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RECORD OF DECISION

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Responsiveness Summary
Completion of Remedial Investigation/Feasibility Study
Combe Fill South Landfill
Chester and Washington Townships
Morris County
New Jersey

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This Combe Fill South Responsiveness Summary documents the concerns of the local residents, municipal, state and federal officials, along with the Department's responses during two public meetings, six informal briefings and the public comment period. Public meetings were held at the initiation of the Remedial Investigation/Feasibility Study (RI/FS) and at the conclusion of the RI/FS. During the course of the RI/FS, the Department held six informal briefings to discuss the project status with local, state and federal officials, as well as representatives of the Upper Raritan Watershed Association, HALT (Help Avoid a Landfill Tragedy), and the Interlocal Coordinating Committee consisting of local residents and officials of Chester and Washington Townships, Morris County, New Jersey.

This Responsiveness Summary is presented in four sections:

- I. RI/FS Initiation Meeting: July 23, 1984
- II. Informal Briefings
- III. RI/FS Completion Meeting: July 14, 1986
- IV. Remaining Concerns

Attachments

- A. Information Package: RI/FS Initiation Meeting
- B. List of Attendees: RI/FS Initiation Meeting
- C. Information Package: RI/FS Completion Meeting
- D. List of Attendees: RI/FS Completion Meeting
- E. Correspondence received by NJDEP during the public comment period

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Responsiveness Summary
Completion of Remedial Investigation/Feasibility Study
Combe Fill South Landfill
Chester and Washington Townships
Morris County, New Jersey

I. RI/FS Initiation Meeting

A public meeting was held at the Washington Township Municipal Building in Long Valley, New Jersey by the New Jersey Department of Environmental Protection (NJDEP) on July 23, 1984 to discuss the initiation of the Remedial Investigation/Feasibility Study (RI/FS) for the Combe Fill South Landfill site. Notification of the meeting was accomplished through press releases sent to all newspapers listed in the Combe Fill South Community Relations Plan and mailings to all parties listed in the "Contacts" section of the plan. An information package, including an agenda, fact sheet, overview of the community relations program at Superfund hazardous waste sites, and the steps involved in a major hazardous waste site cleanup, was given to all attendees at the beginning of the meeting. (See Attachment A.) Approximately 50 people attended the meeting, including local and state officials. (See Attachment B.) The meeting was opened by Washington Township Committeeman Tracy Tobin and Vice-Mayor Robert Schneider. After opening remarks by Jorge Berkowitz, explanation of the community relations program by Grace Singer and site overview by Len Romino (all NJDEP representatives), Patrick Lawler of Lawler, Matusky, and Skelly Engineers gave a detailed presentation of the activities planned for the RI/FS. The meeting was then opened for discussion. Several questions were asked by citizens regarding sampling activities, potable water and other issues. Following is a summary, organized by subject, of all major questions/comments raised at this meeting and NJDEP's responses. Major subjects include:

- ° Well Testing;
- ° Interim measures;
- ° Project schedule;
- ° Cost/Funding; and
- ° Other issues.

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Well Testing

Question: Will we be informed if you find dangerous levels of volatile organics as a result of testing residential wells?

Response: Yes, the Department would contact residents immediately if this were the case.

Question: Has there been any testing of on-site wells?

Response: Tests will be conducted as part of the Remedial Investigation. Residential potable wells, as well as on-site monitoring wells will be tested.

Question: What types of tests will be done and which wells will be tested?

Response: The type of sampling has not yet been determined. Two important criteria will be the historical analytical data and the direction of ground water flow.

Question: Is there State money left over for well testing that could be used to test Mr. Ling's well?

Response: There may be some money left to test his well. We will look into this.
(Note: This well was sampled in February 1982 and March 1985)

Interim Measures

Question: Should we continue using bottled water, as advised?

Response: Yes, that would be advisable until the extent of contamination is known.

Question: Why can't water be supplied to the owners of contaminated wells using Superfund monies?

Response: We will set up a meeting with township officials to discuss that possibility.

Question: Some residents have visible leachate seepage on their properties. Couldn't something be done for such an extreme situation?

Response: A direct health hazard must be demonstrated before taking immediate measures. This problem will be addressed by the RI/FS.

Comment: A letter from Dr. and Mrs. Winston Bostick (who live on Parker Road) was read at the meeting. In the letter, the Bosticks state that they are plagued with odors from the landfill and asked that some of the Superfund monies be used for immediate relief, such as piping, drainage, leachate collection, and filtration, rather than on a Feasibility Study.

Response: Dr. Berkowitz responded that he appreciated the situation and their complaint but that a Feasibility Study is, in fact, necessary to

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determine the extent of the problems at the site and to evaluate the best way to remedy them.

Project Schedule

Question: Will this project actually take six years to complete?

Response: Generally, the RI/FS takes nine months to complete. At the end of the study, if we have been successful in addressing the problem and developing a remedy, the process may not take six years. Such a time period might be needed to complete the entire cleanup (including engineering design, construction/removal).

Question: Can the DEP send us a copy of the contractor's proposed work schedule?

Response: Yes.

Cost/Funding

Question: Are we guaranteed that there will be Superfund money available to fund this project once the RI/FS is completed?

Response: That depends upon the reauthorization of Superfund. If Superfund is not reauthorized, the Department can use State funds.

Question: Do you have a step-by-step breakdown of the costs of the contract?

Response: Yes, that is public information.

Other Issues

Question: Will a biological study of trees and animals be conducted?

Response: When we study the surface and ground water of a site to see if it meets NJDEP standards it is implied that we are studying all biological factors.

Question: Will a water filtration system be installed as part of the site remedy?

Response: That depends on the types of chemicals found.

Question: Will there be interim status reports?

Response: There will be meetings with the Interlocal Coordinating Committee and interested parties are welcome. When officials or citizens request a meeting, we will schedule a briefing.

Question: Over the past two years there has been above average rainfall. Does this affect the movement of the leachate?

Response: Yes, heavy rain accelerates the generation of leachate from the landfill. Ground water movement is not usually affected by rainfall but the extremely wet conditions from two years of heavy rain have had an effect on the amount of leachate.

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II. Informal Briefings

Throughout the course of the RI/FS NJDEP staff attended six informal briefings to address the concerns of and receive input from the community and to apprise them of the status of the RI/FS. These briefings were held with local, state and federal representatives, as well as members of HALT, the Interlocal Coordinating Committee, and the Upper Raritan Watershed Association. Following is a summary of these six briefings:

- ° July 30, 1984: This briefing, in accordance with the Combe Fill South Request for Proposals (RFP), took place shortly after the public meeting regarding the initiation of the RI/FS. It was held at the Washington Township Municipal Building. The purpose of this meeting was to provide NJDEP with previous site data and early input from local representatives regarding the RI/FS. In addition to NJDEP representatives and the contractor, those in attendance included representatives of the Chester Township Board of Health/Environmental Committee, the Washington Township Board of Health/Environmental Committee, the Upper Raritan Watershed Association, the Interlocal Coordinating Committee (with Chester and Washington Township representatives), HALT, and the offices of Senator Foran and Assemblymen Zimmer and Weidel. The primary issue at this meeting was residential well sampling. The agenda included: chronology of events at the site, previous sampling conducted by HALT and the Upper Raritan Watershed Association, sampling to be conducted during the RI/FS, and various other issues such as ownership of properties adjacent to the site.
- ° February 7, 1985: The purpose of this briefing, planned in response to questions and concerns, was to inform local officials and environmental groups of the status of the Combe Fill South RI/FS. It was held at the Chester Township Courtroom. In addition to local and state officials and representatives from local environmental committees, there was an unexpectedly large turnout and the briefing soon took the form of a public meeting. The status of the project was presented, including an explanation of work accomplished, work pending, the anticipated work schedule and NJDEP's Quality Assurance/Quality Control (QA/QC) Program. Several important issues were raised at this briefing: the request by community representatives for monthly progress reports from NJDEP; sampling/analysis of potable wells; sampling/analysis of Trout Brook; on and off-site air monitoring; noise caused by on-site work; and problems gaining access to a private property which prevented installation of a monitoring well.
- ° June 27, 1985: NJDEP held this informal briefing at the Chester Township Municipal Building primarily to discuss the results of the surface water and sediment sampling of Trout Brook and Black River at Hacklebarney State Park. The data revealed no priority pollutants in the water at any of the sampling locations. None of the compounds detected in the Brook or River exceeded the national average (i.e., in comparison with U.S. Geological Survey data on average contaminant concentrations in sediments throughout the United States). As such, recreational fishing in Trout Brook and Black River should not cause adverse health impacts. Other concerns raised at this briefing focused on the delays to the study and the length of time necessary for completion. In attendance were representatives of Chester and Washington Townships, environmental groups (previously mentioned), the

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offices of Senator Foran and Assemblymen Zimmer and Weidel, and Congressman Dean Gallo.

- ° November 25, 1985: This meeting was convened by Congressman Dean Gallo, at his office in Dover, N.J., to discuss the status of the RI/FS. Attendees included Congressman Gallo, Assemblymen Zimmer and Weidel, officials of Chester and Washington Townships, and representatives of Congressman Courter's office, HALT, the Interlocal Coordinating Committee, and the Upper Raritan Watershed Association. Critical concerns raised by officials included: certification problems with the subcontracting laboratory and subsequent delays in awarding a new contract and setting up a new schedule; increased costs; QA/QC issues; sampling/analysis time frame and procedures; and the need for interim measures at the landfill (e.g., erosion controls and temporary berms).
- ° December 16, 1985: NJDEP held this meeting at the Somerset County Administration Building to discuss potable well data and implications for alternative water supplies with local, state, federal and environmental group representatives. It was decided that, as a short-term solution, NJDEP would immediately designate an area of potential impacts. Residents within this area should be provided with bottled water, on an optional basis, and NJDEP would work with the Townships to seek reimbursement from the New Jersey Spill Fund or other public monies. NJDEP's commitment to resolve the long-term issue of water supply was reaffirmed. The results of the RI would be reviewed on an expedited basis and additional potable well sampling would be conducted to confirm the delineation of an impacted area. Also, NJDEP's contractor will explore alternative water supplies including construction of water lines, development of a new well and treatment at the well source.
- ° March 31, 1986: This informal briefing was held by NJDEP at the Chester Township Municipal Building, primarily to discuss the hydrogeological portion of the RI/FS and the implications for an ultimate remedy. Local, state and federal representatives, as well as members of the environmental committees were present at the briefing. Several important issues were discussed: USEPA and NJDEP agreed that there are both actual and potential impacts on well water; NJDEP's contractor would examine options for a permanent alternative water supply; the ROD must include an alternative water supply as an operable unit in order to expedite the design; a Preliminary Assessment of the soybean field near the site should be conducted; the impacted area was reduced in size from the area described in December 1985 and would be monitored to ensure that the present delineation is accurate; and the Townships would have to pass an ordinance requiring well sealing and hook-up of affected residences to a public water system.

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III. RI/FS Completion Meeting

The Draft Remedial Investigation/Feasibility Study Report was made available for public review and comment starting June 23, 1986 at five repositories: the Chester Township Library in Chester, the Washington Township Public Library in Long Valley, the Chester Township Municipal Building, the Washington Municipal Building in Long Valley and the NJDEP, Division of Hazardous Site Mitigation in Trenton. The public comment period closed on July 31, 1986 during which time five letters with various comments were received by NJDEP (See Attachment E) in addition to comments at the public meeting discussed below.

A public meeting was held by NJDEP on July 14, 1986 to discuss the results of the RI/FS at Combe Fill South. Notification of the meeting was accomplished through press releases sent to local newspapers and mailings to local and state officials, as well as to NJDEP's list of concerned citizens. An information package including the agenda and fact sheet was given to all attendees at the beginning of the meeting. (See Attachment C.) Approximately 100 people attended (See Attachment D) the meeting which was opened by Ed Russo, Member of the Chester Township Council, the Upper Raritan Watershed Association, and West Morris HALT. After an overview of the situation by Richard Salkie, Acting Director of the NJDEP Division of Hazardous Site Mitigation, Ruth Maikish and Patrick Lawler, of Lawler, Matusky & Skelly Engineers, discussed the results of the RI/FS and presented the following remedial action alternatives for long-term site remediation:

1. Minimal action (or "No Action") including the installation of security fencing around the perimeter of the landfill, installation and sampling of monitoring wells, reimbursement of costs associated with bottled water for residents and development of a permanent alternate water supply for impacted residences.
2. Construction of an on-site Resource Conservation and Recovery Act (RCRA)-approved landfill facility including excavation of wastes and installation, filling and capping of landfill cells. This alternative would include the purchase of over 100 acres of adjacent property for the construction of this facility, as well as fencing, well monitoring and an alternate water supply for impacted residences.
- 3A. Installation of a multi-layered clay cap covering existing waste areas, ground water/leachate collection trench, on-site treatment and disposal of leachate, passive gas venting, security fencing, and an alternate water supply for impacted residences.
- 3B. This alternative is identical to 3A except that it includes two deep wells to pump contaminated ground water from the bedrock aquifer for on-site treatment and surface discharge.
- 3C. This alternative is similar to 3B except that a shallow pumping system would be used in place of the leachate collection trench to collect and transport the contaminated shallow ground water to an on-site treatment facility.

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4. This includes all components of 3A, as well as an active gas collection and treatment system, ten deep pumping wells, discharge of treated effluent to the Lamington River and an upgradient ground water barrier.
- 5A. This alternative is similar to 3A except that it provides a slurry wall to prevent further off-site migration of ground water in the saprolite instead of the collection trench and on-site treatment facility for ground water/leachate.
- 5B. This alternative is identical to 3A except that the multi-layered cap does not include a clay layer.

Mr. Salkie then presented a modified version of Alternative 3C as the alternative recommended by NJDEP. The components of this alternative include:

- ° Multi-layered terraced cap: covering all three fill areas, upgraded in level areas to a full RCRA "model" cap by the addition of a plastic liner;
- ° Pumping of the shallow aquifer: 48 wells;
- ° On-site treatment of leachate and ground water with discharge to Trout Brook;
- ° Active gas collection and treatment;
- ° Security fencing with warning signs;
- ° Grading, filling, site preparation and access road;
- ° Surface water controls;
- ° Environmental monitoring;
- ° Additional monitoring wells to be installed at the site perimeter; and
- ° Permanent alternative water supply for affected residences.

This meeting was then opened for discussion during which time many questions were asked by local officials and concerned citizens. These questions, as well as the written comments received during the public comment period, along with NJDEP's responses are summarized below, according to the following subjects:

- ° Issues regarding remedial action alternatives;
- ° Alternative water supply;
- ° Affected residences/Potential risks;
- ° Cost/Funding;
- ° Schedule; and
- ° Other issues.

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Issues Regarding Remedial Action Alternatives

Question: There are 43 sites on the New Jersey National Priorities List (NPL) with priority over this one. How many of those have been capped?

Response: Each site must be evaluated individually; capping may not be the most effective solution at all sites. At some of the sites the decision has been made to cap, it just has not been done yet. There are two or three that have partial caps at this time.

Question: When will you know if treating the shallow aquifer will take care of the deeper aquifer's problems?

Response: There are two ways of finding out: sampling the water quality and monitoring the hydraulics to verify that the water is being drawn down as planned. The problem with this method is that you may draw contamination where you do not want it.

*Comment: The recommendation was made that the proposed landfill capping be done in a "stepped fashion", thereby allowing the immediate installation of an appropriate liner over the site in order to minimize the impact of rain water on the landfilled waste.

Response: The remedial alternative proposed for the Combe Fill South site would indeed be constructed in a staged manner, in order to immediately mitigate some of the problems at the site. Use of a synthetic liner as one of several cap layers on part or all of the site is still under consideration. However, use of a synthetic liner alone or as the first mitigative step at the site is inappropriate for several reasons including:

- ° The steep slopes, gullies and other site surface features make immediate placement of a liner physically impractical.
- ° Currently, the site surface has exposed waste and sharp objects which could easily tear the liner. Even if the liner were not torn upon placement, direct contact of the membrane with landfill wastes, particularly leachate, would corrode the liner.
- ° Gases, including methane and volatile organics generated by the landfill, may also corrode the liner or create potentially hazardous "bubbles" or gas pockets beneath the liner as the gases attempt to escape.

Therefore, it would be more cost effective to use such a liner as part of a long-term site remediation program rather than as an interim or immediate action.

*Paraphrased comment received by NJDEP in correspondence from Theodore A. Schwartz of Schwartz, Tobia & Stanziale.

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*Comment: The use of the RCRA multi-layered terraced cap with...a partial membrane cover...exceeds the minimum requirements and adequately reflects site topographic conditions.

Response: The NJDEP concurs with this comment. (The RCRA "model" cap is a multi-layered cap with a plastic liner throughout.)

*Comment: ...We believe that the proposed system of 48 pumping wells...in the shallow aquifer system is applicable, given the nature of the saprolitic zone and the quantities of water present, at least during the initial phases...We would recommend phasing in deep ground water pumping in the future if the overburden layers can be sufficiently dewatered.

Response: The need for deep aquifer pumping in the future can be reevaluated based on results of the proposed well monitoring program. If the shallow pumping scheme successfully dewateres the landfill and prevents the continued off-site migration of contaminants in the ground water (as measured in the monitoring wells), then deep aquifer pumping becomes unnecessary.

*Comment: We are...concerned with the establishment of an ongoing maintenance entity responsible for pump and well maintenance. Standby pumping units and power for the operation of the system should be provided in the event of a system failure.

Response: Additional information as to the operation and maintenance of the proposed shallow pumping system will be provided in the report on the conceptual design of the recommended alternative. Detailed plans and specifications should be developed during the final design of the recommended alternative.

⁺Comment: Mr. Pelletier protests the absence of deep pumping from the recommended alternative. In light of the fact that ground water has been determined to be the primary means by which contamination is leaving the site and that contamination has been found in both the shallow and deep aquifer, Mr. Pelletier feels that deep pumping is required. He recognizes that provision of alternate public potable water will provide him with safe drinking water, but would also like to be assured of uncontaminated ground water for his "stream, pond, fields and forest."

*Paraphrased comment received by NJDEP in correspondence from David Peifer, Executive Director of the Upper Raritan Watershed Association.

⁺Comment received by NJDEP in correspondence from Michael C. Pelletier, resident of Chester Township.

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Response: As described in Chapter 4 of the Remedial Investigation (RI), movement of ground water in the deep bedrock occurs within a network of fractures and rock cleavages oriented in a northeast and southwest direction. Although deep monitoring wells were necessary to detect contamination in this deep aquifer and to test the direction of ground water movement, direct pumping of the deep aquifers will provide no greater assurance of remediation than the proposed shallow pumping scheme because of the nature of ground water movement in the bedrock.

The three-dimensional network of fractures and cleavages in the bedrock through which ground water flows is extensive but often not interconnected. Pumping of the deep bedrock at one or more locations will not provide assurance that all deep ground water flows will be intercepted because the pumping wells may not be tapping all the contaminated ground water flow fractures. Furthermore, deep pumping during the early stages of remediation, i.e., prior to the implementation of the cap and shallow pumping wells, may draw contaminated shallow ground water down into the deep aquifer.

The proposed action provides for indirect remediation of the contamination in the deep ground water. First, the cap will eliminate infiltration into the waste pile and so minimize the production and movement of contaminated leachate. Second, the shallow ground water pumping scheme will prevent further migration of contaminants into the deep aquifer. The purpose of shallow ground water pumping is to remove leachate and to lower the ground water table so that waste is not in contact with ground water.

In addition, the proposed extensive ground water monitoring program will provide a quarterly assessment of the effectiveness of the proposed remediation. Should the proposed remedial measures not be as effective as expected, deep pumping wells could be installed at a later date at the perimeter of the site if it is subsequently determined that such action is necessary.

*Comment: Several issues relating to the discharge of effluent to Trout Brook were raised including:

- ° Applicability of appropriate standards for water quality of effluent;
- ° Regulation of flows to ensure that channel capacity will not be exceeded; and
- ° Increased flows and velocities in combination with storm water flow which will move contaminated sediments downstream into the Hacklebarney State Park.

*Comment received by NJDEP in correspondence from David Peifer.

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Response: Effluent discharge limits have been preliminarily established by the NJDEP to meet stream classification requirements. The on-site treatment facility will be designed to achieve these requirements. The final design of the treatment facility, however, must await the results of a treatability study.

Storm water flows and the effects of effluent discharge on flows in Trout Brook will be further addressed in the final Feasibility Study. However, several points can be mentioned at this time: (a) the proposed effluent discharge location is below the confluence of the west and east branches of Trout Brook in a stream segment of sufficient size to accept the effluent discharge; (b) the lowering of the water table in the landfill vicinity by the pumping wells will produce significantly less ground water supplied stream baseflow; (c) the amount of runoff expected from the remediated site will probably be similar to the current amount of runoff occurring at the site during times of high ground water (work is presently underway to confirm this point); (d) only small amounts of contaminated sediments currently exist in the streams because storm water scouring has been steadily moving sediments downstream to Black River. Even so, these sediments do not show contamination in concentrations warranting remediation.

*Comment: "We suggest the installation of a monitoring well downstream of Trout Brook...in the area of ground water discharge."

Response: The number and general location of the monitoring wells will be provided in the conceptual design report based on our understanding of the local hydrogeology. Final locations can be specified during detailed design.

*Comment: Various surface water control issues were raised, particularly storm water control mechanisms, impacts of uncontrolled flow, potential on-site uses for clean storm water runoff, the entrapment and containment of sediment during construction, and thermal impacts.

Response: The discussion of surface water controls will be examined in the final FS and conceptual design report and will address several of these concerns. In general, several points can be made at this time: (a) as mentioned above, the peak flows of storm water runoff from the remediated site will probably not be greater than under current normal wet weather conditions wherein high ground water levels combine with sparse vegetative cover to increase high peak runoff flows; (b) although permanent mechanisms to temporarily store runoff during high rainfall events may have a secondary beneficial impact for stream flow regulation, they are not intrinsically necessary as part of site remediation; (c) temporary runoff catch basins and other control mechanisms during construction are important construction tools that can be detailed during final design but are beyond the scope of work for the feasibility and conceptual design reports.

*Comment received by NJDEP in correspondence from David Peifer.

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Alternative Water Supply

Question: How many residences will be hooked up to the alternative water system?

Response: Presently the delineated impacted area includes 40-50 residences. However, we will continue sampling and that figure could change depending on the sampling results. The final area will incorporate safety margins and allow for the extended time frame for site remediation.

Question: How many of these homes are currently contaminated?

Response: Approximately 25-30.

Question: Do you plan to continue monitoring until an alternative water system is implemented?

Response: Yes.

Question: Are there plans to provide these people with bottled water in the interim?

Response: They can use bottled water at their discretion and submit claims to the New Jersey Spill Fund for reimbursement of costs associated with the purchase of the bottled water.

Question: Will the municipal water main extension go all the way up Schoolhouse Lane?

Response: Yes.

Question: The white line which outlines the impacted area seems to follow property lines instead of contour lines. Isn't this preferential treatment?

Response: We are trying to outline the area where we have found problems. We try to be conservative. If one property has a problem, we include the next one also.

Question: If you are trying to be conservative, wouldn't it be better to extend the boundaries of the impacted area to include all of the homes up to State Park Road?

Response: We intend to continue sampling and monitoring the entire area so that if there is contamination discovered outside of the known impacted area, we can extend the boundaries to include all affected residences. We feel that our monitoring program will detect any contamination moving off site in plenty of time to mitigate the problem.

Question: What guarantee can you give us that you will not have to come back later and supply us with public water?

Response: We have the option to extend the water line if sampling reveals further contamination.

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Question: Are there any problems with the water we will receive from the Washington Township Municipal Utilities Authority (WTMUA)?

Response: We do not know of any problems. The WTMUA monitors its system according to state standards and there have been no problems with the water quality.

*Comment: The conclusion reached in the RI/FS that ground water does not flow from the landfill in the direction of East Gate Road is questionable. Given the nature of the fractured bedrock in the area, the plume could change and indeed affect the residences along East Gate Road. For this reason, the alternate water supply area should be extended to include East Gate Road.

Response: The conclusions reached regarding the location and movement of ground water contaminants on and around the landfill, are based primarily on information gathered during the recent Remedial Investigation. However, previous studies (primarily surface geophysical and chemical sampling and analyses) were also used in evaluating the current site conditions. As discussed in Chapter 4 of the RI, the evidence from this work indicates that ground water and its associated contamination is not moving from the landfill to East Gate Road. Based on this evidence, ground water and contaminants are expected to continue to flow in the directions currently defined (i.e., NE and SW) until remedial measures are taken at the landfill. East Gate Road is located to the north of the landfill, and is not in the downstream direction of ground water flow.

Upon implementation of the proposed remedial measures (including capping and shallow ground water pumping), a localized ground water depression will be created below the landfill such that ground water will flow toward the landfill. Thus, it is unlikely that contaminated ground water would flow toward East Gate Road in the future, assuming these remedial actions are taken.

Finally, the expanded on and off-site ground water monitoring program, proposed as part of the site remediation, is being designed to function not only as a means to evaluate the effectiveness of the remedial actions but also as an early warning system should these measures not function as expected. Shallow and deep ground water monitoring wells, including private residential wells encircling the site, would be sampled four times a year. If the results of these samplings indicate further contaminant movement, or movement in unexpected directions, additional remedial measures can be taken, including the extension of municipal water supplies beyond the currently designated areas.

*Comment received by NJDEP in correspondence from Bill Golden, resident of East Gate Road.

*Comment: With regard to the permanent alternative water source for affected residences, the ...use of water-saving devices should be required to prevent overloading of septics.

Response: The local health departments, rather than the Feasibility Study (FS) Report, should address the need to use water saving devices.

+Comment: The NJDEP is urged to consider installation of a point-of-use water filtration system for the affected residences. Mr. Tunkel elaborates on advantages of the point-of-use system.

Response: The NJDEP's recommended alternative includes a permanent water system for affected residences. This is a more comprehensive remedy than a point-of-use water filtration system.

Affected Residences/Potential Risks

Question: My property was one of those labelled "at risk". A letter was sent telling us not to drink the water. Will we be sent letters telling us that we are no longer at risk?

Response: We have additional sampling to conduct but when we are sure of the boundaries of the impacted area, we will send you a letter explaining this delineation and any associated risks.

Question: Could we have a public statement?

Response: We would not have a problem making a public statement, given the proper forum.

Question: Could this letter address present and future risks at the site?

Response: We would say that the homes are presently not at risk and that we have a monitoring program to detect any future risk. We could not say that there is absolutely no future risk.

Question: Have the wells on East Gate Road and Route 24 been tested?

Response: Yes. Current data indicates that these wells are not contaminated.

Question: I live on the north end of State Park Road. How many wells in this area are contaminated?

Response: The area within the white boundary line is the impacted area. The north end of State Park Road is far removed from the currently defined impacted area.

Question: What will be done for the properties along Parker Road which have become contaminated? The smell in this area is unbearable.

*Comment received by NJDEP in correspondence from David Peifer.

+Comment received by NJDEP in correspondence from Warren Tunkel.

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Response: An alternative water supply will be installed for these homes. You can contact the Spill Fund and submit a claim for reimbursement for any damages you have experienced due to the landfill.

Question: Is there any danger to children playing along the northeastern corner of the landfill and in the brook?

Response: Children should not play in the brook because they may ingest some of the water. They certainly should not go onto the landfill itself, but to occasionally run through the surrounding area should not hurt them.

Question: Were any of the chemicals found known carcinogens?

Response: Yes; the concentrations vary.

Question: What symptoms (of effects from the chemicals) should people look for in themselves and their children?

Response: The levels found here are too low to produce symptoms. There is not any one symptom that you should look for.

Question: Is it safe to bathe in this water?

Response: Dermal absorption is one of the things we consider in our risk assessments. We do not have defined standards as we do for potability but we will evaluate the data and get back to you. (This is currently being done by NJDEP.)

Cost/Funding

Question: The recommended alternative has some components not in Alternative 3C. What would the cost of the recommended alternative be?

Response: \$49 million (present worth), \$42 million (capital).

Comment: The \$30 million figure to cap the landfill seems like an excessive figure.

Response: The \$30 million figure includes not only the cap, but also gravel, sand, clay, soil, topsoil with vegetation, grading, trenching, terracing, leachate collection, etc.

Question: We initially heard a figure of \$5-6 million to cap the landfill. Is this correct?

Response: The direct capital cost to cap the landfill is \$21 million.

Question: Is there Superfund money available to do this work?

Response: Right now, no. However, the State has advanced to USEPA the money to continue work while Superfund is being reauthorized.

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Question: What is the cost of the alternative water system, using the Washington Township Municipal Utilities Authority?

Response: Approximately \$0.5 million.

Schedule

Question: How long will a complete cleanup take?

Response: Approximately 3½ years, including design and construction.

Question: Dr. Berkowitz promised us water by the end of 1986. When will we have it ?

Response: By late spring of 1987, if we are able to construct during the winter.

Question: What is the time frame for the engineering design, construction, final evaluation and contractor close out?

Response: The average time period is 18 months. In this case we will try to "fast track" and have the alternative water supply in operation by late spring 1987.

Other Issues

Question: What is the rate of flow in this area?

Response: It is difficult to assess the rate of flow in this area because of the highly fractured bedrock. We feel the rate of flow is slow due to the fact that the landfill has been in operation since the 1940s and the contamination has moved only a limited distance from the site.

Question: What is the direction of ground water flow in this area and why?

Response: The flow is primarily northeast, southwest and also easterly. Ground water flow is governed by the bedrock formations underlying the site.

Question: Have you considered a berm to prevent water from entering Trout Brook?

Response: If we were to have a berm, where would the surface water go? It would take a significant amount of time to develop an alternate plan.

Question: Will the monitoring wells be usable later?

Response: At this point in our investigation, that cannot be determined.

Question: Who is responsible for the operation and maintenance of the landfill after it is installed?

Response: DEP would be responsible for oversight, as well as the operation and maintenance. A contractor would perform the actual work.

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Question: Did you explore the possibility that the potable wells have been affected by septic systems?

Response: We believe the contamination in the wells is from the landfill.

Question: Was any radioactivity found in the ground water?

Response: We found traces of radioactivity in deep borings and deep monitoring wells and we suspect it is occurring naturally. Capping of the landfill would also prevent movement of the radioactivity off site.

Question: Did you find unusual pH values in any of the wells?

Response: No, we did not find any unusually high or low pH readings in any of the wells we sampled.

*Comment: The presence of natural radioactivity in ground water at the site renders the water useless as a potable source and therefore the issue of other contamination of the ground water is moot.

Response: As stated in the Remedial Investigation report, both natural and man-made radioactivity sources are suspected at the site. Nevertheless, none of the ground water sampled (on-site and in private potable wells) had a concentration of radioactivity which exceeded federal primary drinking water standards. Two leachate samples on-site had concentrations of gross alpha radioactivity which exceeded the public water supply screening concentration (i.e., that concentration at which additional testing for radium 226 and other species is required); no potable well samples exceeded this screening concentration.

⁺Comment: The feasibility of using site-generated methane to provide power should be explored and use of the standby unit in a cogeneration scheme should be considered.

Response: The feasibility of using site-generated methane to provide power will be explored in the final edition of the Feasibility Study. However, at this time, it is not being included as part of the recommended remedial action. A final decision as to such use of methane and other specific operational details will be part of the final design of the remedial action.

*Paraphrased comment received by NJDEP in correspondence from Theodore A. Schwartz.

⁺Paraphrased comment received by NJDEP in correspondence from David Peifer.

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*Comment: Since the location of the pumping wells is adjacent to a mapped wetland area, the effect of this dewatering on the...wetland ecosystem should be addressed.

Response: Additional discussion of the impact of the shallow pumping wells on the wetland area will be provided as part of the final Feasibility Study Report. The purposes of the pumping wells are to lower the ground water table on and near the landfill to below the waste pile and maintain this lowered water level indefinitely. Therefore, the wetlands bordering the site will gradually dry out and become more like drier upland forest communities.

*Comment: Purchase of the private property adjacent to the site which contains significant and highly impacted wetlands should be considered.

Response: With remediation of the landfill site as proposed, the impacts to the adjacent property will also be remediated. The proposed layout of site facilities and remedial activities has attempted to limit, wherever possible, all such activities and structures to the Combe Fill South property. Where this is not possible (i.e., the effluent outfall), the purchase of easements and/or property will be necessary. The extent of and mechanism for such purchases and/or easements will be defined as part of the final design.

+ Comment: Mr. Schwartz takes exception to a discussion in the fact sheet regarding the types of wastes accepted at the landfill. Under the section "Site Description", the statement is made that household and industrial wastes, chemical and waste oils, dead animals, sewage sludge, and septic tank wastes were disposed of at the landfill. Mr. Schwartz states that, to his knowledge, only household and commercial wastes were received at the landfill, and the Department is confusing the Combe Fill Corporation fill area with the previous fill operation at the site. Additionally, Mr. Schwartz feels that statements made regarding the unauthorized disposal of chemical and industrial waste in open fields at the site are unfounded and "absolutely outrageous". Mr. Schwartz would like to see the fact sheet amended to reflect his concerns.

Response: The fact sheet reflects current knowledge of activities that took place at the site.

*Paraphrased comment received by NJDEP in correspondence from David Peifer.
+ Comment received by NJDEP in correspondence from Theodore A. Schwartz.

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*Comment: Mr. Schwartz also comments that a representative of Lawler, Matusky and Skelly Engineers (LM&S) indicated that the landfill prior to 1972 was poorly managed.

Response: The statement made by LM&S was that the landfill was poorly managed and operated. No time frame was attached to the statement and no inference as to responsible parties was made.

+Comment: Concerns were expressed regarding construction access to the site, line-of-site requirements, adverse impacts to homes on Lots 5 and 6, width of the access road, and development of a soil and sediment control plan.

Response: The exact location, grade, etc. of the site access road and associated structures are details which should be addressed during the final design phase of the project.

+Comment: Development encroachment on Trout Brook downstream of Hacklebarney State Park should be prevented by securing conservation easements. Also, non-point source pollution control, watershed land protection, soil and sediment control, and reforestation should all be implemented in the area.

Response: These are all important issues of concern that should be addressed by local government. However, they are not pertinent to site remediation.

At the conclusion of the meeting, Mr. Ed Russo was asked by a member of the audience for his personal feelings regarding DEP's recommended alternative. He expressed relief that money was going to be spent not on further research but on actual remedial measures at the site. He said he believes that the plan meets the community's needs and is what they want, but would like to see it acted upon quickly.

*Comment received by NJDEP in correspondence from Theodore A. Schwartz.

+Comment received by NJDEP in correspondence from David Peifer.

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IV. Remaining Concerns

The most critical concern of the residents near the Combe Fill South Landfill is the final determination of the area to be supplied with a permanent alternative water supply. Residents are waiting to receive this information from NJDEP. For the residents who are not within the impacted area, the concern will be to implement a comprehensive and preventive monitoring program to ensure that their private wells are not being impacted by the Landfill. This information will also be forthcoming from NJDEP in the near future. Besides the delineation of the impacted area, the concern is for the amount of time necessary to implement the alternative water system. No matter how expeditiously the system is implemented, it will not be soon enough for the residents near Combe Fill South.

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Attachments

- A. Information Package: RI/FS Initiation Meeting
- B. List of Attendees: RI/FS Initiation Meeting
- C. Information Package: RI/FS Completion Meeting
- D. List of Attendees: RI/FS Completion Meeting
- E. Correspondence received by NJDEP during the public comment period.

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