Preliminary Close Out Report

Selma Pressure Treating Superfund Site
Selma, California

I. INTRODUCTION

This Preliminary Close Out Report (PCOR) documents that the U.S. Environmental Protection Agency (EPA) has completed construction of the soil and groundwater remedies, at the Selma Pressure Treating Superfund Site (Site), in accordance with the EPA guidance, *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P) (January 2000). EPA and the State of California, Department of Toxic Substances Control (DTSC), conducted a final inspection for the groundwater remedy in September 1998, and for the soil remedy on June 10, 2004. EPA has determined that the U.S. Army Corps of Engineers (USACE) has constructed the remedies in accordance with the EPA-approved remedial design plans and specifications.

II. SUMMARY OF SITE CONDITIONS

Background Summary

Location

The Selma Pressure Treating Superfund Site consisted of a 14-acre plant facility and a 26 acre former vineyard, in Selma, California. The Site is in the agriculturally rich Central Valley, approximately 15 miles south of Fresno. The Site is zoned for heavy industrial use, but is in a transition zone between agricultural, residential and industrial areas. There are 12 residences and businesses within one-quarter mile of the Site.

Site Description

The Site operated as a wood preservative treatment facility from1936 to about 1994. The treatment process originally involved dipping wood into a mixture of pentachlorophenol (PCP) and oil, then drying the wood on open racks. The facility was converted to a pressure treatment process, using solutions primarily containing copper, chromium, and arsenic (CCA) in the mid 1960s. Discharge practices at the Site included runoff into drainage and percolation ditches, drainage into dry wells, spillage onto open ground, placement into an unlined pond and sludge pit, and discharges to the vineyard. These practices resulted in both groundwater and soil contamination. In 1997 all pressure vessels and tanks were removed from the site along with all buildings except for the facility office.

The site-related COCs included chromium, arsenic, copper, dioxin/furans, pentachlorophenol (PCP) and trichlorophenols (TCPs).

Regulatory and Enforcement History and NPL Listing

From 1971 to 1981, the Regional Water Quality Control Board (RWQCB) regulated Site discharges under a Waste Discharge Requirements (WDR) Order. EPA and the State Department of Health Services (DHS) conducted a Resource Conservation and Recovery Act (RCRA) investigation in 1981, because of concerns about potential groundwater

contamination. Based on initial investigations EPA added the Site to the National Priorities List (NPL) in September 1983. In March 1996, EPA and the State entered into two Consent Decree with separate Potentially Responsible Parties (PRPs), to resolve the liabilities of the owners and operators. The total value of the two settlements was $1,500,000 and an additional $100,000 upon sale of the vineyard. The settlement did not include provisions for the PRPs to conduct any site work.

Removals

In 1997, EPA entered into an Interagency Agreement (IAG) under removal authority with the USACE Rapid Response Program, to install a perimeter fence to provide site security and perform demolition of portions of the existing wood treatment facility on site. Additional soils from the yard around a residence/office located within the primary site were also excavated and stored on site for future disposal.

Remedies Selected and Remedial Construction Activities

In the Record of Decision (ROD) the following remedies were selected by EPA for the Site:

Soil

In the 1988 ROD, the selected remedy for soils included:

- Excavation of contaminated soil exceeding cleanup goals (13,000 cubic yards)
- Mixing soils with a fixative agent to solidify and stabilize contaminated soil
- Placement of the soils into an impoundment cell onsite
- Placement of a RCRA Cap on top of the fixed soils to provide additional protection from surface disturbance and water infiltration
- Abandonment of six dry wells

The USACE, under an IAG with EPA, performed this remediation work between 1991 and 1993. The excavated soils came from an on-site unlined pond, sludge pit, percolation ditches, and dry wells used to drain surface runoff from the treated wood storage areas of the Site. Off-site soils contaminated by drainage from the Site were also removed and stabilized on site.

Based on data collected for remedial design and during the soil remedial action, EPA determined that additional soil remediation work was needed beyond that done under the 1988 ROD. On October 26, 1993, EPA issued an Explanation of Significant Differences (ESD) for the soil remedy to include a more stringent cleanup standard for arsenic in soils, (25 ppm), a cleanup standard for pentachlorophenol in soils (17ppm), additional areas of soil contamination requiring cleanup, and documentation of compliance with RCRA Land Disposal Restrictions. Work under this ESD was performed in 1999 by USACE and included excavation of an additional 5,000 cubic yards of soil within and just outside the plant property where drainage and spillage from treatment operations had been deposited on public right of ways and adjacent properties. The excavated soil was stockpiled on site in the same area as the stockpile from the 1988 ROD, and the excavation area was backfilled with clean soil.

On September 30, 2003, EPA signed a ROD Amendment based upon a Focused Feasibility Study for soil performed under a USACE IAG (Geomatrix Consultants, June 2003) to reevaluate remedial action alternatives using soil data collected after 1988.

The soil remedy described in the 2003 ROD Amendment included:

- Using the same cleanup standards as the 1993 ESD
- Excavating approximately 21,000 cubic yards of additional contaminated soil to a maximum depth of five feet from the source area (retort area)
- Uncovering the existing RCRA Cap and placing the excavated soil into the existing RCRA Cap impoundment area
- Placing a new, low-permeability RCRA Cap over the impoundment area
- Fencing the impoundment area
- Backfilling the excavated area with clean soils
- Capping the excavated area with a low-permeability Asphalt RCRA Cap
- Operations and Maintenance of the RCRA Cap and Asphalt Cap

Final Soil Remedy Construction Activities

The final soil remedy construction included the following tasks in accordance with the September 2003 ROD Amendment:

- Uncovering and removing overburden soils from the existing on-site RCRA soil impoundment cell to prepare it to receive additional contaminated soil
- Placing the previously stockpiled 5,000 cubic yards of soil into the soil impoundment
- Laying out a grid and excavating up to 5 feet of surface and subsurface soils (total volume removed was approximately 30,000 cubic yards)
- Installing a RCRA geocomposite clay liner and soil/vegetative cap on the soil impoundment
- Backfilling and grading the excavated areas with clean soil
- Installing a 5.4 acre Asphalt RCRA Cap on the east end of the plant property to cover the excavated area and contain the contaminated soils below five feet
- Operating and maintaining the RCRA Caps for a period of one year (the State will assume O&M after that time)

The excavation, backfill and reinstallation of the RCRA Cap on the soil impoundment were completed in November, 2003 and the Asphalt RCRA Cap was completed in May, 2004. The pre-final inspection of the construction was conducted by EPA and the State on June 10, 2004. No punch list items were identified.

Groundwater

In the 1988 ROD, the selected remedy for chromium in groundwater consisted of constructing and operating a groundwater extraction and treatment system to convert hexavalent chromium to trivalent chromium, disposal of treated and tested groundwater by re-injection into the aquifer, and off-site disposal of sludge generated by the treatment process.

This groundwater remedy included the following:

- Installing a perimeter fence for site security
- Demolishing select structures at the wood treating operating area
- Developing and performing a depth sampling program to define and characterize the plume
- Developing a groundwater model of the contamination plume and use the

operating model to develop a pumping and extraction plan for containing and mitigating the existing plume
- Designing, procuring and constructing a 200 gallon per minute (gpm) groundwater extraction and treatment system

The groundwater extraction and treatment system (including 8 extraction wells) was installed from May-August 1998, and the post construction inspections and operational tests were conducted in September 1998. The treatment system began full 200 gpm operation in late September, 1998. The shake down period was completed on October 10, 1998 and the treatment system was deemed operational and functional at that time. The RA report documenting completed construction activities for the groundwater remedial action was completed in September, 2000. The treated groundwater reinjection was discontinued and an evaporation pond utilized instead, as documented in an ESD in April 1997. Additional groundwater system optimization is occurring at the site as part of the Long Term Remedial Action (LTRA) activities at the site.

Institutional Controls

There will be land use restrictions placed on portions of the site covered by the Asphalt Cap, RCRA Cap, groundwater treatment system infrastructure, and groundwater use. A Land Use Covenant identifying the institutional controls (ICs), will be entered into between Selma Pressure Treating Co., the current property owner, DTSC, and EPA, as a third party beneficiary. These ICs will be in place prior to the Final Closeout Report for the Site. They will likely include limitations on activities that could penetrate the Cap, continued site access for O&M, prohibitions on well drilling, continued site fencing and signage, and prohibition on interference with the groundwater pump and treatment system. The ICs will run with the land and DTSC and EPA will enforce them.

Reuse

The site is in the process of being sold to a local businessman in Selma. The primary use of Asphalt Cap area will be for storage/parking. Plans for extensive redevelopment of the site do not currently exist. The RCRA Cap and groundwater pump and treat areas will be prohibited from use.

III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

EPA and the State have 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.

The USACE Remedial Contractor adhered to the approved construction quality control plan (CQCP). The construction quality assurance plan (CQAP) and CQCP incorporated all EPA and State requirements including health and safety. All confirmatory inspections, independent testing, audits, and evaluations of materials and workmanship were performed in accordance with the construction drawings, technical specifications, and CQAP.

A USACE approved laboratory was used to perform EPA analytical methods for all confirmation and monitoring samples during removal and continued operating activities. Sampling of soil, sediments, and water have followed EPA protocol *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods.*

EPA and the State have determined that analytical results are accurate to the degree necessary to assure satisfactory execution of the RA.

IV. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

The following activities remain for the Selma Pressure Treating site:

Task	*Estimated Completion*	*Responsible Organization*
1) Optimization of groundwater pump and treat	12/2004-06/2005	EPA/State
2) Operation and Maintenance (O&M)*	09/30/14	EPA/State
3) Implementation of Institutional Controls	03/2005	State/EPA
4) Second Five Year Review	07/2007	EPA/State
5) Pre-certification Inspection	12/31/14	State/EPA
6) Approval of Final RA Report	3/30/15	EPA/State
7) Approve Final FCOR	5/30/15	EPA/State
8) Deletion From NPL	9/30/15	EPA/State

*The O&M for the groundwater treatment system includes the following additional activities:

- Provide for 24 hour/day operation and routine and emergency repair maintenance to the operating extraction and treatment system
- Continually monitor the performance of the system and collect monthly influent and effluent samples from the treatment system to document performance
- Collect and analyze samples from operating extraction wells on a monthly basis and from monitoring wells within the plume on a tri-annual basis
- Provide a written monitoring well sampling report at the completion of each monitoring well sampling event
- Evaluate and monitor the effectiveness of the containment of the contamination plume and make recommendations to EPA to increase efficiency of the plume removal.

O&M for soils includes: Annual RCRA Cap and asphalt cap inspections, and repair as needed. The assessment will include evaluating the integrity of the vegetative cover, drainage channels, asphalt surfaces, drain inlets and manholes. Corrective measures such as mowing, repairing cracks, adding hydroseed, clearing channels and drain inlets, etc., will be performed as needed.

V. SUMMARY OF REMEDIATION COSTS

The original cost estimate to implement the remedial action described in the 1988 ROD was $11,280,000. The 2003 ROD amendment added $2.5 million for a combined total of $13,780,000. This total included a ten years O & M period for the groundwater extraction/treatment system valued at $1.3 million and a 30 years of O & M on the soil impoundment and the RCRA asphalt cap valued at $350,000.

The total remediation costs for both the groundwater and soil remedies is to date $19.65 million. This includes $16.2 million in construction costs, $1.6 million for O & M costs of the groundwater treatment system thus far, and $1.85 million for USACE oversight and management costs-to-date. The increased costs were associated with greater actual construction costs than originally estimated for the soil and groundwater remedies. The

O & M costs thus far are greater than that estimated in the original ROD. The estimates in the original ROD and the 2003 ROD Amendment also did not include cost estimates for USACE oversight and management.

Groundwater Remedy Costs

The initial task for the groundwater remedial action completed in late 1997 cost $5.0 million. This funding was utilized to construct the ground water extraction and treatment system in 1998 and operate and maintain it for a period of 3 months during shakedown. The final cost for the construction was $5.0 million. This cost included extension of the O & M for 2 additional years.

The average yearly cost for O & M is $314,000. This yearly cost may increase as the extraction and treatment system ages, requiring more maintenance and repair.

The overall funds expended at the writing of this report for the groundwater remediation is $7.4 million. This includes $5.0 million for construction costs, $1.6 million for O & M costs thus far, and $0.8 million to-date for USACE construction oversight and management. The O & M costs and USACE oversight and management costs will continue as long as the plant operation is ongoing and until it is turned over to the State.

Soil Remedy Costs

Beginning in 1992 and continuing to 1996, Remedial Action funds were expended totaling $8.0 million to perform initial remediation of contaminated soils identified in the 1988 ROD. This included $7.3 million for construction activities and $0.7 million for construction oversight and management.

Beginning in 1997 and continuing to 1999, funds were expended totaling $1.25 million under removal authority to perform interim soil removal and construction activities. This included $1.1 million for construction activities and $0.15 million for construction oversight and management.

After completion of a Focused Feasibility Study in June 2003, selection of the final soil remedy, and issuance of a ROD amendment, the design of the soil remedy was completed in August 2003. The completion of this final soil remedy phase cost an additional $3 million, which includes $2.75 million for construction cost and $0.25 million for oversight and management cost.

This brings the combined total funding for the soil remedy to $12.25 million.

The soil remedy is complete with a current expenditure of $12.25 million. The expected costs for long term O & M of the soil impoundment and the RCRA asphalt cap are $12,000 per year.

VI. FIVE YEAR REVIEW

In July 2001, EPA conducted a Five Year Review of the groundwater remedy (Geomatrix Consultants Inc.). In January 2002, EPA performed a Remediation System Evaluation (GeoTran Inc.) of the treatment process. The following recommendations and subsequent actions were taken as a result of these reviews:

- Recommendation to recalibrate the 1998 groundwater model to reflect more current contaminant plume conditions to allow better evaluation of containment and provide capture analysis.
- Install monitoring wells around the on-site percolation ponds to better assess mounding affects in the aquifer.
- Establish various model scenarios to determine options for better capture, such as additional extraction wells and/or adjustments to pumping rates where applicable.

Hazardous substances will remain at the site above levels that allow unlimited use and unrestricted exposure after the completion of the soil and groundwater remedial actions. Pursuant to CERCLA section 121(c) and as provided in the current guidance on Five Year Reviews: Comprehensive Five-year Review Guidance (OSWER Directive 9355.7-03B-P, 2001, EPA must conduct a statutory Five-year review. The next Five-Year Review for soil and groundwater will be completed prior to July 2006.

Approved By:

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Date