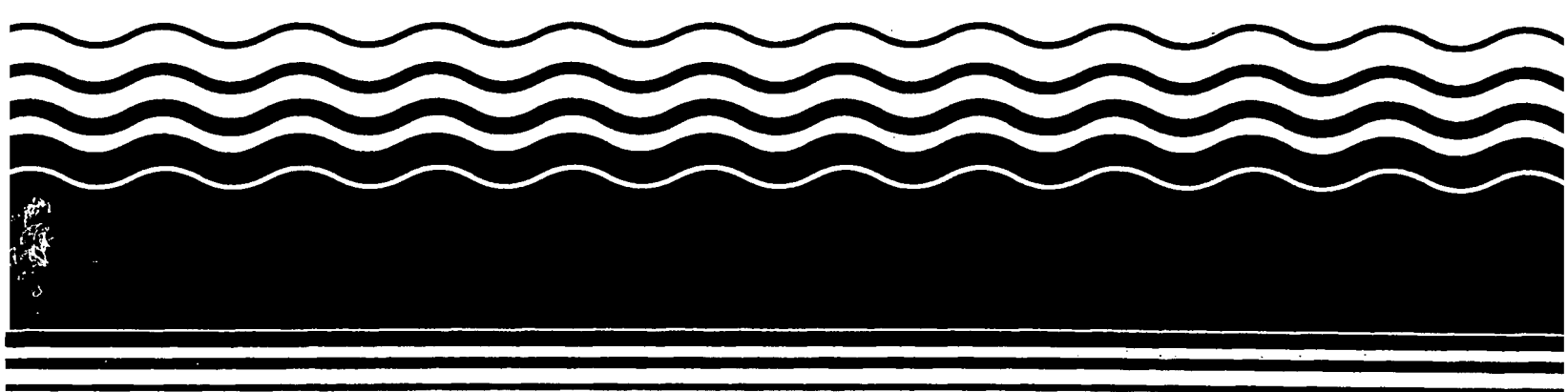


**PB97-963138
EPA/541/R-97/141
January 1998**

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

**Pepe Field
Boonton, NJ
7/25/1997**



EXPLANATION OF SIGNIFICANT DIFFERENCES

PEPE FIELD

Site Name and Location

Pepe Field
Town of Boonton
Morris County, New Jersey

Introduction

The United States Environmental Protection Agency (EPA) presents this Explanation of Significant Differences (ESD) to explain the change made to the remedy selected in the September 29, 1989 Record of Decision (ROD) for the Pepe Field Superfund site. This proposed change is the result of information obtained and developed subsequent to the 1989 ROD.

This ESD is issued in accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. 9617(c), and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR 300.435(c)(2)(i), which contain provisions for addressing and documenting changes that occur to a remedy after a ROD is signed. The ESD and documents which form the basis for the decision to change the response action will be incorporated into the Administrative Record for the site in accordance with Section 300.825(a)(2) of the NCP. The Administrative Record is available for review during normal business hours at EPA Region II, 290 Broadway, New York, New York 10007, and at the information repositories near the site at the Boonton-Holmes Library and the Boonton Town Municipal Building.

Summary of Site History, Contamination Problems, and Selected Remedy

The Pepe Field site is located in the Town of Boonton, Morris County, New Jersey. It is situated in a residential area and encompasses approximately three acres. The site was formerly used for the disposal of wastes generated from the processing of vegetable oils and soap products. It is currently an inactive recreational facility owned by the Town of Boonton. The facility includes tennis courts, a baseball field, a playground and a refreshment stand. The Town of Boonton has installed a cover, surface runoff controls, and a leachate collection and treatment system to reduce odors.

Beginning around 1935, and continuing until about 1950, the E.F. Drew Company used the site for the disposal of wastes from its plant in Boonton, New Jersey. These wastes were generated in the course of processing edible vegetable oils and soap products.

During the time that the Drew Company used the site for waste disposal, complaints about objectionable odors were registered by residents living adjacent to Pepe Field. In 1947, the Boonton Board of Health requested that Drew cease waste disposal at the site by June 30, 1947. The Board of Health also requested that the waste be covered in 1948. However, this was not done and the site remained an open, unused area until the mid-1960s when the Town of Boonton covered the site with soil in preparation for use as an athletic field. In 1969, a leachate collection and treatment system was installed at the site. These measures reduced the frequency and severity of the odor problems, however, some incidents were still reported. In 1970, the Town purchased the property and began developing it for more formal use as an athletic field. The site remained in use as a recreational facility until 1984, when it was closed by the Town of Boonton in anticipation of the beginning of a remedial investigation to be conducted under CERCLA. A four-foot high chain-link fence, installed by the Town, currently surrounds the field.

In August 1985, under a Cooperative Agreement with EPA, the New Jersey Department of Environmental Protection (NJDEP) initiated a remedial investigation and feasibility study (RI/FS) to determine the nature and extent of contamination at the site. The RI/FS, which was completed in June 1989, indicated that although the risks associated with the site in its current state were limited, several situations could occur that would increase those risks. Among these situations were the possible migration of the methane gas generated at the site to nearby basements and accumulation to explosive levels, the possible migration of metals into the ground water as the landfill aged, and the possibility of wastes becoming airborne due to deterioration of the cover at the site. Based on the results of the remedial investigation (RI), EPA and NJDEP established a remedial objective for the Pepe Field site. The objective was landfill closure in accordance with New Jersey Solid Waste Regulations. The implementation of closure would address the threat posed by landfill gases and their possible off-site migration. To accomplish these goals and objectives, EPA selected a containment-based remedy in the ROD, signed on September 29, 1989, which included the following major elements:

- ▶ Installation and maintenance of a landfill gas collection and treatment system
- ▶ Upgrade and maintenance of the leachate collection and treatment system
- ▶ Maintenance of the site cover
- ▶ Groundwater quality monitoring
- ▶ Deed restrictions to prevent waste disruption

On August 26, 1991, NJDEP formally requested that EPA assume the role of lead agency for the remedial design and construction phases of the project.

Description of the Significant Differences and the Basis for those Differences

The differences between the remedy selected in the 1989 ROD and the actions described in this ESD are based on information obtained during the design of the selected remedy. In the 1989 ROD, EPA evaluated five alternatives for remediating the site including: excavation and off-site disposal; passive perimeter controls; active interior gas venting with a cap; active interior gas collection and treatment with a cap; and no action with monitoring. Each alternative was evaluated with respect to a number of criteria including overall protection of human health and the environment, compliance with applicable or relevant and appropriate requirements (ARARs), long-term effectiveness and permanence, short-term effectiveness, implementability, cost, and community acceptance.

The no-action with monitoring alternative was eliminated from consideration because it was not judged to be protective of human health and the environment. The no-action alternative would not eliminate the potential for the development of combustible conditions in off-site structures, and it did not comply with ARARs. Active interior gas venting was considered to be less effective since gases would be vented to the atmosphere rather than treated. Passive perimeter controls were also determined to be less effective since they would relieve combustible conditions at the perimeter of the site, but would not address interior site conditions or air emissions. Excavation and off-site disposal, and active interior gas collection and treatment with a cap were considered to provide the greatest protection of public health and the environment, and to be the most effective alternatives.

Although the excavation and off-site disposal alternative was determined to be protective of human health and the environment and to provide long-term effectiveness and permanence, it was considered to be less effective in the short-term than the other alternatives because of the potential risks to the community associated with excavation of the wastes, and because it would require more time to implement than the other alternatives. Excavation and off-site disposal was also considered to be more difficult to implement than the other alternatives due to construction concerns and permitting issues. In addition, the excavation alternative was estimated to be significantly more costly than the other alternatives. Based on the above evaluation, excavation and off-site disposal was not chosen and a combination of active gas collection and treatment and passive perimeter controls was selected as the remedy for the site.

During the design of the remedy selected in the ROD, several investigations were conducted to provide more information regarding the current conditions at the site. The results of these investigations indicated that the selected remedy would require several modifications to achieve the remedial goals set forth in the ROD.

As part of the design work, soil samples were collected at off-site properties to delineate the outer limits of the deposited waste materials. The results of this sampling indicated that wastes extended beyond the boundaries of the Pepe Field site, and excavation and placement of these wastes under the site cover would be required as part of the remedy. Five test pits were also excavated along the southern boundary of the site to provide information on the condition and extent of the leachate collection trench installed by the Town of Boonton. Four of the five test pits intercepted the existing gravel-filled trench, which was found to drain only part of the southern perimeter of the site. In addition, waste material was found to be present on both sides of the trench. Based on these findings, it was determined that the existing leachate collection trench would need to be completely reconstructed to meet the criteria established in the ROD.

Extraction tests involving five gas wells were conducted during the design to measure the quality and quantity of the landfill gas for design of the gas treatment system. These tests indicated much higher levels of hydrogen sulfide than measured during the remedial investigation and confirmed elevated levels of methane that would require flaring. As a result of the gas well tests and new public health criteria for hydrogen sulfide promulgated after the ROD, it was concluded that the landfill gas would require pretreatment for hydrogen sulfide removal prior to being flared for the removal of methane. This additional gas treatment step was not anticipated in the remedy selected in the ROD. Further, an engineering assessment of the existing soil cover indicated that it could not contain the landfill gas; therefore, the gas perimeter collection system called for in the ROD would not be effective. This finding necessitated a redesign of the landfill cap to include a low permeability barrier layer to limit the release of gas into the environment, along with a gas collection layer to direct the gas to the collection and treatment system.

Samples of the landfill leachate were also collected and analyzed as part of the design effort. Based on the levels at which certain contaminants were detected, it was determined that the leachate would require pretreatment prior to being discharged to the local sewerage authority. This leachate pretreatment step was not a component of the remedy selected in the ROD. Because such treatment represented an additional cost, the design focused on minimizing the amount of leachate generated at the site.

An analysis conducted to define the flow components that were contributing to the production of leachate concluded that groundwater flow, and the infiltration of rainwater into the waste area represented the predominant factors in leachate generation. To minimize the influx of clean groundwater flowing into the waste area, a slurry wall was proposed in the design. The slurry wall would divert clean groundwater around the site before it contacted the waste mass. To reduce rainwater infiltration into the waste, a drainage layer was added to the cap to capture and transfer rainwater to the perimeter of the site. The drainage layer, and the low permeability barrier layer added to the design of the cap to prevent gas releases, would serve to restrict the vertical movement of rainwater into the waste mass.

The above modifications necessary to implement the selected remedy resulted in an increase in the estimated present worth cost of the remedy from the \$1,293,700 identified in the ROD, to \$8.4 million, including operation and maintenance of the site for 30 years. In view of the significant increase in cost, EPA decided to reevaluate all of the other alternatives presented in the ROD to determine if the selected remedy was still the most appropriate for remediating the site. The three alternatives involving passive perimeter controls, active interior gas venting with a cap, and active interior gas collection and treatment with a cap all would require the same modifications along with similar cost increases as the selected remedy to achieve the remedial goals. Consequently, these alternatives were eliminated from consideration. However, the off-site disposal alternative was retained for further review.

The original evaluation of alternatives presented in the ROD concluded that excavation and off-site disposal was less effective in the short-term than the other alternatives because of the potential risks associated with excavation, and the longer time period required for implementation. As discussed above, waste materials have been found on residential properties beyond the boundaries of Pepe Field. These wastes must be removed, making excavation a necessary component of the remedy. As part of the remedial design effort, bench-scale stabilization testing of the deposited waste materials and soil gas emission testing were performed. The results of this testing along with other information obtained during the design were used to develop a conceptual plan to excavate the waste in a safe manner, thus reducing the risks previously associated with the excavation alternative. In addition, because the design modifications outlined above will result in a significant amount of additional remedial work, it is believed that off-site disposal can be implemented in approximately the same time frame as the selected containment remedy.

The ROD also considered the excavation and off-site disposal alternative to be more difficult to implement than the other alternatives due to construction and permitting issues. The modifications necessary to implement the previously selected remedy (e.g., treatment of hydrogen sulfide gases, the addition of drainage and barrier layers to the cap, more elaborate leachate collection and treatment, and the added slurry wall) will make construction of the modified containment remedy much more complex. Also, there are more detailed permitting issues associated with both the leachate disposal and gas treatment components of the selected remedy. Consequently, EPA now considers the implementability of the excavation and off-site disposal alternative to be similar to that of the selected containment remedy.

Finally, the ROD estimated the cost of excavation and off-site disposal to be \$6,873,000, which is less than the revised cost estimate for the selected remedy. However, like the original cost estimate for the selected remedy, the ROD excavation estimate does not take into account the new information that was obtained during the design and, therefore, needed to be updated to reflect current conditions at the site.

To develop an accurate cost estimate for the excavation and off-site disposal alternative as well as to determine how best to implement such an alternative given the current site conditions, EPA developed a conceptual plan to excavate and dispose of the waste at Pepe Field. The physical properties of the waste are presently unsuitable for excavation and acceptance at a disposal facility. The ROD indicated that the excavated waste material would be mixed with cement kiln dust; in contrast, the conceptual plan includes in-situ blending of a stabilizing agent into the waste prior to excavation. This would allow the material to be excavated and safely transported to a landfill for disposal.

A slurry wall or sheet piling will likely be used to divert groundwater around the site, thereby reducing the amount of dewatering necessary during excavation. To control gas emissions during intrusive activities (i.e., soil stabilization and excavation), it is expected that an enclosed structure with a gas treatment system may be required during excavation in some areas. Continuous air monitoring will be performed during all cleanup work. The site will be backfilled and restored for future use as a recreational facility in accordance with a detailed restoration plan to be developed with local officials.

The cost of the excavation and off-site disposal alternative, as it is described above, is now estimated to be \$10 million, which is only slightly more than the current estimate of \$8.4 million to implement the selected containment remedy with all of the necessary modifications described above.

The above cost for the excavation alternative is based on the assumption that the bulk of the material will be classified as non-hazardous and can be disposed of in a solid waste landfill and includes only those disposal costs paid directly to the landfill facility. In addition, it is important to note that implementation of the remedy is dependent upon securing approvals from other parties, such as the local sewerage authority for the final treatment of dewatering flows.

Furthermore, several adjacent homeowners will need to grant the government access to excavate waste from their properties. After completion of the excavation work, the residential properties will be restored to the conditions which existed prior to any cleanup activities. The government's ability to proceed with the excavation and off-site disposal alternative is contingent on the cost assumptions and regulatory and access approvals described herein.

In summary, the excavation and off-site disposal alternative is now considered to be comparable to the current containment-based remedy with respect to the criteria used by EPA to evaluate remedies, including short-term effectiveness, implementability and cost. Excavation and off-site disposal is the preferable alternative for a number of reasons. It is permanent, will not require long-term maintenance, and no restrictions will need to be placed on the property after the remedy has been completed. This alternative also is believed to have wide community acceptance. In contrast, the current containment remedy will require the installation and operation of elaborate gas and leachate treatment systems within a residential community. The cap to cover the waste materials will cause the grade of the site to be elevated compared to the adjacent residential properties. These and other aspects of the containment remedy make it much less desirable to the community than excavation and off-site disposal. In fact, many area residents have long voiced their support for excavation of the waste materials at Pepe Field.

Consequently, EPA has decided to change the remedy for Pepe Field to excavation and off-site disposal. As the next step in the cleanup process, EPA will proceed to modify the design consistent with the new remedy. This design work may include the performance of a pilot study at the site to refine the construction specifications. Following the completion of the design work, the actual cleanup work will begin dependent on the availability of federal funds at that time.

Support Agency Comments

The State of New Jersey supports EPA's revision to the remedy and decision to issue this ESD for the Pepe Field site.

Affirmation of Statutory Determinations

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

Public Participation Activities

In accordance with the NCP, a formal public comment period is not required when issuing an ESD. However, EPA will announce the availability of this ESD in the Morris County Daily Record. This ESD has been placed in the Administrative Record for the Pepe Field site.



Jeanne M. Fox
Regional Administrator

7/25/97

Date

ESD FACT SHEET

SITE

Name :Pepe Field
Location/State :New Jersey
EPA Region :II
HRS Score(date):34 (12/82
Site ID # :NJD980529598

ROD

Date Signed: 7/25/97
Remedy: In-situ Stabilization and Off-site Disposal
Operable Unit Number: OU-1
Capital cost: \$10,000,000 (in 1997 dollars)
Construction Completion: Sept. 1999
O & M: N/A
Present worth: N/A

LEAD

Remdial/Enforcement: Remedial
EPA/State/PRP: EPA
Primary contact (phone): Romona Pezzella (212) 637-4385
Secondary contact (phone): Don Lynch (212) 637-4419
Main PRP(s): N/A
PRP Contact (phone): N/A

WASTE

Type (metals, PCB, etc.): Metals
Medium (soil, g.w., etc.): Soil/Waste
Origin: Wastes from edible oils, and cleansing and soap
products for household and industrial use.
Est. quantity: 25,000 tons