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Golder Associates
CONSULTING GEOTECHNICAL AND MINING ENGINEERS

July 8, 1987

Our ref: 843-1360.001

RECEIVED
JUL 10 1987
ECOLOGY-HWCP

State of Washington
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504

ATTENTION: Mr. Fred Gardner

RE: DRAFT RESPONSIVENESS SUMMARY,
COLBERT LANDFILL SITE

Dear Fred,

Enclosed please find a draft of the Responsiveness Summary for the Colbert Landfill site. Because of the limitation on completing this document before the end of the fiscal year (and biennium) this draft covers only those comments which we received up to a couple of weeks before the end of the comment period, as well as the issues which were brought up at the public meeting. We anticipate that some additional issues may arise in the comments presently being received, but believe it is in Ecology's best interest to have a draft at this time. We hope this will preserve the ideas developed to date and allow a smooth restart when the project is reactivated. We hope you will also review it and note your comments for inclusion at such time as we have a chance to finalize the document.

In the meantime, if you have any questions about this matter, please feel free to call me or Douglas Morell.

Sincerely,

GOLDER ASSOCIATES

Tony

Anthony S. Burgess

DRAFT

cc: D. Morell, GAI
K. Johnson, Envirosphere
K. Journey, Ecology
M. Sheridan, Hall & Associates

Enclosure

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COLBERT LANDFILL, SPOKANE, WASHINGTON
RESPONSIVENESS SUMMARY

This community relations responsiveness summary is divided into the following sections:

Section 1.0 Overview. This section discusses Ecology's preferred alternative for remedial action, and likely public reaction to this alternative.

Section 2.0 Background on Community Involvement and Concerns. This section provides a brief history of community interest and concerns raised during remedial planning activities at the Colbert Landfill site.

Section 3.0 Summary of Major Comments Received during the Public Comment Period and Ecology's Responses to the Comments. Both written and oral comments are categorized by relevant topics. Ecology's responses to these major comments are also provided.

Section 4.0 Remaining Concerns. This section describes remaining community concerns that EPA should be taken into consideration in conducting the remedial design and remedial action at the Colbert Landfill site.

Community relations activities conducted during remedial response activities at the Colbert Landfill site are listed in Appendix A.

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1.0 OVERVIEW

The Washington State Department of Ecology (Ecology), as lead agency under a cooperative agreement with the U.S. Environmental Protection Agency (EPA), carried out the Remedial Investigation and Feasibility Study (RI/FS) for the Colbert Landfill site north of Spokane. During the 1970s, the landfill had received industrial solvent chemicals and disposed of them in a way that allowed the chemicals to penetrate the underlying aquifer. These chemicals began to show up in nearby drinking water wells, at contaminant levels of concern to public health. The remedial alternative which was recommended by Ecology's consultants, and in turn by Ecology to EPA, is to intercept the advance of the contaminant plume with deep wells, extract the contaminated water, treat it using air strippers, and discharge the cleaned water to either the Little Spokane River or Little Deep Creek. The cleaned water would meet health-based drinking water standards. Three groups of extraction wells would be required under this program:

- One group would be in the southern area of the site to remediate the plume in an upper aquifer,

- The second group would be located west of the landfill to intercept contaminants in the lower aquifer which are heading toward the Little Spokane River, and

- The third group would be east of the landfill to clean up contaminated groundwater in the lower aquifer near the sources of contamination. A common treatment facility would be constructed for both the eastern and western extraction systems.

These systems are described in more detail in Chapter 4 of the Feasibility Study, under the names (respectively) of Alternatives S-5 (p. 4-18), W-5 (p. 4-45), and E-5 (p. 4-57).

This document, the Responsiveness Summary, describes concerns which the community has expressed in regard to the problems at the site, the recommended remedial action, and the RI/FS process itself. These concerns may be separated into residents' concerns and PRP concerns. The most severely impacted individuals, the nearby residents, have long complained that their welfare has not received proper agency attention, particularly during the delays which have been encountered. These residents hope that the remediation will be as thorough as possible and not raise additional problems through its implementation. On the other hand, the named potentially responsible parties (PRPs) at the site, Spokane County and Key Tronic Corporation, are concerned that the recommended remediation may be chosen too quickly without proper study and its cost could be excessive. They would like Ecology to search out other PRPs to share the cleanup costs. Most of the community concerns support one of the two viewpoints, with the interests of the economic well-being of the County and a major employer being balanced to varying degrees by a desire for clean water. Because of the general water shortage and reliance on groundwater supplies in this area, clean water is a particularly important concern.

2.0 BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

Community interest in the Colbert Landfill contamination problem dates back to 1980 when local residents complained to the Washington State Department of Ecology (Ecology) and the Spokane County Utilities Department (SCUD) that hazardous materials were being disposed of at the landfill. Since 1980 community concerns and involvement have remained strong. Three key individuals, Mr. Floyd Wakefield, Ms. Grace Garrison, and Mr. Craig Costello have been active in coordinating community awareness and voicing area residents' concerns to SCUD, Ecology, and the Environmental Protection Agency (EPA). They have been successful in getting attention from these agencies as well as attracting media attention on the site. The major citizen concerns expressed about the Colbert Landfill, since the initial citizen complaint, and how agencies have addressed these concerns are described below:

1) In October 1980, a resident near the landfill complained to Ecology and SCUD that hazardous materials were being disposed of at the landfill.

   Actions: Ecology investigations revealed that between 1975 and 1980 Key Tronic Corporation in Spokane disposed of a 50:50 mixture of 1,1,1-trichloroethane and methylene chloride at the site. As a result of the investigations, sampling of private wells was conducted during late 1980 and indicated that several of them contained 1,1,1-trichloroethane and trichloroethylene. Methylene chlorid was not found in the samples.

   SCUD then initiated an investigation into the extent of the groundwater contamination at their landfill site. An interagency committee consisting of Ecology, SCUD, the State Department of Social and Health Services (DSHS), and the Spokane County Health District (SCHD) was formed to hire a consultant to do the

investigation. In 1981 SCUD retained George Maddox and Associates, Inc., to undertake the first of a three-phased study of the hydrogeology of the landfill site.

2) In the winter of 1981, citizens called SCUD with questions on the Colbert site.

   Actions: Mr. Damon Taam, employed with Spokane County, maintained a record of citizens who called. He obtained the tax assessor's printout of residences in the area to form a mailing list for public meetings. SCUD held the first in a series of seven public meetings on May 5, 1981, to explain the intent of the Maddox study. Phase II of the study carried out by George Maddox and Associates involved installation of monitoring wells and water quality sampling and analysis. This phase occurred from November 1981 to June 1982.

   Additional public meetings were held to discuss study progress and the results of the sampling program. SCUD sent each homeowner in the well sampling program a copy of the test results and also posted water sampling results at the information repository at the Colbert Water District Building.

3) Owners of five residences with contaminated wells filed suit against Spokane County for damages. The five residents were awarded $300,000 to be distributed among them from the litigation that occurred in 1982.

   Actions: Spokane County appealed the case but the ruling was upheld.

4) Citizens' concerns from public meetings held in early 1983 included whether their water was safe to use, what the health impacts could be, and how the contamination would impact their property values. Citizens felt that a new water supply was needed immediately.

Actions: At the public meeting held on February 24, 1983, Dr. Mary Luther, Director of the Spokane County Health District, addressed questions on the health impacts of the sampling results. Residents with contaminated wells were advised to use bottled water. Some area homes began receiving bottled water through Key Tronic Corporation's and Spokane County's contractor.

At the public meeting held on March 21, 1983, Mr. George Burton, County Tax Assessor, was present to discuss the reassessment of the homes affected by the groundwater contamination.

In June 1983 Ecology and EPA agreed that CH_2M Hill would prepare a Remedial Action Master Plan (RAMP) covering feasibility studies and remedial action design. The RAMP was distributed on August 8, 1983.

5) From 1980-1983 (b) (6) a local resident, organized the residents of homes surrounding the landfill, and acted as a spokesperson for the group. When the homeowners became frustrated by the absence of an immediate plan for an alternative water system, (b) (6) held the "Basement Water District Meetings." At these meetings, water districts interested in serving the Colbert landfill area presented their service capabilities.

Actions: Spokane County eliminated many of the proposed water districts from consideration due to technical and legal problems with their prospective service.

In June 1983 EPA designated Colbert Landfill to the National Priorities List (Superfund) under CERCLA.

In June 1984 Ecology prepared a Focused Feasibility Study for Initial Remedial Measures at Colbert Landfill. The study documented the need for an alternative water supply to residents living near Colbert Landfill. The County approved a new water system, called the "Geneden Plan," and began construction in the

fall of 1984. The system was completed in the winter of 1985. This new system served as an alternate water supply and as an Initial Remedial Measure (IRM) for the Colbert Landfill Site.

In March of 1985 Ecology authorized Golder Associates to begin a Remedial Investigation (RI) and Feasibility Study (FS) of the Colbert Landfill site.

6) On approximately August 26-30, 1985, Tracer Research and Lockheed conducted a soil gas investigation at the Colbert Landfill at the request of EPA. Representatives from these two firms alarmed an area family by offering unsubstantiated information about their well water. The family in turn stopped using their water, contacted an attorney, and appeared on the evening news. They also decided to board their 30 thoroughbred horses elsewhere. Two other families were also distressed and concerned by the investigators' information.

   Actions: Ecology and Spokane County worked with Key Tronic Corporation to encourage the two firms to apologize to the family, get an expert opinion, retract their statements, and admit that their employees were only rendering an opinion. Key Tronic supplied the family unlimited bottled water and on September 12, 1985, they were hooked up to the Whitworth Water District.

7) In the fall of 1985, two area residents, (b) (6) and (b) (6) organized the Colbert Landfill Contaminate Area Committee. This committee was designed to gather information, and make sure the information was available to everyone. The Committee presented seven recommendations to the County Commissioners on December 19, 1985.

Actions: A response to the seven recommendations was drafted in January 1986, that includes specific conditions under which water would be supplied to the affected residents. Because of these conditions the level of citizen frustration increased. Ecology summarized the community concerns of the 18 months prior to October 21, 1986, in a Colbert file memo. Thirteen specific concerns were listed.

8) During January 1987 a north side developer, (b) (6) sued the Colbert Water District after they refused to buy a water system that had cost him $300,000. Because of the District's action, (b) (6) claimed he was unable to develop his planned 160-unit Shenandoah Forest Park mobile home project which, in turn, resulted in his subsequent filing for bankruptcy.

Actions: (b) (6) won his lawsuit against the District. The impact of this case is not yet known, though it does prevent Whitworth from entering the bond market to obtain financing for needed system expansion.

9) EPA and Ecology released the Remedial Investigation/Feasibility Study (RI/FS) report on May 18, 1987, and held a public meeting on May 28 in the Colbert Elementary School. The purpose of the meeting was to present the report and the cleanup alternatives identified by the study. Citizens and PRPs complained that the three-week comment period was too short.

Actions: EPA extended the comment period by three weeks.

10) On June 7, 1987, about 1,000 Key Tronic Corporation employees purchased full-page ad space in the Spokesman Review Spokane Chronicle Sunday newspaper to support the paper's May 31st editorial. The editorial had criticized EPA for not using stronger investigatory and enforcement powers. The Key Tronic employees

believed that certain other users of Colbert Landfill should share in the cleanup expenses. Both the editorial and Key Tronic employees criticized the shortness of the comment period and also criticized Ecology for not using its investigation authority.

Actions: As previously noted in #9 above, EPA extended the comment period. Additional evidence recently determined indicates that EPA may soon include Fairchild Air Force Base as a potentially responsible party (PRP).

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3.0 SUMMARY OF MAJOR COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND AGENCY RESPONSES TO THE COMMENTS

Comments from members of the public, primarily Colbert-area residents, regarding the feasibility study report are summarized below. Similar comments are grouped under one of the following headings: general, public participation process, contamination levels, and remedial alternatives. Each comment is followed by a response from the lead agency, Ecology.

The public comment period originally ran from May 15 to June 5, 1987, but was later extended to June 30, 1987, a total of over six weeks. Ecology held a public meeting in Colbert on May 28, 1987, to explain the Feasibility Study and the alternatives. The consultants described four alternatives including "No Action." The consultants' recommended alternative (Extraction-Treatment-Discharge-Expanded Water Supply) included air stripping among the three treatment options and a river outfall from three discharge options. Many comments focused on this alternative and the various treatment and discharge options. Ecology will make a final cleanup recommendation after reviewing comments from the public, agencies and Potentially Responsible Parties (PRPs).

Detailed comment forms were distributed to all meeting attendees. Ecology received (23) completed forms by the June 30 deadline, primarily from Colbert area residents. These forms, as well as the oral comments at the public meeting, are summarized here.

Meeting attendees were asked to rank the four cleanup alternatives on the comment form. The consultant-recommended alternative was preferred by 19 of the 23 respondents. Two people preferred Alternate Water Supply, one preferred No Action. One person proposed a fifth alternative consisting of removal and treatment of the landfill waste.

The recommended option for treating the groundwater, air stripping, also received a majority of support. However, eight people supported either Carbon Adsorption or Chemical Oxidation, primarily because of

the potential air pollution from the air stripping process. The recommended option for discharging the treated water, River Outfall, also received strong support. However, seven respondents favored recharge wells because of fears of lowering the water table.

GENERAL

1) Identification of additional PRPs was a major concern, both at the public meeting and in subsequent written comments. Employees of Key Tronic were especially concerned about the equity of their company apparently being held largely responsible for the contamination and cleanup; they pointed out that the company has not been associated with all of the identified contaminants.

   Agency Response: EPA and Ecology have identified two PRPs: the landfill owner (Spokane County) and a major disposer of hazardous substances (Key Tronic Corporation). Additional evidence has recently become available that implicates Fairchild Air Force Base as a contributor. Ecology will be notifying the Air Force of its responsibility. Currently under Superfund, however, Ecology (or EPA) is not obliged to notify any other potentially responsible parties. Ecology must only identify the owner and operator of a site, and any large, major contributor based on their records and the information available.

2) The cost of cleanup concerned several residents. Some felt that the proposed program may be too costly. One Spokane-area resident felt that the health risks had been overstated and that the funds could be better spent elsewhere in the county. Others felt that no expense should be spared to clean the aquifer. The most common response, however, was that the most cost-effective alternative be selected. This was mentioned frequently in support of the air stripping treatment option, which is less expensive than the other options studied. The public was also concerned about the source and reliability of the cost estimates and who would pay the cost of the cleanup.

Agency Response: The Superfund law stipulates that, whenever possible, responsible parties pay the bill for remedial action or as a cost recovery action following the cleanup to recover monies for Superfund. Following the formal selection of a remedial action alternative at the Colbert Landfill site, the responsible party or parties will be directed by EPA to undertake the remedial action as specified in the Record of Decision. The responsible parties have two choices: 1) agree to undertake the remedial action; or, 2) fail to comply with the request, and then EPA will conduct the remedial action and recover costs later. EPA's ~~will ensure~~ policy is that the responsible parties pay cleanup costs as well as operations and maintenance for the remedial action.

up to Judge to make final decision

The source of the cost information is, originally, data from vendors who supply this equipment and engineering compilations of costs on similar previous projects. The reliability of the estimates was limited by a 30-year project planning horizon. Present knowledge does not indicate how long the contaminated groundwater at the site will have to be treated so 30 years was selected as a reasonable timeframe. Costs were estimated based on current pricing and technologies, and then totalled over the 30-year timeframe. The actual costs may be from 30 percent less to 50 percent more than the estimates. More accurate cost estimates will be available when Ecology moves into the remedial design stage.

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The National Contingency Plan specifies that the effectiveness of any remedial action should not be compromised to be cost-effective. However, among the alternatives considered to be effective, EPA may select the least costly.

3) Property values have been a continuing issue with residents since contamination was first detected. Potential impacts of cleanup measures (such as noise, odor, and air pollution) on property values were a concern to several residents. A major corporate

owner of undeveloped property expressed concern about the reduced value of the property if water were not available for future development.

Agency Response: Noise and air pollution generated by the remedial system will be within acceptable local, state, and federal regulatory standards. Similar facilities in other communities have been used successfully without problems or complaints related to noise and air pollution. Ecology understands that the Spokane County assessor will review property values in the Colbert area on a yearly basis to determine whether or not changes should be made in the assessed evaluation of the property for tax purposes.

4) Immediate availability of clean, low-cost water has also been a continuing concern since the beginning of the project. One resident suggested that clean water should be supplied to everyone in the contaminated area; otherwise property owners should not have to pay taxes because their land is unsaleable. At the same time, another person was concerned that expanding the Whitworth Water District supply lines to accommodate the long-term growth cost to the district would be unfair.

Agency Response: EPA and the Superfund Program provide for alternative water needs, as was previously done to allow the Whitworth Water District to extend the water system north to affected residences. The risk assessment, Appendix A of the Feasibility Study, indicated that there should be no adverse health consequences from use of the contaminated groundwater for yard and garden uses such as irrigation. It should be possible to continue to use existing wells for these high-consumption purposes as long as these lines are adequately isolated from the domestic supply systems. However, for adequate domestic water supplies for present and future population in the area, there appears to be no alternative to maintaining and improving the Whitworth Water District System.

5) The need for continued long-term monitoring of both drinking water and monitoring wells was emphasized.

Agency Response: The remedial alternative provides continued monitoring of drinking water and the monitoring wells. EPA or Ecology will supervise and manage the monitoring to ensure that it is conducted using appropriate methodology and is consistent with current regulations. Two kinds of monitoring would be conducted: system monitoring and monitoring of the spread of contamination. The system monitoring program would frequently assess how well the groundwater extraction and treatment system is working. The other monitoring would track the spread of contaminants in the groundwater zone.

PUBLIC PARTICIPATION PROCESS

1) Residents, particularly those who had been most involved in the process, sought assurance that their involvement would continue through the remedial design process. A large corporate property owner also expressed the desire to be contacted during the design phase. One meeting participant, not a resident of the affected area, questioned the extent of citizen involvement and review up to this point.

Agency Response: EPA and Ecology have appreciated and encouraged the level of public involvement experienced at Colbert Landfill in the process of selecting a remedial alternative. A summary of the public involvement to date is included in Section 2.0 of this Responsivenss Summary. As specified within the Superfund legislation, the agencies will continue to work with the community and local residents and ensure public participation through the remedial design and remedial action phases. Under the new Superfund Amendments, there are provisions for citizens to have even a larger role than previously. For example, financial assistance will be available to affected public groups for obtaining technical assistance in reviewing documents.

2) Residents and one agency representative asked about regulatory controls or permit requirements relating to the treatment and discharge options. They specifically asked whether air and water discharges would be subject to state or federal law.

Agency Response: The Colbert Landfill site, as a federally funded Superfund site, is not required to file for permits under current legislation. However, the remedial action alternative must satisfy the intent and purpose of any applicable and appropriate regulations that would otherwise relate to the site. Such applicable regulations would include National Pollution Discharge Elimination System provisions of the Clean Water Act, local air quality standards, and others.

CONTAMINATION LEVELS

1) Several questions were asked to clarify the remedial investigation findings. One person asked if the contamination levels in various parts of the aquifers had changed over time in relation to the EPA standards. Another person asked why the investigation report seemed to indicate that 90 percent of the pollutants disposed in the landfill had not been accounted for in the groundwater.

Agency Response: Some of the wells have shown decreasing concentrations of contaminants; others have shown fluctuations. Yet others are showing fairly constant concentrations. The wells that are showing a fairly constant concentration appear to be near the areas of secondary sources of contamination. These secondary sources have remained at high levels for several years. Such information suggests that the sources are still in place and still releasing contaminants. It is likely that much of the 90 percent referenced above could be in these areas, and the rest had already been lost to volatilization at the time of disposal (see the Remedial Investigation Report, Section 5.4.1, pp. 76-77 for more information). In the upper zone decreasing concentrations have been observed, suggesting the depletion of contamination there.

2) A long-time resident of the area asked if capping the landfill in 1980 would have prevented the spread of the contaminants in the groundwater.

Agency Response: Capping a working landfill would be a difficult task, particularly if it were as large and as active as had been Colbert Landfill. It is unknown whether such an option would have had any effect on the spread of the contamination, or even if it would have been feasible. As the solvents were dumped into the landfill in large quantities and as pure solvents, with a low viscosity, it is likely that even with capping they would have actually migrated through the ground on their own accord. Infiltrating rainwater is not needed to mobilize such low viscosity solvents since the liquids can move through the soil by their own flow properties.

Also, by 1980 contaminants had already been documented in wells northeast of the landfill so capping would have been too late and not particularly useful.

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REMEDIAL ALTERNATIVES

Extraction Options

1) There were major concerns about lowering the groundwater levels and possibly drying up existing wells through the extraction of large amounts of groundwater for treatment. Many wells in the area already have low water levels during the summer; this water is needed for irrigation even if another water supply is available for domestic use. A related concern was that lowering the water table would increase the flow of contaminants, including iron, into the southern part of the aquifers.

Agency Response: The interception wells are designed to intercept the contaminant plume to remove the contaminated water. The water which is extracted is obviously not available for other uses downstream. Clean water is, however, also being carried along

around the edges of the plume. Current information on the upper aquifer, which is more likely to be depleted, indicates that drawdown due to the proposed extraction system would be only about two feet in the vicinity of the wells and less at further distances. Thus, the extraction systems should not violate the existing water rights in the area. The design of the wells will be refined through additional testing during the design phase to ensure that adverse impacts are minimized. Also, there is virtually no chance that problems associated with the deep granite aquifer, such as high iron concentrations, could spread to more shallow aquifers through the effects of the extraction systems.

2) One person suggested that the existing monitoring wells be incorporated into the extraction well system.

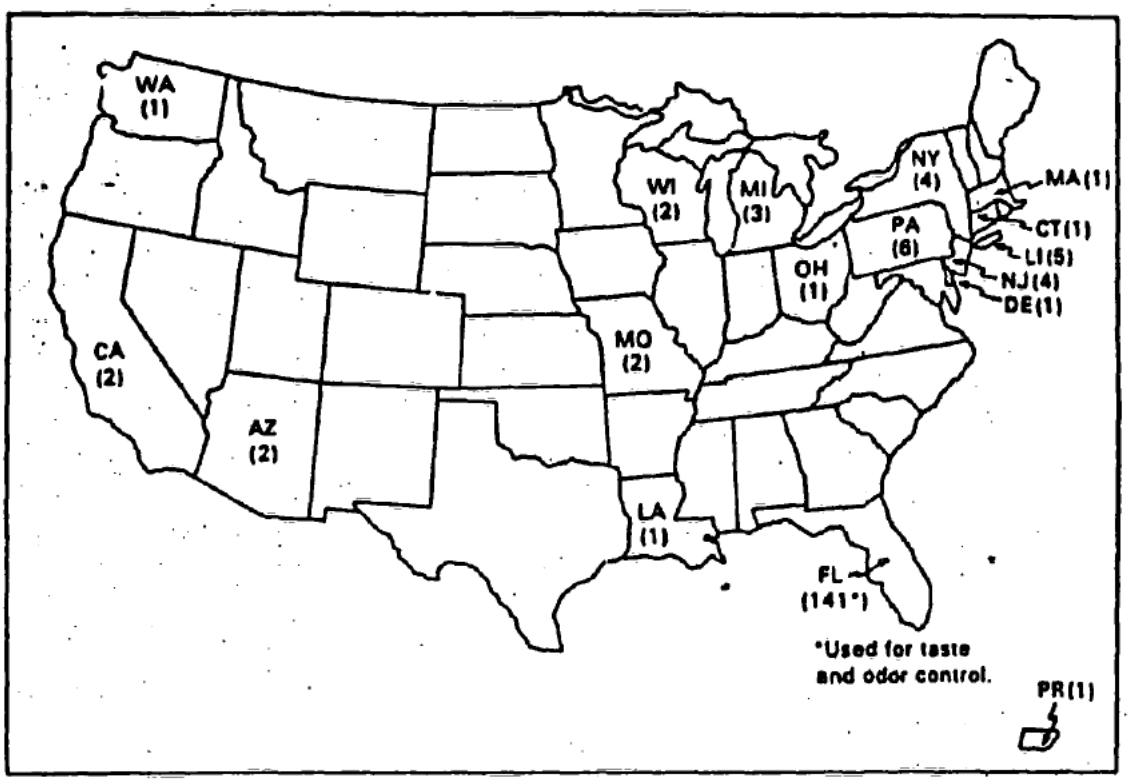
   Agency Response: Existing monitoring wells are generally two inches in diameter. This is too small for the amount of extraction which is necessary. In addition, the monitoring wells with their known history of contamination levels will be needed to observe changes due to the removal operations.

Treatment Options

1) The public questioned the effectiveness of the alternatives studied, wanting assurance that the recommended technology had been used successfully elsewhere. They were also concerned that the process would clean both aquifers effectively, completely, and in a reasonable time period.

   Agency Response: An EPA study (EPA Municipal Environmental Research Lab, "Aeration to Remove Volatile Organic Compounds from Groundwater," PB86-163664, 1984) surveyed the use of air stripping to remove volatile organic constituents from groundwater. Figure 1 is taken from that study. Since that time, many more such systems have been installed, so that in Washington State a total of seven

Figure 1: Air stripping Systems for Removal of Volatile Organic Contaminants from Groundwater, as of 1984 (Source, EPA 1984, see text).



are operational. The technology has been successfully used for treatment of these contaminants. Ecology fully expects that air stripping will be just as effective at the Colbert Landfill site and will eliminate the hazards presently posed by the groundwater contamination. The length of time this cleanup will take is still uncertain but a 30-year planning horizon is being used. It may require considerable time for the sources to become depleted. However, the spread of contamination will be controlled within two to three months following installation of the system.

2) The recommended treatment option, air stripping, provoked numerous comments. The greatest concern was about potential air pollution caused by the release of the contaminants taken out of the water. Residents and an agency representative questioned whether any health risk assessment had been done and how consultants knew that the contaminants would present no health risk.

Agency Response: The potential for air contaminant transport was investigated in two ways during the Feasibility Study. First, the Risk Assessment (Appendix A) compared volatilization from showers or other household uses to Federal Standards for air concentrations. Second, in Appendix F, the emissions likely from air strippers are evaluated. Comparing these values, even a person standing all day, every day, in the exhaust of the air strippers, would not be at danger according to these Federal standards, and would have a safety factor at least 90 times.

At increasing distances from the air strippers the factor of safety would be even greater because the contaminants would be dispersed into the air as well as degraded. Air strippers cleaning similar contaminants at other locations have been investigated from this standpoint and found to be well within safe levels. This issue will be investigated more thoroughly during the design phase of the project.

3) Other concerns were raised about the moisture emitted by the air stripping towers, potentially causing ice and heavy fogs on nearby roads.

Agency Response: As described above (Question 1), similar systems have been used in a number of locations, many of them with generally more severe winter climates than this area. Demisters are included in the air strippers to reduce moisture emissions. References do not indicate problems on nearby highways.

4) The effectiveness of the air stripping process was also discussed, with a question about whether it would remove methylene chloride. Some respondents suggested that treatment options be combined to take advantage of the strong points of each and minimize the weaknesses. One suggested the use of carbon adsorption as well as air stripping to alleviate the air pollution problem.

Agency Response: Methylene chloride is the most difficult of the contaminants present to remove using air stripping. Nevertheless, the treatment system has been specifically designed to remove this and other contaminants to concentrations below drinking water standards. The possibility of combining technologies was considered (see Alternatives W-6 and E-6 which combine carbon adsorption and air stripping) and was found to be not as cost-effective in attaining these effluent levels. The combination of air stripping with carbon to clean the air emissions was considered as well and is described in Section 6.2.4 of the Feasibility Study.

5) Other potential impacts also elicited comment, including possible noise, odors, and the appearance of the air stripping towers.

Agency Response: Noise, odors, and appearance have been considered at other sites and resolved satisfactorily to adjacent residents. Odors, in particular, would not be discernable even directly in the exhaust. These factors will also be considered in the design phase.

6) Disposal of the contaminated carbon used for the carbon adsorption process was a concern for one person.

Agency Response: The contaminated carbon would be disposed, through incineration, at a facility in Yakima. Hazards associated with transporting it there are minor, because even in the event of a complete spill of the carbon, few adverse impacts are likely.

7) One resident asked how bacteria growth in the treatment equipment would be controlled to maintain water quality.

Agency Response: Bacterial growth has been considered at similar facilities and methods to control it have been successfully implemented. We are presently envisioning the occasional use of chlorination to control bacterial growth.

Discharge Options

1) One of the concerns expressed most frequently was about the potential impacts of discharging large quantities of water into the Little Spokane River, particularly flooding and erosion. One resident requested that a contingency plan be discussed in the event that flooding and low well water levels do occur. It was urged that the river outfall be constructed to eliminate hazards to both humans and animals, since the river is heavily used for swimming.

Agency Response: Because the groundwater extracted, treated, and discharged to the Little Spokane River would have been discharged to it naturally anyway, the net change of flows in the river will be small over the long run. There will be a temporary effect of higher flows occurring while both the original natural recharge continues and the treated water is introduced, but this is expected to be of only a few months at most. Even during the transition time the impact will be small; the discharge from the recommended

alternative is only about 4 cubic feet per second (cfs) from both the Western area and the Eastern area pumpages, which is only about 2 percent of the mean flow in the Little Spokane River (236 cfs). Such a small addition is not likely to be discernible in its flooding potential. In addition, if this appears to be a problem, it is possible to shut down the treatment system temporarily during flood events to avoid increasing the flood flows at all. Similar concerns also apply to the outfall on Little Deep Creek, and both will be dealt with in more detail during the design phase of the project.

The river outfall will be constructed to eliminate hazards to humans (especially children) and animals. Normally the flows will be relatively constant, so the chance of anyone being caught unaware by a sudden flow is unlikely.

2) The public wanted assurance that the water discharged into surface streams would be effectively treated so it would be safe for humans, fish, and animals. They also requested safeguards to prevent accidental discharge of contaminated water in case of treatment equipment failure.

   Agency Response: The discharge water will be analyzed frequently to assure that the water is suitably clean. One of the advantages of the recommended technology, air stripping, is its simplicity, so that plant failures are unlikely. Detection systems may be included to shut down the air stripping tower in the event of a failure. Even if a failure occurred, the effect will be temporary and should not have environmental or public health effects.

3) Other potential uses for the cleaned water provoked considerable comment. Some residents considered the discharge into the river to be a waste of a resource. They suggested such options as using it for irrigation, for the Whitworth Water District, or for a new recreational reservoir.

Agency Response: No alternate uses of the discharge water were discussed during the Feasibility Study because no other use is likely to be able to absorb all the water that must be discharged, especially during the winter months. Ecology studied the option of the Whitworth Water District handling the water but more was produced than the District could handle. It is possible that alternate uses could be developed when the design is prepared; points of contention may remain as to who should pay for the additional facilities required, but these should be easily arranged considering the value of water in the area.

4) One of the other discharge options studied, discharge into a drainfield, also provoked several comments. One was that it would cause a build-up of water, resulting in swamps and pests. Another person was concerned that this option would cause water to carry more contaminants down to the aquifer. However, several people favored recharge wells or drainfields to maintain the level of the aquifer and prevent drying up of existing wells.

Agency Response: Given the very permeable soils in the area, it is unlikely that swamps could develop. Instead, the water should seep very readily into the upper aquifer. It is unlikely that these flows could carry contaminants into the aquifers unless the treatment system breaks down. A potential advantage of the drainfield option is that the water is directly returned to the aquifer, and is available for additional use downstream. However, this option results in higher treatment costs. These issues are some which differentiate the recharge options, and would require consideration during the design phase if such an alternative is selected.

5) One resident questioned whether the private ownership of the bed of the Little Spokane River had been considered in the planning phase. She also asked what action would be taken if owners refused to grant easements for discharge facilities.

Agency Response: Ecology recognizes the private ownership of the bedlands. The water within the Little Spokane River belongs to the state but the bedlands of the river are in private ownership. Should a release of some contamination threaten bedlands or aquatic organisms, Ecology understands that there may be certain legal ramifications. However, Ecology believes that the likelihood of such contamination is slim.

Ecology will work with landowners to make arrangements for putting in towers or excavating to put in pipes or river outfalls. However, if arrangements cannot be made the state will pursue condemnation or confiscation of lands to obtain easements. The state has a responsibility to maintain the public health and safety of its citizens.

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4.0 REMAINING CONCERNS

Issues and concerns that EPA must be aware of in conducting the remedial action phase include:

- Will additional PRPs be identified?
- Will alternative uses of the cleaned water be identified?
- How will the issues of lower property values be addressed?
- How will the extent and cost of improvements to the Whitworth District be determined?
- Will the affected residents receive an immediate supply of water prior to the implementation of the remedial action?
- For certain Colbert residents who have not declared legal rights to the irrigation water they are currently using, how will the potentially decreased water levels downgradient of the extraction system affect them?
- How much consideration will be given to landowners in obtaining easements?

APPENDIX A

COMMUNITY RELATIONS ACTIVITIES CONDUCTED AT THE COLBERT LANDFILL SITE

Community relations activities conducted at the Colbert Landfill site to date include:

- Spokane County developed a community relations plan for the Colbert Landfill site (April 1981).
- Spokane County held a public meeting to discuss Phase I monitoring and water quality sampling program (May 1981).
- A press release was issued by Spokane County to announce public meetings scheduled for December 1 and 3 (November 1981).
- Spokane County held two public meetings to discuss the results of the Phase I study (December 1981).
- Spokane County had a public meeting to discuss the intent of the Phase II study (February 1982).
- Spokane County Health District met with residents to discuss results of the Phase II study (February 1983).
- Affected residents began receiving bottled water from Key Tronic Corporation and Spokane County (March 1983).
- Spokane County held a public meeting to present the intent of the Phase III study (March 1983).
- Remedial Action Master Plan (RAMP) was published (August 1983).

- EPA designated Colbert Landfill and National Priorities List (NPL) site (August 1983).

- Ecology prepared a Focused Feasibility Study for Initial Remedial Measures (IRM) (June 1984).

- An alternate water supply was constructed as part of the IRM (1984-1985).

- EPA authorized soil, gas, and earth resistivity tests (August 1985).

- Ecology met frequently with citizens, County officials, and Key Tronic Corporation representatives (1985-1987).

- Remedial Investigation/Feasibility Study (RI/FS) was released for public review and comment (May 1987).

- Ecology held a public meeting on the RI/FS (May 1987).

- Public comment period closed on the RI/FS. Comment period lasted from May 18 - June 30, 1987.

- Responsiveness Summary drafted (July 1987).

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