92484

Environmental Resources Management, Inc.

116 Defense Highway • Suite 300 • Annapolis, Maryland 21401 • (410) 266-0006

23 June 1992

Ms. Debra Rossi
U.S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, Pa. 19107 File Number: C64-01-00-01

Re: Septic System Drain Field Investigation
Woodlawn Transfer Station
Cecil County, Md.

Dear Ms. Rossi:

On behalf of the Cecil County Department of Public Works, Environmental Resources Management, Inc. (ERM) is submitting responses to the Environmental Protection Agency (EPA) comments of April 17, 1992 to the report on the Septic System Drain Field Investigation Dated March 11, 1992. ERM has provided responses in the order in which they were presented in your April 17, 1992 letter.

Comment:

Executive Summary, page i, second paragraph: As previously stated (September 9, 1991 letter from Debbi Rossi to Barry Belford), the objective of the Addendum Two subsurface soil analyses was to determine if soils that received discharges from the septic system presently constitute a potential source of ground water contamination; the results of the Addendum No. 1 and Addendum No. 2 investigations cannot be used "to evaluate the nature and extent of contamination attributable to the septic system." In its September 9, 1991 letter, EPA further stated:

> "The objective of the Summers approach is to determine... the concentration of contaminants in soils that should not degrade ground water quality beyond an acceptable level [e.g., an MCL]. The threshold contaminant values determined by the Summers approach are compared to contaminant levels measured in site soils. If contaminant levels in the soils in the vicinity of the septic system exceed the threshold values derived by means of the Summers approach, remediation alternatives for this portion of the Woodlawn Landfill site will be addressed in the Feasibility Study."

The use of the Summers method in the report is not what was requested in EPA's September 1991 letter. Additional comments pertaining to use of the Summers method are provided below.

Response:

EPA's letter of June 11, 1992 stated that it was not necessary to respond to EPA's comment regarding ERM's application of the Summers method. Since changes to the application of the Summers method is not warranted, a response or modification of any references in the report to the Summers method will not be made.

Comment:

Executive Summary, first bullet: Replace the word "trace" with "variable" before "levels of VOCs, semivolatiles, and pesticides." Rewrite the last sentence since organic compounds (most notably, semivolatiles and pesticides) and inorganics were found below the drain field.

Response:

The first bullet of the Executive Summary has been revised to read as follows: soils above and/or within the drain field were found to be contaminated with variable levels of VOCs, semivolatiles, and pesticides.The contamination was limited in the extent and magnitude, and found not to extend continuously below the drain field backfill. Organic compounds (most notably, semivolatiles and pesticides) and organics were found in the water table below the drain field but not in the soils between the drain field and the water table.

Comment:

Executive Summary, second bullet: Rewrite this statement and state that soils beneath the original drain field for the septic system are contaminated sporadically and at low levels with BEHP, phenanthrene and pesticides.

Response:

The second bullet has been revised to read as follows: soils immediately beneath the original drain field contain low levels of BEHP, phenanthrene and pesticides. However, there is no indication that these compounds have gone beyond the septic system drainfield into the groundwater.

Comment:

Executive Summary, third bullet: Please see the comments above (Executive Summary, page i, second paragraph).

Response:

Please see response above regarding the Summers Method.

Comment:

Executive Summary, fourth bullet: Include pesticides and metals in the ground water discussion. The limited scope of the drain field investigation does not support the conclusion that contamination found in ground water in the saturated zone beneath the original drain field "cannot be attributed to discharges from the septic system." Please refer to EPA's September 9, 1991 letter (pages 2-3) for further discussion.

Response:

The following statement should be added to the fourth bullet of the Executive Study: also, groundwater in the saturated soil zone beneath the original drain field contains measurable concentrations of metals and pesticides, but the metals compounds are well below any MCL and are not indicative of discharges from the septic system. Low levels of pesticides were found in the groundwater beneath the septic system.

Comment:

Executive Summary, fifth bullet: Contaminants were found in samples obtained from well TSW-1 which were not detected in other on-site wells. Please include this information in the discussion.

Response:

We have indicated that "several " of the contaminants observed in TSW-1 have been observed in the monitoring wells throughout the Woodlawn Landfill. There is no clear explanation of why other contaminants detected were not found in other wells in the landfill.

Comment:

Executive Summary, sixth bullet: The scope of ERM's potential source investigation was limited to examination of soils in the original drain field. Furthermore, the history of site operations suggests a potential for the existence of unknown sources of contamination. Therefore, state that the septic system drain field is hydraulically downgradient of other known and potential source areas at the Woodlawn Landfill site and delete the reference to the cells B and C as the "potential source area closest to the septic system."

Response:

The sixth bullet of the Executive Summary should read as follows: the septic system is hydraulically downgradient of other known and potential source areas on the site, including cells B and C.

Comment:

Executive Summary, last paragraph: Revise the first sentence as follows: "The results of the investigation of the Woodlawn Transfer Station septic system indicate that the septic system drain field soils are not a significant source area. Rewrite the final sentence as follows: "The need for further investigation or remediation of the septic system area will be determined based upon the results of the risk assessment for the Woodlawn Landfill site that is being conducted by IT Corporation."

Response:

The last paragraph of the Executive summary should read as follows: The results of this investigation of the Woodlawn Transfer Station septic system indicate that system drain field soils are not a significant source area. This statement is based upon the low ppb levels of organic and inorganic compounds found in the system drain field soils and the very small area (less than 500 square feet) found to contain these compounds. However, the risk assessment conducted by IT will determine if further investigation or remediation are needed.

Comment:

Page 1-1, bottom: All four phases of the IT Corporation remedial investigation have been completed.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 1-6, second paragraph: As stated in EPA's September 9, 1991 letter, the purpose of Work Plan Addendum No. 2 was not "to obtain additional data for evaluating whether the **septic system may have been** a potential source of contaminants identified in ground water in the vicinity of the Transfer Station." The November 1991 "Work Plan Addendum No. 2" states the purpose of the Addendum No. 2 investigation is the following:

> "to obtain additional data for evaluating **whether soils that received liquid discharges from the septic system may be a potential source of contaminants identified in ground water** in the vicinity of the Transfer Station; and
>
> to evaluate risks to potential receptors from direct contact with surficial soils that may have been contaminated by septic system liquids that overflowed the manhole at the head of the septic system drain field."

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Section 2.1, Review of Existing Data: Is the transfer station effluent currently being analyzed prior to treatment at the wastewater treatment plant? Could this information be used in lieu of historic data?

Response:

The transfer station effluent in not currently being analyzed prior to treatment at the wastewater treatment plant. This tank is not part of their investigation. If EPA would accept this data in lieu of historic data then the county would begin a sampling program.

Comment:

Page 2-2, bottom: Please define HCISP.

Response:

HCISP is sited on the plans, however there is no available definition.

Comment:

Section 2.1.3, Septic System Use and Maintenance, second paragraph: No discussion of termite controls or other soil-injected pesticides use (i.e., chlordane) at the transfer station was mentioned as a possible contaminant source.

Response:

Interviews with employees did not indicate the use of termite controls at the transfer station. Since it is a reinforced concrete building, it is highly unlikely that termite controls were needed. The only pest control was the spraying of bleach in the compactor area to control maggots.

Comment:

Fourth and fifth paragraphs: Please include the constituents of mineral spirits, such as paraffins, naphthalenes, and aromatic compounds, in this discussion. Please add information regarding the maintenance, cleaning and degreasing of the compactors during this period since these units also drained into the septic tank.

Response:

As stated in the report only 1% of the product used contained mineral spirits, there was no further break down of the constituents. There is no indication during our investigation that the compactors were subject to the need for periodic cleaning and degreasing.

Comment:

Page 2-5, top: Black and Veatch is B & V Waste Science and Technology Corp.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 2-7, bottom: Please specify plans for sampling/disposal of drummed wastes generated during the drain field investigation.

Response:

The contents of the drummed wastes are indicative of the sampling results from the borings and other soil samples. We will review these results and determine the need for additional sampling before disposal.

Comment:

Table 2-1: Please add the identification of the saprolite to the descriptions in the table.

Response:

Table 2-1 has been revised to include the identification of the saprolite.

Comment:

Page 2-10, fourth bullet: EPA's selection of sample SS-2 was based on detection of metals (cadmium and mercury) by ERM-FAST.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 2-10, bottom: EPA's selection of soil sample TSB-5 (4-6 feet) was also based on headspace readings.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Section Three: In general, numerous conclusions are presented throughout this section which is entitled, "Results of Field Investigation." Please move the conclusions to section 4, "Discussion of Results."

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 3-1, last paragraph. Was black staining in the sand and gravel interpreted as evidence of the drain field backfill, or simply the drain field?

Response:

Black staining in the sand and gravel was interpreted as evidence of the drain field backfill.

Comment:

Section 3.2.3, Results for Organic Analyses of Soils, first paragraph: Please remove the reference that estimated data are invalid.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments

Comment:

Second paragraph: Note also that mineral spirits commonly contain paraffins, naphthalenes, and aromatic compounds and are used as degreasing and cleaning agents. Toluene, xylene and alkylbenzenes (such as ethylbenzene) are also components of aromatic petroleum naphthas and are commonly used as

degreasing agents. Please add this information to the text along with the discussion of petroleum hydrocarbons in gasoline. Please also note in the text that benzene is also a common constituent of gasoline and was not identified during this investigation.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Third paragraph: Please remove the work "trace" from the sentence, "These results indicate that trace levels of VOCs are present in shallow soils..."

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 3-4, top: Please also add that PAHs are found in mineral spirits and other common degreasing agents.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 3-4, first paragraph: Reword the last two sentences to indicate that the soils underlying the original drain field are contaminated with low concentrations of BEHP and potentially with phenanthrene.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Second paragraph: Please remove "at trace levels" in the second sentence. Please reword the last two sentences in the paragraph to indicate that all shallow samples contained pesticides in varying concentrations and that all but three deep samples also contained various pesticides in low concentrations. Pesticides were therefore widespread in the evaluated soils.

Response:

Per EPA's June 11, 1992 letter the report will incorporate by reference the April 17, 1992 comments.

Comment:

Section 3.2.4, Results for Inorganic Analyses of Soils: Please remove the conclusion in this paragraph that detected metals are not indicative of soil contamination and only present actual results in this section.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 3-5, top: Please remove the "B" qualifiers for cyanide in soils in table 3-2 and replace with the appropriate qualifier as indicated in Appendix D. Please reserve conclusions for section 4 of the report.

Response:

Per EPA's June 11, 1992 letter the report will incorporate by reference the April 17, 1992 comments. However, this comment is probably better addressed once the risk assessment is completed.

Comment:

Table 3-1: Please add the CRQL to this table. Also explain the reason for the pesticide dilutions. Endosulfan I and II, and endosulfan sulfate were qualified "J" for exceeding duplicate controls, as indicated in Appendix D.

Response:

The domestic well samples obtained by IT indicate that manganese, calcium, magnesium and sodium were within the range of the groundwater sample from well TSW-1.

Comment:

Section 3.3.4, Results for Inorganic Analyses of Ground Water: Indicate the source for the statement that the four metals, including manganese, that were positively identified in filtered ground water samples are considered to be background concentrations. Manganese was not identified in the transfer station tap samples collected from well TSTA-1 during Phase II of the RI; manganese levels detected in the TSTA-1 well samples collected during Phase III were below the CRDL.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Section 4.1, Soils: Please add a discussion of the transport, attenuation and fate of the compounds discussed in this section.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Third paragraph: Add BEHP to the list of chemicals detected above or within the drain field and indicate the maximum detected level of 3,000 J.

Response:

Per EPA's June 11, 1992 letter the report will incorporate by reference the April 17, 1992 comments.

Comment:

Fourth paragraph: Fifteen pesticides, rather than the twelve indicated, were detected in drain field soil samples. Seven pesticides were detected above or within the drain field backfill instead of the four listed.

Response:

Per EPA's June 11, 1992 letter the report will incorporate by reference the April 17, 1992 comments. However, table 4-2 is correct for Beryllium it ranges from ND to 2.0 ppm.

Comment:

Table 4-1: Please correct the entries for the following compounds: 2-methylnaphthalene, septic tank results should be 3,400 J; alpha chlordane, range in shallow soils should be 51-180 J.

Response:

Per EPA's June 11, 1992 letter the report will incorporate by reference the April 17, 1992 comments.

Comment:

Page 4-2, top: Please add "with VOCs" following the statement "these soils are not contaminated." Since pesticides and BEHP, etc., were detected, please reword the third sentence to indicate that low levels of contaminants were detected.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 4-2, first paragraph: Please reevaluate metals concentrations in the soil sample based on a review of metal concentrations in soils near the site, rather than USA-wide.

Response:

Per EPA's June 11, 1992 letter the report will incorporate by reference the April 17, 1992 comments. We were unable to find any local background metal concentrations in soils near the site. Apparently off-site soil borings by IT did not include analysis of metals.

Comment:

Page 4-2, second paragraph: Please change the reference for Table 4-2 to 4-1.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Table 4-2: Please reevaluate the soil ranges using only those USGS results for the area near the site. For example, the maximum manganese concentration expected in the surface soils in the State of Maryland near the site is 300 ppm, rather than the 7,000 ppm found in other states.

Barium ranges from ND to 83.9 ppm in the soils from the drain field. Beryllium ranges from ND to 985 in the soils from the drain field. Zinc and manganese were qualified "B" for the lower values.

Response:

Soil ranges from above/within and beneath the original drain field was compared to soil analysis for IT soil borings ITW-1 and ITW-3 which are both outside of the landfill and indicative of soil ranges of the area. The soils beneath the original drain field were well within the background soil ranges in ITW-1 and ITW-3. Also, Beryllium did range for ND-2, EPA misread the results.

Comment:

Page 4-3, first paragraph, second sentence: Please replace "lack of VOCs, ..." with "low levels of VOCs,..."

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Section 4.2, Ground Water, first paragraph: Add a comparison with the site ground water background sample collected from the transfer station well, TSTA-1, by IT Corp. Please add the fact that this area is on a relatively steep hill and that some horizontal migration is also expected. Soils below the source would only be expected to have similar characteristics if no attenuation, volatilization, or degradation occurred. Indicate this in the text.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 4-4, first bullet: Reporting below the CRQL is allowed as stated in the general comments.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 4-4, second bullet: Which three pesticides are referred to in this section?

Response:

The three pesticides referred to are: Endosulfan Sulfate, Gamma-Chlordane and Endrin Ketone.

Comment:

Page 4-5, top: Please reevaluate manganese concentrations in filtered samples.

Response:

The manganese concentrations are comparable to those found in the domestic wells samples.

Comment:

Page 4-5, first paragraph: Please refer to EPA's September 9, 1991 letter (pages 2-3) and restate the last sentence in this paragraph.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Page 4-5, second paragraph: Please see the comment above regarding the Executive Summary (sixth bullet); cells B and C are not known to be the nearest source areas upgradient of well TSW-1.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Section 6.1, Conclusions, first bullet: Remove the word "trace."

Response:

Per EPA's June 11, 1992 letter the report will incorporate by reference the April 17, 1992 comments.

Comment:

Second bullet: Rewrite the first sentence to indicate that the soils beneath the drain field contained variable concentrations of several contaminants. The entire septic system was not evaluated. Conclusions may only be drawn regarding the soils in the drain field.

Response:

The second bullet should read as follows: Soils immediately below the original drain field for the Transfer Station septic system contain variable concentrations of several contaminants. However, these same contaminants were not observed at depth below the drain field. The only portion of the septic system not evaluated was approximately 100' of 4 inch pipe line from the Transfer Station building to the Septic Tank.

Based on this information, the septic system drain field is not a source area for the organic and inorganic contaminants observed in groundwater during Phase II of the Woodlawn Landfill remedial investigation.

Comment:

Third bullet: Please see comments above pertaining to the use of the Summers method, and revise this section accordingly.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Fifth bullet: Delete the second sentence. (Please refer to EPA's September 9, 1991 letter and comments above.)

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Sixth bullet: Add "for the RI'FS" to the end of the sentence.

Response:

Per EPA's June 11, 1992 letter, the report will incorporate by reference, the April 17, 1992 comments.

Comment:

Appendix D, Page 2-3:

Response:

ERM did not reject any qualifiers, therefore the need for an internal standard is not applicable.

Sincerely,

Joseph P. Lewandowski
Branch Manager

JPL/mwj
enclosures:
cc: Barry Belford
Kevin Gaynor
John Fairbanks