IN THE MATTER OF THE UNITED STATES ENVIRONMENTAL PPROTECTION AGENCY'S STATEMENT OF BASIS ON SPARTON TECHNOLOGY, INC., COORS ROAD FACILITY, ALBUQUERQUE, NEW MEXICO

NMED COMMENTS ON THE EPA STATEMENT OF BASIS REGARDING SPARTON COORS ROAD FACILITY

INTRODUCTION

This document provides comment by the New Mexico Environment Department (NMED) on the Statement of Basis (SB) issued by the United States Environmental Protection Agency (EPA) on the Draft Corrective Measures Study (CMS) submitted by Sparton Technology, Inc. (Sparton). The Draft CMS was submitted for Sparton's facililty located at 9621 Coors Road, Albuquerque, New Mexico in November of 1992. It gives Sparton's recommendations for abatement of solvent (Trichloroethene, Tetrachloroethene, 1,1,1-Trichloroethane, 1,1-Dichloroethene) and metals (Chromium) contamination of soil and ground water due to their past waste management practices between 1961 and the early 1980's at its Coors Road facility.

In the Draft CMS, Sparton recommended that the current interim ground water remedial system and monitoring plan be maintained as the final remedy. The interim system consists of quarterly monitoring of 8 on-site monitor wells and pumping of shallow ground water at a total rate of less than 1 gallon per minute (gpm) from 8 on-site pumping wells. Sparton considers all other remediation technologies to be technically and economically unfeasible.

The ground water that has been contaminated, due to Sparton's past waste management practices, is in an area of Albuquerque that is prime for ground water development due to the acceptable water quality and the location. Private and commercial land development has been taking place at a very high rate.

NMED is of the opinion that the Draft CMS submitted by Sparton is unacceptable in its recommendation to continue the inadequate interim system of monitoring and remediation of ground water. The following statement sets out the bases as to why Sparton's recommendations are inadequate and what actions NMED believes are necessary to abate contamination.

EXTENT OF CONTAMINATION

Neither the horizontal nor the vertical extent of contamination are fully known. In 1992, Sparton submitted to EPA a RCRA Facility Investigation (RFI) and the Draft CMS. Based on data available to EPA at the time, the RFI was approved indicating that the EPA

believed the plume was delineated. Since then, data have become available showing that the plume has migrated beyond the horizontal limits of the current system of monitor wells. Trichloroethene (TCE) concentrations in the most downgradient shallow monitor well (MW-61) have been steadily increasing from 490 ug/l in July, 1993 to 2000 ug/l in October, 1995, 400 times the federal Maximum Contaminant Level. MW-60, a deeper well next to MW-61, has shown a steep increase in TCE levels in the last two years. See Attachment A which is incorporated herein.

NMED contends that the vertical extent of the plume has never been fully characterized. MW-55, the deepest off-site monitor well has shown a steadily increasing trend in TCE concentration from 74 ug/l in October of 1991 to 680 ug/l in July of 1995. All well nests in the central portion of the plume that show contamination in the shallowest well also show contamination in the deepest well.

NMED recently acquired quarterly data that Sparton had been collecting at 18 off-site monitor wells since 1991 (See Attachment A). The data show a clear trend of increasing TCE concentrations in 7 of the wells (39 %) and a clear decreasing trend in only two of the wells (11%). All the other monitor wells have either non-detectable contamination or contaminant levels that have fluctuated over time. Furthermore, trends cannot be accurately determined for on-site wells in the shallow portion of the aquifer due to the operation of the pumping system (NMED believes that if the pump-and-treat ground water recovery system were to be shut down for a week or more, contaminant levels in this area would likely rise). Based on this information and the lack of full plume characterization, NMED considers Sparton's claim that the overall contaminant mass is decreasing to be unjustifiable.

The extent of vadose zone contamination in the source area is unknown. A soil study was conducted in 1986 by Sparton in which soil samples from several on-site borings were field and lab tested. Sparton's conclusion was that there is little organic contamination of significance remaining in the vadose zone. NMED considers the results of this study to be questionable due to the lack of good correlation between field and lab testing and because the scope of borehole testing is limited. NMED considers the use of dedicated nested vapor probes to be a more reliable and relatively inexpensive method of assessing vadose zone volatile organic contamination.

RECOMMENDATIONS

Given the available data and information, NMED believes that Sparton's current interim ground water remedial system is having little useful effect in containing or cleaning up contamination. To date, less than 3 gallons of TCE have been extracted by the pump-and-treat system. TCE concentrations are generally increasing

off-site as discussed above. High levels of organic contaminants are still detected in ground water in the source area.

Due to the importance of the area around the plume for possible future development of additional drinking water by the City of Albuquerque, NMED believes that it is imperative that an effective system be put in place to monitor, contain and remediate contaminated ground water. See Attachment B which is incorporated herein. NMED believes that such a system must be designed and constructed as soon as possible because the high rate of land development makes the design, construction and operation of such a system increasingly difficult, and because the continuing migration of the plume causes an increase in the cost and scope of an appropriate system design over time.

NMED believes that the following must be included in any selected remedy:

1) Further characterization of the plume. As described above, the full three-dimensional extent of the plume is not known. This information is necessary to design an effective system for containment and remediation of ground water contamination. The monitor well system will have to be assessed for its adequacy in verifying the remediation of ground water;

2) A new monitoring program revising the current on-site schedule and including a monitoring schedule for off-site wells;

3) Investigation of vadose zone contamination in the source area and soil vapor extraction (SVE) if necessary based on the results of the investigation. Continued high contaminant levels in shallow ground water suggest the existence of residual contamination in the soil matrix. Residual volatile organic compounds (VOCs) in the vadose zone can serve as a source for vapor transport of the contaminants to ground water. NMED recommends the installation of permanent, nested vapor probes in the source area from which soil vapor samples can be collected and then analyzed. Soil samples should be collected, field extracted (for VOCs) and lab analyzed for VOCs and metals as part of the drilling program to install the vapor probes.

   If sufficiently high levels of VOCs are detected in the soil vapor, then an aggressive SVE system must be implemented at the source area. If metals are still in a mobile state, they must be fixated.

4) The existing plume must be contained. The plume is far too large as it is and must be prevented from migrating further downgradient. Hydraulic containment is the only reasonable method of containment. Water pumped from such a system must be treated to below applicable ground water standards and then

reinjected or allowed to infiltrate back into the ground water system;

5) Deeper ground water contamination in the general source area must be abated. The increasing TCE levels in the deeper wells suggest the existence of residual contamination at depth in the aquifer.

Any proposed remedy should include air sparging as a possible method. Testing would have to be done to determine the potential effectiveness of an air sparging system. If air sparging proves to be inadequate, a pump-and-treat system (more aggressive than the system currently in place) is the most likely method under these conditions. This would entail the installation of additional pumping wells that extend deeper into the aquifer than the current pumping wells. Additional innovative technologies should also be considered;

6) The long-term goal of remediation should be to restore the aquifer to drinking water quality. Remediation goals for the aquifer should be the more stringent of the Federal Maximum Contaminant Levels (MCL), established by the EPA, or the New Mexico Water Quality Control Commission (WQCC) abatement standards including 20 NMAC 6.2 §1101.TT and §4103:

Contaminant	MCL (ppb)	WQCC (ppb)
Trichloroethene	5	100
1,1,1-Trichloroethane	200	60
1,1-Dichloroethene	7	5
Methylene Chloride	5	100
Tetrachloroethene	5	20
Chromium (total)	100	50

In addition, a risk assessment may have to be conducted for multiple residual constituents to ensure protection of health and environment (RCRA criterion). The SB gives seven proposed corrective measure alternatives. The alternative that most closely incorporates NMED's requirements is Alternative 5, understanding that air sparging may turn out to be inappropriate at the site. NMED, therefore, recommends that EPA adopt Alternative 5 with expanded and more aggressive pumping on-site, in the event air sparging proves inadequate to clean up ground water on-site, and to include a provision to allow consideration of other innovative technologies.

In the Draft CMS, Sparton argued that the current interim system should be the preferred alternative; this corresponds to Alternative 2 in the SB. Sparton's only reason supporting this recommendation were the claims that the plume is shrinking in size and that they consider there to be an absence of risk to the public presented by the plume. NMED considers both of these claims to be invalid and unsupported by the facts. Their first claim is, in fact, not true as the plume has clearly been shown to be expanding and increasing in concentration in several wells (see discussion above).

Their second claim is not valid as RCRA and the New Mexico Water Quality Act protect all ground water in the state that is being used or may be used in the reasonably foreseeable future. There is little doubt that with Albuquerque's rapid rate of growth, this area would be prime for ground water development in the future if not for the contamination from the Sparton facility. Federal and state laws apply and require Sparton to abate the ground water and soil contamination that they have directly caused. Thus, Sparton's defense of maintaining the current remediation system as proposed in the Draft CMS is invalid.

No technical arguments are given in the Draft CMS against expanded pump-and-treat for remediation and containment or against an SVE system. However, in a letter from Sparton to Desi Crouther of the EPA dated November 6, 1995, Sparton argues that any pump-and-treat remedy may be technically impracticable. NMED does not consider the difficulties expressed by Sparton to be insurmountable. Most importantly, the difficulties of pump-and-treat must be weighed against the ability of alternative methods to provide for plume containment and remediation.

NMED disagrees with most of the arguments made by Sparton in the November 6 letter against pump-and-treat containment. Sparton states that "because the greatest contamination occurs in the [upper flow zone], near the surface of the aquifer, deeper wells to contain the entire plume would result in contamination being pulled downward into lower, less contaminated zones of the aquifer". Since the plume is poorly characterized vertically, this statement can not be justified. In fact, at well nest 48/55/56, TCE concentrations increase with depth. There is also an increase in TCE concentrations with depth at wells 41/32 on the northwest site boundary (based on the preliminary results of the most recent sampling event). The concern for not bringing contamination into uncontaminated zones can be addressed in the design of the pumping system.

Sparton states that "containment based on extraction wells will be very limited in effectiveness with respect to a diffusion-dominated plume". NMED maintains that the plume is not diffusion dominated and that this argument against pump-and-treat is invalid.

The concerns relating to the "mining" of ground water become moot if ground water is reinjected or allowed to infiltrate back into the ground water system. This would require a Ground Water Discharge Permit from the State of New Mexico, but no problems are foreseen in obtaining such a permit.

Due to the forgoing, NMED requests that EPA adopt Alternative 5 in the Statement of Basis with the expansion of the on-site pump-and-treat system as set forth above.

Respectfully submitted,

Ed Kelley 7 Feb 1996

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