



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

ENTERED



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 27, 1992

Mr. Barry R. York  
Environmental Project Manager  
General Electric Company  
Building 5, Room 211  
1 River Road  
Schenectady, NY 12345

RE: Civil Action No. 87-1073-jb  
Revised Corrective Measure Study Report

Dear Mr. York:

The Environmental Protection Agency (EPA) has completed its review of the revised Corrective Measures Study (CMS) report. The following comments address deficiencies in the revised CMS report.

**CMS REPORT**

Section 1.2.2           The section will need to be updated to include the results of the supplemental soil boring program.

Section 1.3            The reference to the proposed Subpart S action levels in the CMS report still indicate that the corrective action objectives are based in part on the proposed action levels. The CMS report states "Specifically, the corrective action objectives established for the GE facility were based on: 1) proposed Subpart S Rule action levels . . ." The reference to the proposed Subpart S Rule action levels must be deleted from the CMS report.

Item 4) needs to be amended to read as ". . . March, 1985 Closure Plan *as modified* by the New Mexico Environmental Improvement Division (EID).

Section 1.3.1.1        The reference to the Subpart S Rule must be deleted.

Section 1.3.1.2

As required in Task VII.B, Establishment of Corrective Action Objectives, in the Consent Decree and Section 6, Remedial Activities, in the NMEID Closure Plan, the corrective action objectives for soils is based on public health and environmental criteria. The use of Time of Travel and SESOIL calculations do not provide an estimate of the potential loading of contaminants to the ground water, thus preventing an evaluation of the potential health or environmental threat to the ground water. As provided by GE in previous correspondence, utilization of the VLEACH model will provide an estimate of the mass loading of contaminants to the ground water. The estimated mass loading can then be used to calculate contaminant concentrations for comparison with the MCLs listed in 40 CFR 141.61 or the New Mexico Ground Water Standards, whichever standard is more protective of human health and the environment.

VLEACH MODEL

The objective of the VLEACH calculations is to determine if the remaining hazardous waste constituents in the soil poses a health or environmental threat to the ground water and if additional excavation and removal of contaminated soil is warranted. As provided by GE in previous correspondence, the following parameters will be used in predicting the mass loading of hazardous waste constituents from the vadose zone into the ground water over time.

INPUT DATA FOR VLEACH PROGRAM

PARAMETER	VALUE
AREA, area of polygon	400 ft <sup>2</sup>
ΔZ, vertical cell spacing	2 ft
Q, ground water recharge rate	0.075 ft/year
RHOB, bulk density of soil	1.74 g/cc
n, total porosity	0.4
Θ, volumetric water content	0.15
f <sub>oc</sub> , organic carbon content	0.001
NCELL, number of cells	133
Concentration in Recharge	0
Atmospheric Concentration	0
Ground Water Concentration	-1

CHEMICALS	$X_{\text{con}}$	$K_{\text{oc}}$	$C_{\text{max}}$	$D_{\text{air}}$	$K_h$
Xylenes	1,400,000	240.0	198.0	0.61	0.22
Ethylbenzene	160,000	396.0	152.0	0.61	0.37
1,2,4-Trichlorobenzene	18,000	1,080.0	19.0	0.57	0.043
Tetrachloroethene	1,100	283.0	150.0	0.64	0.35
Methylene Chloride	1,100	8.8	20,000	0.90	0.104
1,1,1-Trichloroethane	1,900	95.7	4,400	0.69	0.77
Toluene	6,700	115.0	515.0	0.68	0.280

- $X_{\text{con}}$  initial concentration in each cell (ppb)  
 $K_{\text{oc}}$  organic carbon distribution coefficient (mg/l)  
 $C_{\text{max}}$  aqueous solubility (mg/l)  
 $D_{\text{air}}$  free air diffusion coefficient (m<sup>2</sup>/day)  
 $K_h$  Henry's Law constant (dimensionless)

For purposes of evaluating the CMS report, please provide a brief description of the individual parameters and documentation of how the parameter values were derived (references, maps, calculations, professional judgement, etc.). In addition, the VLEACH user's manual needs to be included as an appendix to provide background on theory of operation and calculations.

#### RESULTS OF VLEACH CALCULATION

For purposes of comparison, the output from the model needs to be provided as:

- (1) A table format for each constituent comparing mass (mg) and concentration for each  $\Delta t$  time step;
- (2) A graphical format for each constituent illustrating mass loading to the ground water over time assuming an area of 400 square feet;

#### GROUND WATER IMPACT CALCULATION

The objective of the ground water mixing calculations is to estimate the concentrations of the modeled contaminants that can be expected in the ground water beneath the site due to mass loading from the vadose zone. The impact of the mass loading of the individual constituents to ground water must be assessed to determine if concentrations exceed the MCLs for organic chemicals in 40 CFR 141.61 or the New Mexico Ground Water Standards, whichever standard is more protective of human health and the environment.

The property line for the GE Apparatus Service Shop will be used as the point of compliance. If simulated contaminant concentrations in the ground water exceed the selected ground water standard at, or downgradient of the compliance point, then additional soil excavation and removal will be necessary to reduce potential mass loading such that potential ground water concentrations do not exceed the ground water standard.

In addition to a narrative description, results of contaminant transport modeling needs to be displayed on a map illustrating the contaminant ground water concentration distribution in relationship to the source area, site layout, and site boundaries.

Sufficient documentation must be provided for all calculations, data sources, and assumptions used in the ground water mixing calculations. Example calculations with the equations also need to be provided.

Please provide copies of the VLEACH model, input and output files, and the ground water mixing calculations in DOS format on 3.5 inch HD disks.

Section 1.3.2

The corrective measure objectives requiring remediation needs to be amended to include remedial activities for soils which pose a health or environmental threat to the ground water as required in Section 6.0 of the NMEID Closure Plan.

Section 1.4

The corrective measure objectives requiring remediation needs to be amended to include remedial activities for soils which pose a health or environmental threat to the ground water as required in Section 6.0 of the NMEID Closure Plan.

## APPENDIX A: RISK ASSESSMENT

The discussion in the Risk Assessment does not adequately address the characterization of the potentially exposed populations as discussed in Section 6.2.2 of the Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A), December, 1989 (EPA/540/1-89/002). For a complete assessment of the commercial/industrial exposure scenario, the risk assessment needs to include the following:

- (1) Current population of the surrounding area as indentified in the RFI report;
- (2) Current land use of the site and surrounding area for a radius of three miles; this information includes the local zoning codes and zoning maps;
- (3) The detailed job descriptions and the percentage of time spent indoors/outdoors for all on-site GE employees needs to be provided for verification of the exposure frequency of one hour/day for Scenario A; In addition, maintenance schedules (frequency, length of time for outside exposure) for the shop building and surrounding ground (i.e. painting, weeding) should be provided for GE employees or contractors.
- (4) Provide verification that site access is restricted to GE employees;

- (5) Provide city or county projections for future land use if available;
- (6) Provide land use trends in the general area surrounding the site;
- (7) GE states that where site-specific data were not available, standard conservative assumptions developed by the U.S. EPA were used (page 3 of the report). GE should briefly describe which parameters were estimated using the EPA based assumptions.

Table A-1 needs to be amended to include the boring from which the maximum concentrations were obtained for the individual constituents used in the risk assessment.

#### APPENDIX B: TIME OF TRAVEL CALCULATIONS

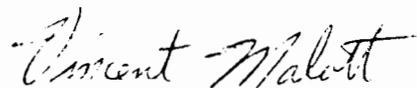
Appendix B: Time of Travel Calculations Summary needs to be deleted from the Final CMS report as a result of the VLEACH model calculations. References to the Time of Travel calculations will need to be deleted from the text of the CMS report.

#### APPENDIX C: SUMMARY OF SESOIL MODEL RESULTS

Appendix C: Summary of SESOIL Model Results needs to be deleted from the Final CMS report as a result of the VLEACH model calculations. References to the SESOIL results will need to be deleted from the text of the CMS report.

Please submit the Final CMS report to EPA within 30 days from receipt of this letter. If you have any questions regarding these comments, please contact me at (214) 655-6480.

Sincerely,



Vincent Malott  
Geologist  
Technical Section (6H-CX)  
RCRA Enforcement Branch

cc: Ed Horst, NMED  
Steve Alexander, NMED