. Support Agency Comments

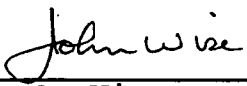
The California Environmental Protection Agency, Department of Toxic Substances Control was provided an opportunity to comment on this draft ESD before it was sent out for public review. Based on comments received from DTSC, EPA added language in the ESD pertaining to the soil clean up standard of 17 ppm for pentachlorophenol.

V. Affirmation of the Statutory Determinations

Considering the new information that has been developed and the changes that have been made to the selected remedy, the EPA believes that the remedy remains protective of human health and the environment, complies with federal and state requirements that were identified in the ROD and in this ESD as applicable or relevant and appropriate to this remedial action at the time this ESD was signed, and is cost-effective. In addition, the revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site.

VI. Public Participation

A public notice fact sheet describing this Explanation of Significant Differences was distributed to people on EPA's mailing list of interested community members for the Selma site in May 1992. A public notice was also placed in the Fresno Bee newspaper on May 8, 1992. The fact sheet summarized the changes proposed in the draft ESD, identified the repository in Selma where the entire text of the draft ESD could be reviewed, and provided a period for public comments from May 8 to June 8, 1992. (A public comment period was included for this ESD because EPA invoked a RCRA treatability variance.) EPA received no public comments on the draft ESD. Therefore, the changes identified in this ESD are identical to the changes identified in the version made available to the public in May 1992.



John C. Wise
Deputy Regional Administrator

10.26.93

Date