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R.K.
Barbara
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733



December 18, 1995

Certified Mail - Return Receipt Requested Z 698 454 955

Mr. Richard D. Mico
Sparton Technology, Inc.
Vice President and General Manager
4901 Rockaway Blvd., SE
Rio Rancho, New Mexico 87124

Dear Mr. Mico:

The U.S. Environmental Protection Agency (EPA) has revised the Statement of Basis summarizing the remedial alternatives for the ground water contamination at the Coors Road facility. Enclosed is a copy of the Statement of Basis and the public notice which appeared in the Albuquerque Journal newspaper on Friday, December 8, 1995. The public comment period began December 8, 1995, and will end on February 8, 1996. The Administrative Record in support of the Statement of Basis is available at the Taylor Ranch Branch library in Albuquerque, New Mexico, the New Mexico Environment Department offices in Santa Fe, New Mexico, and the EPA Region 6 Library in Dallas, Texas.

Per Section IV.J of the Administrative Order on Consent No. VI-004(h)-87-H, EPA is providing notice of the public hearing scheduled for February 1, 1996, to receive public comments on the remedial alternatives. The public hearing will begin at 7:00 p.m. at the Cibola High School, 1510 Ellison Drive, Albuquerque, New Mexico. EPA will also host an informal question and answer session prior to the public hearing beginning at 5:00 p.m. at the Cibola High School. Sparton is invited to participate in both public events. EPA will contact you in January 1996 to provide additional information on the public hearing and informal question and answer session and receive your response concerning participation in these events.

If you have any questions regarding the Statement of Basis, the schedule of events during the public notice, or the public meeting, please contact Vincent Malott of my staff at (214) 665-8313.

Sincerely,

Desi A. Crouther, Chief
Hazardous Waste Enforcement Branch

Enclosures

cc (w/ enclosures):

Mr. Ron Kern, HRMB, New Mexico Environment Department
Mr. Dennis McQuillan, GWPRB, New Mexico Environment Department
Mr. Steve Cary, New Mexico Office of Natural Resources Trustee
Mr. Norman Gaume, City of Albuquerque Public Works Dept.
Mr. Kurt Montman, City of Albuquerque Environmental Health Dept.

# U.S. EPA REGION 6 ANNOUNCES A PUBLIC HEARING AND PUBLIC COMMENT PERIOD FOR THE SPARTON TECHNOLOGY COORS ROAD FACILITY RCRA STATEMENT OF BASIS

The U.S. Environmental Protection Agency (EPA) is seeking public comment under the Resource Conservation and Recovery Act (RCRA) on the various cleanup alternatives to address ground water contamination at the Sparton Technology facility on 9621 Coors Road in Albuquerque, New Mexico. Testing of the ground water beneath and around the Sparton facility has demonstrated levels of contaminants, such as trichloroethylene, above public health standards in the ground water contaminant plume extending approximately 1/2 mile from the facility. A summary of the facility history, previous sampling activities, and the cleanup alternatives is presented in the Statement of Basis. This information is also available in greater detail in documents found in the Administrative Record.

The various alternatives which have been identified to address the ground water contamination include: 1) No Further Action; 2) On-Site Ground Water Extraction; 3) Expanded Ground Water Extraction; 4) Expanded Ground Water Extraction and Soil Vapor Extraction; 5) Expanded Ground Water Extraction, Soil Vapor Extraction, and Air Sparging; 6) Expanded Ground Water Extraction and Soil Flushing; and 7) In Situ Bioremediation.

EPA encourages you to review the Statement of Basis and the Administrative Record to better understand the facility, the RCRA activities conducted there, and the various cleanup alternatives. EPA also encourages you to participate in the decision-making process by offering comments on the various alternatives. EPA will begin selection of a remedy for the facility only after the public comment period has ended and the information submitted by the community and other interested parties has been reviewed and considered.

**The public comment period for the various cleanup alternatives begins December 8, 1995, and ends on February 8, 1996.** EPA will also hold a **public hearing beginning at 7 p.m., February 1, 1996,** to inform the community about the proposed remedy and obtain their comments. The public hearing will be held at the **Cibola High School, 1510 Ellison Drive, Albuquerque, New Mexico.** EPA will also host an informal question and answer session prior to the public hearing beginning at 5 p.m. at the Cibola High School.

Interested parties can obtain copies of the Statement of Basis and review the Administrative Record at the following locations:

**Taylor Ranch Branch Library - 5700 Bogart St., NW - Albuquerque, New Mexico**
**(505) 897-8816 - Hours: Tues, Thurs - 12:30-9:00; Wed, Fri & Sat - 9:00-5:30**

**New Mexico Environment Department - 2044-A Galisteo - Santa Fe, New Mexico**
**(505) 827-1560 - Hours: Mon - Fri 8:00-4:00**

**U.S. EPA - 12th Floor Library - 1445 Ross Avenue - Dallas, Texas**
**(214) 665-6427 - Hours: Mon - Fri 8:00-4:30**

During the public comment period, written comments must be postmarked by February 8, 1996, and submitted to: Vincent Malott, Project Manager, U.S. EPA Region 6, Hazardous Waste Enforcement Branch (6EN-HX), 1445 Ross Avenue, Dallas, Texas 75202-2733. If you have any questions or need additional information, please call Vincent Malott at (214) 665-8313.

Media inquiries should be directed to the EPA Region 6 Office of External Affairs at (214) 665-2200.

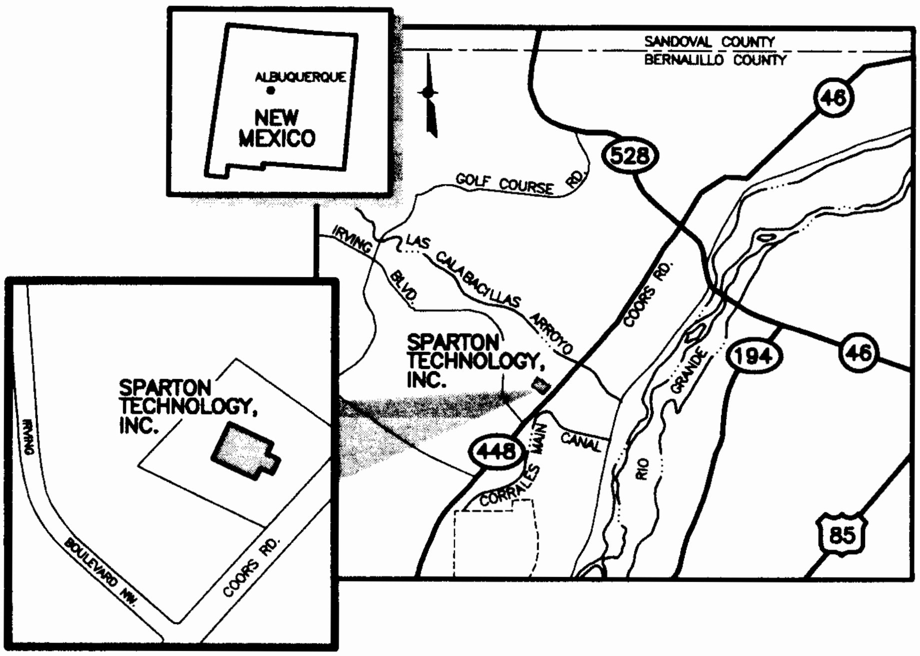
12/18/95

# STATEMENT OF BASIS
# RCRA CORRECTIVE ACTION

## SPARTON TECHNOLOGY, INC.
## COORS ROAD FACILITY
## ALBUQUERQUE, NEW MEXICO

**THE PURPOSE OF THIS STATEMENT OF BASIS IS TO:**

- Identify the remedial alternatives for addressing contamination at this site;
- Solicit public review and comment on the Statement of Basis and information contained in the Administrative Record;
- Provide information on how the public can be involved in the remedy selection process; and
- Provide history and background about the facility and surrounding site.




**EPA ANNOUNCES STATEMENT OF BASIS**

In this Statement of Basis, the U.S. Environmental Protection Agency (EPA) describes the remedial alternatives for addressing the ground water and soil contamination at the Sparton Technology Coors Road facility located in Albuquerque, New Mexico. EPA, in consultation with the State of New Mexico, will select a final remedy for the Sparton Technology facility only after the public comment period has ended and the information submitted during this time is reviewed and considered in the decision-making process. EPA is issuing this Statement of Basis as part of its public participation responsibilities under the **Resource Conservation and Recovery Act (RCRA)**. The Statement of Basis summarizes information that can be found in greater detail in the **Administrative Record**. Words appearing in **boldface** are defined in the glossary at the end of this document.

A discussion of the nature and extent of contamination at the Sparton Technology Facility and surrounding area are presented in the **RCRA Facility Investigation (RFI) Report.** Ground water sampling data collected after the RFI which updates and redefines the extent of the ground water contaminant plume is also included in the Administrative Record. The development and evaluation of remedial alternatives to address the contamination is presented in the **draft Corrective Measures Study (CMS) Report** and in supplemental correspondence between Sparton Technology and EPA. The facility investigation and development of remedial alternatives is performed by Sparton Technology and provided to EPA for review and approval.

**COMMUNITY PARTICIPATION**

EPA encourages the public to review the Administrative Record in order to gain a more comprehensive understanding of the RCRA activities that have been conducted at the Facility. The Administrative Record is available for review at the following locations:

Taylor Ranch Branch Library
5700 Bogart St., NW
Albuquerque, New Mexico
(505) 897-8816
Wed., Fri. & Sat., 9:00 a.m. to 5:30 p.m.
Tue. & Thur., 12:30 p.m. to 9:00 p.m.

New Mexico Environment Department
2044-A Galisteo
Santa Fe, New Mexico
(505) 827-1560
Monday - Friday, 8:00 a.m. to 4:00 p.m.

U.S. EPA Region 6 Library
12th Floor
1445 Ross Avenue
Dallas, Texas 75202-2733
(214) 665-6427
Monday - Friday, 8:00 a.m. - 4:30 p.m.

EPA welcomes public comment on all of the remedial alternatives described in the Statement of Basis and draft CMS Report and on any additional options not previously identified and/or studied. Public input on all of the potential remedial alternatives, and on the information contained in the Administrative Record, is an important contribution to the remedy selection process.

The public comment period begins December 8, 1995, and ends on February 8, 1996. During the public comment period, written comments must be postmarked by February 8, 1996, and submitted to:

U.S. Environmental Protection Agency
Hazardous Waste Enforcement Branch
Technical Section (6EN-HX)
Attention: Vincent Malott
1445 Ross Avenue
Dallas, Texas 75202-2733

EPA will also hold a public hearing beginning at 7:00 p.m., February 1, 1996, to inform the community about the remedial alternatives and obtain their comments. EPA will also host an informal question and answer session prior to the public hearing beginning at 5:00 p.m. The public hearing/meeting will be held at the following location:

Cibola High School
1510 Ellison Dr.
Albuquerque, New Mexico
(505) 897-0110

EPA will address all comments received during the public comment period in the Final Decision and Response to Comments document (RTC). The RTC will also explain EPA's rationale for the remedy selected to address contamination problems at the Sparton site. The RTC will be incorporated into the Administrative Record and made available to the public in the information repositories.

The final remedy selected by EPA will be implemented either through a Corrective Measure Implementation (CMI) Administrative Order on

Consent, a CMI Unilateral Administrative Order, a civil judicial enforcement action under Section 3008(h) of RCRA, or a RCRA Post-Closure permit issued jointly by the New Mexico Environment Department (NMED) and EPA.

**FACILITY BACKGROUND**

A. Site Description

The Sparton Technology, Inc., Coors Road Plant (Facility), at 9621 Coors Road, NW, consists of a 64,000-square-foot building on a 12-acre parcel of land on the northwest side of Albuquerque, New Mexico. The Facility is located on the edge of a **terrace** approximately 60 feet above the adjacent Rio Grande floodplain and approximately 0.5 mile west of the Rio Grande. The Corrales Main Canal, a man-made hydraulic structure used for irrigation, is approximately 200 feet southeast of the Facility and contains flowing water eight months out of the year. The Calabacillas Arroyo is located about 1,000 feet north of the site. West of Irving Boulevard, the elevation rises some 250 feet from the terrace to form the surrounding hills.

Land use in the immediate area consists of commercial and residential developments and undeveloped tracts along the west side of Coors Road and agricultural operations to the east of Coors Road. Residential developments, such as Paradise Hills, are located primarily west of Irving Boulevard and are approximately 1/3-3/4 mile west of the Facility.

The subsurface soils across the Facility consist of sandy muds, sands, and gravel. The depth to **ground water** varies from approximately 65 feet at the Facility to approximately 200 feet in the hills to the west. The depth to ground water can vary as much as two to three feet during the year as a result of recharge from irrigated fields and the Corrales Main Canal. Ground water flow is generally to the southwest across the Facility, changing to the west-northwest between the Facility and Irving Boulevard.

Local ground water supplies both drinking water for the City of Albuquerque as well as process water for industrial purposes. New Mexico Utilities, Inc., operates the nearest downgradient municipal water supply well (well No. 2) approximately 2.6 miles northwest of the Facility. There have been no identified private water supply wells immediately downgradient from the Facility. Based on the criteria presented in the Groundwater Protection Strategy (U.S. EPA, 1984), EPA considers the **aquifer** beneath the Facility to be a Class IIA aquifer because it is a current and potential source of drinking water.

B. Facility History

Manufacturing operations began in 1961 with commercial, industrial, and military electronic components, including printed circuit boards. As of 1994, Sparton discontinued manufacturing operations at the Facility and other than routine maintenance activities, the Facility is currently inactive.

The printed circuit board manufacturing process at the Facility generated an aqueous plating waste which is classified as hazardous due to heavy metals and a low pH. Waste solvents were generated primarily from cleaning of electronic components. From 1961 to 1975, the plating wastes were stored in an in-ground concrete basin. This basin was replaced by a lined surface impoundment in 1975, termed the "West Pond" and a second lined surface impoundment in 1977 termed the "East Pond" (Figure 1). The "West" and "East" ponds remained in use until 1983 when Sparton ceased discharging to either pond and removed the remaining plating wastes. The ponds are approximately 20 feet by 30 feet in surface dimension and 5 feet deep. The impoundments were constructed of concrete block or cast-walls with a natural sand base and a 30-mil, two-ply hypalon liner.

From 1961 to 1980, waste solvents were accumulated in an on-site sump (Figure 1) and allowed to evaporate. The sump was constructed of concrete blocks and measured approximately 5 feet by 5 feet in surface dimension by 2 feet deep. Sparton ceased discharging to the sump in October 1980 by removing the remaining wastes and filling the sump with sand.

Drums of hazardous waste were stored on the ground surface prior to May 1981, when a new drum storage area was constructed for storage of all drummed hazardous waste. The new drum storage area consists of a covered concrete pad and a spill collection system.

C. Regulatory History

In response to a Consent Agreement and Final Order signed by Sparton and EPA in 1983, Sparton installed a ground water monitoring system for the RCRA regulated hazardous waste management units at the Facility (East and West ponds). Analyses of the samples collected from the ground water monitoring system revealed that hazardous waste had been released to the ground water as a result of previous and ongoing hazardous waste management practices. During the period of 1983 to 1984, Sparton installed 17 ground water **monitoring wells** at the Facility. These monitoring wells were screened predominately across the top of the aquifer. Analyses of ground water samples collected from the monitoring wells detected the significant contaminants presented in Table 1.

| TABLE 1 | |
|---|---|
| Chemical | Concentration (ppb) |
| Trichloroethylene | 27 - 90,900 |
| 1,1,1-Trichloroethane | 14 - 54,900 |
| Methylene Chloride | 420 - 78,400 |
| 1,1-Dichloroethylene | 18 - 31,600 |
| Tetrachloroethylene | 17 - 953 |
| Toluene | 5 - 4,720 |
| Benzene | 20 - 193 |
| Chromium | 22 - 32,100 |

Sparton ceased discharging to the ponds in 1983, and removed the remaining plating wastes from the ponds for shipment to a permitted off-site disposal facility. On June 16, 1986, NMED approved the closure plan for the "East" and "West" Ponds and Sump. The ponds and sump were certified closed by Sparton on December 18 1986, and closure was acknowledged by NMED on May 18, 1987. Sparton removed the solvent sump and sand backfill and placed the wastes in the two remaining lined impoundments. The impoundments and sump area were capped by a 6-inch thick asphaltic base overlain by a 3-inch asphaltic concrete layer (Figure 2). The cap was sloped at 1 percent to promote drainage and reduce the potential for infiltration. The protective cap installed across the former waste management area reduces the potential for direct exposure to the contaminated material, prevents stormwater runoff from transporting contaminants away from the Facility, and reduces further downward migration of hazardous waste to the underlying ground water.

Sparton also performed a soil investigation during 1986 through 1987. Soil borings were advanced on the site to evaluate the contaminant migration within the unsaturated subsurface soils as a result of past operations at the Facility. Total metals analyses indicated that chromium was the primary **inorganic** contaminant exceeding 3000 **ppm** underneath the former pond and sump area. The chromium concentration decreases to approximately 20 ppm outside of the waste management area but is still above the background levels (2-3 ppm). Field screening was conducted for the **organic** contaminants indicating the presence of volatile chemicals throughout the soil profile. Additional investigations included surface soil gas surveys conducted in 1984 and 1987. Trichloroethylene and trichloroethane were detected in the soil gas across the Facility and the general area of the ground water contamination.

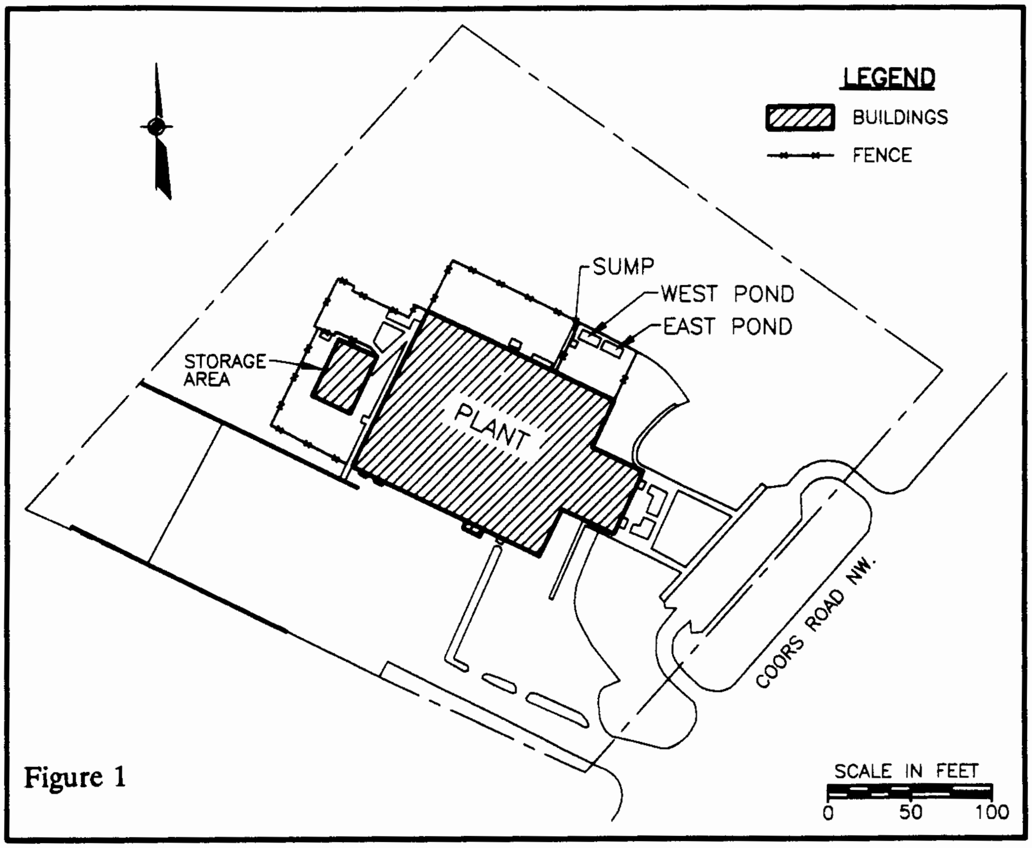


Figure 1

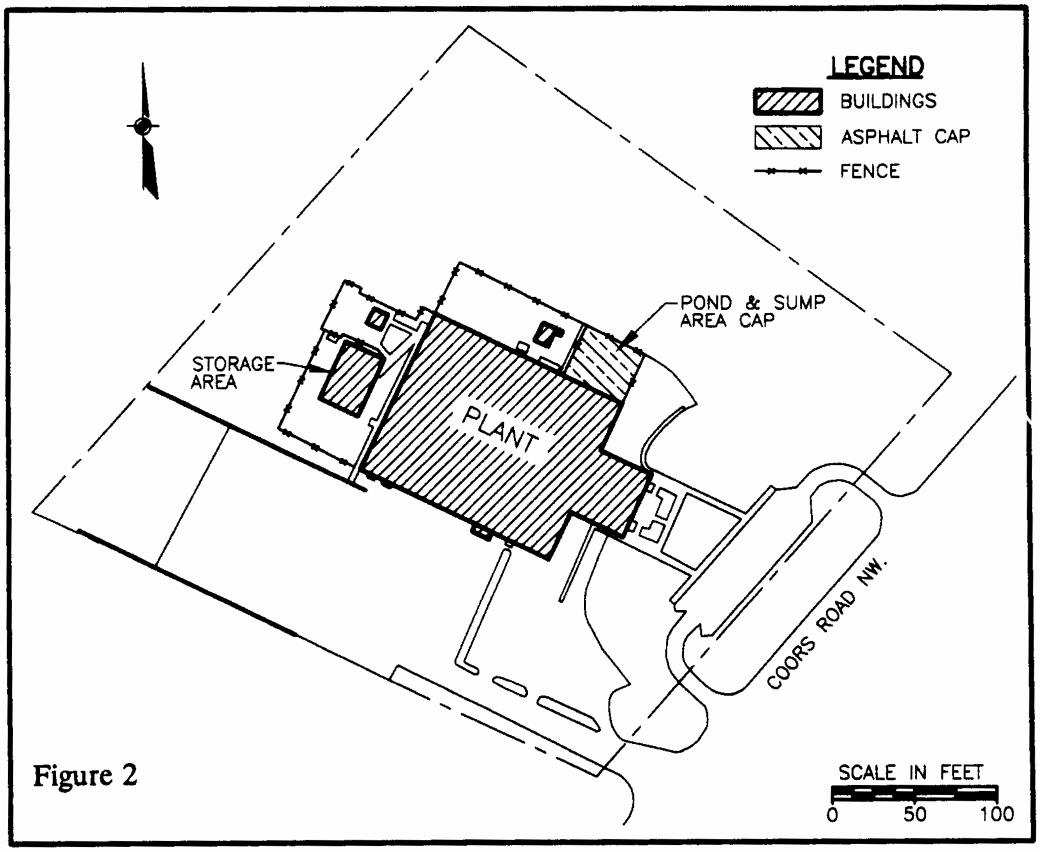


Figure 2

On October 1, 1988, the EPA and Sparton Technology, Inc. (Sparton) entered into an Administrative Order on Consent (Order), Docket No. VI-004(h)-87-H, pursuant to Section 3008(h) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6921(h). The Order specified the legal and technical requirements for Sparton to follow in performing corrective action at the Facility.

**FACILITY INVESTIGATION**

Under the terms of the Order, Sparton is required to complete the following three actions: 1) install an on-site recovery system for the contaminated ground water; 2) conduct a RFI to determine the nature and extent of contamination resulting from past facility operations; and 3) perform a CMS to evaluate the various clean-up alternatives. Sparton performed the requirements of the Order with oversight by EPA personnel and contractor support.

A. Interim Measures

Based on the available sampling data, Sparton was required under the RCRA § 3008(h) Order to install and operate a ground water recovery well network in the upper 10 feet of the aquifer as an interim measure. The recovery system became operational in 1988 to address the known ground water contamination and consists of eight on-site recovery wells at the facility. Figure 3 illustrates the location and approximate radius of influence for the individual recovery wells in the network.

The recovery well network removes approximately 1300 gallons per day of contaminated ground water. The annual ground water withdrawal rate is regulated under the New Mexico State Engineer's office permit No. RG-50161 (expiration date is December 31, 1999). Ground water pumped from the recovery wells is discharged to a collection piping system which transports the water to a collection tank. The collection piping system consists of discharge lines encased in secondary piping to provide leak detection and containment. The produced ground water is collected in a 550-gallon fiberglass-coated steel tank. The double wall tank has a leak detection system with a visual and audible alarm in the control building.

Water from the collection tank is then transported to the top of a 20 gallon per minute (gpm) packed tower air stripper. The air stripper operates by allowing the water to slowly flow downward across plastic balls while forcing air upward through the column to remove volatile organic compounds from the water. Approximately 3.2 million gallons of water have been recovered and treated in the air stripper. The demonstrated efficiency of the system is 99 percent for the contaminant indicators of trichloroethylene, 1,1,1-trichloroethane, methylene chloride, and 1,1-dichloroethylene. Contaminant concentrations in the treated water are in the range of 1 ppb for each contaminant. The volatile organic contaminants which are removed from the ground water in the air stripper are released to the atmosphere. The emissions are permitted by the City of Albuquerque Environmental Health Department (Air Quality Permit Number 187). The average daily air emission from the air stripper is 0.02 pounds which is below the maximum allowable of 9.1 pounds per day in the permit.

Treated water from the air stripper is discharged to a 15,000-gallon fiberglass-coated steel tank for storage. The double wall tank has a leak detection system with a visual and audible alarm in the control building. During previous plant operations, treated water from the storage tank was used in the main plant building as cooling and flushing water and eventually discharged into the sewer system. Since facility operations have been discontinued, the treated water is utilized in the sanitary system prior to discharge into the sewer system.

B. RCRA Facility Investigation

Under the RCRA § 3008(h) Order, Sparton investigated the nature and extent of contaminant releases to the ground water.

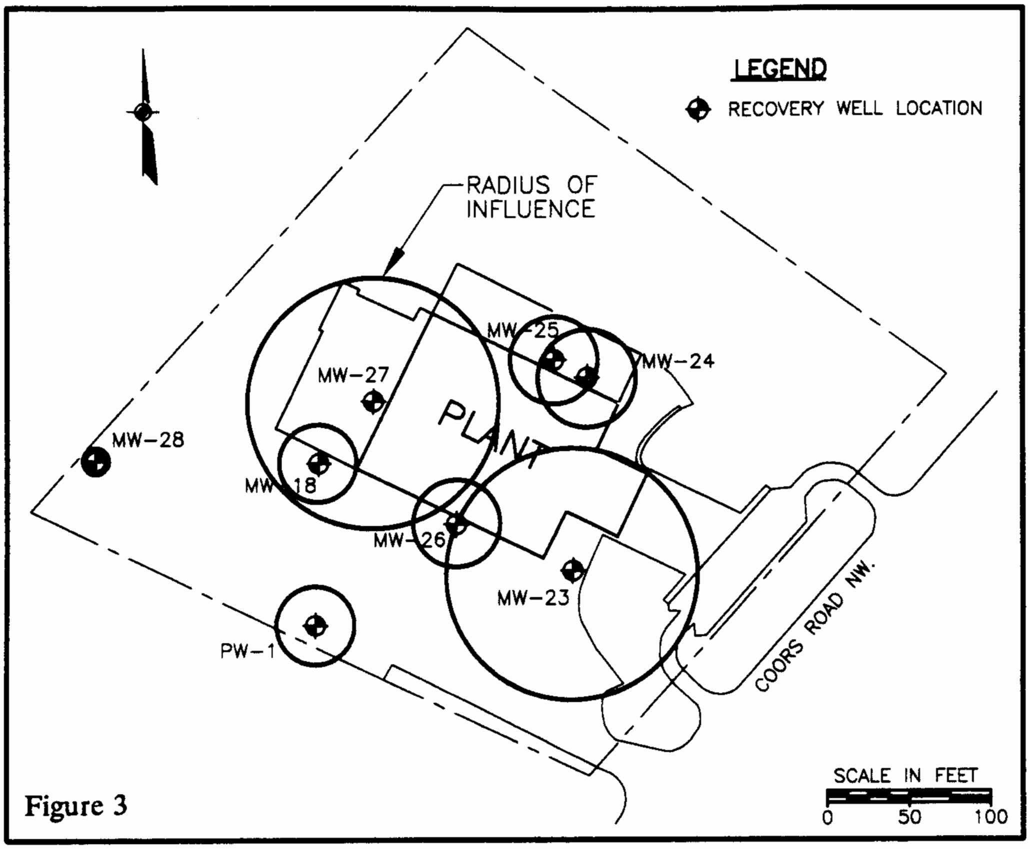



Figure 3

Monitoring wells installed in the aquifer are used to monitor the concentration and migration of contaminants in the ground water. Of these monitoring wells, 24 are located on-site at the Facility and 23 are installed off-site to a distance of approximately 1/2 mile west-northwest of the Facility. The wells are installed to monitor discrete intervals of the aquifer from 0-10 feet (upper flow zone), 30-40 feet (upper-lower flow zone), 50-60 feet (lower-lower flow zone), and 70-80 feet (third flow zone) below the top of the **water table**.

Analyses of samples collected from the monitoring wells have shown both organic and inorganic contaminants (Table 1) using EPA approved methods. Trichloroethylene is the major ground water contaminant and has been used to define the extent of the contaminant plume. Trichloroethylene is a chlorinated organic compound which is denser than water, and if present as a **nonaqueous phase liquid (NAPL)**, would sink to the bottom of the water column. While a NAPL has not been identified in the monitoring wells, existing concentrations of trichloroethylene indicate the possible presence of a NAPL in the upper flow zone of the aquifer on-site at the Facility. Remaining NAPL in the soil and ground water may produce a zone of contaminant vapors above the water table and a plume of dissolved contaminants below the water table. Both residual and migrating NAPLs dissolve slowly, supplying potentially significant concentrations of contaminants to ground water over a long period of time.

Based on available data, the horizontal extent of the ground water contaminant plume is greatest in the upper flow zone. Contaminant concentrations are the highest on-site at the Facility, decreasing off-site to the west-northwest. As of June 1991, the contaminant plume had migrated approximately 1/2 mile west-northwest of the Facility and the boundary of the plume had shown no significant changes between 1989 and 1991. The boundary of the trichloroethylene contamination in ground water is illustrated in Figure 4 by the heavy contour line representing the <5 ppb concentration in the upper flow zone.

During sampling activities in 1993, analytical results of the ground water indicated that the leading edge of the contaminant plume (<5 ppb) had moved northwest along Irving Boulevard (Figure 5). Concentrations of trichloroethylene in the ground water ranged from 13,000 ppb on-site to less than 5 ppb at a distance of approximately 1/2 mile off-site in 1993. Of the inorganic contaminants, chromium has the highest frequency of occurrence with concentrations up to 500 ppb.

While the organic contaminant concentrations have decreased with time in the on-site and certain off-site monitoring wells, other off-site monitoring wells have shown an increase in organic concentrations related to the continued migration of the contaminant plume beyond the boundary defined during the RFI. Based on available data, the contamination extends at least 60 feet below the water table. However, the existing monitoring system does not completely define the horizontal and vertical extent of the contamination.

## SUMMARY OF SITE RISKS

The primary human health risks are related to the potential contact with contaminated ground water. Ground water currently supplies the sole source of drinking water for the City of Albuquerque. At this site, the aquifer is potentially useable as a source of drinking water and is currently used outside of the contaminant plume for this purpose. The New Mexico Utilities Inc., water supply well No. 2 is approximately 2 miles downgradient (northwest) of the leading edge of the contaminant plume. Future use of the aquifer as a potential source of drinking water is also described in the Albuquerque/ Bernalillo County Ground Water Protection Policy and Action Plan (1994) and the Albuquerque Water Resources Management Strategy - San Juan- Chama Diversion Project Options (1995).

TABLE 2

| Contaminant | MCL (ppb) | WQCC (ppb) |
|---|---|---|
| Trichloroethylene | 5 | 100 |
| 1,1,1-Trichloroethane | 200 | 600 |
| Methylene Chloride | NA* | 100 |
| 1,1-Dichloroethylene | 7 | 5 |
| Tetrachloroethylene | 5 | NA* |
| Benzene | 5 | 10 |
| Toluene | 1000 | 750 |
| Chromium (total) | 100 | 50 |

* Not Available

Since the aquifer is potentially useable as a source of drinking water, the media standards applicable to cleanup of the aquifer are based upon the most stringent of either: 1) the **Maximum Contaminant Levels** (MCLs) for drinking water established under the Safe Drinking Water Act; or 2) the maximum allowable contaminant concentrations in ground water set by the State of New Mexico Water Quality Control Commission (WQCC). Protection of the ground water as a source of drinking water and as a natural resource is protected under Parts 1-203 and 3-103 of the WQCC regulations (effective November 18, 1993). Table 2 lists the specific contaminants present in the ground water and the corresponding Federal MCL and State WQCC standard.

Other site risks are directly related to the former sump and the two waste impoundments. During closure of these units, the liquid wastes were removed and a protective cap placed across the former waste management area. The cap reduced the potential for direct exposure to the residual

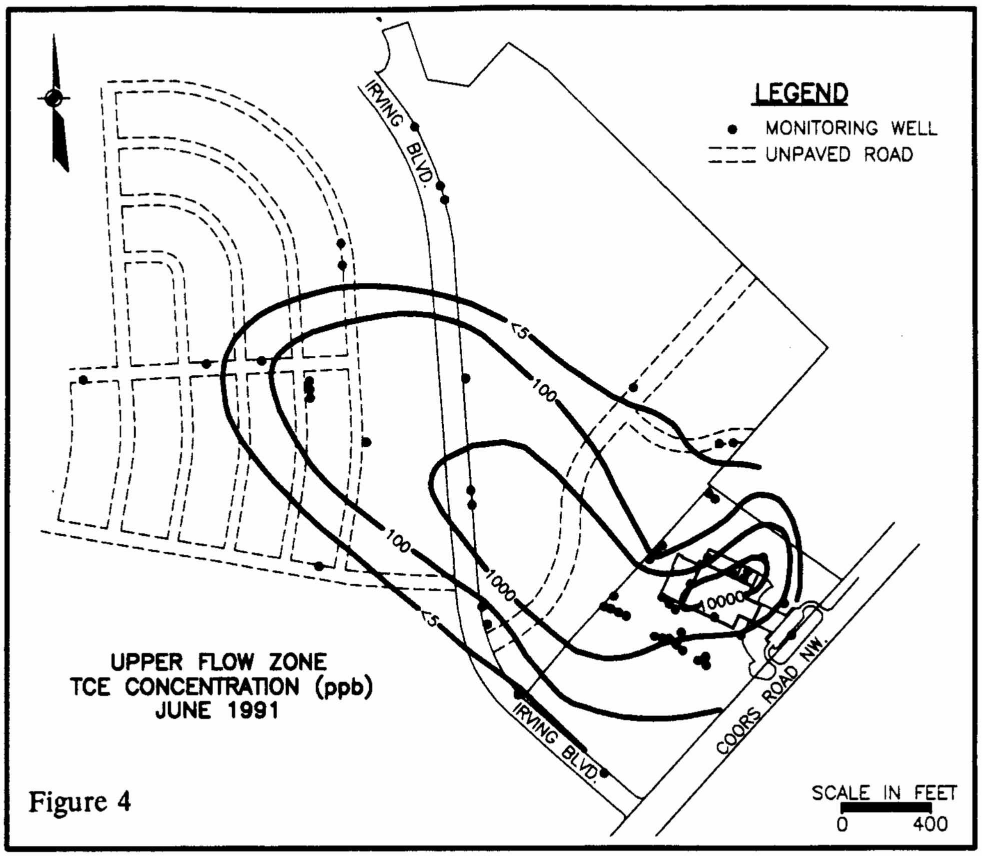



Figure 4

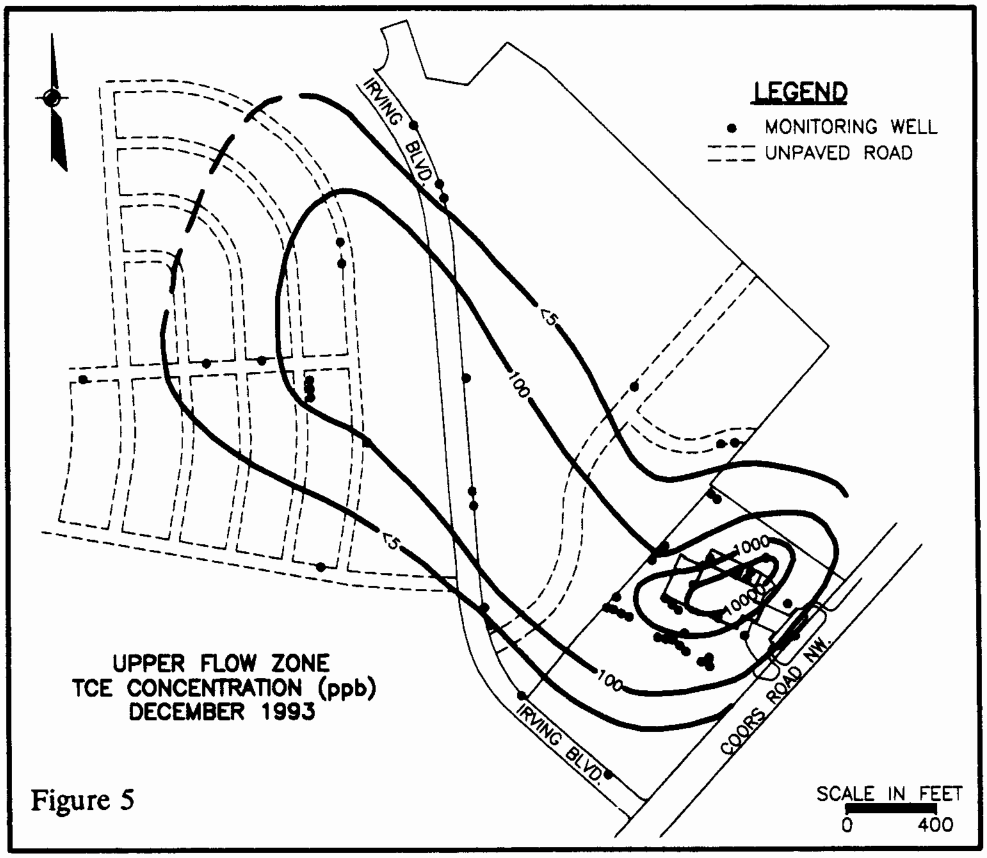



Figure 5

hazardous waste present in the units and in the surrounding soils. The cap also prevents stormwater runoff from transporting contaminants into the surrounding water bodies.

## SUMMARY OF ALTERNATIVES

For this Statement of Basis, individual corrective measure alternatives in the draft CMS Report have been combined and renumbered to present comprehensive alternatives for addressing the release of contaminants into the ground water and soil. The descriptions and evaluations of the corrective measure alternatives are presented in greater detail in the draft CMS Report and Administrative Record. Information gathered during the RFI was used to develop several remedial alternatives in the draft CMS Report. Sparton Technology also conducted a screening process to eliminate those remedial alternatives that may prove infeasible to implement, or that rely on technologies unlikely to perform satisfactorily or reliably.

The cost estimates presented for each of the following alternatives include capital costs, operation and maintenance costs, and **present worth costs**. Due to the uncertainty in predicting the time necessary for restoration of the ground water to its beneficial use, all costs were based on a thirty year operational period for comparison purposes.

### Alternative 1: No Further Action

| | |
|---|---|
| Present Worth Cost: | $0 |
| Capital Cost: | $0 |
| Operation & Maintenance: | $0 |

| | |
|---|---|
| Time of Implementation | |
| Design/Remedial Action: | 0 months |
| Operation & Maintenance: | 0 months |

Description

The "No Further Action" alternative is often evaluated to establish a baseline for the comparison with other alternatives. Under this alternative, no further remedial actions are performed by Sparton to address the existing ground water and soil contamination. In addition, Sparton's operation of the existing ground water recovery and treatment system at the Facility would be discontinued. Instead, the contaminant plume would be allowed to degrade naturally (natural attenuation) over an indefinite period of time.

### Alternative 2: On-Site Ground Water Extraction System

| | |
|---|---|
| Present Worth Cost: | $3.14 million |
| Capital Cost: | $300,000 |
| Operation & Maintenance: | $185,000/Year |

| | |
|---|---|
| Time of Implementation | |
| Design/Remedial Action: | 0 months |
| Operation & Maintenance: | 30 years |

Description

Alternative 2 consists of: 1) continued operation of the existing ground water extraction and treatment system to remove contaminants from the ground water at the Facility; and 2) natural attenuation of the off-site contaminant plume. The existing ground water extraction system was previously described in the section on Interim Measures. The existing system can also be enhanced by adding additional on-site recovery wells at greater depths to recover contaminants from the lower flow zones unaffected by the existing system. Operation of the air stripper unit has confirmed the effectiveness and reliability of this technology for treating ground water contaminated with volatile organic contaminants. The existing air stripper has sufficient remaining capacity to accommodate additional flow if another recovery well is added to the system.

Since the existing extraction system is not capable of removing contaminants from the ground water outside of the facility, the off-site portion of the contaminant plume would be allowed to degrade naturally (natural attenuation) over an indefinite period of time. Ground water would be monitored on a quarterly basis and the results used to evaluate changes in the extent of the contaminant plume, changes in contaminant concentrations within the plume, and the effectiveness of the on-site ground water recovery system. Current estimates indicate that 20 to 40 monitor wells may be required for quarterly sampling and analyses. As part of a quarterly monitoring program, additional site characterization would also be performed to determine the horizontal and vertical extent of the ground water contaminant plume. An additional 20 ground water monitoring wells may be necessary to monitor the entire contaminant plume. The number of additional monitoring wells for installation and quarterly sampling may increase or decrease based on the results of the site characterization, continued migration of the contaminant plume, future performance of the selected remedy, and any changes in the risk to human health and the environment. An annual evaluation of changes in land use/development would be implemented to determine the need for any additional corrective measures.

Potential impacts to the local community involve construction activities in the public right-of-ways for the off-site monitoring wells, quarterly sampling activities for the monitoring wells, and routine operation and maintenance activities for the monitoring wells.

Capital costs for this alternative include the installation of additional monitoring wells. Annual operation and maintenance costs include quarterly sampling and analyses of monitoring wells.

**Alternative 3: Expanded Ground Water Extraction System**

| | |
|---|---|
| Present Worth Cost: | $6.16 million |
| Capital Cost: | $812,000 |
| Operation & Maintenance: | $348,000/Year |

Time of Implementation

| | |
|---|---|
| Design/Remedial Action: | 1 year |
| Operation & Maintenance: | 30 Years |

Description

Alternative 3 includes all of the activities outlined in Alternative 2. In addition, ground water extraction wells are installed off-site to prevent further migration of the contaminant plume and restore the contaminated aquifer to its beneficial use. The off-site extraction wells would probably be sited in existing public right-of-ways as are the existing off-site monitoring wells.

This alternative can be implemented in several phases. For example, an initial phase would include further characterization of the ground water contamination to determine the complete horizontal and vertical extent of the contaminant plume. As discussed in Alternative 2, the current estimate is that an additional 20 monitoring wells may be needed to monitor the contaminant plume.

After completion of the initial phase, ground water extraction wells would be installed off-site from the Sparton property near the leading edge of the contaminant plume to prevent further migration of the plume. Current estimates indicate that two to three extraction wells may be required to accomplish this goal. However, the number of recovery wells may increase over the current estimate based on the results of the investigation completed in the initial phase. In addition, the location and number of extraction wells would be determined during the remedial design phase. After construction of this phase of the system is completed, the extraction system and surrounding ground water monitoring wells would be carefully monitored on a regular basis to evaluate the performance of the system in meeting the containment goal. Further refinement of the extraction system may be necessary during the monitoring phase to prevent further migration of the contaminant plume. Quarterly sampling and analyses of selected monitoring wells will also continue for evaluation of the contaminant plume.

In a final phase, additional extraction wells are installed as necessary to restore the aquifer for use as a source of drinking water, in addition to controlling further plume migration. Restoration is defined as attainment of the media standards (the more stringent of Federal MCLs or State WQCC standards) in the aquifer, over the entire contaminant plume. The number of recovery wells for restoration of the contaminated aquifer would be determined during the remedial design phase. The number of additional recovery wells for installation and the amount of recovered ground water may increase or decrease based on the future performance of the recovery system and additional analytical data.

The extracted ground water from the off-site recovery wells will have to be transported back to the Facility via underground pipes for treatment. The expanded volume of recovered ground water could no longer be discharged into the sewer system. Options for disposal of the treated ground water may include reinjection back into the aquifer, reuse of the treated ground water as irrigation water, or disposal into the Rio Grande. Any disposal option will have to be consistent with both the State regulations governing ground water usage, and the water management plan presented in the Albuquerque Water Resources Management Strategy - San Juan-Chama Diversion Project Options (July 1995) and the Albuquerque/ Bernalillo County Ground Water Protection Policy and Action Plan (1994).

All of the disposal options would require treatment of the ground water prior to disposal. Since the contaminants to be removed include both organic and inorganic compounds, the treatment system may require two separate treatment units. For organic compounds, the treatment unit may consist of a larger air stripper to remove volatile organic compounds and **a granular activated carbon** unit to reduce air emissions from the air stripper. For the inorganic compounds, the treatment unit may consist of a chemical precipitation unit for removal of metals from the water. Other treatment options for organic compounds include chemical and/or UV oxidation, and aerobic biological reactors. For the inorganic compounds, other available technologies include ion exchange and electrochemical methods. The sequence of technologies used for the ground water treatment train would be determined during the remedial design. Any treatment train will need to be designed to: 1) attain the chemical-specific discharge requirements; and 2) be easily modified to treat increased flow from an expanded extraction system.

The ability to achieve the ground water cleanup goals throughout the entire ground water contaminant plume with Alternative 3 cannot be realized within a few years. It is likely that many years of ground water pumping and treatment will be required in order to determine if ground water cleanup goals can be achieved. Because of the high contaminant concentrations and the possible presence of NAPL in the ground water, as well as the process of chemical and physical desorption of contaminants in both the ground water and soil which lies below the Facility, there are several possibilities in achieving the cleanup goals at all points of compliance.

A possibility exists that the ground water contaminants may show a rapid initial drop in concentration and then level out to relatively constant, or slowly declining, concentrations. This relatively constant concentration would exist regardless of the length of time ground water extraction was implemented. The equilibrium or steady-state concentration of these organic and inorganic contaminants in the ground water may be greater than the corresponding cleanup goals.

Performance of a ground water extraction system will be carefully monitored on a regular basis and adjusted as warranted by the collected data. Refinement of the system may be required, if EPA determines that such measures will be necessary in order to restore the aquifer in a reasonable time frame, or to significantly reduce the time frame or long-term cost of attaining this objective. Post-construction refinements to the alternative may include any or all of the following:

- adjusting the pumping rate in some or all of the ground water extraction wells;

- installing additional extraction wells to facilitate or accelerate cleanup of the contaminant plume;

- discontinuing pumping at individual extraction wells where cleanup goals have been attained; monitoring of the aquifer would be continued to ensure that media cleanup goals are maintained;

- installing additional ground water monitoring wells to monitor changes in the ground water contaminant plume; and

- refining the treatment and disposal components of the alternative.

Potential impacts to the local community from implementation of this alternative may involve construction activities in the public right-of-ways for the off-site monitoring wells, recovery wells, and associated piping; quarterly sampling activities; and routine operation and maintenance activities for the monitoring and recovery wells and associated piping. Accidents involving breakage or failure of a component in the recovery well system could result in the release of contaminated ground water at the surface.

**Alternative 4: Expanded Ground Water Extraction and Soil Vapor Extraction**

Present Worth Cost: $6.39 million
Capital Cost: $962,000
Operation & Maintenance:
$376,000/Year 1-3
$348,000/Year 4-30

Time of Implementation
Design/Remedial Action: 1 year
Operation & Maintenance:
1-3 years - Soil Vapor Extraction
30 Years - Ground Water Recovery

Description

Alternative 4 includes all of the activities outlined in Alternative 3. In addition, a soil vapor extraction (SVE) system can be installed to enhance the removal of volatile organic contaminants from the soil and ground water to assist in the attainment of the ground water cleanup goals. The SVE system does not remove inorganic compounds in the soil. SVE wells are installed in the soil above the water table to create a partial vacuum in the soil. This vacuum produces a flow of air which vaporizes the volatile organic compounds from the surrounding soil. The air and vapor mixture is then drawn into the SVE wells and collected at the surface for treatment before venting to the atmosphere. In situ air stripping processes are generally effective in removing volatile organic compounds (e.g. trichloroethylene and trichloroethane) from the soil. Since the SVE system does not result in the physical destruction or transformation of the contaminants, the organic vapors would have to be removed from the air by a granular activated carbon unit to prevent the transfer of contaminants to the atmosphere. The granular activated carbon would then be disposed of off-site or regenerated for future use.

Prior to installation of a SVE system, further sampling of the subsurface soil and soil gas can be performed. The extent of vapor phase organic contaminants in the soil above the water table would then be evaluated to determine the impact to ground water at concentrations above the more stringent standards of either: 1) the Federal MCLs established under the Safe Drinking Water Act or the standards set by the State of New Mexico under the WQCC regulations. This data can then be used to evaluate the design and performance of a soil vapor extraction system. Remediation goals for the subsurface soil and soil gas will be determined following additional characterization and performance testing of the soil vapor extraction system.

Since the highest volatile organic concentrations are expected to be associated with the source material in the on-site soil and ground water, the SVE wells would be installed on-site to remove the maximum amount of contaminants. Performance of the SVE system can be enhanced with the addition of blowers which would force air into the soil in surrounding wells. Further enhancements to the SVE system can be achieved by lowering the water level in the upper few feet of the aquifer at the facility to allow greater volatilization of the organic contaminants in the upper flow zone. An added benefit of the SVE system is the potential for decreasing the time frame for meeting cleanup goals in the ground water by enhancing the volatilization of volatile organic compounds from the water table, thereby further reducing concentrations in the ground water.

**Alternative 5: Expanded Ground Water Recovery System, Air Sparging and Soil Vapor Extraction**

Present Worth Cost: $6.60 million
Capital Cost: $1.06 million
Operation & Maintenance:
$416,000/Year 1-3;
$348,000/Year 4-30

Time of Implementation
Design/Remedial Action: 1 year
Operation & Maintenance:
1-3 years - Air Sparging/SVE
30 Years - Ground Water Recovery

Description

Alternative 5 includes all of the activities outlined in Alternative 4. In addition, air sparging wells are installed in the aquifer to remove additional source material. Air sparging utilizes wells installed in the aquifer to inject clean air directly into the ground water. Dissolved volatile organic compounds are stripped from the ground water by the rising air bubbles around the air injection wells. As the volatile organic compounds rise upward to the overlying soil, the SVE system collects the contaminants for treatment. In addition, the SVE system removes existing soil vapor from the surrounding soil. In situ air stripping/air sparging processes are generally effective in removing volatile organic compounds (e.g. trichloroethylene & trichloroethane) from the soil and ground water.

An added benefit of the combined air sparging/ SVE system is the potential for decreasing the time frame for meeting cleanup goals in the ground water by enhancing the volatilization of volatile organic compounds from the water table, thereby further reducing concentrations in the ground water. Site limitations at the Facility may involve the presence of low permeability silt/clay layers which may produce lateral spreading of the volatile organic compounds in the ground water outside of the treatment zone. Performance tests would need to be conducted to determine the radius of influence created by the air injection wells in the aquifer.

Since the air sparging/air stripping technologies do not result in the physical destruction or transformation of the contaminants, the organic vapors would have to be removed from the air by a granular activated carbon unit to prevent the transfer of contaminants to the atmosphere. The granular activated carbon would then be disposed of off-site or regenerated for future use. The air stripping technologies are not useful in removing inorganic compounds in the soil or ground water.

**Alternative 6: Expanded Ground Water Extraction and Soil Flushing**

Present Worth Cost: $7.10 million
Capital Cost: $1.31 million
Operation & Maintenance:
$508,000/Year 1-3
$348,000/Year 4-30

Time of Implementation
Design/Remedial Action: 1 year
Operation & Maintenance:
1-3 years - Soil Flushing
30 Years - Ground Water Recovery

Description

Alternative 6 includes all of the activities outlined in Alternative 3. In addition, soil flushing is used to remove source material (both organic and inorganic contaminants) from the soil overlying the ground water. The process uses a flushing agent such as a solvent or surfactant solution to promote or enhance the mobility of the contaminants in the soil. The flushing process transports the contaminants downward to the ground water for recovery in extraction wells and the contaminants are then pumped to the surface for treatment. The flushing agent can be applied to the soil by use of sprinkler system. Site limitations involve the presence of low permeability silt/clay layers in the soil above and within the water table which may produce lateral spreading of the flushing agent outside of the treatment zone. Performance tests would need to be conducted to determine the effectiveness of the technology under site conditions.

**Alternative 7: In Situ Bioremediation**

| | |
|---|---|
| Present Worth Cost: | $15.63 million |
| Capital Cost: | $2.80 million |
| Operation & Maintenance: | $835,000/Year |

| | |
|---|---|
| Time of Implementation | |
| Design/Remedial Action: | 1 year |
| Operation & Maintenance: | 30 Years |

Description

Alternative 7 includes all of the activities outlined in Alternative 2. In addition, in situ bioremediation is utilized to completely or partially decompose organic compounds, such as trichloroethylene and trichlorethane, by bacteria in the subsurface. The decomposition process can occur under either anaerobic (absence of dissolved oxygen) or aerobic (presence of dissolved oxygen) conditions. Contaminants such as trichloroethylene and trichlorethane are more likely to decompose to non-hazardous compounds in anaerobic conditions. Additional data will need to be collected to determine if these conditions exist in the ground water or soil impacted by the contaminants. In order to enhance the bioremediation process under aerobic conditions, additional oxygen and nutrients would have to be injected into the ground water and soil. The high contaminant concentrations on-site would probably restrict the initial application of bioremediation to less contaminated off-site areas. The on-site concentrations would have to be further reduced by continued operation of the on-site ground water recovery system prior to application.

Benefits of in-situ bioremediation are the absence of above-ground treatment units and the associated by-products produced from treatment of recovered ground water and organic vapor requiring off-site disposal. Limitations include the potential inability to produce a non-toxic degradation product due to incomplete biodegradation and sensitivity to toxins and changing environmental conditions resulting in limited bioremediation. The efficiency of the bioremediation process is also limited by the ability to deliver a uniform application of nutrients and oxygen to the bacteria in the ground water. Performance tests would need to be conducted to determine the effectiveness of the technology under site conditions.

**EVALUATION OF ALTERNATIVES**

Prior to EPA's decision on a final remedy selection, the performance of all of the alternatives will be evaluated against the criteria outlined in the Guidance on RCRA Corrective Action Decision Documents, Office of Solid Waste and Emergency Response (OSWER) Directive 9902.6 (Please see Figure 6 which discusses the criteria in more detail). The following discussion profiles how the performance of each of the alternatives will be evaluated against the four general standards for corrective measures and the five remedy decision factors discussed in Figure 6.

## FIGURE 6
## SELECTING A REMEDY

The U.S. EPA uses nine criteria, or standards, to evaluate alternatives for addressing a hazardous waste site. In addition, there are two modifying criteria EPA considers in making its final remedy selection.

**FOUR GENERAL STANDARDS FOR REMEDY SELECTION**

| OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT | ATTAIN MEDIA CLEANUP STANDARDS | CONTROL THE SOURCES OF RELEASES | COMPLY WITH STANDARDS FOR MANAGEMENT OF WASTES |
|---|---|---|---|
| • How alternatives provide human health and environmental protection | • Ability of alternatives to achieve the media cleanup standards. Media cleanup standards are the Federal and State statutory and regulatory requirements that a selected remedy must meet. | • How alternatives reduce or eliminate to the maximum extent possible further releases | • How alternatives assure that management of wastes during corrective measures is conducted in a protective manner |

**FIVE SELECTION CRITERIA FOR REMEDY SELECTION**

| LONG-TERM RELIABILITY AND EFFECTIVENESS | REDUCTION OF TOXICITY, MOBILITY, OR VOLUME OF WASTES | SHORT-TERM EFFECTIVENESS | IMPLEMENTABILITY | COST |
|---|---|---|---|---|
| • Magnitude of residual risk<br>• Adequacy and reliability of controls | • Treatment process used and materials treated<br>• Amount of hazardous materials destroyed or treated<br>• Degree of expected reductions in toxicity, mobility, or volume<br>• Degree to which treatment is irreversible<br>• Type and quantity of residuals remaining after treatment | • Protection of community during remedial actions<br>• Protection of workers during remedial actions<br>• Environmental impacts<br>• Time until remedial action objectives are achieved | • Ability to construct and operate the technology<br>• Reliability of the technology<br>• Ease of undertaking additional corrective measures, if necessary<br>• Ability to monitor effectiveness of remedy<br>• Coordination with other agencies<br>• Availability of off-site treatment, storage, and disposal services and specialists<br>• Availability of prospective technologies | • Capital costs<br>• Operating and maintenance costs<br>• Present worth cost |

**MODIFYING CRITERIA**

| STATE ACCEPTANCE | COMMUNITY ACCEPTANCE |
|---|---|
| • The State has an opportunity to review the draft CMS Report and the Statement of Basis and offer comments to EPA. The State may propose a preferred alternative or have no comment. | • During the public comment period, interested persons or organizations may comment on the alternatives. EPA considers these comments in making its final remedy selection. The comments are addressed in the Final Decision and Response to Comments document. |

1. **Overall Protection of Human Health and the Environment**

The first decision factor is a general mandate from the RCRA statute. Since the aquifer is potentially useable as a source of drinking water, the final remedy selected for this site will have to prevent exposure to the contaminants present in the ground water.

2. **Attainment of Media Cleanup Standards**

The final remedy will have to meet the applicable media cleanup standards. Since the aquifer is potentially useable as a source of drinking water, standards for exposure to the contaminants in the ground water are based upon the more stringent of either: 1) the **Maximum Contaminant Levels** (MCLs) for drinking water established under the Safe Drinking Water Act; or 2) the maximum allowable contaminant concentrations in ground water set by the State of New Mexico Water Quality Control Commission (WQCC). Protection of the ground water as a source of drinking water and as a natural resource is protected under Parts 1-101 and 3-103 of the WQCC regulations (effective November 18, 1993). Table 2 lists some of the contaminants present in the ground water and the corresponding Federal MCL and State WQCC standard.

3. **Controlling the Sources of Releases**

Each of the remedial alternatives considered for the final remedy must address the potential for any remaining source material at the facility. The control of source material to the extent practicable is necessary in eliminating further releases and incorporation into the long-term strategy for addressing the ground water contamination. Unless source control measures are taken, efforts to clean up releases may be ineffective or, at best, will involve an essentially perpetual cleanup situation.

4. **Compliance with Waste Management Standards**

Each of the remedial alternatives considered for the final remedy must comply with the requirements for management of wastes during construction of the remedy and routine operation and maintenance activities. Standards potentially impacting the various alternatives include regulatory limits on the discharge of contaminants into the atmosphere and treated ground water, disposal of residues from the treatment of ground water, and the consumption of ground water.

5. **Long-Term Reliability and Effectiveness**

Each of the remedial alternatives will be evaluated on the ability to provide adequate protection of human health and the environment over the long term. Adequate protection includes source control technologies to ensure that environmental damage from the sources of contamination at the facility will not occur in the future. The magnitude of the residual risk and the adequacy and reliability of preventive controls will also be evaluated.

6. **Reduction of Toxicity, Mobility, or Volume of Wastes**

Remedial alternatives will be favored during the selection process that are capable of permanently reducing the overall degree of risk posed by the contamination in the ground water and soil. This criteria is directly supportive of the goal for achieving long-term reliability. Each of the alternatives will be carefully evaluated for the amount of expected reductions in the toxicity, mobility, or volume of wastes and the type and quantity of the remaining residual waste following implementation of the remedy.

7. **Short-Term Effectiveness**

This decision factor directly affects the local community since Alternatives 2-7 require some amount of construction activities in areas being developed for residential and commercial purposes. Protection of the local residents in the community, as well as workers involved in construction of a remedy, must be accounted for when evaluating each of the remedial alternatives. Potential threats to the community involve exposure to contaminants during construction activities, management of contaminated media, and routine operation and maintenance activities.

8. **Implementability**

This decision factor involves the future activities which must be coordinated between the City, County, State, and Federal governments for issuance of any permits at the site. Permits which may be required for the listed alternatives include construction activities in public right-of-ways, recovery and treatment of contaminated ground water, disposal of treated ground water, and management and disposal of hazardous contaminants. The issuance of these permits may affect the time required for implementation of the selected remedy.

9. **Cost**

Due to the uncertainty in predicting the time necessary for restoration of the ground water to its beneficial use, all costs were based on a thirty year operational period for comparison purposes.

10. **State Acceptance**

EPA will continue to coordinate with the State of New Mexico, through the New Mexico Environment Department and the Office of the Natural Resources Trustee, and the City of Albuquerque, through the Environmental Health Department and the Public Works Department, during the remedy selection process. Support for one of the listed alternatives, or an alternative not considered in the Statement of Basis, will be evaluated during the public comment period.

11. **Community Acceptance**

Comments from the community will be an important consideration in the evaluation of remedial alternatives. All comments received during the public comment period and at the public meeting scheduled for February 1, 1996, will be evaluated during the remedy selection process.

# SPARTON TECHNOLOGY FACILITY - PUBLIC COMMENT PERIOD

The 45-day public comment period for the Sparton Technology Facility will begin on **December 8, 1995,** and end on **February 8, 1996**. Your written comments must be postmarked by **February 8, 1996.** EPA would like your comments on the Statement of Basis and the Administrative Record file for the Sparton Technology Facility. Please write your comments below, then fold, tape, stamp, and mail this form. EPA will address all comments received during the public comment period in the Final Decision and Response to Comments. If you would like to receive a copy of the Response to Comments, please include your full name and address on the return address form.

# SPARTON TECHNOLOGY
# RCRA CORRECTIVE ACTION SITE
# PUBLIC COMMENT PERIOD

The public comment period for the Sparton Technology Facility
begins December 8, 1995.
Your comments must be post marked by February 8, 1996.

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Name ______________________

Address ____________________

City _______________________

State ____________Zip______

U.S. EPA
Compliance Assurance and Enforcement Division
Hazardous Waste Enforcement Branch
Technical Section (6EN-HX)
Att: Vincent Malott
1445 Ross Avenue
Dallas, TX 75202-2733

# GLOSSARY OF TERMS

**Administrative Record** - A collection of documents that form the basis for the remedy selection.

**Aquifer** - A layer of permeable rock, sand, or gravel below the ground's surface that can supply usable quantities of ground water to wells and springs. An aquifer can be a source of drinking water.

**Corrective Measures Study** - An evaluation of the alternatives for cleanup of sites contaminated with hazardous waste.

**Granular Activated Carbon** - Carbon used to treat ground water that is usually crushed to produce a large surface-to-volume ratio that exposes a large number of carbon atoms for adsorption of hazardous constituents.

**Ground Water** - Water found beneath the Earth's surface that fills pores between soil, sand, and gravel particles to the point of saturation. When it occurs in a sufficient quantity, ground water can be used as a water supply.

**Inorganic** - Chemical substances of mineral origin, not of basically carbon structure.

**Maximum Contaminant Level** - Maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

**Monitoring Wells** - Special wells drilled at specific locations on or off a site where ground water can be sampled at selected depths and studied to determine such things as the direction in which ground water flows and the types and amounts of contaminants present.

**Nonaqueous phase liquid (NAPL)** - The term NAPL refers to the undissolved liquid phase of a chemical, such as trichloroethylene (TCE), and not to the aqueous phase dissolved in water. Virtually all NAPLs are organic compounds that are immiscible (resistant to mixing) with water. The distinct interface resulting from the water-NAPL contact does allow some NAPL to dissolve, with the degree of aqueous solubility varying dramatically among NAPL compounds. As NAPL moves through the soil and aquifer, a portion becomes trapped and a portion may continue to migrate. The "free-phase NAPL" is the migrating portion, which can flow into a well. "Residual NAPL" is that portion trapped in the soil or aquifer and no longer migrates as a separate phase. Both residual and free-phase NAPLs are sources of vapors and dissolved contaminants.

**Organics** - Compounds which contain carbon. For example, trichloroethylene is an organic compound.

**Parts Per Million (ppm)/Parts Per Billion (ppb)** - Units of measure used to express concentrations of contaminants. 1 ppm is equal to 1,000 ppb and 1 ppb is equal to 0.001 ppm. Also, 1 ppm is equal to 1 mg/kg or 1 mg/l; 1 ppb is equal to 1 ug/kg or 1 ug/l. As an example, 1 ounce of trichloroethylene in 1 million ounces of water is 1 ppm.

**Present Worth Costs** - The amount of money necessary to secure the promise of future payment at an assumed interest rate. For example the total cost of purchasing a car after the car loan has been paid off is the net present worth of the car.

**Resource Conservation and Recovery Act (RCRA)** This law authorizes the federal government to respond directly to releases of hazardous waste which may be a threat, or potential threat, to public health and the environment. EPA is responsible for implementing Section 3008(h) of RCRA in the State of New Mexico.

**RCRA Facility Investigation (RFI)** - An investigation to determine the nature and extent of contamination at a facility.

**Terrace** - A relatively flat ground surface bounded by steep slopes.

**Water Table** - The upper surface of ground water in an aquifer. The water table marks the boundary between the unsaturated soil and the saturated aquifer.

FOR MORE INFORMATION

For more information about the public involvement process, or if you have questions about site activities at the Sparton Technology Facility, please contact:

**Mr. Vincent Malott**
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New Mexico Environment Department
Hazardous & Radioactive Materials Bureau
P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-1560

All media inquiries should be directed to the EPA Region 6 Office of External Affairs at (214) 665-2200

**SPARTON TECHNOLOGY**
**RCRA CORRECTIVE ACTION SITE**
**PUBLIC MEETING**

Oral and written comments will be accepted at a public meeting to be held:

Thursday, February 1, 1996
at 7:00 PM
in the Cibola High School
1510 Ellison Drive
Albuquerque, New Mexico

EPA will also host an informal question and answer session prior to the public hearing beginning at 5:00 p.m. at the Cibola High School.

U.S. Environmental Protection Agency
Hazardous Waste Enforcement Branch
Technical Section (6EN-HX)
1445 Ross Avenue
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