ENSR International
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Pewaukee Road, Unit D
Pewaukee, WI 53072
(262) 523-2040
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November 22, 2004

RECEIVED
NOV 24 2004
By

Ms. Margaret Brunette
Hydrogeologist
Wisconsin Department of Natural Resources
2300 N. Dr. Martin Luther King Jr. Drive
Milwaukee WI 53212-3196

Re: Case Summary and Close Out Request
Electronic File Submittal (Compact Disk [CD])
Former Bostik Findley, Inc. Facility
2930 West Center Street
Milwaukee, Wisconsin
WDNR File Ref. #: 03-41-005301
06-41-526102

Dear Margaret:

The attached CD contains the portable document file (pdf) file pertaining to the Case Summary and Close-Out Request (Closure Request) for the former Bostik Findley, Inc. Facility at 2930 West Center Street in Milwaukee submitted to you in "hard copy" on November 19, 2004. All information included in the electronic document contained on this CD is correct and the document was prepared in compliance with all applicable requirements. The Closure Request is intended to provide information to meet the requirements of the Wisconsin Voluntary Party Liability Exemption (VPLE) Program.

If you have any questions, or require additional information, please contact either of us at your convenience.

Sincerely,

ENSR Corporation

William C. Looney
Senior Program Manager

Kristine M. Casper, P.G.
Program Manager

cc: Mr. Bruce Keyes, Esq., Foley & Lardner
Mr. Geoff Pyka, Bostik Findley, Inc.

Enclosures: as

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November 19, 2004

Ms. Margaret Brunette
Hydrogeologist
Wisconsin Department of Natural Resources
2300 N. Dr. Martin Luther King Jr. Drive
Milwaukee WI 53212-3196

Re: Case Summary and Close Out Request
Former Bostik Findley, Inc. Facility
2930 West Center Street
Milwaukee, Wisconsin
WDNR File Ref. #: 03-41-005301

Dear Margaret:

ENSR Corporation (ENSR) has prepared the attached Case Summary and Close-Out Request (Closure Request) for the former Bostik Findley, Inc. Facility at 2930 West Center Street in Milwaukee for your review. This Closure Request was prepared in accordance with applicable sections of Wisconsin Administrative Code, guidance documents and administrative instructions. The Closure Request is intended to provide information to meet the requirements of the Wisconsin Voluntary Party Liability Exemption (VPLE) Program.

If you have any questions, or require additional information, please contact either of us at your convenience.

Sincerely,

ENSR Corporation

William C. Looney
Senior Program Manager

Kristine M. Casper, P.G.
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cc: Mr. Bruce Keyes, Esq., Foley & Lardner
Mr. Geoff Pyka, Bostik Findley, Inc.

Enclosures: as

WDNR BRRTS CASE # 03 - 41 - 005301 WDNR SITE NAME : Bostik Findley, Inc.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
Bureau for Remediation and Redevelopment

This form is intended to provide instructions and a list of information that must be submitted for evaluation for case closure, each time a request is made. The closure of a case means that the Department has determined that no further response is required at that time based on the information that has been submitted to the Department.

NOTICE: ***Completion of this form is mandatory*** *for applications for case closure pursuant to ch. 292, Wis. Stats. and ch. NR 726, Wis. Adm. Code, including cases closed under ch. NR 746 and ch. NR 726. The Department will not consider, or act upon your application, unless all applicable sections are completed on this form and the closure fee and any other applicable fees, required under ch. NR 749, Wis. Adm. Code, Table 1 are included. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than reviewing close out requests and determining the need for additional response action. The Department may provide this information to requesters as required by Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].*

In order to expedite the closure process, provide a complete and accurate closure package according to the following instructions, each time a closure decision is requested:

- Submit the Case Summary and Close Out Form and the required attachments as a stand-alone, **unbound** package. Include all information requested per section, as appropriate to the site, in the order shown. Include all attachments per section, as appropriate. Do not attach previously submitted reports. Correctly reference any reports in the case summary, as applicable.
- Include fees with this package at the time it is submitted to the department in order for the application to be considered complete.
- Specify your selected closure option.
- Include all **GIS Registry information** (in Section I) as a stand-alone document (*do not refer to materials in other attachments*). Include copies of **all off-source property and ROW notifications.**
- Place a √ (attached) or NA (not applicable) in the blank next to each attachment, in each section.
- Include a draft of the deed document with the close out application, if a **deed restriction** or **deed notice** is required as a condition of closure of the selected remedy. Include a maintenance plan**,** if it is required in the deed instrument.
- **Maps for the GIS Registry may not be larger than 8.5 x 14 inches,** unless maps are submitted in electronic form in portable document format (pdf) readable by the Adobe Acrobat Reader. For electronic document submittal requirements, see http://www.dnr.wi.gov/org/aw/rr/archives/pubs/RR690.pdf**.**
- Prepare maps according to the applicable portions of ss. NR 716.15(2)(h)1 and 726.05(3)(a)4.d. Prepare visual aids, including maps, plans, drawings, cross sections, fence diagrams, tables and photographs according to s. NR 716.15(2)(h)1. – 4.
- **Use a bold font** on information of importance on tables, maps and figures. A **bold font (for ES exceedances**) and *italics (for PALs*) are preferred when differentiation is necessary. **Please do not use shading or highlights** on any of the analytical tables (per s. NR 726.05(3) and maps as the shading obscures the information that is scanned for inclusion in the GIS Registry.
- Put multiple tables submitted for contaminated media data (eg. pre- and post-remedial data) in chronological order. Include the level of detection for results which are below the detection level (i.e. do not just list as no detect (ND)). Summaries of all data should include information collected by previous consultants. Do not submit lab data sheets unless these have not been submitted in a previous report. Tabulate all data required in s. NR 716.15(2)(g)3 in the format required in s. NR 716.15(2)(h)3.
- Document free product recovery estimates as required in s. NR 708.15, if applicable.

Case Summary and Close Out Request
Form 4400-202 (R 5/04)

WDNR BRRTS CASE # **03 - 41 - 005301** WDNR SITE NAME : **Bostik Findley, Inc.**

Section A: Case History and Closure Pathway Selected

ATTACHMENTS:

✓ A brief site summary including results of all investigative activities, interim and remedial actions taken, a description of any residual soil and/or groundwater contamination and their locations, a description of any other media affected, and a description of how actual and potential impacts to receptors have been addressed.

✓ Site location map on USGS topographic base map.

✓ Site map including buildings, utilities, property lines of source property and impacted non-source properties, ground cover and supply wells. *These maps may be combined. A copy of the map(s) from Section I, #5 may be used.*

✓ Verification of the zoning for affected properties.

INFORMATION NEEDED:

1. Site Name: **Bostik Findley, Inc**
   Street Address: **2930 West Center Street**
   City/Zip Code: **Milwaukee, WI 53210**
2. BRRTS #: **03 – 41 – 005301**
3. DNR FID #: **241024740** PECFA Claim#: **NA**
4. Responsible Party Name **Bostik Findley, Inc.**
   Mailing Address: **11320 Watertown Plank Road** City/Zip Code: **Wauwatosa, WI 53226**
   Phone number: **414-607-1363** Contact Person: **Geoff Pyka**
5. Date of Incident/Discovery: **November 1995** Contaminant Type(s): **Volatile Organic Compounds**
6. Quantity Released: **Unknown**
7. Land Use:
   Current : ___ Residential ___ Commercial ___ Industrial ✓ Other
   If other, specify: **Former Industrial Facility, Currently Vacant**
   Planned Post Remediation : ___ Residential ✓ Commercial ✓ Industrial ___ Other
   If other, specify: ______
8. Is a zoning change required? ___ Y ✓ N
   If so, has it been completed for post remedial land use? ___ Y ___ N
9. **1.5** Acres ready for use (The total area in acres of all adjacent tax parcels owned by the same entity on the site where the contamination originated, rounding fractions to nearest .5 acre and noting >100 acres for acreages above 100 acres. For multiple discharges that are cleaned up concurrently, count the acres once.)
10. Geographic Coordinates (meters/ WTM83/91) E **686869** N **290414**
11. Method Used to Obtain Geographic Coordinates:
    ___ On-site using GPS equipment, converted or projected into WTM83/91 coordinates
    ✓ Used RR GIS Registry web site to get WTM83/91 coordinates
    ___ Other (specify): ______
12. *Groundwater Contamination Remaining (>ES):
    On Source Property ___ Y ✓ N
    Off Source Property ___ Y ✓ N
13. *Residual Soil Contamination > Generic or Site-Specific RCL:
    On Source Property ✓ Y ___ N
    Off Source Property ___ Y ✓ N
14. Contamination in Right of Way: ___ Y ✓ N
15. Closure Pathway Selected: check all that apply

CLOSURE via NR 726	
Soil	Groundwater
___ < s. NR 720.09/720.11 Generic RCLs	___ < s. NR 140.10 Table 1 & Table 2 Values
✓ s. NR 720.19(2) Soil Performance Standards	___ s. NR 140.28(2) PAL Exemption
___ s. NR 720.19(4) Groundwater Pathway	___ s. NR 726.05(2)(b), ≥ ES Natural Attenuation
___ s. NR 720.19(5) Direct Contact	
___ s. NR 720.19(6) Other Pathways	

WDNR BRRTS CASE # 03 - 41 - 005301 WDNR SITE NAME : **Bostik Findley, Inc.**

CLOSURE via NR 746 and NR 726	
Petroleum Storage Tank **Soil** Options for Closure:	
___s. NR 746.07 Requirements Met-Post Investigation	
___s. NR 746.08 Requirements Met-Post Remed.	
Petroleum Storage Tank **GW** Options for Closure:	Petroleum Storage Tank **GW** Options for Closure:
Within Permeable Material:	Within Low Permeability Material:
___s. NR 746.07(3) ≥PAL <ES, Post Investigation	___s. NR 746.07(2), Post Investigation
___s. NR746.07(4) >ES, Post Investigation	___s. NR 746.08(2), Post Remediation
___s. NR 746.08(3)≥ PAL, <ES, Post Remediation	
___s. NR 746.08(4) >ES, Post Remediation	

Section B: Receptor Summary

ATTACHMENTS:
NA Notification(s) regarding contamination in ROW
NA Notification(s) to off-source property owners regarding sampling results

INFORMATION NEEDED:
1. Identify **all** pre-remedial actual receptors, the assessed risk and their locations (e.g., both on- and off-site utility corridors, basements or sumps of nearby buildings, direct contact threat from soil, water supplies, surface waters, sediments, vapors, etc.) *For definitions, refer to s. NR 700.03 (47), Wis. Adm. Code.*
No completed pathways; consequently, no receptors.

2. Have the remedial actions addressed the potential or actual impacts to these receptors?
✓ Y (Details in the case history summary (Section A)).
___N If no, please identify the nature of the remaining risk and the receptor at risk, if any:
As long as the current conditions are maintained (i.e., the building and parking area maintained as part of the remedial action), the direct contact pathway will not be completed and the groundwater will continue to be protected.

Section C: Soil Investigation Information

ATTACHMENTS:
✓ Complete soil data summary table of field screening and laboratory analytical results, including all detects, regardless of ch. NR 720 standards, with dates, sample locations, depths and detection limits. Identify exceedances.
✓ Map(s) of all pre-remedial soil sampling locations: depicting all soil sample locations relative to site facilities. Note in bold font those sample locations that exceed ch. NR 720 RCLs (including free product location) and delineate the extent of contamination.
NA Pre-remedial geologic cross-sections; including geology, source location(s), extent of soil and groundwater contamination, free product location/depth, soil sample locations, water table elevation, and bedrock elevation, if encountered.

INFORMATION NEEDED:
1. Extent Defined? ✓ Y ___N If not, explain why.
2. Soil Type(s): **Silty clays and clays with discontinuous sand seams to at least 33 feet below ground surface**
3. Depth of Contamination: Top: **near surface.** Bottom: **31 feet bgs**
4. Type of Bedrock: **Silurian-age dolomite.** Depth to Bedrock: **~ 200 feet bgs**

WDNR BRRTS CASE # 03 - 41 - 005301 WDNR SITE NAME : **Bostik Findley, Inc.**

5. Is Any Contaminated Soil (Unsaturated or Saturated) in Contact With the Bedrock? ____Y _✓_ N
6. Measurable Free Product? ____Y ✓ N Depth/Location: ____________

Section D: Soil Remediation Information

ATTACHMENTS:

NA Map showing remediated area (for example, excavation limits or area influenced by SVE) and locations of post-remediation soil samples (if any). This map should show the locations and extent of residual soil contamination exceeding ch. NR 720 RCLs. These samples should be noted in bold font. *A copy of the map(s) from Section I, #10, may be used.*

NA Soil disposal documentation

✓ NR 720.19 analysis, assumptions and calculations for site specific RCLs (SSRCLs) , with justification

✓ Calculations and results of EPA Soil Screening Level Model.

NA Post-remedial cross-section(s) with post remedial soil sampling results, if soil removal or treatment has occurred. Identify sample results and depths. *A copy of the cross-section(s) from Section I, #11, may be used or you may refer to the cross-section(s) in Section E, as appropriate.*
____see Section E

INFORMATION NEEDED:

1. Remedial Action Completed? ✓ Y ____N
2. Were immediate or interim actions conducted? ✓ Y ____ N If yes, what action was taken?
Soil removal related to several historic UST removal actions was completed at the Site. Description provided in Case-Summary.
3. Brief description of remedial action taken:
Current - Institutional controls (Deed Restriction, GIS Registry); Maintain buildings and paved areas. (See Case Summary for information related to historic UST removal)
4. Were soils excavated? ✓ Y ____N **(Soil was removed as part of historic UST removals)**
Quantity: **Estimate 40 cubic yards (UST removal-related)** Disposal Method: **Landfill**
5. Final Confirmation Sample Collection Methods:
Split-spoon, Shelby tube, Geoprobe, Hand auger.
6. Final Soil/Drill Cuttings Disposal Location:
Orchard Ridge Landfill (UST removal-related waste)
7. Estimated volume and depth of in situ soils exceeding ch. NR 720 Table RCLs or Site Specific RCLs:
100 cubic yards, 10 feet depth
8. Estimated volume and depth of in situ soils exceeding ch. NR 746 Table 1 or Table 2 or Site Specific RCLs (*underground petroleum tank systems, as defined in ch. NR 746 only*):
____
9. s. NR 720.19 Analysis? ✓ Y ____N
✓ Performance Standard -NR 720.19(2)
✓ SSRCL - NR 720.19(3) and (4),(5) or (6)
10. If the remedy includes a Soil Performance Standard, what type? ____ not applicable
____Cap ____ Soil ✓ Building ____ Natural Attenuation of Groundwater ✓ Other
Specify other: **Paved Area**
11. Will the maintenance of the SPS be consistent with the planned post remediation land use?
✓ Y ____N If No, please explain: ____________
12. Is the EPA Soil Screening Level Model used as justification for closure of sites with residual contaminated soils?
✓ Y ____N Are the input numbers used: ____ Site Specific , or ✓ WI Defaults?

Section E: Groundwater Information

ATTACHMENTS:

NA Table identifying all contaminants, summarizing all pre- and post-remediation groundwater analytical results, with sample collection dates *(prepared in accordance with guidance document RR-628)*

WDNR BRRTS CASE # 03 - 41 - 005301 WDNR SITE NAME : **Bostik Findley, Inc.**

NA Groundwater sample location map showing the site facilities and all monitoring wells, sumps, extraction wells, and potable and non-potable wells.

NA Isoconcentration map(s) when included as part of the site investigation or map(s) of the horizontal extent of contamination based on most recent data. *A copy of the map(s) from Section I, #7, may be used.*

NA A map showing groundwater flow direction(s) and summarizing the maximum variation in flow direction. *Multiple maps may be used. A copy of the map(s) from Section I, #9, may be used.*

NA A table summarizing all groundwater elevations, with dates, and top and bottom elevations of well screens. (*Wells are to be referenced to national geodetic survey datum, as per NR 141.065(2)).*

NA Graphs and statistical analyses which demonstrate the dynamics of the groundwater plume, for sites requesting closure using natural attenuation that meet the criteria s. NR 726.05(2)(b) or of s. NR 746 (permeable soils). *Refer to WDNR publication RR-614 for guidance.*

NA Geologic cross-sections showing extent of residual soil and/or groundwater contamination, as applicable. *A copy of the cross-section(s) from Section I, #11 may be used.*

INFORMATION NEEDED:

1. Extent of Contamination Defined? ____Y ____N ✓ N/A
2. Remedial Action Completed? ____Y ____N ✓ N/A
   Brief Description of Remedial Action Taken: ____________
3. Depth(s) to Groundwater____________ Flow Direction(s): ____________
4. Field Analyses? ____Y ____N
   Lab Analyses? ____Y ____N
5. ____ # of Sample Rounds
   ____ # of Sampling Points
   ____ # NR 141 Monitoring Wells Sampled
   ____ # Temporary GW Sampling Points Sampled
   ____ # Recovery Sumps Sampled
   ____ # Municipal Wells Sampled
   ____ # Private Wells Sampled
6. Was DNR notified of substances in groundwater without standards? ____Y ____N ____N/A
   If yes, how many? ____ What substances? ____________
7. Preventive Action Limit currently exceeded? ____Y ____N If yes, identify location(s)
8. Enforcement Standard currently exceeded? ____Y ____N If yes, identify location(s)
9. Measurable free product detected? ____Y ____N Pre-remediation
   ____Y ____N Post-remediation
10. Was free product remediated? ____Y ____N
    Method:____________
    Purge water or free product-groundwater mixture disposal method?
11. Potable wells within 1200 feet of site? ____Y ____N
    Have they been sampled? ____Y ____N
    Type (i.e. municipal, private, etc.)?____________
    [NOTE: Include wells on *groundwater well location map*]
12. Has DNR been provided with **all** results of private well sampling? ____Y ____N
13. Have well owners/occupants been notified of results? (*Sec. B Attachments*) ____Y ____N
    (*Results also need to be sent to the DNR Water Supply Specialist)*

Section F. Other Contaminated Media Information:

ATTACHMENTS:

NA Table of analytical results for all contaminants for media other than soil or groundwater

WDNR BRRTS CASE # 03 - 41 - 005301 WDNR SITE NAME : **Bostik Findley, Inc.**

INFORMATION NEEDED:

1. Have other media been impacted (either on-site or off-site e.g. sediment, utilities, air)? ____Y ✓ N
   Briefly describe type and extent of **all** contamination found in media other than soil or groundwater:

2. Remedial action completed? ____Y ____N ✓ N/A
   Brief description of remedial action taken: ____

3. # of Post Remedial Sample Rounds: ____
   # of Sampling Points: ____
   Field Analyses? ____Y ____N
   Lab Analyses? ____Y ____N

Section G. Associated Site Closure Information:

ATTACHMENTS:

NA Construction documentation or as-built report for any constructed remedial action or portion of, or interim action specified in s. NR 724.02(1), in accordance with s. NR 724.15.

✓ Maps and photos documenting the cap area, and/or integrity of the cap, with date.

✓ Description of any soil performance standard cover system used, including a description of how it meets the requirement to be protective until residual contaminant concentrations no longer pose a threat to public health, safety, welfare or the environment, per s. NR 720.19(2), s. NR 722.09(2) and (3).

✓ Maintenance plan with deed restriction for performance standard remedy. (per ss. NR 720.19(2) and 724.13(2))

INFORMATION NEEDED:

1. Enforcement actions closed out? ____Y ____N ✓ N/A
2. Permits closed out? ____Y ____N ✓ N/A
3. Describe how the following pathways are protected:
   a) Direct Contact Pathway: **The Site is almost entirely covered by either the building or an asphalt parking lot, access is restricted - there are currently no completed pathways for direct contact. As long as the current conditions are maintained, the direct contact pathway will not be completed.**

      Groundwater: **There are no indications that groundwater has been impacted and modeling indicates that contaminants in the soil are not expected to impact groundwater. As long as the current conditions are maintained, the groundwater will continue to be protected.**

   b) Other: ____

H. Proposed Institutional Controls: *(See Pub. RR-606)*

ATTACHMENTS:

✓ RR GIS Registry of Closed Remediation Sites
- ✓ Soil
- NA Groundwater
- NA Both

✓ Draft deed document *(Contact your DNR project manager for a template or guidance.)*

Type:
- ✓ Deed Restriction
- NA Deed Notice
- ✓ Maintenance Agreement
- NA Other: ____

WDNR BRRTS CASE # 03 - 41 - 005301 WDNR SITE NAME : **Bostik Findley, Inc.**

I. Required GIS Registry Information: Provide the following information, as a separate, stand-alone attachment, in the order specified.

✓ 1. **Copy(s) of most recent deed**, including legal description(s), for all affected properties within or partially within the contaminated site boundary. *(NOTE: If a property has been purchased with a land contract and the purchaser has not yet received a deed, a copy of the land contract which includes the legal description shall be submitted instead of the most recent deed. If the property has been inherited, written documentation of the property transfer should be submitted along with the most recent deed.)*

NA 2. **A copy of certified survey map(s),** as required by s. NR 716.15(2)(j)2., or the relevant section of the recorded plat map for those properties where the legal description in the most recent deed refers to a certified survey map or a recorded plat map (lots on subdivided or platted property (*e.g.*, lot 2 of xyz subdivision).

✓ 3. **The parcel identification number** (if county uses them) for each property within the contaminated site boundaries. Include the address of each property within the contaminated site boundary (regardless of whether parcel id # exists). **Geographic position** data for each property (meters in WTM83/91 projection) in compliance with the requirements of s. NR 716.15 (2)(k), unless this information was previously submitted to the agency with administrative authority for the site as part of the site investigation report, or unless the agency with administrative authority has directed that the responsible party does not need to provide geographic position data for a specific site.

✓ 4. **A site location map** which outlines all properties within the contaminated site boundaries on a U.S.G.S. topographic map or plat map in sufficient detail to permit the easy location of all parcels. If groundwater standards are exceeded, the map must also include the location of all municipal and potable wells within 1200 feet of the site. (If only one property, combine with map required in next item #5.)

✓ 5. **A map of contaminated properties within the site boundary** showing buildings, roads, property boundaries, contaminant sources, utility lines, monitoring wells and potable wells. This map shall also show the location of all contaminated public streets, and highway and railroad rights-of-way in relation to the source property and in relation to the boundaries of groundwater contamination exceeding ch. NR 140 enforcement standards, and/or in relation to the boundaries of soil contamination exceeding generic or site-specific residual contaminant levels as determined under s. NR 720.09, 720.11 and 720.19.

✓ 6. **A table of the most recent analytical results**, with sample collection dates from all monitoring wells, and any potable wells for which samples have been collected for groundwater, and/or showing results for all contaminants found in pre-remedial sampling and in the most recent soil sampling event, for soils (without shading or crosshatching). Note occurrence of free product.

NA 7. **A groundwater isoconcentration map**, if required as part of the site investigation (SI), of the contaminated properties within the site boundaries. The map must include the areal extent of groundwater contamination exceeding PALS and the areal extent of groundwater contamination exceeding ESs, groundwater flow direction(s) based on the most recent data, and sample collection dates. **If an isoconcentration map was not required** as part of the SI, substitute a map showing the horizontal extent of contamination, based on the most recent data. Note free product location(s).

NA 8. **A table of the previous 4 water level elevation measurements from all monitoring wells**, at a minimum, with the date measurements were made, is to be included. If present, note free product elevation and thickness on the table.

NA 9. **A groundwater flow direction map** representative of groundwater movement at the site. If the flow direction varies by more than 20° over the history of the site, 2 groundwater flow maps showing the maximum variation in flow direction are to be submitted. *Prepare maps according to the applicable portions of ss. NR 716.15(2)(g)5-8 and 716.15(2)(h)1-2.*

✓ 10. For sites closing with residual soil contamination, **include a map showing the location of all soil samples** and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeds generic or site specific residual contaminant levels.

NA 11. **A geologic cross section**, if required as part of the SI, showing vertical extent and location of residual soil contamination exceeding generic or site specific RCLs and residual groundwater contamination, source extent and location, isoconcentrations for all groundwater contaminants that exceed PALs that remain when closure is requested; water table and piezometric elevations, and the location and elevation of geologic units, bedrock, and confining units, if any.

✓ 12. **A statement signed by the responsible party,** which states that he or she believes that the legal description has been attached for each property that is within, or partially within, the contaminated site boundary. *(The* *purpose of this requirement is that a legal description for each of the contaminated properties has been submitted. The RP is not required to attest to the accuracy of the attached legal descriptions.)*

NA *13.* **A copy of the letters sent by the RP to all owners of properties with groundwater exceeding ESs** as required by s. NR 726.05(3)(a)4.g. Letters sent to off-source properties must contain standard provisions in Appendix A of ch. NR 726. *(Off source properties are listed separately on the GIS Registry with a link to the source property.)* If the source property is owned by someone other than the person who is applying for case closure, a copy of the letter notifying the current owner of the source property that case closure has been requested should also be included.

NA 14. **A copy of all written notifications** provided to the city/village/municipal/state agency or other entity responsible for maintenance of a public street or highway or railroad right-of-way, within or partially within the boundaries of the contaminated site, for contamination exceeding groundwater ESs and/or soil exceeding generic or site specific RCLs.

NA 15. **A list of addresses for all off-source properties** affected by residual soil or groundwater contamination exceeding applicable standards.

I certify that, to the best of my knowledge, the information presented on and attached to this form is true and accurate. This recommendation for case closure is based upon all available data as of 11/19/04 (date). I have read the Case Summary and Close Out Form instructions and all required information has been included.

Form Completed By: William C. Looney 11/19/04
(Signature) **(Date)**

____**$750.00 Closeout Review Fee Attached**
____ **$250.00 GIS Registry Maintenance Fee Attached (GW)**
____ **$200.00 GIS Registry Maintenance Fee Attached (Soil)**

Printed Name: **William C. Looney**.

Company Name: **ENSR Corporation**.

Email address: **blooney@ensr.com**.

If not site owner, relationship to site owner: **Environmental Consultant**.

Address: **W239 N2890 Pewaukee Road**. City/Zip Code **Pewaukee, WI 53072**.

Telephone Number: **262-523-2040**. FAX Number: **262-523-2059**.

Environmental Consultant (if different than above):____

Address:____ City/Zip Code ____

Telephone Number: (____)____ FAX Number: (___)____

WDNR BRRTS CASE # 03 - 41 - 005301 WDNR SITE NAME : **Bostik Findley, Inc.**

FOR DEPARTMENT USE ONLY

PROJECT MANAGER: ______________________ Date Reviewed: ________________________

( ) Approved ( ) Denied ( ) Sent to Committee

CLOSURE COMMITTEE DECISION ON CLOSURE:

FIRST COMMITTEE REVIEW DATE: __________________ **( ) Approved ( ) Denied**

(Signature) (Signature) (Signature) (Signature)

COMMITTEE RECOMMENDATION:

_____ **Closure Approved With:**

- _____ No Restrictions
- _____ Listing on GIS Registry due to Groundwater impacts
- _____Listing on GIS Registry due to Soil impacts
- _____ Zoning Verification
- _____ Deed Restriction
- _____ Deed Notice
- _____ Site Specific Close Out Letter
- _____ Well Abandonment Documentation
- _____ Soil Disposal Documentation
- _____ NR 140 Exemption For: ________________________________
- _____VPLE Insurance needed
- _____ Other Conditions/Comments:____________________________

_____ **Closure Denied, Needs More:**

- _____ Investigation
- _____ Groundwater Monitoring
- _____ Soil Remediation
- _____ Groundwater Remediation
- _____ Documentation of Soil Landspreading or Biopile Destiny
- _____Specific Comments: ________________________________

State of Wisconsin
Department of Natural Resources
http://dnr.wi.gov

Case Summary and Close Out Request
Form 4400-202 (R 5/04)

WDNR BRRTS CASE # 03 - 41 - 005301 WDNR SITE NAME : Bostik Findley, Inc.

FOR DEPARTMENT USE ONLY

PROJECT MANAGER: ______________________ Date Reviewed: ______________________

( ) Approved ( ) Denied ( ) Sent to Committee

CLOSURE COMMITTEE DECISION ON CLOSURE:

SECOND COMMITTEE REVIEW DATE: ______________ **( ) Approved ( ) Denied**

(Signature)	(Signature)	(Signature)	(Signature)

COMMITTEE RECOMMENDATION:

_____ **Closure Approved With:**

- _____ No Restrictions
- _____ Listing on GIS Registry due to Groundwater impacts
- _____ Listing on GIS Registry due to Soil impacts
- _____ Zoning Verification
- _____ Deed Restriction
- _____ Deed Notice
- _____ Site Specific Close Out Letter
- _____ Well Abandonment Documentation
- _____ Soil Disposal Documentation
- _____ NR 140 Exemption For: ______________________
- _____ VPLE Insurance needed
- _____ Other Conditions/Comments: ______________________

_____ **Closure Denied, Needs More:**

- _____ Investigation
- _____ Groundwater Monitoring
- _____ Soil Remediation
- _____ Groundwater Remediation
- _____ Documentation of Soil Landspreading or Biopile Destiny
- _____ Specific Comments: ______________________

SECTION A
CASE HISTORY AND CLOSURE PATHWAY
ATTACHMENTS

- CASE SUMMARY
- SITE LOCATION MAP
- SITE LAYOUT MAP
- VERIFICATION OF ZONING INFORMATION

CASE SUMMARY

CASE SUMMARY

1.0 INTRODUCTION

1.1 Site Location and Ownership

The Site is located at 2930 West Center Street in Milwaukee, Milwaukee County, Wisconsin. The Site occupies a portion of the northeast quarter of the southeast quarter of Section 13, Township 7 North and Range 21 East (NE ¼, SE ¼ of Sec. 13, T7N, R21E).

Bostik Findley, Inc. (Bostik) of Milwaukee, Wisconsin, is the Site owner. The contact is:

Bostik Findley, Inc.
c/o Mr. Bruce A. Keyes, Esq.
Foley & Lardner LLP
777 East Wisconsin Avenue
Milwaukee, WI 53202
(414) 297-5815

1.2 Consultant Identification

The site investigation activities reported herein were performed by:

ENSR Corporation
Attn: Mr. William Looney
W239 N2890 Pewaukee Road, Unit D
Pewaukee, WI 53702
(262) 523-2040 ext, 222– phone
(262) 523-2059 – fax

1.3 Background

The Site currently consists of three adjoining parcels. Buildings constructed on the parcels are interconnected. The first parcel, containing the main facility and a covered parking area, occupies approximately 39,000 square feet ("Main Parcel"). The second parcel contains a warehouse building with an outdoor dock comprising approximately 6,000 square feet and storage area of approximately 16,000 square feet ("Dock Parcel"). The third parcel, located between the first and second parcels, contains a two story leased building of approximately 4,800 square feet of floor space with a footprint of approximately 3,700 square feet ("Middle Parcel"). The Middle Parcel is currently leased, but will be conveyed to Bostik shortly, and combined with the other two parcels to create one property or parcel. The parcels are zoned by the City of Milwaukee for light industrial use, specifically, as IL2, (Industrial light, older industrial corridors).

A creamery operated on the Main Parcel from the late 1800s or early 1900s until the 1960s, when Findley Adhesives (predecessor of Bostik) began operations. A laundry reportedly operated on the Middle Parcel from the 1930s until the 1960s, then a printing company operated on the Middle Parcel from the 1960s until the mid-1990s. Available information indicated that several residential structures (some of which may have been used as a tavern, real estate office or insurance office) were located on the Dock Parcel from the 1930's until about 1998 when the dock and warehouse were constructed.

The area in the vicinity of the Site is heavily developed and contains a number of residential, commercial and industrial properties. The Site and the vicinity is serviced by public electrical and natural gas utilities and the municipal sewage system. Potable water is provided to the area by the City of Milwaukee. Groundwater yields from the shallow groundwater aquifer in the area of the Site are insufficient for domestic or industrial use. No surface-water features to which groundwater discharges exist in the Site area. Therefore, risks associated with potentially-impacted groundwater are negligible.

Bostik utilized the Site to manufacture hot melt adhesives until suspension of operations in July 2003. The manufacturing process included combining wax, resins and polymers in mixing vessels at elevated temperatures. The finished product was stored at the Site and shipped to customers. The Site is currently closed and the hot melt process equipment has been removed from the Site. Limited quantities of solvents were used on-site for clean-up. Bostik did not produce solvent-based adhesives at the Site.

1.4 Previous Work

Several environmental-related activities have been accomplished at the Site. GZA GeoEnvironmental, Inc. (GZA) completed a *"Phase I Environmental Site Assessment Report,"* for the Site, dated September 3, 2003. The GZA report identified the soil impacts discovered during the 1995 underground storage tank (UST) removal performed by Swanson Environmental, Inc. (Swanson) and associated historical use of chemicals at the Site as recognized environmental conditions (RECs). Also identified as a REC was a small area (approximately one foot by one foot) of soil stained with what appeared to be hardened fuel oil or similar petroleum product located directly below a fill pipe for a former UST on the northwest portion of the Site.

A Site map identifying the Site features and processes that are recognized as possible sources for hazardous substance discharges and depicting the location and analytical results related to the investigations and remedial activities described below is included as an attachment to this closure request.

Main Parcel

CBC Environmental Services (CBC) supervised the removal of one, 8,000-gallon mineral oil UST at the Site in October 1990. Soil samples collected during the removal were analyzed for Total Petroleum Hydrocarbons (TPH). No TPH was detected in any sample.

In November 1995, Braun Intertec Corporation (Braun) performed an investigation of two out-of-service sumps located in the sub-basement under the main facility. Both concrete sumps (crocks) are approximately four feet in diameter and extend approximately seven feet beneath the sub-basement floor. The crocks were connected by a three-inch diameter pipe. Reportedly, liquid from floor cleaning was collected in floor drains in the main facility and transferred via gravity flow through pipes to the eastern-most crock. Overflow from the easternmost crock was transferred through the connecting pipe to the western-most crock. Overflow from the western-most crock was connected to another smaller-diameter concrete catch basin located west of the western-most crock. This catch basin discharged to the sanitary sewer.

At the time of the 1995 inspection, the bottom of both crocks contained sludge. The sludge was removed (containerized in eight, 55-gallon drums) and the interior of the crocks pressure washed. The sludge was subsequently classified as a hazardous waste due to the presence of tetrachloroethylene (PCE) above the characteristic hazardous waste limits and was properly transported off-site and disposed.

After sludge removal and cleaning, the crocks were removed from service by sealing the pipes with concrete plugs. The use of chlorinated solvents was terminated prior to decommissioning the crocks in 1995. There is no visible evidence of cracks or damage to the interior of the crocks. As the crocks were found to be intact, this was not considered a REC.

In November 1995, impacts to the subsurface soils were noted by Swanson during removal of two, 300-gallon USTs; one was a gasoline UST and the other was a diesel fuel UST. The USTs had been installed under the Main Parcel floor by the creamery prior to 1956. Bostik was subsequently notified of the results and the release was reported to the Wisconsin Department of natural Resources (WDNR) in December 1995. In January 1996, Swanson removed and disposed of approximately 39 tons of impacted soil. Concerns of damage to the building's structural integrity limited the excavation.

Following the tank and soil removal, further investigation beneath the Main Parcel floor revealed soil impacts of petroleum constituents such as gasoline range organics (GRO), diesel range organics (DRO), benzene, ethylbenzene, toluene, xylenes, naphthalene and various chlorinated VOCs, such as PCE, trichloroethylene (TCE), and methylene chloride. Several of these constituents exceeded the WAC NR 720 generic soil clean-up criteria.

Modeling of both the direct-contact hazard of the constituents and the potential for the constituents to impact groundwater was completed. The results indicated that none of the constituents are expected to pose a threat to human health from direct contact (industrial use) or are expected to impact groundwater.

At the request of WDNR, additional investigation activities to further define the extent of impacts of chlorinated VOCs to the subsurface were conducted and the results submitted to WDNR. In June 1997, a "conditional no further action" letter was issued by WDNR requiring a deed restriction. This restriction would include the provisions that "any future subsurface work on this property shall include an investigation of the degree and extent of PCE contamination" and further that "the contamination shall be properly treated or disposed in accordance with applicable law". A deed restriction or GIS registration was not filed at that time.

Middle Parcel

No extensive investigative activities had been conducted prior to the recent investigation (see below).

Dock Parcel

In March 1998, Braun removed one, 550-gallon fuel oil UST from the Dock Parcel (likely a heating oil UST associated with a former residence). Soil samples obtained from beneath the UST were analyzed for DRO and no detections were reported. A "clean" UST closure report was filed with the WDNR.

1.5 Recent Investigation

ENSR was retained by Bostik to conduct a focused site investigation to complete the definition of the extent of impacts that were identified during previous investigations Additionally, ENSR was to provide assistance in developing a strategy and move the Site toward closure.

The objectives for the placement and sampling scope for each boring in the initial investigation phase were presented in the *Site Investigation Work Plan* (ENSR, June 2004). Based on review of the data collected during the first phase of investigation (conducted in June 2004) and discussions with WDNR representatives, a subsequent investigation phase was conducted to evaluate the vertical extent of impacts inside the building in the vicinity of boring GP-4 (drilled in June 1996) and in the vicinity of the former location of two, 300-gallon USTs removed in November 1995. This subsequent investigation phase was completed in July 2004.

1.5.1 Initial ENSR Investigation (June 2004)

Six Geoprobe borings were advanced and sampled. No VOCs were detected in samples from GP-1, GP-2, GP-3, GP-5 and GP-6. None of the samples in which VOCs were detected (from GP-4) contained concentrations of VOCs that exceeded their respective Wisconsin Generic Industrial Direct Contact Residual Contaminant Levels (RCLs).

In GP-4, the TCE concentration exceeded the Wisconsin Generic RCL for the soil to groundwater pathway in the sample collected at a depth of 3-feet bgs; however, TCE was not detected in the deeper GP-4 samples[1]. PCE concentrations exceeded the Wisconsin generic soil to groundwater RCL in the sample collected from borings GP-4 at depths of 3

[1] Note that the calculated Wisconsin Generic RCL for the soil to groundwater pathway for TCE and PCE are 3.7 µg/kg and 4.1 µg/kg respectively, which are less than their laboratory method detection limits of 25 µg/kg (matrix dependant).

feet and 8 feet bgs. PCE was not detected in the sample from GP-4 obtained at a depth of 16 feet bgs. The Wisconsin generic soil to groundwater RCL for *cis*-1,2,-dichloroethene (*cis*-1,2,-DCE) was also exceeded in the sample collected from GP-4 at a depth of 3 feet bgs. However, *cis*-1,2,-DCE was not detected in any of the deeper GP-4 samples.

DRO was detected in the sample from GP-6 at a concentration of 7,100 mg/kg. This concentration exceeded the Wisconsin RCL as set forth in NR 720.09. Note that the DRO impacted soil in this area was subsequently removed and transported off-site for proper disposal. Confirmatory samples were obtained and the results were below the generic RCL for petroleum impacts outlined in NR 720.09 (4) (a) 2.

Arsenic exceeded the Wisconsin RCL for industrial areas of 1.6 milligrams per kilogram (mg/kg) in borings GP-1 through GP-5. Although above the RCL, the arsenic concentrations observed at the site are within the naturally-occurring ranges found in Wisconsin, as reported by USGS[2] and are indicative of area background concentrations rather than impacts due to Site operations.

1.5.2 Subsequent ENSR Investigation (July 2004)

Following a technical review by WDNR, two additional Geoprobe borings were advanced in an effort to locate groundwater. The borings terminated at a depth in excess of 30 feet bgs without any indication of groundwater. Soil samples were also collected as part of this investigation. Naphthalene was the only VOC detected in the sample from GP-8 collected at a depth of 31 feet bgs. The detected naphthalene concentration, 30 mg/kg, is significantly less than the Wisconsin Generic Industrial Direct Contact RCL. TCE was initially detected in the sample from GP-7 collected at 33 feet bgs, which was inconsistent with the findings of soil samples at the shallower depths above. Consequently, ENSR requested a reanalysis of the samples from both GP-7 and GP-8. The reanalysis of the sample from GP-8 verified the initial naphthalene result; however, TCE was not detected in the sample from GP-7. ENSR requested the laboratory evaluate the discrepancy. An August 11, 2004 letter from the TestAmerica Laboratory Manager, states that, "However, due to the low level detection (the result is at the Limit of Quantification) and the fact that two subsequent analyses failed to confirm the initial findings, I feel the first analyses was a false detection of Trichloroethene."

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[2] USGS, National Geochemical Database Open File Report 97-492

1.6 Additional Background Information

Detailed background information and site remediation/investigation activities are summarized in the following reports:

- *"A Report of an Underground Storage Tank Soil Assessment at Findley Adhesives, Milwaukee, Wisconsin,"* CBC Environmental Services (CBC), January 14, 1991,

- *"Report on Underground Storage Tank Removal, Site Investigation and Closure, Findley Adhesives, Inc., 2930 West Center Street, Milwaukee, Wisconsin,"* Swanson Environmental, Inc. (Swanson), March 25, 1996,

- Letter to Mr. Charles Krohn, Wisconsin Department of Natural Resources (WDNR) from Mr. Wayne R. Hutchinson, Braun Intertec (Braun), *"RE: Results of Geoprobe Investigation for Chlorinated Hydrocarbons – Findley Adhesives (30th and West Center),* August 26, 1996,

- *"Sump Investigation Report,"* Braun, November 1996,

- Letter to Mr. Charles Krohn, WDNR from Mr. Wayne R. Hutchinson, Braun, (*No Subject Indicated,)* December 16, 1996,

- Letter to Ms. Kim Dabertin, Findley Adhesives, Inc. from Ms. Gina Keenan, Wisconsin Department of Natural Resources Subject: *Request for Closure, Findley Adhesives, Inc., 2930 Center Street, Milwaukee, Wisconsin. BRR-ERP FID # 241024740 BRRT # 04-41-000530,* February 27, 1997,

- Letter to Ms. Kim Dabertin, Findley Adhesives, Inc. from Ms. Gina Keenan, Wisconsin Department of Natural Resources Subject: *Request for Closure, Findley Adhesives, Inc., 2930 Center Street, Milwaukee, Wisconsin. BRR-ERP FID # 241024740 BRRT # 04-41-000530,* June 11, 1997,

- *"Phase I Environmental Site Assessment, Six Properties on N. 29th Street and W. Center Street, Milwaukee, Wisconsin,"* STS Consultants, Ltd. (STS), June 24, 1997,

- *"Phase II Investigation Report at the Properties on North 29th Street and West Center Street in Milwaukee, Wisconsin,"* STS, August 25, 1997,

- *"Addendum to the Phase II Investigation Report at the Properties on North 29th Street and West Center Street in Milwaukee, Wisconsin,"* STS, August 28, 1997,

- *"Tank Closure Report, ATO Findley, Inc. Center Street Facility, 2930 West Center Street, Milwaukee, Wisconsin,"* Braun, April 1, 1998,

- "*Phase I Environmental Site Assessment Report*", GZA GeoEnvironmental, Inc. (GZA) September 3, 2003,

- "*Site Investigation Work Plan,*" ENSR, June 2, 2004, and

- *"Site Investigation and Remedial Action Options Report, Former Bostik Findley, Inc. Facility, 2930 West Center Street, Milwaukee, Wisconsin, BRRTS #03-41-00530,"* ENSR, November 2004

Additional reports may be on file with the WDNR.

2.0 SUMMARY OF INVESTIGATION FINDINGS

Soils encountered at the Site consist typically of silty clay and clays with discontinuous sand and gravel seams to at least the termination depths of the borings (33 feet bgs). These are predominantly low-permeability soils.

The soil impacts exceeding Wisconsin Generic RCLs are found at shallow depths at the Site. The highest concentrations are found at the Main Parcel in boring GP-4, drilled/sampled in June 1996, and in the vicinity of the former USTs removed in November 1995. Based on the investigation results, impacts are shown to decrease significantly with depth.

Based on the analytical data generated during this and previous site investigations, the boundaries of soil impacts are defined, confined to the Site and located beneath the building foundation or paved parking areas. There are no indications that groundwater has been impacted and, based on the SESOIL modeling of both the direct contact hazard of the constituents and the potential for the constituents to impact groundwater, none of the constituents would pose a threat to human health from direct contact (industrial use) or be expected to impact groundwater (*"Evaluation of Site-Specific Soil Cleanup Standards, Findley Adhesives, Inc., 2930 West Center Street, Milwaukee, WI,"* Environmental Software Consultants, Inc., 3/13/1996) ("SESOIL Model"). Based on existing data regarding soil characteristics and depth to groundwater, it is ENSR's opinion that the conclusions reached in the SESOIL Model remain valid for the Site.

Potable water is provided to the area by the City of Milwaukee and the groundwater yields from the shallow groundwater aquifer in the area of the Site are insufficient for domestic or industrial use. No surface-water features to which groundwater could discharge exist in the immediate Site area. Thus, potential risks associated with impacted groundwater are minimal.

No sensitive species, habitats or ecosystems, wetlands, or any outstanding or exceptional resource waters or any sites or facilities of historical or archaeological significance were identified in the vicinity of the Site. Based on the limited extent of impacts to soil, the limited potential for migration (impacts located under the building foundation) and the extensive developmental history of the Site and surrounding area, the impacts at the Site are not believed to pose a threat to public or private water supplies, to any sensitive species, habitats or ecosystems, to any wetlands, to any outstanding or exceptional resource waters or to any sites or facilities of historical or archaeological significance.

3.0 CONCEPUTAL SITE MODEL

A conceptual Site model was developed to provide an understanding of contaminant release and transport mechanisms, exposure pathways and receptors. Based on the use of the Site (the Site is currently vacant) and limited access (only workers are allowed in the building and foot access to the Site is restricted by the presence of fencing), general Site workers are the most likely potentially exposed population.

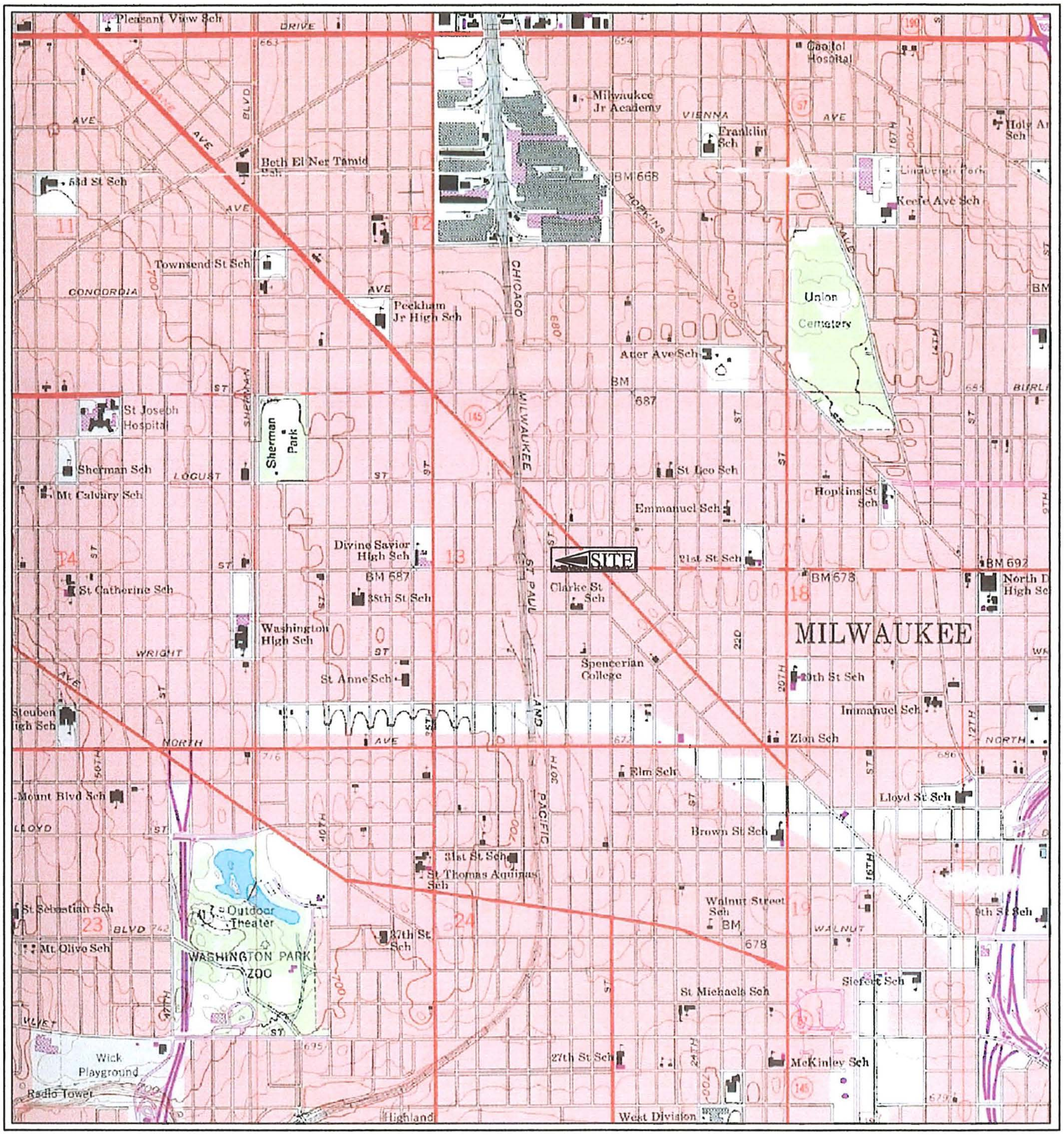
Potential exposure routes include direct contact with impacted soils, ingestion of impacted soils, inhalation of impacted fugitive dust and inhalation of volatilized contaminants from impacted soil. However, as the Site is almost entirely covered by either the building or an asphalt parking lot, access is restricted and there is no indication that groundwater is impacted, there are no completed pathways for direct contact.

Potable water is provided to the area by the City of Milwaukee and the groundwater yields from the shallow groundwater aquifer in the area of the Site are insufficient for domestic or industrial use. There are no indications that groundwater has been impacted and modeling indicates that contaminants in the soil are not expected to impact groundwater. Additionally, no surface-water features to which groundwater could discharge exist in the Site area. Thus, there are no complete pathways for exposure to groundwater. Therefore, current conditions at the Site are protective of human health and the environment.

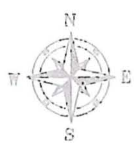
4.0 REMEDIAL ACTION

To develop a remedial strategy, remedial technologies potentially-applicable to the current and future Site conditions were screened. The alternatives were subjected to an evaluation and grouped into potential remedial options. The options were then evaluated and an option consisting of Institutional Controls (*i.e.*, listing the Site on the WDNR Geographic Information System [GIS] Registry, filing deed restrictions controlling the development of the Site, and maintaining the existing access restrictions) and Containment (using the existing building foundation and paved areas as a barrier to prevent direct contact and control precipitation infiltration) was selected for recommended implementation at the Site. This option is protective of human health and environment.

SITE LOCATION MAP



Adapted from: USGS 7.5 minute series Milwaukee, Wisconsin topographic quadrangle dated 1958, Photorevised 1971.



ENSR INTERNATIONAL

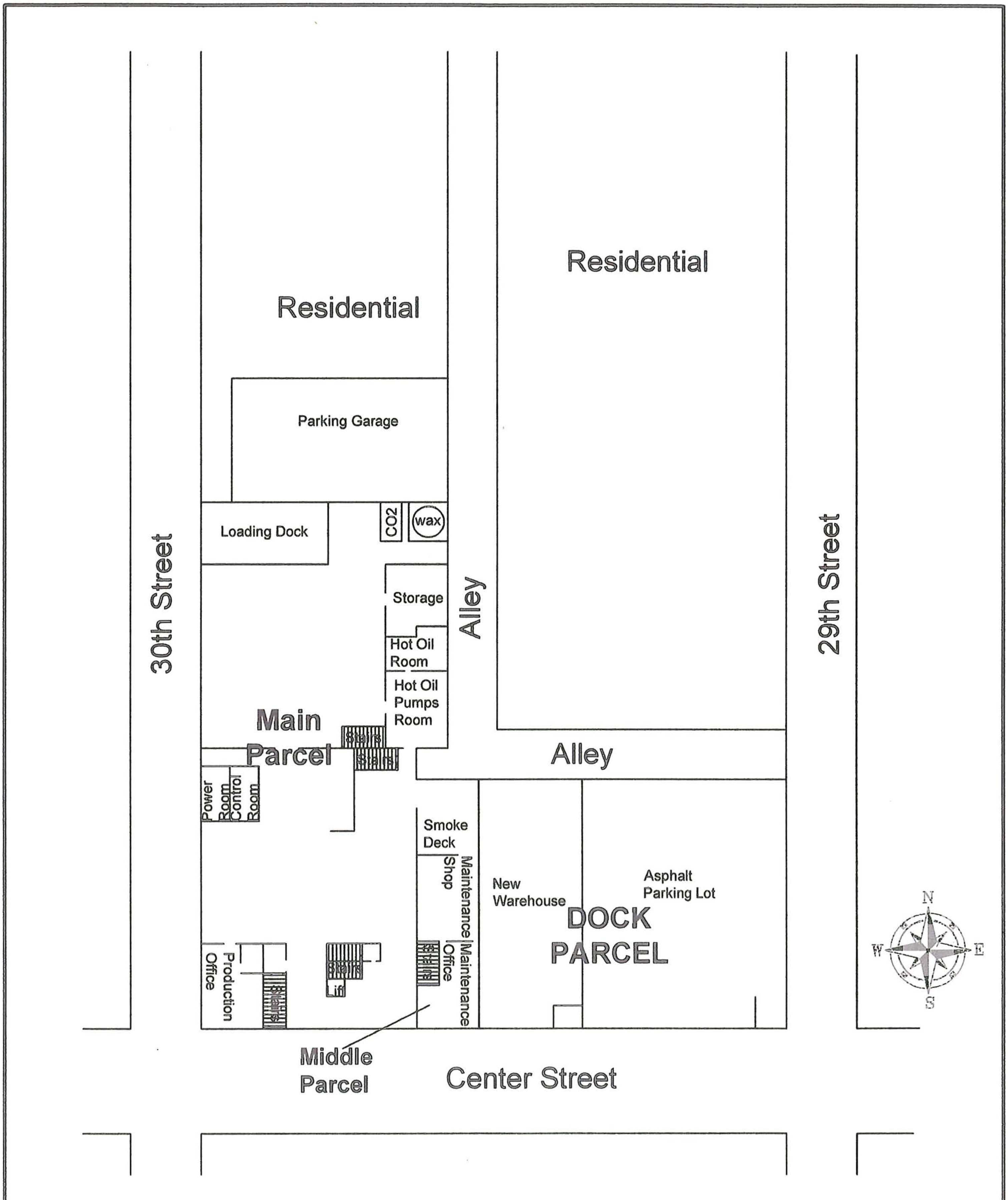
SCALE 1:24,000

Figure 1

Site Location Map

Bostik Findley
2930 West Center Street, Milwaukee, Wisconsin

SITE LAYOUT MAP



J: \COMMON\00963023 Bostik Center ST\figures\site layout map R-1.dwg

REV#	DESCRIPTION	APP'D

ENSR INTERNATIONAL

FIGURE A-2
SITE LAYOUT MAP
Bostik Findley
2930 West Center Street
Milwaukee, Wisconsin

DRWN: HEP	SCALE: 1"=59'
CHK'D:	DATE: 06-21-04
APP'D:	

VERIFICATION OF ZONING INFORMATION

Verification of Zoning Information

Parcels

Rec	Taxkey	Parcel Address	Parcel Zip Code	Owner Occupied?	Owner's Name	Owner's Mailing Address	Owners City and State	Owner's Zip Code	Current Total Assessment	Number of Rooms	Number of Units	Year Built	Aldermanic District	Building Area (Sq.Ft.)	Building Type	Census Block	Census Tract	Historic Code	Land Use	Land Use Group	Parcel Area (Sq. Ft.)	Police District	Years Tax Delinquent	Zoning	#SHAPE#	#ID#
1	3091134000	2918 W CENTER ST	532100000	N	ROBERT ZARNE & JEANE HW	11320 WATERTOWN PLANK RD	WAUWATOSA, WI	532260000	21600	0000	1	1924	15	4800	EXMMFG	120	89		2752	8	3703	7	0	IL2	[polygon]	70340

Parcels

Rec	Taxkey	Parcel Address	Parcel Zip Code	Owner Occupied?	Owner's Name	Owner's Mailing Address	Owners City and State	Owner's Zip Code	Current Total Assessment	Number of Rooms	Number of Units	Year Built	Aldermanic District	Building Area (Sq.Ft.)	Building Type	Census Block	Census Tract	Historic Code	Land Use	Land Use Group	Parcel Area (Sq. Ft.)	Police District	Years Tax Delinquent	Zoning	#SHAPE#	#ID#
1	3091135110	2930 W CENTER ST	532102636	N	FINDLEY ADHESIVES INC	11320 WATERTOWN PLANK RD	MILWAUKEE WI	532260000	156100	0000	1	1925	15	38616	EXMMFG	120	89		2891	8	39073	7	0	IL2	[polygon]	69343

Parcels

Rec	Taxkey	Parcel Address	Parcel Zip Code	Owner Occupied?	Owner's Name	Owner's Mailing Address	Owners City and State	Owner's Zip Code	Current Total Assessment	Number of Rooms	Number of Units	Year Built	Aldermanic District	Building Area (Sq.Ft.)	Building Type	Census Block	Census Tract	Historic Code	Land Use	Land Use Group	Parcel Area (Sq. Ft.)	Police District	Years Tax Delinquent	Zoning	#SHAPE#	#ID#
1	3091133110	2900 W CENTER ST	532102636	N	ATO FINDLEY INC	11320 WATERTOWN PLANK RD	WAUWATOSA WI	532260000	106800		1	2000	15	6000	EXMMFG	120	89		2752	8	15987	7	0	IL2	[polygon]	70353

Information from City of Milwaukee, Map Milwaukee Geographic Information Services Web Site, http://www.milwaukee.gov/DISPLAY/ROUTER.ASP?DOCID=451 Accessed 10/29/2004

INDUSTRIAL-LIGHT (IL). This district is intended to provide sites primarily for light industrial uses that utilize medium-sized buildings and do not have extensive outdoor storage areas or operations. This district includes both older industrial corridors (IL2) and modern industrial parks (IL1). While most buildings contain clean, light industrial uses, some commercial and office uses may also be included. This district contains heavier uses than the IO district and requires more extensive buffering from adjoining residential areas.

SECTION B
RECEPTOR SUMMARY
(NOT APPLICABLE/NO ATTACHMENTS)

SECTION C
SOIL INVESTIGATION INFORMATION
ATTACHMENTS

- SOIL DATA SUMMARY TABLES
- SOIL SAMPLING LOCATION MAP

SUMMARY TABLES

TABLE 1

SOIL ANALYTICAL RESULTS - Swanson Environmental, Inc., *"Report on Underground Storage Tank Removal, Site Investigation and Closure," (3-25-1996)*

(Table revised to include detection limits)

Bostik Findley
2930 W. Center St.
Milwaukee, WI

	Sample Identification, Depth and Date Sampled					
Analyte[1]	**N-1** **6 ft bgs** 12/1/95	**S-1** **6 ft bgs** 12/1/95	**E-1** **6 ft bgs** 12/1/95	**W-1** **6 ft bgs** 12/1/95	**Ba-1-1** **12 ft bgs** 12/1/95	**NR 720 Soil Cleanup Standard[2]**
PID (i.u.)	26.3	22	0	0	1990	-
DRO (mg/kg)	4	7.3	<3.7	8.5	18	100
GRO (mg/kg)	<0.9	1.8	<0.9	<0.9	172	100
Lead (mg/kg)	110	24	58	32	15	500
Anthracene (ug/kg)	<6.2	<5.2	<4.9	7.7	14	-
Benzene (ug/kg)	3.1	<1.5	2.6	1.7	1210	5.5
Benzo(a)anthracene (ug/kg)	22	20	<3.8	100	<4.9	-
Benzo(a)pyrene (ug/kg)	<4.4	<3.7	<3.5	157	<4.5	-
Benzo(b)fluoranthene (ug/kg)	55	17	28	172	<6.9	-
Benzo(g,h,i)perylene (ug/kg)	45	13	19	162	<11	-
Benzo(k)fluoranthene (ug/kg)	23	9.6	13	83	<4.4	-
n-butylbenzene (ug/kg)	<6.8	<5.8	<6.4	<2.3	2950	-
Chrysene (ug/kg)	20	16	12	79	18	-
Di-isopropyl ether (ug/kg)	<3.6	<3.1	<3.4	<2.8	3320	-
1,2-Dichloroethane (ug/kg)	<3.9	<3.4	<3.7	<3.1	<1670	5
Ethylbenzene (ug/kg)	<2.1	<1.8	<2.0	<1.7	9610	2,900
Fluoranthene (ug/kg)	44	25	<11	157	64	-
Indeno(1,2,3-cd)pyrene (ug/kg)	45	16	23	162	<6.3	-
Methylene Chloride (ug/kg)	39	37	15	34	3050	-
2-Methylnaphthalene (ug/kg)	<23	<19	<18	<18	574	-
Naphthalene (ug/kg)	<3.6	<3.1	<3.4	<2.8	4620*	-
Phenanthrene (ug/kg)	<6.8	<5.6	<5.3	24	<6.5	-
n-Propylbenzene (ug/kg)	<2.8	<2.5	<2.7	<2.3	2400	-
Pyrene (ug/kg)	38	24	22	151	53	-
Tetrachloroethene (ug/kg)	131	110	145	14	<1370	-
Toluene (ug/kg)	13	2	14	6.9	19300	1,500
Trichloroethene (ug/kg)	3.40	7.50	13.00	3	<1070	-
1,2,4-Trimethylbenzene (ug/kg)	<6.1	<5.2	<5.7	<4.8	19200	-
1,3,5-Trimethylbenzene (ug/kg)	<3.2	<2.8	<3.0	<2.6	6030	-
m,p-Xylene	<6.1	<5.2	<5.7	<4.8	37200	4,100
o-Xylene (ug/kg)	<1.8	<1.5	<1.7	<1.4	19200	4,100

Notes:
[1]Only Detected Compounds Shown
[2]NR 720 values from tables in effect in 1995
bgs = below ground surface.
DRO = Diesel range organics.
μg/kg = micrograms per kilogram (parts per billion).
mg/kg = milligram per kilogram (parts per million).

TABLE 2 Soil Borings Sample Analysis Results Findley Adhesives December 1995										
Analyte	**B-1 (15'-17')**	**B-1 (19'-21')**	**GP-1 (10'-12')**	**GP-1 (12'-14')**	**GP-1 (14'-16')**	**GP-1 (16'-18')**	**GP-1 (18'-20')**	**GP-1 (20'-22')**	**GP-1 (22'-23.5')**	**NR 720 Soil Clean-up Standard**
PID (i.u.)	54.9	77.6	21.7	286	97.5	60.2	46.6	30.9	46.3	—
DRO (mg/Kg)	NA	13	378	105	64	60	53	52	78	100
GRO (mg/Kg)	1.4	8.2	33	2.1	4	2	1.1	<0.9	0.9	100
Lead (mg/Kg)	8.8	9.5	9	11	8.7	11	7.4	7.4	7.6	500
Benzene (ug/Kg)	279	1220	567	1260	3.1	3.96	<0.57	<0.68	<0.80	5.5
Chloroform (ug/Kg)	<0.46	<0.54	<1.42	<0.83	2.2	6.05	<0.54	2.41	<0.76	—
1,1-Dichloroethane (ug/Kg)	<0.38	<0.45	62.7	<0.69	<0.36	<0.57	<0.45	<0.54	<0.63	—
1,2-Dichloroethane (ug/Kg)	8.93	75.2	<2.80	<1.62	<0.85	<1.34	<1.06	<1.28	<1.48	4.9
cis-1,2-dichloroethene (ug/Kg)	<0.48	<0.56	2030	<0.86	<0.45	<0.71	<0.56	<0.68	<0.79	—
trans-1,2-Dichloroethene (ug/Kg)	<0.54	<0.64	10.9	<0.97	<0.51	<0.80	<0.64	<0.77	<0.89	—
Ethylbenzene (ug/Kg)	0.8	1.85	93.4	12.5	<0.47	<0.74	<0.59	<0.71	<0.82	2900
Methylene chloride (ug/Kg)	132	215	31.1	31.4	26.3	54.1	16.9	28.1	16.4	—
Naphthalene (ug/Kg)	<1.39	<1.63	<4.30	2.58	<1.30	<2.06	<1.63	<1.96	<2.28	—
n-Propylbenzene (ug/Kg)	<0.92	<1.09	<2.86	7.72	<0.87	<1.37	<1.08	<1.30	<1.52	—
Toluene (ug/Kg)	20.1	30.5	46.1	21.9	<0.27	<0.42	<0.33	<0.40	<0.47	1500
Trichloroethene (ug/Kg)	<0.55	<0.64	18.5	<0.98	<0.51	<0.81	<0.64	<0.77	<0.90	—
1,2,4-Trimethylbenzene (ug/Kg)	1.77	<1.41	<3.71	62.1	<1.12	<1.78	<1.40	<1.69	<1.97	—
1,3,5-Trimethylbenzene (ug/Kg)	<0.89	<1.05	<2.77	46.3	<0.84	<1.33	<1.05	<1.26	<1.47	—
m,p-Xylene (ug/Kg)	7.38	8.49	112	126	<0.95	<1.50	<1.19	<1.43	<1.66	4100
o-Xylene (ug/Kg)	1.93	4.44	46	77.7	<0.43	<0.68	<0.54	<0.65	<0.76	4100
Hexane (ug/Kg)	NA	NA	<9.26	55.4	<2.80	<4.43	<3.51	<4.22	<4.91	—

TABLE 1
Ato-Findley, Inc. - 2930 West Center Street, Milwaukee
Soil Sample Laboratory Results
Sampled 6/27/96 (ug/kg)

Sample Location→	GP-2		GP-3		GP-4		GP-5		Site Specific Soil RCL's	Non-Industrial Direct Contact Concentration*
Sample depth (ft)→ Analytes↓	5-7	11-13	5-7	11-13	5-7	11-13	5-7	11-13		
Methylene chloride	88	91	94	82	<67	78	91	231	85,000	85,000
Tetrachloroethene	96	<25	582	<25	89,300	552	<25	<25	12,000	12,000
1,2-Dichlorobenzene	<25	<25	<25	<25	49	<25	<25	<25	7,000	7,000
cis-1,2-Dichloroethene	<25	<25	<25	<25	207	<25	<25	<25	780,000	780,000
1,1,1-Trichloroethane	<25	<25	<25	<25	42	<25	<25	<25	2,700,000	2,700,000
Trichloroethene	<25	<25	<25	<25	252	<25	<25	<25	58,000	58,000

Exceeds concentration for non-industrial direct contact.
* Source: USEPA Region III Risk-Based Concentrations: R.L. Smith (June 6, 1996).

Table 1 Ato Findley Inc. 2930 West Center Street Closure Samples Laboratory Results				
Sample Location	Sample Collection Date	Sample Depth bgs (ft)	DRO (mg/Kg)	FID (i.u.)
TB-N	03/02/98	8.0	<1.8	nd
TB-S	03/02/98	8.0	<1.8	nd
WDNR Site Investigation "Trigger Level"*	----	----	10	----

* WDNR Release News April 1994
mg/Kg - milligrams per kilogram (parts per million)
i.u. - instrument units
nd - no detect

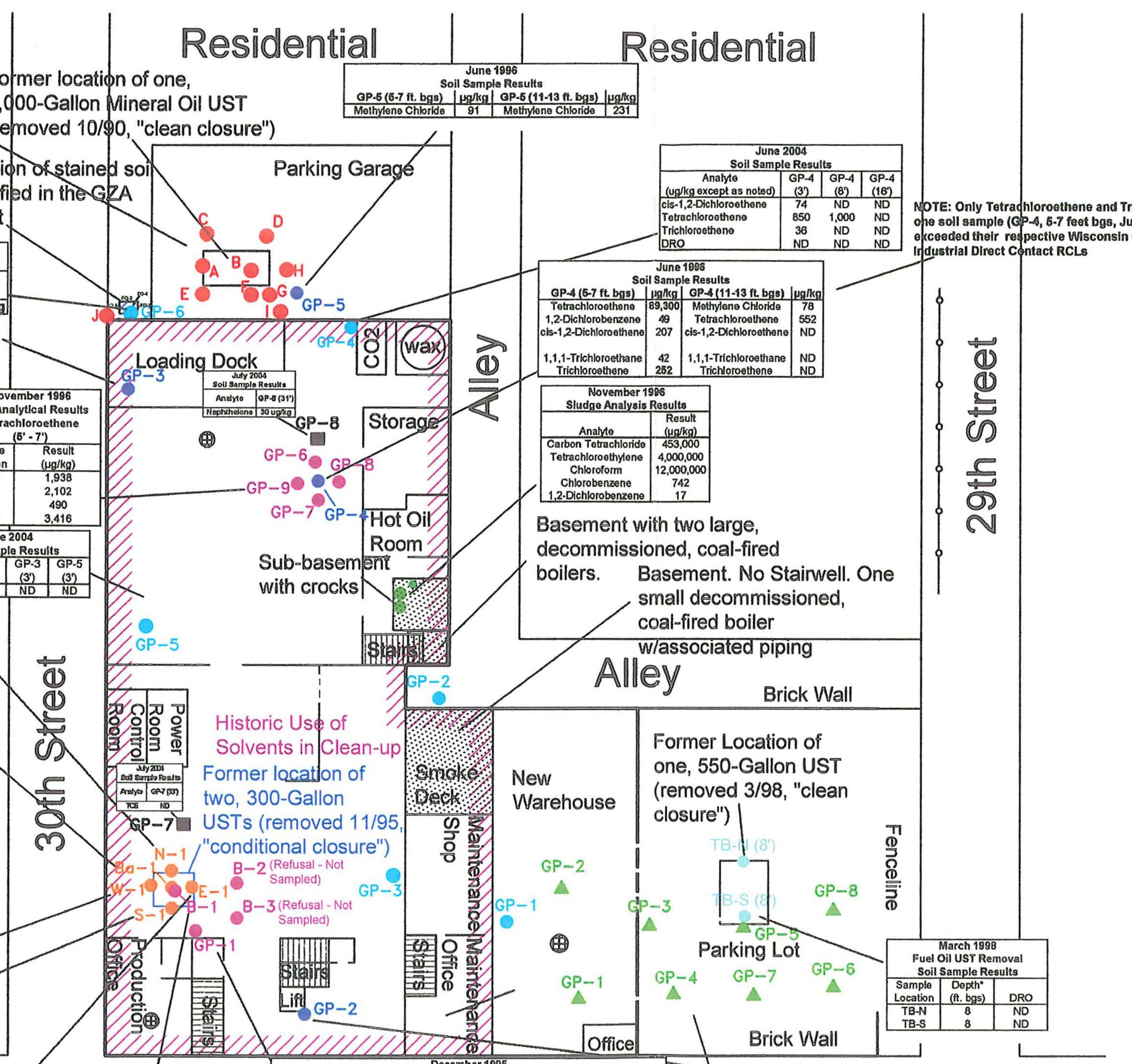
TABLE 1
SOIL ANALYTICAL RESULTS - ENSR INVESTIGATION

Bostik Findley
2930 W. Center St.
Milwaukee, WI

	Sample Identification, Depth and Date Sampled												
Analyte[1]	GP-1 3 ft bgs 6/15/04	GP-2 3 ft bgs 6/15/04	GP-3 3 ft bgs 6/15/04	GP-4 3 ft bgs 6/15/04	GP-4 8 ft bgs 6/15/04	GP-4 16 ft bgs 6/15/04	GP-5 3 ft bgs 6/15/04	GP-6 1ft bgs 6/15/04	GP-7* 33ft bgs 7/30/04	GP-8 31 ft bgs 7/30/04	Wisconsin Generic Direct Contact Industrial RCL	Wisconsin Generic Direct Contact Residential RCL	Wisconsin Generic Soil to Groundwater
VOCs (µg/kg)													
cis-1,2-Dichloroethene	<25	<25	<25	**74**	<25	<25	<25	<25	<31	<28	1,300,000[2]	156000[2]	27[2]
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<31	30	110,000[3]	20000[3]	400[3]
Tetrachloroethene	<25	<25	<25	**850**	**1,000**	<25	<25	<25	<31	<28	35,000[2]	1230[2]	4.1[2]
Trichloroethene	<25	<25	<25	**36**	<25	<25	<25	<25	<31*	<28	240[2]	14[2]	3.7[2]
DRO (mg/kg)													
	NA	NA	NA	NA	NA	NA	NA	**7,100**	NA	NA	100/250[5]	100/250[5]	100/250[5]
RCRA Metals (mg/kg)													
Arsenic (mg/kg)	**5.4**	**2.7**	**5.6**	**9.2**	NA	NA	**12**	NA	NA	NA	1.6 mg/kg[4]	0.039 mg/kg[4]	0.58 mg/kg[2]
Barium (mg/kg)	69	100	65	98	NA	NA	140	NA	NA	NA	71,500,000 mg/kg[2]	1,100 mg/kg[2]	330 mg/kg[2]
Cadmium (mg/kg)	0.51	0.40	0.41	0.34	NA	NA	0.38	NA	NA	NA	510 mg/kg[4]	8 mg/kg[4]	0.75 mg/kg[2]
Chromium (mg/kg)	20	23	17	23	NA	NA	22	NA	NA	NA	NL[4]	16,000 (Cr +3) mg/kg[4]	NL[4]
Lead (mg/kg)	19	15	19	15	NA	NA	13	NA	NA	NA	500 mg/kg[4]	50 mg/kg[4]	NL[4]
Mercury (mg/kg)	0.049	0.075	0.020	0.084	NA	NA	0.036	NA	NA	NA	2,900 mg/kg[2]	2,900 mg/kg[2]	0.42 mg/kg[2] (elemental)
Selenium (mg/kg)	0.53	<0.44	0.90	<0.44	NA	NA	<0.42	NA	NA	NA	5,110,000 mg/kg[2]	78,200 mg/kg[2]	1.0 mg/kg[2]
Silver (mg/kg)	0.046	0.069	0.051	0.050	NA	NA	0.072	NA	NA	NA	5,110,000 mg/kg[2]	78,200 mg/kg[2]	6.2 mg/kg[2]

Notes:
[1]Only Detected Compounds Shown
[2]RCL values calculated per *"Determining Residual Contaminant Levels Using EPA Soil Screening Level Web Site",* Publication RR-682.
[3]Value from Table 1, "Soil Cleanup Levels for Polycyclic Aromatic Compounds (PAHs) Interim Guidance", Publication RR-519-17
[4]Direct Contact RCL Value from Table 2, NR 720.11
[5]Value for GRO/DRO from NR 720.09 (protection of groundwater). Value depends on soil type.
bgs = below ground surface.
DRO = Diesel range organics.
µg/kg = micrograms per kilogram (parts per billion).
mg/kg = milligram per kilogram (parts per million).
NA = Not Analyzed
NL = Not Listed
VOCs = volatile organic compounds.
RCL = Residual Contamination Levels
Concentrations in bold and outlined indicate and exceedance of an the Wisconsin Generic Groundwater Protection RCL
* Trichloroethene was initially detected in the sample from GP-7 collected at 33 feet bgs. ENSR requested a reanalysis of the samples from both GP-7 and GP-8. The reanalysis of the sample from GP-8 verified the initial naphthalene result; however, trichloroethene was not detected in the sample from GP-7. ENSR requested the laboratory evaluate the discrepancy. An August 11, 2004 letter from the TestAmerica Laboratory Manager, states that, "However, due to the low level detection (the result is at the Limit of Quantification) and the fact that two subsequent analysis failed to confirm the initial findings, I feel the first analyses was a false detection of Trichloroethene."

SOIL SAMPLING LOCATION MAP



October 1990 Mineral Oil UST Removal			
Sample Location	Depth (ft. bgs)	Analyte	Result (µg/kg)
A	12	TPH	ND
B	13	TPH	ND
C	8.5	TPH	NA
D	10	TPH	NA
E	4	TPH	ND
F	10	TPH	ND
G	4	TPH	ND
H	8	TPH	ND
I	2	TPH	ND
J	8	TPH	ND

July 2004 Excavation Confirmatory Sample Results				
Analyte	F-01 (2')	F-02 (2')	F-03 (2')	F-04 (3')
DRO	160 mg/kg	76 mg/kg	150 mg/kg	190 mg/kg

June 2004 Soil Sample Results	
Analyte	GP-6 (1')
DRO	7,100 mg/kg

June 1996 Soil Sample Results			
GP-5 (5-7 ft. bgs)	µg/kg	GP-5 (11-13 ft. bgs)	µg/kg
Methylene Chloride	91	Methylene Chloride	231

June 1996 Soil Sample Results			
GP-3 (5-7 ft. bgs)	µg/kg	GP-3 (11-13 ft. bgs)	µg/kg
Methylene Chloride	94	Methylene Chloride	82
Tetrachloroethene	582	Tetrachloroethene	ND

July 2004 Soil Sample Results	
Analyte	GP-8 (31')
Naphthalene	30 ug/kg

November 1996 Soil Analytical Results Tetrachloroethene (5' - 7')	
Sample Location	Result (µg/kg)
GP-6	1,938
GP-7	2,102
GP-8	490
GP-9	3,416

June 2004 Soil Sample Results			
GP-1 (3')	GP-2 (3')	GP-3 (3')	GP-5 (3')
ND	ND	ND	ND

November 1995 Diesel/Gasoline UST Removal	
N-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	4
Lead (mg/kg)	110
Benzene	3
Benzo(a)anthracene	22
Benzo(b)fluoranthene	55
Benzo(g,h,i)perylene	45
Benzo(k)fluoranthene	23
Chrysene	20
Fluoranthene	44
Indeno(1,2,3-cd)pyrene	45
Methylene Chloride	39
Pyrene	38
Tetrachloroethene	131
Toluene	13
Trichloroethene	3.4

November 1995 Diesel/Gasoline UST Removal	
Ba-1 (12 ft. bgs)	µg/kg
DRO (mg/kg)	18
GRO (mg/kg)	172
Lead (mg/kg)	15
Anthracene	14
Benzene	1,210
n-Butylbenzene	2,950
Chrysene	18
Di-Isopropyl ether	3,320
Ethylbenzene	9,610
Fluoranthene	64
Methylene Chloride	3,050
2-Methylnaphthalene	574
Naphthalene	4,620
n-Propylbenzene	2,400
Pyrene	53
Toluene	19,300
1,2,4-Trimethylbenzene	19,200
1,3,5-Trimethylbenzene	6,030
m,p-Xylene	37,200
o-Xylene	19,700

July 2004 Soil Sample Results	
Analyte	GP-7 (33')
TCE	ND

November 1995 Diesel/Gasoline UST Removal	
W-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	8.5
Lead (mg/kg)	32
Anthracene	7.7
Benzene	1.7
Benzo(a)anthracene	100
Benzo(a)pyrene	157
Benzo(b)fluoranthene	172
Benzo(g,h,i)perylene	162
Benzo(k)fluoranthene	83
Chrysene	79
Fluoranthene	157
Indeno(1,2,3-cd)pyrene	162
Methylene Chloride	34
Phenanthrene	24
Pyrene	151
Tetrachloroethene	14
Toluene	6.9
Trichloroethene	3.3

November 1995 Diesel/Gasoline UST Removal	
S-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	7.3
GRO (mg/kg)	1.8
Lead (mg/kg)	24
Benzo(a)anthracene	20
Benzo(b)fluoranthene	17
Benzo(g,h,i)perylene	13
Benzo(k)fluoranthene	9.6
Chrysene	16
Fluoranthene	25
Indeno(1,2,3-cd)pyrene	16
Methylene Chloride	37
Pyrene	24
Tetrachloroethene	110
Toluene	2.1
Trichloroethene	7.5

November 1995 Diesel/Gasoline UST Removal	
E-1 (6 ft. bgs)	µg/kg
Lead (mg/kg)	58
Benzene	2.6
Benzo(b)fluoranthene	28
Benzo(g,h,i)perylene	19
Benzo(k)fluoranthene	13
Chrysene	12
Indeno(1,2,3-cd)pyrene	23
Methylene Chloride	15
Pyrene	22
Tetrachloroethene	145
Toluene	14
Trichloroethene	13

December 1995 Soil Sample Results		
Analyte (µg/kg)	B-1 (15'-17')	B-1 (19'-21')
DRO (mg/kg)	NA	13
GRO (mg/kg)	1.4	8.2
Lead (mg/kg)	8.8	9.5
Benzene	279	1,220
1,2-Dichloroethane	8.93	75.2
Ethylbenzene	0.8	1.85
Methylene Chloride	132	215
Toluene	20.1	30.5
1,2,4-Trimethylbenzene	1.77	ND
1,3,5-Trimethylbenzene	ND	ND
m,p-Xylene	7.38	8.49
o-Xylene	1.93	4.44

December 1995 Soil Sample Results							
Analyte (µg/kg)	GP-1 (10'-12')	GP-1 (12'-14')	GP-1 (14'-16')	GP-1 (16'-18')	GP-1 (18-20')	GP-1 (20-22')	GP-1 22-23.5'
DRO (mg/kg)	378	105	64	60	53	52	78
GRO (mg/kg)	33	2.1	4	2	1.1	ND	0.9
Lead (mg/kg)	9	11	8.7	11	7.4	7.4	7.6
Benzene	567	1,260	3.1	3.98	ND	ND	ND
Chloroform	ND	ND	2.2	6.05	ND	2.41	ND
1,1-Dichloroethane	62.7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	2,030	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	10.9	ND	ND	ND	ND	ND	ND
Ethylbenzene	93.4	12.5	ND	ND	ND	ND	ND
Methylene Chloride	31.1	31	26.3	54.1	16.9	28.1	16.4
Naphthalene	ND	2.58	ND	ND	ND	ND	ND
n-Propylbenzene	ND	7.72	ND	ND	ND	ND	ND
Toluene	46.1	21.9	ND	ND	ND	ND	ND
Trichloroethene	18.5	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	62.1	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	46.3	ND	ND	ND	ND	ND
m,p-Xylene	112	126	ND	ND	ND	ND	ND
o-Xylene	46	77.7	ND	ND	ND	ND	ND
Hexane	ND	55.4	ND	ND	ND	ND	ND

June 2004 Soil Sample Results			
Analyte (ug/kg except as noted)	GP-4 (3')	GP-4 (8')	GP-4 (16')
cis-1,2-Dichloroethene	74	ND	ND
Tetrachloroethene	850	1,000	ND
Trichloroethene	36	ND	ND
DRO	ND	ND	ND

NOTE: Only Tetrachloroethene and Trichloroethene in one soil sample (GP-4, 5-7 feet bgs, June 1996) exceeded their respective Wisconsin Generic Industrial Direct Contact RCLs

June 1996 Soil Sample Results			
GP-4 (5-7 ft. bgs)	µg/kg	GP-4 (11-13 ft. bgs)	µg/kg
Tetrachloroethene	89,300	Methylene Chloride	78
1,2-Dichlorobenzene	49	Tetrachloroethene	552
cis-1,2-Dichloroethene	207	cis-1,2-Dichloroethene	ND
1,1,1-Trichloroethane	42	1,1,1-Trichloroethane	ND
Trichloroethene	252	Trichloroethene	ND

November 1996 Sludge Analysis Results	
Analyte	Result (µg/kg)
Carbon Tetrachloride	453,000
Tetrachloroethylene	4,000,000
Chloroform	12,000,000
Chlorobenzene	742
1,2-Dichlorobenzene	17

March 1998 Fuel Oil UST Removal Soil Sample Results		
Sample Location	Depth* (ft. bgs)	DRO
TB-N	8	ND
TB-S	8	ND

June 1996 Soil Sample Results			
GP-2 (6-7 ft. bgs)	µg/kg	GP-2 (11-13 ft. bgs)	µg/kg
Methylene Chloride	88	Methylene Chloride	91
Tetrachloroethene	96	Tetrachloroethene	ND

July 1997 PID Screening Results		
Sample Location	Depth* (ft. bgs)	PID Result
GP-1	0 - 10	ND
GP-2	0 - 10	ND
GP-3	0 - 10	ND
GP-4	0 - 10	ND
GP-5	0 - 10	ND
GP-6	0 - 10	ND
GP-7	0 - 12	ND
GP-8	0 - 10	ND

* Continuous Sampling at 2-foot intervals

LEGEND

Recognized Environmental Conditions (RECs)

Historic Recognized Environmental Conditions (HRECs)

All REC and HREC locations are approximate.

Bold type indicates exceedence of the WI Industrial Direct Contact RCL or NR 720 standard for DRO

- A — UST Soil Excavation Samples (Collected October 1990)
- Sludge Analysis Samples (Collected November 1996)
- N-1 — UST Soil Excavation Samples (Collected November 1995)
- GP-2 — Soil Boring Samples (Collected June 1996)
- B-3 — Soil Boring Samples (Collected December 1995)
- GP-1 — Geoprobe Boring PID Soil Sample (Collected July 1997)
- TB-N — UST Soil Excavation Samples (Collected March 1998)
- GP-2 — Geoprobe Boring Soil Sample (Collected June 2004)
- GP-8 — Soil Boring Sample (Collected August 2004)
- Basement Crock or Catch Basin
- Floor Drain
- Basement Area

US EPA Region III Risk-Based Concentrations[1]		
ANALYTES[2]	Industrial Direct Contact RBC[3]	Residential Direct Contact RBC[3]
BENZENE	52,000	11,600
CHLOROFORM	10,220,000	782,000
1,2-DICHLOROBENZENE	91,980,000	7,039,000
1,1-DICHLOROETHANE	102,200,000	7,821,000
1,2-DICHLOROETHANE	31,400	7,000
CIS-1,2-DICHLOROETHENE	10,220,000	782,000
TRANS-1,2-DICHLOROETHENE	20,440,000	1,564,000
DIISOPROPYL ETHER	NL	NL
ETHYLBENZENE	102,200,000	7,821,000
HEXANE	11,242,000,000	860,357,000
LEAD	NL	NL
METHYLENE CHLORIDE	382,000	85,000
ANTHRACENE	306,600,000	23,464,000
BENZ[A]ANTHRACENE	3,900	870
BENZO[B]FLUORANTHENE	3,900	870
BENZO[K]FLUORANTHENE	39,200	8,700
BENZO[A]PYRENE	390	87
CHRYSENE	392,000	87,000
FLUORANTHENE	40,880,000	3,129,000
INDENO[1,2,3-C,D]PYRENE	3,900	870
2-METHYLNAPHTHALENE	4,088,000	313,000
NAPHTHALENE	20,440,000	1,564,000
PHENANTHRENE	NL	NL
PYRENE	30,660,000	2,346,000
n-PROPYLBENZENE	NL	NL
TETRACHLOROETHENE	5,300	1,200
TOLUENE	204,400,000	15,643,000
1,1,1-TRICHLOROETHANE	286,160,000	21,900,000
TRICHLOROETHENE	7,200	1,600
1,2,4-TRIMETHYLBENZENE	51,100,000	3,911,000
1,3,5-TRIMETHYLBENZENE	51,100,000	3,911,000
XYLENES	204,400,000	15,643,000
DRO	NL	NL
GRO	NL	NL

[1] Updated April 2004
[2] Only Detected Compounds Shown
[3] All units in ug/kg, except where shown
RBC = Risk-based Concentration
NOTE: Region III 10/4/95 Direct Contact RBCs utilized in original risk assessment, *"Evaluation of Site-Specific Soil Cleanup Standards, Findley Adhesives, Inc., 2930 West Center Street, Milwaukee, WI by Environmental Software Consultants, Inc."*, dated 3/13/96 for which conditional closure was granted on 6/11/97.

Wisconsin Generic Residual Contaminant Levels		
ANALYTES[1]	Industrial Direct Contact RCL[2]	Residential Direct Contact RCL[2]
BENZENE[3]	2,800	170
CHLOROFORM[3]	950	57
1,2-DICHLOROBENZENE	600,000	600,000
1,1-DICHLOROETHANE[3]	1,800,000	510,000
1,2-DICHLOROETHANE[3]	1,300	76
CIS-1,2-DICHLOROETHENE[3]	1,300,000	156,000
TRANS-1,2-DICHLOROETHENE[3]	3,200,000	313,000
DIISOPROPYL ETHER[3]	1,900,000	1,900,000
ETHYLBENZENE[3]	400,000	400,000
HEXANE[3]	270,000	82,000
LEAD[6]	500,000	50,000
METHYLENE CHLORIDE[3]	45,000	2,700
ANTHRACENE[4]	300,000,000	5,000,000
BENZ[A]ANTHRACENE[4]	3,900	88
BENZO[B]FLUORANTHENE[4]	3,900	88
BENZO[K]FLUORANTHENE[4]	39,000	880
BENZO[A]PYRENE[4]	390	8.8
CHRYSENE[4]	390,000	8,800
FLUORANTHENE[4]	40,000,000	600,000
INDENO[1,2,3-C,D]PYRENE[4]	3,900	88
**2-METHYLNAPHTHALENE[4]	40,000,000	600,000
NAPHTHALENE[4]	110,000	20,000
PHENANTHRENE[4]	390,000	18,000
PYRENE[4]	30,000,000	500,000
n-PROPYLBENZENE[3]	NL	NL
TETRACHLOROETHENE[3]	35,000	1,230
TOLUENE[3]	670,000	650,000
1,1,1-TRICHLOROETHANE	1,200,000	1,200,000
TRICHLOROETHENE[3]	240	14
1,2,4-TRIMETHYLBENZENE[3]	350,000	50,000
1,3,5-TRIMETHYLBENZENE[3]	200,000	29,000
XYLENES[3]	1,900,000	280,000
DRO[5]	100/250 mg/kg	100/250 mg/kg
GRO[5]	100/250 mg/kg	100/250 mg/kg

[1] Only Detected Compounds Shown
[2] All units in ug/kg, except where shown
[3] Values calculated per *'Determining Residual Contaminant Levels Using EPA Soil Screening Level Web Site'*, Publication RR-682.
[4] Values from Table 1, *"Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance*, Publication RR-519-17
[5] Value for GRO/DRO from NR 720.09 (protection of groundwater). Value depends on soil type.
[6] Direct Contact Value for lead from Table 2, NR 720.11
RCL = Residual Contaminant Levels

J:\COMMON\00963023 - Bostik Center ST\figures\REC and Boring Location Map.dwg

ENSR INTERNATIONAL

Historical Soil Analytical Results

Bostik Findley
2930 West Center Street
Milwaukee, Wisconsin

DRWN: HEP	SCALE: 1" = 25'
CHK'D: LG	DATE: 08-03-04
APP'D: BL	FIGURE C-1

SECTION D
SOIL REMEDIATION INFORMATION
ATTACHMENTS

- SSRCL ANALYSIS
- CALCULATIONS AND RESULTS OF EPA SOIL SCREENING LEVEL MODEL

SSRCL analysis from, *"Evaluation of Site-Specific Soil Cleanup Standards, Findley Adhesives, Inc., 2930 West Center Street, Milwaukee, WI,"* (Environmental Software Consultants, Inc., 3/13/1996)

REPORT FOR

EVALUATION OF SITE-SPECIFIC SOIL CLEANUP STANDARDS

FINDLEY ADHESIVES, INC.

2930 WEST CENTER STREET

MILWAUKEE, WISCONSIN

PREPARED FOR

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EXECUTIVE SUMMARY

Swanson Environmental, Inc. (SEI) retained Environmental Software Consultants Inc. (ESCI) on the behalf of Findley Adhesives, Inc. to develop site-specific soil cleanup objectives for hydrocarbon impacted soil associated with an apparent release from one or two out-of-service underground storage tanks (USTs). The 0.87-acre facility is located at 2930 West Center Street in Milwaukee, Wisconsin and lies within the NE 1/4 of the SE 1/4 of Section 13, Township 7 North, Range 21 East in Milwaukee County. The USTs were located beneath the western portion of the facility building. The site facilities are currently used to produce adhesive products. Soil impacts above the Chapter NR 720, WAC minimum baseline residual contaminant levels (RCLs) or at potential levels of concern were identified during UST closure activities and a subsequent site investigation. This report documents the methodologies used to develop site-specific soil residual contaminant levels (RCLs). The site-specific RCLs were then used to assess an appropriate remedial response designed to meet applicable environmental regulation and guidelines.

The threat to ground water quality for substances of concern previously identified in soil were evaluated utilizing a soil:water partitioning equation and vadose zone contaminant transport and fate modeling. Vadose zone modeling was performed using the US EPA SESOIL program. Both sensitivity analysis and predictive modeling methods were utilized to evaluate the fate of the substances of concern in soil. The threat to human health was evaluated utilizing the default exposure assumption contained in NR 720.

Based on transport and fate modeling and determination of direct contact RCLs soil impacts at the site do not appear to pose a threat to ground water quality or human health and may remain in place.

This executive summary is provided for your convenience and should be considered part of the appended report. Interpretation of the results should be considered incomplete without reviewing the remaining sections, tables and appendices of this report.

1.0 SITE LOCATION AND INTRODUCTION

Swanson Environmental, Inc. (SEI) retained Environmental Software Consultants Inc. (ESCI) on the behalf of Findley Adhesives, Inc. to develop site-specific soil cleanup objectives for hydrocarbon impacted soil associated with an apparent release from one or two out-of-service underground storage tanks (USTs). The 0.87 acre facility is located at 2930 West Center Street in Milwaukee, Wisconsin and lies within the NE 1/4 of the SE 1/4 of Section 13, Township 7 North, Range 21 East in Milwaukee County. The USTs were located beneath the western portion of the facility building. The site facilities are currently used to produce adhesive products.

This report documents the methodologies used to develop site-specific soil residual contaminant levels (RCLs) for hydrocarbon impacted soil located beneath the site building. The site-specific RCLs were then used to assess an appropriate remedial response designed to meet applicable environmental regulation and guidelines.

1.1 Summary Of Previous Investigations

Soil impacts above the minimum baseline NR 720 RCLs at potential levels of concern were detected as part of the closure and subsequent environmental investigations associated with two out-of-service 300-gallon USTs at the Findley facility. Soil impacts appear to be related to releases of gasoline and diesel products associated with both USTs. Based on historical records and type of construction (riveted steel) it appears that the USTs were installed prior to 1956. Both USTs were located in the west central portion of the site building. Following removal of the USTs rust holes were observed in both USTs. Both USTs contained pea gravel indicating the tanks were abandoned in place at an earlier date. Dark soil discoloration and strong petroleum odors were noted upon removal of the USTs from the excavation. An attempt was made to excavate impacted soil. However, as the USTs were located under a building, equipment access and safety concerns limited soil excavation activities. Therefore, limited soil impacts were left in place beneath a depth of approximately 12 feet in the excavation. Following UST closure the excavation was filled with traffic bond gravel and compacted.

A total of five soil samples were collected from the side walls and base of the excavation and submitted for laboratory analysis of diesel range organics (DRO), gasoline range organics (GRO) and volatile organic compounds (VOCs). Benzene, ethylbenzene, toluene, xylenes (total) and GRO were detected above the minimum baseline NR 720 residual contaminant levels (RCLs) in a soil sample collected from the base of the excavation. In addition, n-butylbenzene, di-isopropyl ether, methylene chloride, naphthalene, n-propylbenzene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene were detected at potential levels of concern in the soil sample collected from the base of the excavation. Methylene chloride, tetrachloroethene and trichloroethene were detected in soil samples collected from the excavation side walls. A summary of detected soil impacts is presented on Table 1.

To determine the degree and extent of environmental impacts SEI completed a total of three soil borings (B-1, B-3 and GP-1) as part of a site investigation. Diesel range organics (DRO), benzene and ethylbenzene were detected at concentrations above the WDNR minimum baseline soil RCLs in soil samples collected from depths of 12 to 21 feet. In addition, chloroform, 1,1-dichloroethane, 1,1-dichloroethane, cis-1,2-dichloroethene, trans-1,2-dichloroethene, hexane, methylene chloride, naphthalene, n-propylbenzene, trichloroethene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene were detected at potential concentrations of concern at depths of 12 to 25.5 feet. A summary of detected soil impacts is presented on Table 1.

1.2 Regulatory Framework

The Wisconsin Department of Natural Resources (WDNR) regulates soil contamination and soil remediation based on protection of public health, safety and welfare, and the environment as part of Chapter NR 700, of the Wisconsin Administrative Code (WAC). Chapter NR 720 of the WAC contains minimum baseline soil RCLs for select substances. Chapter NR 720 WAC also provides for the establishment of higher site-specific RCLs for these substances and for the establishment of site-specific RCLs for additional substances of concern.

This report documents the methodologies used in the establishment of site-specific RCLs for hydrocarbon substances previously identified at the site protective of ground water quality and human health affects from direct contact in accordance with Chapter NR 700 WAC requirements. This report also documents chemical- and site-specific background information utilized in the establishment of the RCLs. This submittal has been prepared in accordance with WDNR guidance, and is intended to meet requirements specified in Chapter NR 720.19, WAC.

1.2 General Project Goals

The primary goal of this project is to establish site-specific RCLs to assess environmental threats posed by soil impacts previously identified at the site. Additional goals included the establishment of site and chemical characteristics and an evaluation of appropriate remedial response at the site. A detailed description of project objectives is presented below.

1.2.1 Specific Model Objectives

Specific objectives of this project include: (1) establish physical and chemical characteristics for site soils, ground water and contaminants of concern, (2) establish soil RCLs protective of human health from direct contact, (3) determine site-specific soil cleanup objectives based on utilizing a soil:water partitioning method, (4) perform computer transport and fate modeling to identify sensitive site-specific input parameters, (5) perform predictive transport and fate modeling to establish site-specific soil cleanup objectives, (6) perform uncertainty analysis to qualify the results of this study, and (7) describe the results of project activities in a report.

1.2.2 General Approach

A tiered approach, employing the methods identified in Chapter NR 720.19 WAC, was utilized to establish site-specific RCLs. Site characteristics and chemical properties were established based on information obtained as part of previous investigations and by reviewing published information. This included an evaluation of the principal fate of the substances of concern in the subsurface environment under site conditions.

Initially, the threat to ground water quality was evaluated using a soil:water partitioning equation. The soil:water partitioning results were used to screen out contaminants of concern detected at concentrations that would not require computer modeling to establish site-specific RCLs. Contaminant transport and fate modeling was then performed on the remaining substances of concern to predict ground water quality at the property. The threat to human health from direct contact was evaluated utilizing the exposure assumptions presented in NR 720.

1.2.3 Previous SESOIL Model Studies

The WDNR used SESOIL to establish minimum baseline soil cleanup objectives for select substances as described in Table 1 of Chapter NR 720 WAC. The baseline Chapter NR 720 WAC minimum RCLs were developed as part of the Groundwater Contamination Susceptibility Evaluation project. The principal objective of the Groundwater Contamination Susceptibility Evaluation was the development of the methodologies to be utilized in evaluating potential threats to ground water quality posed by soil impacts, based on site and contaminant characteristics. The results of the evaluation are presented in the "Groundwater Contamination Susceptibility Evaluation, SESOIL Modeling" report (Ladwig and Hensel, 1993). The study also determined that SESOIL proved useful as a screening level program concerning the fate of substances in the unsaturated soil zone. Additional information on previous SESOIL investigations is presented in Section 3.4.4.

ESCI has utilized the procedures outlined in Chapter NR 720, of the WAC (including SESOIL modeling) to establish site-specific soil RCLs protective of ground water quality and human health from direct contact at several sites in southeastern Wisconsin.

1.3 Long-Term Goals

This project was undertaken to evaluate the likely fate of soil impacts based on SESOIL modeling. A secondary goal was to reach a consensus with the WDNR regarding an appropriate remedial response to the soil impacts.

1.4 General Modeling Protocol

The general modeling protocol included establishment of site characteristics including the degree and extent of soil impacts, and the development of a site conceptual model identifying the principal pathways and processes of concern. This effort was followed by the development of the conceptual modeling approach including: an assessment of model applicability and rationale for model selection; establishment of baseline input parameters; and model sensitivity analysis and calibration. Predictive modeling was followed by uncertainty analysis to assess and qualify the results.

Project activities were guided by procedures contained in NR 700 WAC and those used in the establishment of the minimum baseline RCLs as part of the Groundwater Contamination Susceptibility Evaluation project (Ladwig and Hensel, 1993).

1.5 Report Organization

Information obtained during this project is documented in several sections of this report, with discussions referring to supporting tables, figures and appendices. The site environmental setting and results of previous subsurface investigations are presented in Section 2.0. Modeling methodologies, including code selection, data management, and the establishment of input parameters are presented in Section 3.0. Determination of site-specific RCLs is presented in Section 4.0, and conclusions are presented in Section 5.0. Selected references are contained in Section 6.0.

Modeling activities and supporting information are documented in several appendices. Chemical-specific parameters, including references are contained in Appendix A. A schematic representation of each SESOIL scenario and listing of all SESOIL input files are contained in Appendices B and C, respectively. Appendix D contains SESOIL mass balance reports and a graphical presentation of each model scenario. Appendix D also contains the SEVIEW journal.

1.5 Warranty

The background information including substance- and site-specific data reported herein are considered sufficient in detail and scope to form a reasonable basis for a the establishment of site-specific soil RCLs for impacted soil previously identified at the site. The findings and conclusions contained herein have been prepared in accordance with generally accepted environmental consulting and modeling methods, as they relate to the site described in this report. This evaluation of site-specific soil cleanup objectives has been developed to provide the client with information regarding the risk to ground water quality based on environmental conditions previously identified. It is necessarily limited to the conditions observed and to the information available at the time the work was performed.

Due to the limited nature of the work, there is a possibility that conditions may exist which were not identified at the time of the modeling and report preparation. It is also possible that the establishment of site-specific soil cleanup objectives and/or other applicable guidelines and regulations utilized at the time the report was prepared may later be superseded. The description, type, and composition of what are commonly referred to as "hazardous materials or conditions" can also change over time. ESCI does not accept responsibility for changes in the state of the art nor for changes in the scope of various lists of hazardous materials, conditions, guidelines, regulations and etc. ESCI believes that the findings and conclusions provided in this report are reasonable. However, no warranties are implied or expressed.

2.0 ENVIRONMENTAL SETTING

2.1 General Physical Setting

2.1.1 Topography and Surface Water Features

The surface topography in the Milwaukee County area is an expression of glacial and geomorphic processes, and cultural impacts. In general, the land surface consists of a gently undulating plain, which generally slopes eastward toward Lake Michigan. Based on published regional studies, the regional land surface is controlled by the depth and orientation of the bedrock surface.

Surface elevations within a one-mile radius of the site vary between approximately 700 feet above mean sea level (AMSL) near the site to 630 feet AMSL along the Menomonee River approximately two miles to the southwest. A general decrease in elevation is observed toward Lake Michigan to the southeast. The site is located at an elevation of approximately 670 above AMSL. The variation in surface topography across the site is relatively flat (approximately 1 foot).

The closest major surface water features located within a two-mile radius of the site include the Menomonee River approximately two miles to the southwest and a pond located within Washington Park approximately 1.25 miles to the southwest. The Menomenee River discharges to Lake Michigan approximately four miles east of the site. Surface water in the vicinity of the site appears to be directed towards municipal stormwater and/or sanitary systems.

2.1.2 Soil Types and Distribution

Surficial Soils

The United States Department of Agriculture - Soil Conservation Service (SCS) mapped soils occurring in the site vicinity as belonging to the Ozaukee-Morley-Mequon Association. These soils are somewhat poorly drained and have subsoil of silty clay loam and silty clay. Soils of this association formed in a thin layer of loess and underlying glacial till in glacial moraines. Although the majority of the Ozaukee-Morley-Mequon Association in Milwaukee County has been developed, this association is well suited to farming provided drainage is improved to prevent flooding in low lying areas. Ozaukee-Morley-Mequon Association soils are not well suited for the disposal of effluent from septic systems due to restricted infiltration rates.

Glacial Geology

Unconsolidated soil deposits of Quaternary age cover the site vicinity. Based on geologic studies, these deposits may be up to 200 feet thick (Skinner and Borman, 1973). The unconsolidated deposits consist of unsorted glacial till, which was deposited within glacial ground and end moraines. Unconsolidated materials in the area also include sorted and stratified outwash and lake deposits.

The near-surface geology found in most of Milwaukee County has been mapped as the glacially-derived Oak Creek Formation of Pleistocene Age that was deposited as the Lake Michigan Lobe moved west-southwest across southeastern Wisconsin. The Oak Creek Formation consists of fine-grained glacial till, lacustrine clay, silt and sand and some glaciofluvial sand and gravel. The fine-grained Oak Creek till is strongly calcareous. The texture of the till ranges from silty clay to silty loam. The color of the oxidized till is brown to dark yellowish-brown, grading into gray where unoxidized.

2.1.3 Regional Bedrock Geology

Bedrock underlying the unconsolidated glacial deposits in the site vicinity has been mapped as Silurian-age dolomite. This unit is composed predominantly of Niagaran dolomite (Skinner and Borman, 1973).

The Silurian system conformably overlies a sequence of Ordovician and Cambrian age rocks. The Ordovician-age rocks include the Maquoketa Shale Formation (shales and dolomitic shales); the Sinnipee Group (dolomites with minor limestones and shales) and St. Peter Sandstone (well sorted beach sand and minor shale, with basal conglomerate); and the Prairie du Chien group (dolomite with minor sandstone and shale). The Maquoketa Formation, which is a regional aquiclude, is at least 200 feet thick in the site vicinity. The Ordovician rocks are underlain by a thick sequence of Cambrian Sandstones, which includes interbedded shale, siltstone and dolomite. The Cambrian sandstones unconformably overlie Precambrian-age crystalline basement rock (Skinner and Borman, 1973).

2.1.4 Regional Hydrogeology

Ground water in and around Milwaukee County typically occurs within two major aquifer systems. The shallow upper unconfined aquifer system consists of the Niagara dolomite. The lower confined aquifer system includes the Ordovician-and Cambrian-age sandstone and carbonate bedrock units. The characteristics of each aquifer unit are described more fully below.

The uppermost aquifer in Milwaukee County consists of discontinuous unconsolidated sand and gravel deposits and dolomitic bedrock. This aquifer is interbedded within less permeable silt and clay deposits. Recharge to the upper aquifer is primarily from local downward seepage of precipitation.

The lateral movement of water in the upper aquifer is toward rivers and lakes and the water table generally mimics surface topography. The upper aquifer discharges into streams, rivers, inland lakes, wetlands and Lake Michigan. Gradients for this aquifer system vary greatly depending on topography and aquifer location.

The Niagaran dolomite aquifer is the principal aquifer overlying the Maquoketa Shale in Milwaukee County. The depth to the top of this aquifer ranges from approximately 40 to 150 feet (Skinner and Borman, 1973). Recharge to the Niagaran aquifer is from precipitation that falls on the region, although some water enters the area as underground flow. The more permeable materials generally are in the western part of the County, where most of the recharge from downward migration enters the Niagaran aquifer. The lateral movement of water through the Niagaran aquifer generally is from west to east (Skinner and Borman, 1973). The Niagaran aquifer discharges water naturally into Lake Michigan, and into some of the area lakes, rivers and streams.

The deeper confined (sandstone) aquifer system includes the Cambrian- and Ordovician-age rock sequence between the Precambrian igneous rock and the top of the Sinnipee Group Dolomite. The depth to the top of the sandstone aquifer ranges from 500 to 800 feet below ground surface, making it the deepest aquifer in the area (Skinner and Borman, 1973). Regional geologic and hydrologic conditions limit recharge to the sandstone aquifer in Milwaukee County. Recharge to the sandstone aquifer primarily occurs to the west of Milwaukee County.

Within the sandstone aquifer in Milwaukee County, the piezometric surface generally declines towards the east, similar to the dip of the formation. Water within this aquifer generally flows from west to east. However, the influence of concentrated pumping from this aquifer system in downtown Milwaukee has diverted ground water flow towards the southeast.

2.1.5 *Local Water Supplies*

Potable water for the City of Milwaukee is provided by a municipal water supply system that obtains water from Lake Michigan. The deep confined sandstone aquifer supplies only a small percentage of water used in the area. Water supply wells in the area may also provide water for local industries.

2.1.6 *Ground Water Quality*

The aquifer system most susceptible to contamination is the unconfined sediment aquifer due to the close proximity to the ground surface.

2.2 Site Geology and Hydrogeology

Based on observations made as part of the UST closure and site investigations the site consists of approximately 7 inches of concrete above 5 inches of gravel fill. The fill is underlain by at least 17 to 25.5 feet of clayey silt.

2.2.1 *Surface Water*

Surface water at the site controlled by roof drainage systems and pavement, is diverted toward storm sewers.

2.2.1 *Occurrence of Ground Water*

Groundwater was not observed within the excavation or to the maximum depth penetrated (25.5 feet). Based on site soil borings and regional trends, ground water appears to be located at least 30 feet below grade at the site.

2.2.2 *Hydraulic Gradients*

An approximate regional hydraulic gradient of 0.009 ft/ft for the area was determined, from regional ground water levels. Ground water flow in the area appears to be to be primarily west-southwestward towards the Menomonee River.

2.2.3 *Hydraulic Conductivity*

Based on regional trends saturated hydraulic conductivity for the native soil in the area ranges between 1.0 x 10^{-6} cm/sec to 1.0 x 10^{-8} cm/sec. An unsaturated soil permeability of 1.2 x 10^{-6} cm/sec was determined for a native soil sample collected in a Shelby tube from a depth of7 to 9 feet in the UST excavation.

2.2.4 Ground Water Velocity Estimates

An estimated ground water flow velocity was established based on the measured unsaturated hydraulic conductivity, regional hydraulic gradient and an estimated effective porosity of 0.05 (Fetter, 1980). The average ground water flow velocity in the native soil was determined to be on the order of 2 X 10^{-1} ft/yr. These flow rates appear to be typical of silt in the Milwaukee area.

2.3 Conceptualization of Site Impacts

Soil impacts above the NR 720 WAC minimum baseline concentration or at potential concentrations of concern have been identified at the site. The following evaluation of site impacts has been prepared from information obtained during the previous investigations. The conceptualization of site impacts included identification of affected media, potential contaminant pathways, secondary sources (if any), and potential exposure routes and receptors.

2.3.1 Nature of the Release

An apparent release of hydrocarbon substances has occurred at the property. The impacts appear to be attributable leaks from one or two of the out-of-service on-site USTs.

2.3.2 Degree and Extent of Soil Impacts

Based on laboratory analytical results of select soil samples obtained from soil borings, hydrocarbon substances were detected at concentrations above NR 720 minimum baseline RCLs or at levels of potential concern. In general, soil impacts extend from depths of approximately 12 to 25.5 feet. A summary of soil analytical results detected as part of the previous investigations is presented in Table 1. A discussion of the soil impacts by substance is presented below.

DRO

DRO concentrations above the NR 720 minimum RCL of 100 mg/kg ranged from 105 mg/kg to 378 mg/kg at depths of 10 to 14 feet below the ground surface in soil boring GP-1. A summary of detected hydrocarbon soil impacts is presented on Table 1.

GRO

A GRO concentration of 172 mg/kg, above the NR 720 minimum baseline RCL of 100 mg/kg, was detected in a soil sample collected at an approximate depth of 12 to 13 feet from the base of the UST excavation. A summary of detected hydrocarbon soil impacts is presented on Table 1.

VOCs

VOCs, including benzene, ethylbenzene, toluene, xylenes (total) and 1,2-dichloroethane, were detected at concentrations above the minimum baseline soil RCLs presented in chapter NR 720 of the Wisconsin Administrative Code. Additional VOCs, including chloroform, n-butylbenzene, 1,1-dichloroethane, cis 1,2-dichloroethene, trans 1,2-dichloroethene, di-isopropyl ether, hexane, methylene chloride, naphthalene, n-propylbenzene, tetrachloroethene, trichloroethene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene, were detected at potential concentrations of concern.

2.3.3 Degree and Extent of Ground Water Contamination

As ground water was not encountered to the maximum depth penetrated (25.5 feet below ground surface), ground water quality was not evaluated as part of previous investigations. SESOIL modeling was performed to assess the potential risk of ground water impacts at the site (see Section 4.5.2).

2.4 Contaminants of Concern

This evaluation of site-specific soil RCLs protective of ground water quality was limited to hydrocarbon substances of concern detected in soil. The following substances of concern were evaluated due to their occurrence, distribution, known or anticipated contaminant persistence or mobility, and/or human health risks:

- Diesel Range Organics (DRO)
- Gasoline Range Organics (GRO)
- Volatile Organic Compounds (VOCs) of concern

Naphthalene and hexane were used as surrogates to establish the site-specific RCLs for DRO and GRO, respectively. The use of naphthalene and hexane as surrogates was based upon the use of these compounds in the establishment of the minimum baseline NR 720 RCLs for DRO and GRO by the WDNR.

2.5 Potential Contaminant Fate and Transport Considerations

The primary processes involved in the transport and fate of hydrocarbon substances in soil in the Milwaukee area include volatilization to the atmosphere, adsorption to soil, biological degradation and migration to ground water. Under typical Wisconsin conditions the transport of chemicals within the vadose zone is controlled by the migration of soil moisture. However, the fate of chemicals in the soil is complex and may be controlled by many parameters including depth of burial, precipitation (amounts and duration), depth to ground water, evapotranspiration rates, temperature, soil type and chemical properties.

2.6 Other Pathways of Concern

The threat to human health from ingestion was evaluated to establish a site-specific RCL protective of direct contact. No additional pathways of concern including the human food chain, surface water quality, and terrestrial ecosystems were identified at the site. This is due to the limited mobility, depth of burial and the limited degree and extent of soil impacts.

3.0 MODEL DESCRIPTION

3.1 General

This section includes a description of the conceptual approach used to establish site-specific RCLs protective of ground water quality and human health from direct contact at the site. This section also includes information regarding the tiered screening approach utilized in this study, model selection and applicability and establishment of baseline input parameters as well as input value selection rationale. A discussion regarding the establishment of baseline and sensitivity range input values for all parameters is also included. The following discussion of chemical- and site-specific parameters is limited to characteristics pertinent to the project conceptual model approach, not to all possible applications of vadose zone modeling.

3.2 Conceptual Approach

Project activities were conducted in a stepwise manner utilizing the most conservative and cost-effective methods for the development of site-specific soil cleanup objectives first. Observed site and chemical characteristics were initially evaluated based on published information regarding the transport and fate of substances in soil. Available published information regarding known human health and environmental risks associated with each substance was also reviewed. A soil:water partitioning equation and site specific dilution factors were used to establish conservative site-specific RCLs protective of ground water quality. This process was used to screen out substance that would not require vadose zone computer modeling. Computer-based contaminant transport and fate modeling was then performed to further assess contaminant mobility and to establish RCLs for the remaining substances of concern protective of ground water quality.

3.3 Model Selection Rational

Selection of the contaminant transport and fate model and the equations used as part of this project were based upon the ability of the method to simulate the likely fate of hydrocarbon substances in the vadose zone at the site and regulatory requirements. The majority of the equations utilized in this study are presented in NR 720 WAC, or earlier draft versions. Additional equations presented are currently utilized by the WDNR. The applicability of the soil:water partitioning equation presented in the April 1, 1993, draft version of NR 720 WAC was confirmed with Mike Barden of the WDNR prior to its use. An assessment of the capability of SESOIL's ability to simulate the fate of hydrocarbon substances under site conditions was also performed. A detailed discussion regarding code selection is provided below.

3.4 Code Selection

3.4.1 Ground water Dilution Factor

The ground water dilution factor accounts dilution provided by ground water flow and a ground water mixing zone. It also accounts for the horizontal extent of soil impacts. A site-specific ground water dilution factor was determined utilizing the Method 2 equation contained in NR 720.09 WAC and is presented below:

$$DF = 1 + \frac{K * I * d}{R * l} \qquad (1)$$

Where:

DF = the ground water dilution factor,

K = the hydraulic conductivity (cm/day),

I = the hydraulic gradient (cm/cm),

d = the depth of the ground water mixing zone (cm),

R = the average ground water recharge rate (cm/day), and

l = the horizontal extent of observed soil impacts parallel to ground water flow (cm).

3.4.2 Soil:Water Partitioning

A soil:water partitioning equation was used to evaluate the susceptibility of observed soil impacts to adversely affect ground water quality. The soil:water partitioning equation assumes soil impacts are in direct contact with ground water. As such, the results of this method represents a worst-case scenario. The soil water partitioning equation as provided in the April 1, 1993, draft version of the NR 720 WAC, was utilized and is presented below:

$$C_{m,\ soil} = (K_{oc}\ f_{oc} + 1 / D_b - 0.377)\ GW_{std} \qquad (2)$$

Where:

$C_{m,\ soil}$ = the measured dry weight contaminant concentration in soil (ppb),

GW_{std} = the substance specific NR 140 WAC PAL (ppb),

K_{oc} = Organic carbon:water partitioning coefficient of the contaminant ($\{g/g\}/\{g/cm^3\}$),

f_{oc} = Soil organic carbon content (g/g),

D_b = Soil bulk density (g/cm^3), and

3.4.3 Contaminant Transport and Fate Model Selection

Vadose zone contaminant transport and fate modeling of hydrocarbon-based substances of concern was performed using the US EPA SESOIL program. The January, 1993 version of SESOIL was used for all scenarios. A detailed description of the SESOIL model is presented in Section 3.4.4.

SESOIL was selected because it simulates the principal processes controlling the fate of the hydrocarbon substances identified in the vadose zone in site soil. SESOIL has also been used by the US EPA and the WDNR to evaluate potential risks to ground water quality. In addition, numerous SESOIL studies have been performed including sensitivity analysis, comparisons with other models and field validation. Additional selection rationale are presented below.

- SESOIL is a public-domain software program;
- Availability of a concise user's guide;
- Pre- and post-processor capabilities (SEVIEW);
- The WDNR has access to both SESOIL and SEVIEW;
- Simulates primarily fate of hydrocarbon substances in soil;
- Used by the WDNR to establish NR 720 WAC minimum baseline RCLs;
- Provisions for time variant contaminant loading;
- Personal expertise in its use;
- Relatively limited amount of input data;
- Input parameters are readily available, or inexpensive to acquire.

3.4.4 SESOIL Model Description

SESOIL is a one-dimensional vertical transport compartment model that simulates the transport and fate of substances within the vadose zone. SESOIL was developed for the US EPA Office of Water and the Office of Toxic Substances (OTS) by M. Bonazountas and J. Wagner at Arthur D. Little, Inc. (ADL) in 1981. SESOIL was developed as a screening-level time-variant pollutant load model. Since 1981 SESOIL has been updated three times to enhance its capabilities. The first update by ADL in 1984 added a fourth soil layer option and a soil erosion algorithm (Bonazountas and Wagner, 1984). Significant enhancements to SESOIL were made in 1986 at Oak Ridge National Laboratory (ORNL) by D. M. Hetrick following a detailed evaluation of the model by Watson and Brown in 1985. SESOIL was modified again in 1994 by D.M. Hetrick at ORNL. The most recent version now includes the capability of modeling 999 year scenarios, provides for contaminant loading of each sublayer and includes a calculation of the ground water concentrations based on the Summers model.

SESOIL was developed using theoretically derived equations that describe the transport of water, pollutants, and sediment along with pollutant transformation processes, to simulate the long-term fate a substance in the vadose zone. SESOIL determines the fate of a substance based on a mass balance equilibrium partitioning between the dissolved, sorbed, vapor, and pure-phase components. SESOIL utilizes chemical- and site-specific information, including information on chemical properties, release rate, soil profile characteristics and climatic data to determine the fate of a substance within the vadose zone.

SESOIL has been used in numerous studies to model the behavior of pollutants in soil and to evaluate risk-based chemical exposures. SESOIL has been verified by comparison with other models and field studies (Bonazountas et al., 1982, Wagner et al., 1983; Hetrick, 1984; Kincaid et al., 1984; Watson and Brown, 1985; Hetrick et al., 1986; Melancon et al., 1986; Hetrick et al., 1988; Hetrick et al., 1989). The state of California used SESOIL to evaluate soil cleanup levels (Odencrantz et al., 1991). The WDNR used SESOIL to establish minimum baseline soil cleanup objectives as part of the NR 720 WAC (1995). The NR 720 WAC also provides for the development of higher site-specific soil cleanup objectives based on SESOIL modeling and other appropriate methods.

SESOIL can be run as a standalone program. However, SESOIL has been incorporated into several data management systems. PCGEMS a Graphical Exposure Modeling System for the PC was designed to help users perform exposure assessments, was developed for US EPA-OTS in 1987 by General Sciences Corporation (GSC). RISKPRO, an enhanced version of PCGEMS, was developed by GSC (1990). SEVIEW a Windows-based SESOIL data management system that includes a mass balance report and also converts SESOIL output information to a spreadsheet format was developed in 1994 by

Environmental Software Consultants Inc. (ESCI). SESOIL for Windows, an updated version of RISKPRO, was developed in 1995 by GSC.

A complete discussion of the SESOIL model is presented in "The New SESOIL User's Guide" (Hetrick et al., 1994). Although the user's guide specifically describes the use of SESOIL within the RISKPRO system, the background information presented can be used with all versions of SESOIL. The user's guide includes information required to run the model and interpret the results. It also describes the assumptions and equations used within the model.

3.4.5 Data Management

The ESCI SEVIEW data management software was used to prepare a mass balance report, calculate the SESOIL leachate concentration and to present a contaminant fate plot for each scenario. SEVIEW was also used to evaluate water budget information as part of model calibration. SESOIL input files were created and edited using SEVIEW and the multiple run feature was used to simplify model setup and data management.

SEVIEW was also used to log all input and output files and to chronicle modeling activities in a journal. The journal is created automatically as a user establishes SESOIL model runs. In addition to logging the input and output files the user can include a description of each scenario identifying which parameter was modified. As part of this study once an input file was used in a scenario it was not modified to ensure the integrity of the journal. The SEVIEW journal also provides easy access to the input and output files, simplifying model setup, quality control and evaluation of the results. A copy of the journal in a dBASE format (SERUN.DBF) is provided on the accompanying computer disk and is presented in Appendix D.

3.4.6 Quality Control

Data Management

Two-year test scenarios were performed utilizing all SESOIL input files. The accuracy of all SESOIL input data was verified via examination of the resulting SESOIL output file. The SEVIEW journal was used to assist in this evaluation.

Computer Maintenance and Testing

Periodic maintenance was performed to ensure the proper operation of the computer system. Prior to modeling, Microsoft's SCANDISK.EXE program was used to repair errors in file structures, directory entries and file allocation tables and to identify bad clusters on the hard drive. Microsoft's DEFRAG.EXE was periodically used to reorganize files and optimize hard drive performance. The computer was also periodically tested for the presence of computer viruses using Microsoft's MWAV.EXE software. No viruses were detected on the computer system as of the date of this report.

3.4.7 Computer Hardware and Operating Systems

Computer modeling was performed on an AT&T 486DX2/50 computer with eight megabytes of memory. All software was run in Windows 3.1 and MS DOS 6.20.

3.4.8 Direct Contact Assessment

RCLs protective of human health from direct contact of contaminated soil were established based on default exposure assumptions and procedures presented in Chapter 720.19, WAC. Risk to human health from direct contact was based on restricted exposure assumptions for industrial facilities. The industrial exposure assumptions were utilized as the site has restricted access and is zoned industrial. The risk to human health was evaluated using the substance specific oral toxicological values presented in the October 4, 1995, US EPA Region III Risk-Based Concentration Table.

3.5 Initialization of Evaluation Parameters

3.5.1 Chemical Properties

Chemical-specific characteristics required for soil:water partitioning and SESOIL modeling were established based on values cited in the chemical reference literature. Chemical characteristics for water solubility, air diffusion coefficient, Henry's law constant, organic carbon adsorption coefficient (K_{oc}) and molecular weight were established for all substances of concern. The range of chemical characteristics identified in the literature along with references is provided in Appendix A. Selected input parameters for each substance are presented on Table 2. Default chemical-specific input values were selected based on midrange values identified in the literature. Sensitivity analysis was performed using the extreme literature values identified. The range of values calculated or identified in the literature are contained in Appendix A.

Air Diffusion Coefficient

Where measured values for the air diffusion coefficient could not be located an estimated value was used. Air diffusion coefficient values were estimated using the following equation:

$$D_{A2} = D_{A1}(MWT_1/MWT_2)^{1/2} \qquad (3)$$

Where:

MWT_2 = Molecular weight of a chemical 1
MWT_1 = Molecular weight of chemical 2
D_{A1} = Air diffusion coefficient of chemical 1
D_{A2} = Air diffusion coefficient of chemical 2

The air diffusion coefficient and molecular weight for trichloroethylene as presented in the "The New SESOIL User's Guide" (Hetrick et al., 1994) along with the chemical-specific molecular weight, were used to calculate air diffusion coefficients.

Organic Carbon Adsorption Coefficient (K_{oc})

Whenever possible, measured K_{oc} values were used. However, if measured values for K_{oc} could not be located an estimated value was used. Chemicals for which measured K_{oc} values could not be located were estimated using the following equation (Hassett et al., 1983):

$$\text{Log } K_{oc} = 3.95 - 0.62 \log S \qquad (4)$$

Where:

S = Chemical water solubility in mg/l.

This equation was selected as reliable values of water solubility are readily available. Estimated K_{oc} values for chemicals with measured K_{oc} values were also established for comparison.

3.5.2 *Climatic Data*

Climatological characteristics including monthly mean air temperature, mean cloud cover fraction, relative humidity, shortwave albedo, precipitation, number of precipitation events, duration of each precipitation event and length of the rainy season were established. The Milwaukee 30-year average climatological data as presented the "The New SESOIL User's Guide" (Hetrick et al., 1994) was used for all scenarios. The Milwaukee climate data was selected as the site is located within Milwaukee County and the WDNR NR 720 baseline RCLs were calculated using the Milwaukee climatic data. Precipitation values used in this evaluation are presented on Table 3.

3.5.3 *Soil Physical Characteristics*

Site-specific physical soil characteristics including information on the average dry bulk density, average intrinsic permeability, soil pore disconnectedness, effective porosity, organic carbon content and Freundlich exponent were established. Soil physical characteristics of total organic carbon (f_{oc}), dry bulk density and vertical soil permeability were established based a Shelby-tube soil sample collected from the base of the UST excavation or split-spoon soil samples from soil boring GP-1. Additional soil properties of soil disconnectedness and effective porosity were established based on information provided in "The New SESOIL User's Guide" (Hetrick et al., 1994).

A vertical unsaturated hydraulic conductivity of 1.2 X 10^{-6} cm/sec was measured in a Shelby-tube soil sample collected from a depth of 7 to 9 feet in the UST excavation. Default values utilized along with the range used as part of the sensitivity analysis are provided in Table 4.

An average on site f_{oc} of 0.00895 g/g was determined for two soil samples collected from depths of 15 to 21 feet in soil boring B-1. A f_{oc} of 0.00019 g/g was detected in the Shelby-tube soil sample collected from the UST excavation. The low concentration of 0.00019 g/g for total organic carbon appears to be attributable to the analytical method used by the laboratory. Although the sample was submitted for analysis of total organic carbon utilizing the SW846 9060 method, analysis was performed utilizing the EPA 415.2 method. The 415.2

method is designed for use with water samples and as such only reports the soluble portion of the total organic carbon. An average f_{oc} of 0.00344 g/g was established based on laboratory analysis of total organic carbon for five soil samples collected from a depths 3 to 15 feet from a nearby investigation with similar soils. Sensitivity analysis was performed utilizing a f_{oc} of 0.01 g/g. A summary of soil input parameters is presented on Table 4.

3.5.4 *Soil Profiles*

Soil profile characteristics including data on the areal and vertical distribution of soil impacts, depth to ground water, soil types and soil physical characteristics (volatilization, organic carbon and Freundlich exponent ratios) were established based on analytical analyses and previous investigations. Soil profiles were assumed to be homogeneous as SESOIL's ability to model varying soil types with depth is limited. Modeling was performed using a single permeability, as SESOIL calculates a depth-weighted average vertical soil permeability for soil profiles with varying permeabilities.

SESOIL soil profiles were established based on the vertical extent of soil impacts. The vertical extent of soil impacts was based on visual, olfactory, PID and analytical methods. Individual soil compartment configurations were used for each substance and soil profile. A schematic representation of each SESOIL soil profile compartment configuration is provided in Appendix B

3.5.5 *Other Modeling Considerations*

The results of biodegradation were not included as part of this evaluation as the rate of biological activity at a site can be difficult and expensive to establish. In addition, as observed soil impacts underlie pavement within a building limiting soil aeration and the supply of energy, it is unlikely that significant biodegradation could occur. Consequently, the inclusion of measured biodegradation rates would likely have little affect on the results. Soil contaminant and fate modeling was restricted to 99 years for consistency with the baseline RCL values in NR 720.

4.0 DETERMINATION OF SITE-SPECIFIC SOIL CLEANUP STANDARDS

4.1 General

As previously discussed, site-specific soil cleanup objectives were established for compounds of concern by reviewing site characterization data, evaluating likely transport and fate processes, performing a preliminary assessment of contaminant mobility using a soil:water partitioning equation followed by vadose zone contaminant modeling.

The establishment of site-specific RCLs is discussed below. The discussion includes results from the soil:water partitioning equation as well as SESOIL sensitivity analysis and predictive modeling. Uncertainties associated with the establishment of the site-specific RCLs are also presented.

4.2 Ground water Dilution Factor

The ground water dilution factor equation presented in Section 3.4.1 was used to determine a site-specific dilution factor for the silty clay soil. A saturated hydraulic conductivity of 1.2 X 10^{-6} cm/sec was used in the equation. An estimated average site gradient (based on regional trends) of 0.009 ft/ft was used (see Section 2.2.2). The default mixing zone depth of 152.4 cm as presented in NR 720 WAC was used. The default infiltration rate of 25.4 cm/year was used. A areal extent of 18.5 feet (564 cm) was used for the horizontal extent of contaminated soil parallel to ground water flow. Utilizing these values a site-specific ground water dilution factor was calculated below.

$$DF = 1 + \frac{\left(0.104\frac{cm}{day} * 0.009\frac{cm}{cm} * 152.4cm\right)}{\left(0.07\frac{cm}{day} * 564cm\right)} = 1 \qquad (5)$$

4.3 Soil:Water Partitioning Equation

Soil:water partitioning provides a means to quickly establish conservative soil cleanup standards. The soil:water partitioning equation assumes that soil impacts are in contact with ground water. The partitioning equation (Equation 2 in Section 3.4.2) was used along with the ground water dilution factor calculated above to develop site-specific RCLs protective of ground water quality.

A measured f_{oc} of 0.00895 g/g was used to establish the RCLs for the site soil. A measured soil bulk density of 1.70 g/cm^3. Where possible, the NR 140 WAC PAL concentration was used to establish an RCL. PAL concentrations were established for the remaining substances.

4.3.1 Results

Proposed site-specific RCLs were established for each substance of concern using the soil:water partitioning and ground water dilution factor equations. According to the soil:water partition results trans-1,2-dichloroethene (GP-1, 12 - 14'), hexane (GP-1, 12 - 14'), naphthalene (GP-1, 14 - 16'), 1,2,4-trimethylbenzene (B-1, 15 - 17' and GP-1, 14 - 16'), and 1,3,5-trimethylbenzene (GP-1, 14 - 16') were not detected at concentrations of concern. Remaining soil impacts of substances of concern were detected above the soil:water partitioning RCL. SESOIL computer transport and fate modeling was used to evaluate the potential threat to ground water quality. A summary of the site-specific soil:water partitioning RCLs is presented on Table 6.

4.4 SESOIL Modeling Sensitivity Analysis

Contaminant transport and fate sensitivity modeling were performed to determine the relative significance of individual input data and if any site-specific critical input parameters were identified. Sensitivity analysis was performed on all substances of concern not screened out as part of the soil:water partitioning evaluation.

4.4.1 Test Description

Sensitivity analysis was used to systematically evaluate the model response to a range of K_{oc} values. Additional sensitivity analysis was performed by varying the total organic carbon content (f_{oc}) of the soil. Data obtained from the sensitivity analysis was used to assess the relative importance of various environmental processes and conditions, and to gain insight into the model response to input parameters. Sensitivity analysis performed as part of the development of the NR 720 baseline RCLs was reviewed to assist in the identification of key input parameters, likely to affect modeling. To limit the number of model scenarios, sensitivity analysis was not performed on parameters that were determined to be insensitive as part of the establishment of the baseline NR 720 RCLs.

Initial baseline input data sets representing a reasonable range of values for each model parameter were created. Values for individual parameters were then varied as other values were held constant. The SEVIEW journal was used to log and run multiple model scenarios, and create and edit all input files.

A total of 89 model scenarios were performed to evaluate the model response to variations of input values. Sensitivity analysis was structured to provide information on the model response to observed site conditions, as well as sensitivity to individual input parameters. Baseline input data and the sensitivity range values are presented in Tables 2 and 4.

Sensitivity analysis of climatic data was not performed as part of this evaluation of the fate of substances since climatic variations in Wisconsin appear to be relatively minor (Ladwig and Hensel, 1993). This indicates that SESOIL appears to be relatively insensitive to variations in precipitation typical of Wisconsin climatic conditions.

4.4.2 SESOIL Compartment Configuration

The four-layer soil compartment configuration was used for all simulations. Layer 1 represents the clean soil above the observed soil impacts for all model scenarios. Contaminant loading was simulated in layer 2 for the base of the excavation (Ba-1), excavation side walls (N-1, S-1, E-1 and W-1), soil boring B-1. Contaminant loading in layer 2 was also modeled for 1,1-dichloroethane, cis 1,2-dichloroethene, trans 1,2-dichloroethene, trichloroethene, naphthalene, n-propylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and hexane in soil boring GP-1. Contaminant loading was simulated in layers 2 and 3 for the remaining substances of concern in soil boring GP-1. As appropriate, layers 3 and 4 were used to establish the thickness of clean soil beneath the soil impacts, above the water table, for each scenario.

Layer thickness was varied in response to varying depths to soil impacts and depths to ground water. SESOIL provides for the inclusion of up to 10 sublayers into each layer. Modeling was performed with one sublayer per layer. This not only reduced computer runtimes but provided conservative modeling results, as increasing the number of sublayers decreases the predicted ground water concentrations.

An initial contaminant concentration of 10 μg/kg was established for both in layers 1 and 2 as appropriate. Modeling was performed at a concentration of 10 μg/kg. A summary of substance and soil specific SESOIL compartment configurations are presented Appendix B.

4.4.3 *Sensitivity Analysis Evaluation*

A mass balance report, SESOIL leachate concentration plot (if any) and a substance fate plot were produced for each simulation. The mass balance report displays both the mass and percentage of the mass in each SESOIL process for the final month of the scenario. The mass balance report includes both raw and normalized data. Normalized results, generated whenever the Freundlich exponent is set to 1.0, correct for a mass loss due to a rounding error within the SESOIL program.

The concentration plot depicts the predicted leachate concentration (if any) in milligrams/liter (mg/l) or parts per million (ppm). The plot is produced by dividing the mass of the substance entering ground water by the volume of water leaving the soil column.

The contaminant fate plot displays the distribution of the substance mass in milligrams (mg) as a function of time. Each report includes text to describe the scenario and the SESOIL output file name used to generate the plot. Results of the sensitivity analysis simulations are presented in Appendix D. The SEVIEW journal in Appendix D includes a description of each scenario and which input files were used to generate each output file. All SESOIL input files used are contained on the accompanying computer disk and are also presented in Appendix C.

4.4.4 *Sensitivity Analysis Results*

No ground water impacts were predicted in any scenario. Based on the results of the sensitivity analysis no critical input parameters were identified. A detailed discussion of the results of the sensitivity analysis for each substance of concern is provided below. A summary of sensitivity analysis is presented on Table 7.

Benzene

No ground water impacts above the NR 140 PAL concentration were predicted for any of the benzene sensitivity analysis scenarios. The primary fate of benzene in most model scenarios was volatilization to the atmosphere accounting for 25.23 to 85.27 percent of the initial load. Lower volatilization rates and associated higher soil adsorption percentages occurred in model scenarios using a K_{oc} of 214 (μg/g)/(μg/ml) and with increasing depth of burial. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 165 to 719 years.

1,1-Dichloroethane

No ground water impacts above the NR 140 PAL concentration were predicted for any of the 1,1-dichloroethane sensitivity analysis scenarios. The primary fate of 1,1-dichloroethane was volatilization to the atmosphere accounting for 70.34 to 91.14 percent of the initial load. Lower volatilization rates and associated higher soil adsorption percentages occurred in model scenarios using higher K_{oc} values. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 162 to 327 years.

cis-1,2-Dichloroethene

No ground water impacts above the NR 140 PAL concentration were predicted for any of the cis-1,2-dichloroethene sensitivity analysis scenarios. The primary fate of cis-1,2-dichloroethene was volatilization to the atmosphere accounting for 54.15 to 76.77 percent of the initial load. Adsorption to soil accounted for an additional 17.1 to 40.79 percent of the input. Lower volatilization rates and associated higher soil adsorption percentages occurred in model scenarios using higher K_{oc} values. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 185 to 419 years.

trans-1,2-Dichloroethene

No ground water impacts above the NR 140 PAL concentration were predicted for any of the trans-1,2-dichloroethene sensitivity analysis scenarios. The primary fate of trans-1,2-dichloroethene was volatilization to the atmosphere accounting for 69.88 to 87.95 percent of the initial load. Adsorption to soil accounted for an additional 8.23 to 25.65 percent of the input. Lower volatilization rates and associated higher soil adsorption percentages occurred in model scenarios using higher K_{oc} values. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 175 to 328 years.

di-Isopropyl Ether

No ground water impacts above the NR 140 PAL concentration were predicted for any of the di-isopropyl ether sensitivity analysis scenarios. The primary fate of di-isopropyl ether was volatilization to the atmosphere accounting for 52.78 to 54.67 percent of the initial load. The mass adsorbed to soil and in soil moisture accounted for an additional 44.51 to 46.45 percent of the input. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 157 to 163 years.

Ethylbenzene

No ground water impacts above the NR 140 PAL concentration were predicted for any of the ethylbenzene sensitivity analysis scenarios. The primary fate of ethylbenzene was volatilization to the atmosphere accounting for 43.15 to 77.56 percent of the initial load. Adsorption to soil accounted for an additional 18.62 to 54.1 percent of the input. The higher soil adsorption percentages occurred in model scenarios using higher K_{oc} values. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 308 to 1,020 years.

Hexane

No ground water impacts above the NR 140 PAL concentration were predicted for any of the hexane sensitivity analysis scenarios. The primary fate of hexane was adsorption to soil accounting for 94.79 to 99.43 percent of the initial load. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 1,832 to 8,407 years.

Methylene Chloride

No groundwater impacts above the NR 140 PAL concentration were predicted for any of the methylene chloride sensitivity analysis scenarios. The primary fate of methylene chloride in most model scenarios was volatilization to the atmosphere accounting for 12.26 to 92.52 percent of the initial load. Lower volatilization rates and associated higher soil adsorption and soil moisture percentages occurred in model scenarios with; higher K_{oc} values, greater depth of burial and increasing total organic carbon content. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 132 to 406 years.

Naphthalene

No ground water impacts above the NR 140 PAL concentration were predicted for any of the naphthalene sensitivity analysis scenarios. The primary fate of naphthalene was adsorption to soil accounting for 91.3 to 99.48 percent of the initial load. Lower soil adsorption occurred in model scenarios with lower K_{oc} values increasing mobility. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from approximately 639 to 6,462 years.

n-Propylbenzene

No ground water impacts above the NR 140 PAL concentration were predicted for any of the n-propylbenzene sensitivity analysis scenarios. The primary fate of n-propylbenzene was adsorption to soil accounting for 71.39 to 91.42 percent of the initial load. Volatilization to the atmosphere accounted for an additional 7.58 to 26.57 percent of the input. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 1,491 to 3,810 years.

Tetrachloroethene

No ground water impacts above the NR 140 PAL concentration were predicted for any of the tetrachloroethene sensitivity analysis scenarios. The primary fate of tetrachloroethene was volatilization to the atmosphere accounting for 51.93 to 71.03 percent of the initial load. Adsorption to soil accounted for an additional 25.78 to 46.26 percent of the input. The higher soil adsorption percentages occurred in model scenarios using higher K_{oc} values. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 405 to 1,182 years.

Trichloroethene

No ground water impacts above the NR 140 PAL concentration were predicted for any of the trichloroethene sensitivity analysis scenarios. The primary fate of trichloroethene was volatilization to the atmosphere accounting for 18.45 to 50.98 percent of the initial load. Adsorption to soil accounted for an additional 42.15 to 72.03 percent of the input. The higher soil adsorption percentages occurred in model scenarios using higher K_{oc} values and increasing depth of burial. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 320 to 419 years.

1,2,4-Trimethylbenzene

No ground water impacts above the NR 140 PAL concentration was predicted for any of the 1,2,4-trimethylbenzene sensitivity analysis scenarios. The primary fate of 1,2,4-trimethylbenzene was adsorption to soil accounting for 72.39 to 93.05 percent of the initial load. Volatilization accounted for an additional 6.03 to 25.4 percent of the input. The higher soil adsorption percentages occurred in model scenarios using higher K_{oc} values. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 1,311 to 3,810 years.

1,3,5-Trimethylbenzene

No ground water impacts above the NR 140 PAL concentration were predicted for any of the 1,3,5-trimethylbenzene sensitivity analysis scenarios. The primary fate of 1,3,5-trimethylbenzene was adsorption to soil accounting for 50.51 to 80.90 percent of the initial load. Volatilization accounted for an additional 17.41 to

46.85 percent of the input. The higher soil adsorption percentages occı model scenarios using higher K_{oc} values. Based on the rate of mobility wit soil column estimated travel times to the water table ranged from 907 to years.

Toluene

No ground water impacts above the NR 140 PAL concentration were predicted for any of the toluene sensitivity analysis scenarios. The primary fate of toluene depended on K_{oc} values used. Utilization of the baseline K_{oc} of 250 (μg/g)/(μg/ml) predicted that 49.45 percent of the toluene would remain adsorbed to soil with an additional 46.94 percent having volatilized. However, when a K_{oc} of 85 (μg/g)/(μg/ml) was used 72.31 percent volatilized, with an additional 22.77 percent adsorbed on soil. When a K_{oc} of 380 (μg/g)/(μg/ml) was used, toluene primarily remained bound to soil accounting for 61.07 percent of the mass. Under this scenario an additional 36.00 percent of the toluene volatilized. The higher soil adsorption percentages occurred in model scenarios using higher K_{oc} values. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 279 to 1,016 years.

Xylenes (total)

No ground water impacts above the NR 140 PAL concentration were predicted for any of the total xylenes sensitivity analysis scenarios. The primary fate of total xylenes depended on K_{oc} values used. Utilization of the baseline K_{oc} of 295 (μg/g)/(μg/ml) resulted in a 62.12 percent remain adsorbed to soil with an additional 34.10 percent having volatilized. However, when a K_{oc} of 25.4 (μg/g)/(μg/ml) was used 84.41 percent volatilized, with an additional 9.12 percent adsorbed on soil. When a K_{oc} of 1,585 (μg/g)/(μg/ml) was used the xylenes primarily remained bound to soil accounting for 90.51 percent of the mass. Under this scenario an additional 8.47 percent of the xylene volatilized. The higher soil adsorption percentages occurred in model scenarios using higher K_{oc} values. Based on the rate of mobility within the soil column estimated travel times to the water table ranged from 155 to 3,331 years.

4.4.5 Summary and Discussion

No critical site-specific input parameters were identified. Overall, SESOIL was determined to be very sensitive to variations in K_{oc} and depth of burial. However, no ground water impacts were predicted for any of the sensitivity analysis scenarios.

4.5 Predictive Model Runs

Site-specific soil cleanup objectives protective of ground water quality were established based on predictive model runs. As no sensitive input parameters were identified as part of the sensitivity analysis, the baseline model scenarios were selected as the predictive runs. The maximum predicted SESOIL leachate concentration (if any) along with a the dilution factor were used to evaluate site-specific RCLs. Predictive runs were based on specific site conditions established from previous investigations (Appendix B) and sensitivity analysis (Section 4.4).

A total of eight predictive simulations were performed. A summary of the predictive model scenarios are presented on Table 7. Results of the predictive modeling are provided below.

4.5.1 Input Data

SESOIL compartment configurations used in the predictive modeling were the same as for the sensitivity analysis (Appendix B). The baseline values for chemical and soil parameters established as part of the sensitivity analysis were also used (Tables 2 and 4). As with the sensitivity analysis, input files were created and logged using SEVIEW.

4.5.2 Predictive Results

Site-specific RCLs were evaluated utilizing SESOIL modeling and a site-specific dilution factor (Section 4.2) for the substance of concern. As no ground water impacts above the PAL or at levels of concern are predicted within 100 years the baseline scenarios were used as predictive runs for each substance of concern. Mass balance reports and graphical monthly fate plots were used to evaluate the fate of each substance and are contained in Appendix D. In addition, a estimated travel time to ground water was determined for each scenario. The fate of each contaminant of concern along with the estimated travel times to groundwater were also used to evaluate the potential threat to ground water quality as appropriate. As SESOIL modeling did not include an evaluation of biodegration or other chemical transformation processes, an assessment of the threat to ground water quality was not performed for scenarios with excessive travel times to the water table.

Benzene

Benzene soil impacts detected at the base of the UST excavation (Ba-1, 12 - 13'), and in soil borings B-1 (15 - 21') and GP-1 (14 - 18') are projected to take between 273 and 361 years to reach the water table. However, based on the predicted rate of volatilization, it is unlikely that significant groundwater impacts will occur.

1,1-Dichloroethane

1,1-Dichloroethane soil impacts detected in soil boring GP-1 (12 - 14') are projected to take 183 years to reach the water table. Based on the predicted rate of volatilization, it is unlikely that significant groundwater impacts will occur.

cis-1,2-Dichloroethene

Cis-1,2-dichloroethene soil impacts detected in soil boring GP-1 (12 - 14') are projected to take 265 years to reach the water table. Based on the predicted rate of volatilization, it is unlikely that significant groundwater impacts will occur.

trans-1,2-Dichloroethene

Trans-1,2-dichloroethene soil impacts detected in soil boring GP-1 (12 - 14') are projected to take 211 years to reach the water table. Based on the predicted rate of volatilization, it is unlikely that significant groundwater impacts will occur.

di-Isopropyl Ether

Di-isopropyl ether soil impacts detected at the base of the UST excavation (Ba-1, 12 - 13') are projected to take 163 years to reach the water table.

DRO

Utilizing naphthalene as a surrogate, DRO soil impacts detected in soil boring GP-1 (12 - 16') are projected to take 2,679 years to reach the water table.

Ethylbenzene

Ethylbenzene soil impacts detected at the base of the UST excavation (Ba-1, 12 - 13') are projected to take 489 years to reach the water table. Based on the predicted rate of volatilization, it is unlikely that significant groundwater impacts will occur.

GRO

Utilizing hexane as a surrogate GRO soil impacts detected at the base of the UST excavation (Ba-1, 12 - 13') are projected to take 3,116 years to reach the water table.

Hexane

Hexane soil impacts detected in soil boring GP-1 (14 - 16'2) are projected to take 2,983 years to reach the water table.

Methylene Chloride

Methylene chloride soil impacts detected at the base (Ba-1, 12 - 13') and side wall of the UST excavation (N-1, S-1, E-1 & W-1, {5 - 6'}), soil borings B-1 (15 - 21') and GP-1 (12 - 25.5') are projected to take between 132 to 156 years to reach the water table. Based on the predicted rate of volatilization, and projected groundwater concentrations from the sensitivity analysis, it is unlikely that significant groundwater impacts will occur.

Naphthalene

Naphthalene soil impacts detected at the base of the UST excavation (Ba-1, 12 - 13') are projected to take 2,678 years to reach the water table.

n-Propylbenzene

n-Propylbenzene soil impacts detected at the base of the UST excavation (Ba-1, 12 - 13') and soil boring GP-1 (14 - 16') are projected to take between 1,832 to 2,102 years to reach the water table.

Tetrachloroethene

Tetrachloroethene soil impacts detected in the side wall of the UST excavation (N-1, S-1, E-1 & W-1, 5 - 6') are projected to take 852 years to reach the water table. Based on the predicted rate of volatilization, it is unlikely that significant groundwater impacts will occur.

Trichloroethene

Trichloroethene soil impacts detected in the side wall of the UST excavation (N-1, S-1, E-1 & W-1, 5 - 6') and in soil boring GP-1 (12 - 14') are projected to take between 371 and 381 years to reach the water table.

1,2,4-Trimethylbenzene

1,2,4-Trimethylbenzene soil impacts detected at the base of the UST excavation (Ba-1, 12 - 13') and in soil boring GP-1 (14 -16') are projected to take between 2,237 and 2,487 years to reach the water table.

1,3,5-Trimethylbenzene

1,3,5-Trimethylbenzene soil impacts detected at the base of the UST excavation (Ba-1, 12 - 13') and in soil boring GP-1 (14 -16') are projected to take between 1,423 and 1,645 years to reach the water table.

Toluene

Toluene soil impacts detected at the base of the UST excavation (Ba-1, 12 - 13') are projected to take 701 years to reach the water table. Based on the predicted rate of volatilization, it is unlikely that significant groundwater impacts will occur.

Xylenes (total)

Xylenes soil impacts detected at the base of the UST excavation (Ba-1, 12 - 13') are projected to take 812 years to reach the water table. Based on the predicted rate of volatilization, it is unlikely that significant groundwater impacts will occur.

4.6 Uncertainty Analysis

Uncertainty analysis was used to evaluate the applicability of limited and estimated input information and the ability of a model to simulate the likely fate of the substances of concern. Uncertainty analysis includes aspects that can be beneficial and detrimental to the establishment of site specific RCLs. A partial list of potential uncertainty associated with this project are presented below.

- Biodegradation was not included in this evaluation. However the inclusion of biodegradation would likely have only a limited effect on the fate of the contaminants of concern
- SESOIL does not model heterogeneity observed in the soil column.
- The SESOIL model has had only a very limited application to site-specific conditions in Wisconsin.
- No provisions for preferential flow pathways are included in the model.
- SESOIL assumes that soil physical properties are not altered by the presence of the substance of concern.
- Model simulations depend on the accuracy of the site characterization and other initial conditions specified. If modeled conditions do not correlate with actual site characteristics, the model results may be invalid.
- Soil physical properties may be difficult to measure. Moreover, soil properties may vary significantly over small areas resulting in increased uncertainty.

5.0 CONCLUSIONS

Based on this evaluation of site-specific soil cleanup objectives, the following conclusions and recommendations are made.

Conclusions

- Soil impacts of GRO, DRO and VOCs of concern may remain in place as they do not appear to threaten ground water quality.
- Soil impacts of GRO, DRO and VOCs of concern may remain in place as they do not appear to threaten human health from direct contact.

6.0 SELECTED REFERENCES

Anderson, M.P., and Woessner, 10992, Applied Ground water Modeling: Simulation of Flow and Advective Transport. Academic Press, San Diego, California.

Bear, J., M.S. Beljinm and R.R. Ross, 1992, Fundamentals of Ground-water Modeling. U.S. Environmental Protection Agency Ground Water Issue, EPA/540/S-92/005. 11 p.

Bonazountas, M., J. Wagner, and B. Goodman, 1982, Evaluation of Seasonal Soil/Ground water Pollutant Pathways, EPA Contract No. 68-01-5949 (9), Arthur D. Little, Inc. Cambridge, Massachusetts.

Fetter, C.W., 1980, Applied Hydrogeology, Charles E. Merrill Publishing, 488p.

Hassett, J.J., Banwant, W.L., and Griffin, R.A., 1983, Correlation of Compound Properties with Sorption Characteristics of Nonpolar Compounds by Soils and Sediments: Concepts and Limitations. In: Environmental and Solids Waste: Characterization, Treatment, and Disposal. pp. 161-178, (Francis, C.W. and Auerback, S.I., Eds.) London, Butterworths.

Heath, J.S., K Koblis and S.L. Sager, 1993, Review of Chemical, Physical, and Toxicological Properties of Components of Total Hydrocarbon Hydrocarbons, Journal of Soil Contamination, volume 2, number 1, p. 1-25

Hetrick, D.M., 1984, Simulation of the Hydrologic Cycle for Watersheds. Paper presented a ninth IASTED International Conference, Energy, Power, and Environmental Systems, San Francisco, California.

Hetrick, D.M., C.C. Travis, P.S. Shirley, and E.L. Etnier, 1986, Model Predictions of Watershed Erosion Components. Water Components: Comparison and Verification. Water Resources Bulletin, 22 (5), 803-810.

Hetrick, D.M. and C.C. Travis, 1988, Model Predictions of Watershed Erosion Components. Water Resources Bulletin, 24 (2), 413-419.

Hetrick, D.M., C.C. Travis, S.K. Leonard, and R.S. Kinerson, 1989, Qualitative Validation of Pollutant Transport Components of an Unsaturated Soil Zone Model (SESOIL). ORNL/TM-10672, Oak Ridge National Laboratory, Oak Ridge, TN, 42 pp.

Hetrick, D.M., S.J. Scott, and M.J. Barden, 1994, The New SESOIL User's Guide, Wisconsin Department of Natural Resources, Madison, Wisconsin.

Kincaid, C.T, J.R. Morery, S.B. Yabusaki, A.R. Felmy, and J. E. Rogers, 1984 Geohydrochemical Models for Solute Migration. Vol. 2: Preliminary Evaluation of

Selected Computer Codes for Modeling Aqueous Solution and Solute Migration in Soils and Geologic Media. EA-3477, Electric Power Research Institute, Palo Alto, California.

Ladwig, L.J., and B.R. Hensel, 1993, Ground water Contamination Susceptibility Evaluation - SESOIL Modeling, Science & Technology Management, Inc. Milwaukee, Wisconsin.

Melancon, S.M., J.E. Pollard, and S.C. Hern, 1986, Evaluation of SESOIL, PRZM, and PESTAN in a Laboratory Column Leaching Experiment. Environ. Toxicol. Chem. 5 (10), 865-878.

Odencrantz, J.E., J.M. Farr, and C.E., Robinson, 1991, Levine/Fricke, Inc., A Better Approach to Soil up Levels Determination. Transport Model Parameter Sensitivity for Soil Cleanup Level determinations Using SESOIL and AT123D in the Context the California Leaking Underground Fuel Tank Field Manual, Sixth Annual Conference on Hydrocarbon Contaminated Soils: Analysis, Fate, Environmental and Public Health, and Regulations, University of Massachusetts at Amherst

Odencrantz, J.E., J.M. Farr, and C.E., Robinson, 1992, Transport Model Parameter Sensitivity for Soil Cleanup Level Determinations Using SESOIL and AT123D in the Context of the California Leaking Underground Fuel Tank Field Manual. Journal of Soil Contamination, 1 (2), 159-182.

Smith, R.L., 1995, Risk-Based Concentration Table, January 31, 1995, U.S. Environmental Protection Agency, 20p.

Skinner, E.L., and G.B. Borman, 1973, Water resources of Wisconsin-Lake Michigan Basin, Hydrologic Investigations, Atlas HA-432, U.S. Geological Survey, Washington, D.C.

U.S. Environmental Protection Agency, 1994, Assessment Framework for Ground-water Model Applications. U.S. Environmental Protection Agency OSWER Directive 9029.00, EPA 500-B-94-004. 41 p.

Wagner, J., M. Bonazountas, and M. Alsterberg, 1983, Potential Fate of Buried Halogenated Solvents via SESOIL. Arthur D. Little, Inc., Cambridge, Massachusetts, 52 pp.

Watson, D.B. and S.M. Brown, 1985, Testing and Evaluation of the SESOIL Model. Anderson-Nichols and Co., Inc., Palo Alto, CA, 155 pp.

TABLES

Table 1
Summary of Detected Petroleum Soil Impacts
Findley Adhesives, Inc.

Parameter	Soil Boring	Depth (feet)	Detected Concentration (µg/kg)
Benzene	Ba-1	12 - 13	1,210
Benzene	B-1	15 - 17	537
Benzene	B-1	19 - 21	1,007
Benzene	GP-1	14 - 16	567
Benzene	GP-1	16 - 18	1,260
n-Butylbenzene	Ba-1	12 - 13	2,950
Chloroform	GP-1	16 - 18	2.2
Chloroform	GP-1	18 - 20	6.05
Chloroform	GP-1	22 - 24	2.41
GRO	Ba-1	12 - 13	172
DRO	GP-1	12 - 14	378
DRO	GP-1	14 - 16	105
1,1-Dichloroethane	GP-1	12 - 14	62.7
1,2-Dichloroethane	B-1	19 - 21	75.2
cis-1,2-Dichloroethene	GP-1	12 - 14	2,030
trans-1,2-Dichloroethene	GP-1	12 - 14	10.9
Di-isopropyl Ether	Ba-1	12 - 13	3,320
Ethylbenzene	Ba-1	12 - 13	9,610
Hexane	GP-1	14 - 16	55.4
Methylene Chloride	N-1	5 - 6	39
Methylene Chloride	S-1	5 - 6	37
Methylene Chloride	E-1	5 - 6	15
Methylene Chloride	W-1	5 - 6	34
Methylene Chloride	Ba-1	12 - 13	3,050
Methylene Chloride	B-1	15 - 17	132
Methylene Chloride	B-1	19 - 21	215
Methylene Chloride	GP-1	12 - 14	31.1
Methylene Chloride	GP-1	14 - 16	31.4
Methylene Chloride	GP-1	16 - 18	26.3
Methylene Chloride	GP-1	18 - 20	54.1
Methylene Chloride	GP-1	20 - 22	16.9
Methylene Chloride	GP-1	22 -24	28.1
Methylene Chloride	GP-1	24 - 25.5	16.4
Naphthalene	Ba-1	12 - 13	4,620
Naphthalene	GP-1	14 - 16	2.58
n-Propylbenzene	Ba-1	12 - 13	2,400
n-Propylbenzene	GP-1	14 - 16	7.72
Tetrachloroethene	N-1	5 - 6	131
Tetrachloroethene	S-1	5 - 6	110
Tetrachloroethene	E-1	5 - 6	145
Tetrachloroethene	W-1	5 - 6	14
Toluene	Ba-1	12 - 13	19,300
Trichloroethene	N-1	5 - 6	3.4
Trichloroethene	S-1	5 - 6	7.5
Trichloroethene	E-1	5 - 6	13
Trichloroethene	W-1	5 - 6	3.3
Trichloroethene	GP-1	12 - 14	18.5
1,2,4-Trimethylbenzene	Ba-1	12 - 13	19,200
1,2,4-Trimethylbenzene	B-1	15 - 17	1.77
1,2,4-Trimethylbenzene	GP-1	14 - 16	62.1
1,3,5-Trimethylbenzene	Ba-1	12 - 13	6,030
1,3,5-Trimethylbenzene	GP-1	14 - 16	46.3
Xylenes (total)	Ba-1	12 - 13	56,900

TABLE 2
Chemical Baseline and Sensitivity Parameters

Parameter	Baseline Value	Sensitivity Range	Source
Benzene			
Water Solubility (μg/ml) at 25°C	1,780	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.077	Constant	Literature
Henry's Law Constant (m^3-atm/mol)	0.00555	Constant	Literature
Molecular Weight (g/mole)	78.11	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	83	31 - 214	Literature
n-Butylbenzene			
Water Solubility (μg/ml) at 25°C	14	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.082	Constant	Calculated
Henry's Law Constant (m^3-atm/mol)	0.013	Constant	Literature
Molecular Weight (g/mole)	134.22	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	1750	1500 - 2942	Literature
Chloroform			
Water Solubility (μg/ml) at 25°C	8200	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.087	Constant	Calculated
Henry's Law Constant (m^3-atm/mol)	1.053×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	119.38	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	35	30 - 76.8	Literature
1,1-Dichloroethane			
Water Solubility (μg/ml) at 25°C	5100	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.096	Constant	Calculated
Henry's Law Constant (m^3-atm/mol)	5.45×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	98.96	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	46	30.2 - 104	Literature
1,2-Dichloroethane			
Water Solubility (μg/ml) at 25°C	8690	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.094	Constant	Calculated
Henry's Law Constant (m^3-atm/mol)	1.19×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	98.96	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	32	14 - 152	Literature
cis-1,2-Dichloroethene			
Water Solubility (μg/ml) at 25°C	3500	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.097	Constant	Literature
Henry's Law Constant (m^3-atm/mol)	4.08×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	96.94	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	80.2	49 - 141	Literature
trans-1,2-Dichloroethene			
Water Solubility (μg/ml) at 25°C	6300	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.097	Constant	Literature
Henry's Law Constant (m^3-atm/mol)	5.32×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	96.94	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	59	39 - 104.1	Literature

Note: Complete chemical input data including the range of values and literature references is provided in Appendix A.

TABLE 2
Chemical Baseline and Sensitivity Parameters
(Continued)

Di-Isopropyl Ether			
Water Solubility (μg/ml) at 25°C	9000	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.094	Constant	Literature
Henry's Law Constant (m^3-atm/mol)	1.73×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	102.17	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	27.4	31.4	Literature
Ethylbenzene			
Water Solubility (μg/ml) at 25°C	152	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.076	Constant	Literature
Henry's Law Constant (m^3-atm/mol)	8.4×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	106.17	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	165	95 - 380	Literature
Hexane			
Water Solubility (μg/ml) at 25°C	13	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.075	Constant	Literature
Henry's Law Constant (m^3-atm/mol)	1.29×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	86.17	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	1445	890 - 4100	Literature
Methylene Chloride			
Water Solubility (μg/ml) at 25°C	16,700	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.103	Constant	Calculated
Henry's Law Constant (m^3-atm/mol)	2.48×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	84.93	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	25	19.2 - 47.9	Calculated & Literature
Naphthalene			
Water Solubility (μg/ml) at 25°C	31.7	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.051	Constant	Literature
Henry's Law Constant (m^3-atm/mol)	4.83×10^{-4}	Constant	Literature
Molecular Weight (g/mole)	128.18	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	1300	240 - 3160	Literature
n-Propylbenzene			
Water Solubility (μg/ml) at 25°C	60	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.059	Constant	Literature
Henry's Law Constant (m^3-atm/mol)	1.02×10^{-2}	Constant	Literature
Molecular Weight (g/mole)	120.19	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	884	704 - 1837	Literature

Note: Complete chemical input data including the range of values and literature references is provided in Appendix A.

TABLE 2
Chemical Baseline and Sensitivity Parameters
(Continued)

Tetrachloroethene			
Water Solubility (μg/ml) at 25°C	150	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.074	Constant	Calculated
Henry's Law Constant (m^3-atm/mol)	2.69×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	165.83	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	302	137.3 - 433	Calculated & Literature
Toluene			
Water Solubility (μg/ml) at 25°C	535	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.085	Constant	Literature
Henry's Law Constant (m^3-atm/mol)	5.93×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	92.14	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	250	92.14 - 380	Literature
Trichloroethene			
Water Solubility (μg/ml) at 25°C	1100	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.083	Constant	
Henry's Law Constant (m^3-atm/mol)	1.17×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	131.39	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	122.8	100 - 137	Literature
1,2,4-Trimethylbenzene			
Water Solubility (μg/ml) at 25°C	60	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.087	Constant	
Henry's Law Constant (m^3-atm/mol)	5.63×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	120.19	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	1082	592 - 1837	& Literature
1,3,5-Trimethylbenzene			
Water Solubility (μg/ml) at 25°C	50	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.087	Constant	
Henry's Law Constant (m^3-atm/mol)	7.93×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	120.19	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	660	365 - 914	& Literature
Xylenes (total)			
Water Solubility (μg/ml) at 25°C	175	Constant	Literature
Diffusion Coefficient (cm^2/sec)	0.073	Constant	
Henry's Law Constant (m^3-atm/mol)	5.2×10^{-3}	Constant	Literature
Molecular Weight (g/mole)	106.17	Constant	Literature
K_{oc} (μg/g)/ (μg/ml)	295	25.4 - 1585	Literature

Note: Complete chemical input data including the range of values and literature references is provided in Appendix A.

TABLE 3
Precipitation Input Parameters
Findley Adhesives, Inc.

Month	Baseline Value (cm)	Source
October	5.52	Literature
November	5.29	Literature
December	5.39	Literature
January	4.19	Literature
February	3.52	Literature
March	6.55	Literature
April	8.71	Literature
May	6.91	Literature
June	8.96	Literature
July	9.08	Literature
August	7.94	Literature
September	7.07	Literature
Annual Precipitation (cm)	79.13	-
Annual Precipitation (inches)	31.15	-

TABLE 4
SESOIL Soil Column Input Parameters
Findley Adhesives, Inc.

Parameter	Baseline Value	Sensitivity Range	Source
Permeability (cm/sec)	1.2×10^{-6}	Constant	Measured
Effective Porosity	0.15	Constant	Literature
Soil Disconnectedness	12	Constant	Literature
Organic Carbon Content (Fraction)	0.0034	.01	Measured
Bulk Density (g/cu-cm)	1.70	Constant	Measured

Table 5
Summary of Direct Contact Results
Findley Adhesives, Inc.

Parameter	Soil Boring	Depth (feet)	Detected Concentration (µg/kg)	Direct Contact Soil RCL Industrial (µg/kg)
Benzene	Ba-1	12 - 13	1,210	98000
Benzene	B-1	15 - 17	537	98000
Benzene	B-1	19 - 21	1,007	98000
Benzene	GP-1	14 - 16	567	98000
Benzene	GP-1	16 - 18	1,260	98000
n-Butylbenzene	Ba-1	12 - 13	2,950	10,200,000
Chloroform	GP-1	16 - 18	2.2	286,000
Chloroform	GP-1	18 - 20	6.05	286,000
Chloroform	GP-1	22 - 24	2.41	286,000
GRO	Ba-1	12 - 13	172	- -
DRO	GP-1	12 - 14	378	- -
DRO	GP-1	14 - 16	105	- -
1,1-Dichloroethane	GP-1	12 - 14	62.7	102,000,000
1,2-Dichloroethane	B-1	19 - 21	75.2	31,500
cis-1,2-Dichloroethene	GP-1	12 - 14	2,030	10,200,000
trans-1,2-Dichloroethene	GP-1	12 - 14	10.9	20,500,000
Di-isopropyl Ether	Ba-1	12 - 13	3,320	- -
Ethylbenzene	Ba-1	12 - 13	9,610	102,000,000
Hexane	GP-1	14 - 16	55.4	61,300,000
Methylene Chloride	N-1	5 - 6	39	47,700
Methylene Chloride	S-1	5 - 6	37	47,700
Methylene Chloride	E-1	5 - 6	15	47,700
Methylene Chloride	W-1	5 - 6	34	47,700
Methylene Chloride	Ba-1	12 - 13	3,050	47,700
Methylene Chloride	B-1	15 - 17	132	47,700
Methylene Chloride	B-1	19 - 21	215	47,700
Methylene Chloride	GP-1	12 - 14	31.1	47,700
Methylene Chloride	GP-1	14 - 16	31.4	47,700
Methylene Chloride	GP-1	16 - 18	26.3	47,700
Methylene Chloride	GP-1	18 - 20	54.1	47,700
Methylene Chloride	GP-1	20 - 22	16.9	47,700
Methylene Chloride	GP-1	22 - 24	28.1	47,700
Methylene Chloride	GP-1	24 - 25.5	16.4	47,700
Naphthalene	Ba-1	12 - 13	4,620	40,900,000
Naphthalene	GP-1	14 - 16	2.58	40,900,000
n-Propylbenzene	Ba-1	12 - 13	2,400	- -
n-Propylbenzene	GP-1	14 - 16	7.72	- -
Tetrachloroethene	N-1	5 - 6	131	286,000
Tetrachloroethene	S-1	5 - 6	110	286,000
Tetrachloroethene	E-1	5 - 6	145	286,000
Tetrachloroethene	W-1	5 - 6	14	286,000
Toluene	Ba-1	12 - 13	19,300	204,000,000
Trichloroethene	N-1	5 - 6	3.4	6,132,000
Trichloroethene	S-1	5 - 6	7.5	6,132,000
Trichloroethene	E-1	5 - 6	13	6,132,000
Trichloroethene	W-1	5 - 6	3.3	6,132,000
Trichloroethene	GP-1	12 -14	18.5	6,132,000
1,2,4-Trimethylbenzene	Ba-1	12 - 13	19,200	51,100,000
1,2,4-Trimethylbenzene	B-1	15 - 17	1.77	51,100,000
1,2,4-Trimethylbenzene	GP-1	14 - 16	62.1	51,100,000
1,3,5-Trimethylbenzene	Ba-1	12 - 13	6,030	51,100,000
1,3,5-Trimethylbenzene	GP-1	14 - 16	46.3	51,100,000
Xylenes (total)	Ba-1	12 - 13	56,900	NA

Table 6
Summary of Soil:Water Partitioning Results
Findley Adhesives, Inc.

Parameter	Soil Boring	Depth (feet)	K_{oc} (µg/g) (µg/ml)	NR 140 PAL (µg/l)	Detected Concentration (µg/kg)	Soil RCL (µg/kg)
Benzene	Ba-1	12 - 13	83	0.5	1,210	0.475
Benzene	B-1	15 - 17	83	0.5	537	0.475
Benzene	B-1	19 - 21	83	0.5	1,007	0.475
Benzene	GP-1	14 - 16	83	0.5	567	0.475
Benzene	GP-1	16 - 18	83	0.5	1,260	0.475
n-Butylbenzene	Ba-1	12 - 13	1,500	5	2,950	78.9
Chloroform	GP-1	16 - 18	76.8	0.6	2.2	0.314
Chloroform	GP-1	18 - 20	76.8	0.6	6.05	0.314
Chloroform	GP-1	22 - 24	76.8	0.6	2.41	0.314
GRO	Ba-1	12 - 13	- -	- -	172	- -
DRO	GP-1	12 - 14	- -	- -	378	- -
DRO	GP-1	14 - 16	- -	- -	105	- -
1,1-Dichloroethane	GP-1	12 - 14	30.2	85	62.7	52.8
1,2-Dichloroethane	B-1	19 - 21	75.2	0.5		0.248
cis-1,2-Dichloroethene	GP-1	12 - 14	49	7	2,030	6.48
trans-1,2-Dichloroethene	GP-1	12 - 14	59	20	10.9	14.7
Di-isopropyl Ether	Ba-1	12 - 13		- -	3,320	- -
Ethylbenzene	Ba-1	12 - 13	250	140	9,610	235
Hexane	GP-1	12 - 14	890	30	55.4	392
Methylene Chloride	N-1	5 - 6	25	0.5	39	0.217
Methylene Chloride	S-1	5 - 6	25	0.5	37	0.217
Methylene Chloride	E-1	5 - 6	25	0.5	15	0.217
Methylene Chloride	W-1	5 - 6	25	0.5	34	0.217
Methylene Chloride	Ba-1	12 - 13	25	0.5	3,050	0.217
Methylene Chloride	B-1	15 - 17	25	0.5	132	0.217
Methylene Chloride	B-1	19 - 21	25	0.5	215	0.217
Methylene Chloride	GP-1	12 - 14	25	0.5	31.1	0.217
Methylene Chloride	GP-1	14 - 16	25	0.5	31.4	0.217
Methylene Chloride	GP-1	16 - 18	25	0.5	26.3	0.217
Methylene Chloride	GP-1	18 - 20	25	0.5	54.1	0.217
Methylene Chloride	GP-1	20 - 22	25	0.5	16.9	0.217
Methylene Chloride	GP-1	22 - 24	25	0.5	28.1	0.217
Methylene Chloride	GP-1	24 - 25.5	25	0.5	16.4	0.217
Naphthalene	Ba-1	12 - 13	1,300	8	4,620	94.2
Naphthalene	GP-1	14 - 16	1,300	8	2.58	94.2
n-Propylbenzene	Ba-1	12 - 13	884	- -	2,400	- -
n-Propylbenzene	GP-1	14 - 16	884	- -	7.72	- -
Tetrachloroethene	N-1	5 - 6	137.3	0.5	131	1.45
Tetrachloroethene	S-1	5 - 6	137.3	0.5	110	1.45
Tetrachloroethene	E-1	5 - 6	137.3	0.5	145	1.45
Tetrachloroethene	W-1	5 - 6	137.3	0.5	14	1.45
Toluene	Ba-1	12 - 13	250	68.6	19,300	167
Trichloroethene	N-1	5 - 6	100	0.5	3.4	0.652
Trichloroethene	S-1	5 - 6	100	0.5	7.5	0.652
Trichloroethene	E-1	5 - 6	100	0.5	13	0.652
Trichloroethene	W-1	5 - 6	100	0.5	3.3	0.652
Trichloroethene	GP-1	12 - 14	100	0.5	18.5	0.652
1,2,4-Trimethylbenzene	Ba-1	12 - 13	1,837	25	19,200	246
1,2,4-Trimethylbenzene	B-1	15 - 17	1,837	25	1.77	246
1,2,4-Trimethylbenzene	GP-1	14 - 16	1,837	25	62.1	246
1,3,5-Trimethylbenzene	Ba-1	12 - 13	707	25	6,030	152
1,3,5-Trimethylbenzene	GP-1	14 - 16	707	25	46.3	152
Xylenes (total)	Ba-1	12 - 13	295	124	56,900	352

trans-1,2-Dichloroethene Substance detected below the soil:water partitioning RCL.

TABLE 7
Summary of SESOIL Modeling Results

Scenario Description	Output File (*.OUT)	Volatilized (percent)	Soil Air (percent)	Adsorbed on Soil (percent)	Soil Moisture (percent)	Ground Water Runoff (percent)	Migration Rate (cm/year)	Estimated Travel Time To Ground Water (years)
1,1-Dichloroethane baseline, GP-1 99 year run.	11DI01	85.95	0.51	10.07	3.44	0.0	286.30/99	183.17
1,1-Dichloroethane Koc = 30, GP-1 99 year run.	11DI02	91.14	0.42	5.54	2.88	0.0	322.30/99	162.68
1,1-Dichloroethane Koc = 104, GP-1 99 year run.	11DI03	70.34	0.56	25.25	3.82	0.0	160.00/99	327.81
1,2,4-Trimethylbenzene baseline, Ba-1 99 year run.	124TMB01	15.69	0.18	82.92	1.21	0.0	21.30/99	2486.62
1,2,4-Trimethylbenzene Koc = 592, Ba-1 99 year run.	124TMB02	25.4	0.29	72.39	1.92	0.0	35.40/99	1496.19
1,2,4-Trimethylbenzene Koc = 1837, Ba-1 99 year run.	124TMB03	9.24	0.12	89.87	0.77	0.0	13.90/99	3810.43
1,2,4-Trimethylbenzene baseline, GP--1 99 year run.	124TMB04	10.53	0.19	87.99	1.28	0.0	20.80/99	2237.02
1,2,4-Trimethylbenzene Koc = 592, GP--1 99 year run.	124TMB05	18.68	0.32	78.9	2.1	0.0	35.50/99	1310.70
1,2,4-Trimethylbenzene Koc = 1837, GP--1 99 year run.	124TMB06	6.03	0.12	93.05	0.8	0.0	12.40/99	3752.42
1,3,5-Trimethylbenzene baseline, Ba-1 99 year run.	135TMB01	31.37	0.34	66.7	1.59	0.0	32.20/99	1644.88
1,3,5-Trimethylbenzene Koc = 365, Ba-1 99 year run.	135TMB02	46.85	0.47	50.51	2.18	0.0	53.90/99	982.47
1,3,5-Trimethylbenzene Koc = 914, Ba-1 99 year run.	135TMB03	24.52	0.27	73.93	1.27	0.0	24.40/99	2170.70
1,3,5-Trimethylbenzene baseline, GP-1 99 year run.	135TMB04	23.37	0.38	74.47	1.77	0.0	32.70/99	1422.94
1,3,5-Trimethylbenzene Koc = 365, GP-1 99 year run.	135TMB05	37.44	0.55	59.44	2.56	0.0	51.30/99	907.02
1,3,5-Trimethylbenzene Koc = 914, GP-1 99 year run.	135TMB06	17.41	0.3	80.9	1.39	0.0	24.60/99	1891.46
Benzene baseline, GP-1 99 year run.	BENZ01	63.39	0.85	30.05	5.69	0.0	126.00/99	361.27
Benzene Koc = 31, GP-1 99 year run.	BENZ02	78.36	1.03	13.63	6.92	0.0	243.10/99	187.17
Benzene Koc = 214, GP-1 99 year run.	BENZ03	39.68	0.61	55.61	4.09	0.0	63.30/99	719.27
Benzene baseline, B-1 99 year run.	BENZ04	48.44	1.2	42.32	8.02	0.0	92.10/99	333.12
Benzene Koc = 31, B-1 99 year run.	BENZ05	69.28	1.47	19.36	9.82	0.0	173.60/99	176.61
Benzene Koc = 214, B-1 99 year run.	BENZ06	25.23	0.76	68.94	5.07	0.0	48.60/99	631.28
Benzene baseline, Ba-1 99 year run.	BENZ07	67.2	0.76	26.9	5.1	0.0	193.60/99	273.48
Benzene Koc = 31, Ba-1 99 year run.	BENZ08	85.27	0.71	9.29	4.71	0.0	320.20/99	165.29
Benzene Koc = 214, Ba-1 99 year run.	BENZ09	45.58	0.55	50.17	3.69	0.0	86.60/99	611.49
cis 1,2-Dichloroethene baseline, GP-1 99 year run.	C12DI01	66.93	0.59	27.13	5.32	0.0	197.70/99	265.30
cis 1,2-Dichloroethene Koc = 49, GP-1 99 year run.	C12DI02	76.77	0.6	17.1	5.49	0.0	282.20/99	185.83
cis 1,2-Dichloroethene Koc = 141, GP-1 99 year run.	C12DI03	54.15	0.5	40.79	4.55	0.0	125.30/99	418.68
di-Isopropyl Ether Koc = 31.4, Ba-1 99 year run.	DIISO02	52.78	0.72	30.95	15.5	0.0	324.00/99	163.35
di-Isopropyl Ether baseline, Ba-1 99 year run.	DIOSO01	54.67	0.76	28.28	16.23	0.0	337.70/99	156.69
Naphthalene baseline, GP-1 DRO 99 year run.	DRO01	0.06	0.02	98.71	1.19	0.0	17.00/99	2678.82
Naphthalene Koc = 240, GP-1 DRO 99 year run.	DRO02	0.88	0.08	92.92	6.09	0.0	58.80/99	774.32
Naphthalene Koc = 3160, GP-1 DRO 99 year run.	DRO03	0.01	0.01	99.48	0.5	0.0	7.20/99	6325.00

TABLE 7
Summary of SESOIL Modeling Results
(Continued)

Scenario Description	Output File (*.OUT)	Volatilized (percent)	Soil Air (percent)	Adsorbed on Soil (percent)	Soil Moisture (percent)	Ground Water Runoff (percent)	Migration Rate (cm/year)	Estimated Travel Time To Ground Water (years)
Ethylbenzene baseline, Ba-1 99 year run.	ETHYL01	65.87	0.66	30.56	2.91	0.0	108.20/99	489.42
Ethylbenzene Koc = 95, Ba-1 99 year run.	ETHYL02	77.56	0.7	18.62	3.08	0.0	171.80/99	308.18
Ethylbenzene Koc = 380, Ba-1 99 year run.	ETHYL03	43.15	0.51	54.1	2.24	0.0	51.90/99	1020.33
Hexane baseline, Ba-1 GRO 99 year run.	GRO01	2.09	0.04	96.81	1.05	0.0	17.00/99	3115.59
Hexane Koc = 890, Ba-1 GRO 99 year run.	GRO02	3.51	0.06	94.76	1.67	0.0	25.10/99	2110.16
Hexane Koc = 4100, Ba-1 GRO 99 year run.	GRO03	0.51	0.01	99.08	0.38	0.0	6.30/99	8407.14
Hexane baseline, GP-1 99 year run.	HEXANE01	0.89	0.04	97.98	1.07	0.0	15.60/99	2982.69
Hexane Koc = 890, GP-1 99 year run.	HEXANE02	1.82	0.06	96.4	1.7	0.0	25.40/99	1831.89
Hexane Koc = 4100, GP-1 99 year run.	HEXANE03	0.15	0.01	99.43	0.38	0.0	5.60/99	8308.93
Methylene Chloride baseline, Side walls 99 year run.	METH01	91.55	0.21	5.05	3.18	0.0	478.70/99	156.00
Methylene Chloride Koc = 19.2, Side walls 99 year run.	METH02	92.52	0.22	3.98	3.26	0.0	516.10/99	144.67
Methylene Chloride Koc = 47.9, Side walls 99 year run.	METH03	87.05	0.21	9.57	3.14	0.0	396.00/99	188.63
Methylene Chloride baseline, GP-1 99 year run.	METH04	44.83	1.39	32.96	20.74	0.0	119.80/99	132.06
Methylene Chloride Koc = 19.2, GP-1 99 year run.	METH05	49.74	1.47	26.77	21.93	0.0	137.50/99	115.06
Methylene Chloride Koc = 47.9, GP-1 99 year run.	METH06	31.77	1.11	50.49	16.58	0.0	81.20/99	194.95
Methylene Chloride baseline, B-1 99 year run.	METH07	54.27	1.15	27.32	17.18	0.0	201.30/99	152.31
Methylene Chloride Koc = 19.2, B-1 99 year run.	METH08	58.8	1.2	21.94	17.97	0.0	230.80/99	132.80
Methylene Chloride Koc = 47.9, B-1 99 year run.	METH09	42.71	0.93	42.4	13.92	0.0	135.80/99	225.85
Methylene Chloride baseline, Ba-1 99 year run.	METH10	72.41	0.69	16.49	10.37	0.0	346.20/99	152.85
Methylene Chloride Koc = 19.2, Ba-1 99 year run.	METH11	75.47	0.72	13.06	10.7	0.0	374.00/99	141.46
Methylene Chloride Koc = 47.9, Ba-1 99 year run.	METH12	61.62	0.62	28.39	9.32	0.0	284.50/99	186.06
Methylene Chloride baseline, GP-1 99 year run, oc=1.0 %.	METH13	23.16	0.89	62.54	13.38	0.0	60.40/99	262.09
Methylene Chloride Koc = 19.2, GP-1 99 year run, oc=1.0%.	METH14	28.4	1.03	55.18	15.36	0.0	72.60/99	218.05
Methylene Chloride Koc = 47.9, GP-1 99 year run, oc=1.0%.	METH15	12.26	0.59	78.38	8.75	0.0	39.00/99	406.15
Naphthalene Baseline, Ba-1 99 year run.	NAPH01	0.36	0.02	98.41	1.19	0.0	18.40/99	2878.53
Naphthalene Koc = 240, Ba-1 99 year run.	NAPH02	2.64	0.08	91.3	5.98	0.0	78.90/99	671.17
Naphthalene Koc = 3160, Ba-1 99 year run.	NAPH03	0.08	0.01	99.39	0.49	0.0	8.20/99	6459.15
Naphthalene Baseline, GP--1 99 year run.	NAPH04	0.1	0.02	98.67	1.19	0.0	17.50/99	2658.86
Naphthalene Koc = 240, GP--1 99 year run.	NAPH05	1.38	0.08	92.48	6.06	0.0	72.80/99	639.01
Naphthalene Koc = 3160, GP--1 99 year run.	NAPH06	0.02	0.01	99.47	0.5	0.0	7.20/99	6462.50

TABLE 7
Summary of SESOIL Modeling Results
(Continued)

Scenario Description	Output File (*.OUT)	Volatilized (percent)	Soil Air (percent)	Adsorbed on Soil (percent)	Soil Moisture (percent)	Ground Water Runoff (percent)	Migration Rate (cm/year)	Estimated Travel Time To Ground Water (years)
n-Propylbenzene baseline, Ba-1 99 year run.	NPROP01	22.21	0.37	76.06	1.35	0.0	25.20/99	2101.79
n-Propylbenzene Koc = 704, Ba-1 99 year run.	NPROP02	26.57	0.44	71.39	1.59	0.0	30.50/99	1736.56
n-Propylbenzene Koc = 1837, Ba-1 99 year run.	NPROP03	11.23	0.21	87.8	0.75	0.0	13.90/99	3810.43
n-Propylbenzene baseline, GP-1 99 year run.	NPROP04	15.77	0.4	82.36	1.46	0.0	25.40/99	1831.89
n-Propylbenzene Koc = 704, GP-1 99 year run.	NPROP05	19.39	0.48	78.37	1.75	0.0	31.20/99	1491.35
n-Propylbenzene Koc = 1837, GP-1 99 year run.	NPROP06	7.58	0.22	91.42	0.78	0.0	12.40/99	3752.42
Tetrachloroethene baseline, Side wall 99 year run.	PCE01	60.86	0.14	37.06	1.93	0.0	87.70/99	852.17
Tetrachloroethene Koc = 137, Side wall 99 year run.	PCE02	71.03	0.21	25.78	2.95	0.0	177.20/99	404.99
Tetrachloroethene Koc = 433, Side wall 99 year run.	PCE03	51.93	0.12	46.26	1.68	0.0	63.20/99	1182.52
trans 1,2-Dichloroethene baseline, GP-1 99 year run.	T12DI01	81.4	0.54	14.23	3.79	0.0	248.20/99	211.28
trans 1,2-Dichloroethene Koc = 39, GP-1 99 year run.	T12DI02	87.95	0.48	8.23	3.32	0.0	299.90/99	174.83
trans 1,2-Dichloroethene Koc = 104.1, GP-1 99 year run.	T12DI03	69.88	0.56	25.65	3.88	0.0	160.10/99	327.61
Trichloroethene baseline, Side wall 99 year run.	TCE01	49.3	0.18	44.77	5.73	0.0	196.00/99	381.25
Trichloroethene Koc=100, Side wall 99 year run.	TCE02	50.98	0.21	42.15	6.63	0.0	233.50/99	319.98
Trichloroethene Koc=137, Side wall 99 year run.	TCE03	48.31	0.17	46.21	5.31	0.0	178.30/99	419.10
Toluene Baseline, Ba-1 99 year run.	TOLUEN01	46.94	0.5	49.45	3.11	0.0	75.50/99	701.39
Toluene Koc = 85, Ba-1 99 year run.	TOLUEN02	72.31	0.67	22.77	4.21	0.0	189.70/99	279.10
Toluene Koc = 380, Ba-1 99 year run.	TOLUEN03	36.0	0.4	61.07	2.53	0.0	52.10/99	1016.41
Trichloroethene baseline, GP-1 99 year run.	TRI01	18.45	0.29	72.03	9.22	0.0	141.50/99	370.67
Trichloroethene Koc = 100, GP-1 99 year run.	TRI02	21.05	0.34	67.92	10.68	0.0	167.60/99	312.95
Trichloroethene Koc = 137, GP-1 99 year run.	TRI03	17.08	0.27	74.14	8.51	0.0	129.30/99	405.72
Xylene baseline, Ba-1 99 year run.	XYLENE01	34.1	0.46	62.12	3.31	0.0	65.20/99	812.19
Xylene Koc = 25.4, Ba-1 99 year run.	XYLENE02	84.41	0.79	9.12	5.65	0.0	339.60/99	155.82
Xylene Koc = 1585, Ba-1 99 year run.	XYLENE03	8.47	0.13	90.51	0.9	0.0	15.90/99	3331.13

Table 8
Summary of Site-Specific RCLs
Findley Adhesives, Inc.

Parameter	Direct Contact Soil RCL Industrial (µg/kg)	RCL Protective of Ground Water	Site-Specific RCL
Benzene	98000	NA	98000
n-Butylbenzene	10,200,000	NA	10,200,000
Chloroform	286,000	NA	286,000
GRO	- -	NA	NA
DRO	- -	NA	NA
1,1-Dichloroethane	102,000,000	NA	102,000,000
1,2-Dichloroethane	31,500	NA	102,000,000
cis-1,2-Dichloroethene	10,200,000	NA	102,000,000
trans-1,2-Dichloroethene	20,500,000	NA	204,000,000
Di-isopropyl Ether	- -		- -
Ethylbenzene	102,000,000	NA	102,000,000
Hexane	61,300,000	NA	61,300,000
Methylene Chloride	47,700	NA	47,700
Naphthalene	40,900,000	NA	40,900,000
n-Propylbenzene	- -		- -
Tetrachloroethene	286,000	NA	286,000
Toluene	204,000,000	NA	204,000,000
Trichloroethene	6,132,000	NA	6,132,000
1,2,4-Trimethylbenzene	51,100,000	NA	511,000
1,3,5-Trimethylbenzene	51,100,000	NA	409,000
Xylenes (total)	NA	NA	NA

NA Not Applicable
- - No Standard was established.

780000

REPORT FOR

EVALUATION OF SITE-SPECIFIC SOIL CLEANUP STANDARDS

FINDLEY ADHESIVES, INC.

2930 WEST CENTER STREET

MILWAUKEE, WISCONSIN

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MARCH 13, 1996

ESCI PROJECT NUMBER: 21552

APPENDICES

APPENDIX A

CHEMICAL SPECIFIC INPUT PARAMETERS

Benzene

CAS Number 71-43-2

C_6H_6

SESOIL Input Parameter	Range of Values	Source
Water Solubility (μg/ml) at 25°C	1,780 - 1,800	USEPA, 1981
	1,696 - 1,860	Montgomery et al., 1990
	1,750	Nyer et al., 1991
	1,791	Howard, 1990
	1780	Sanders, 1995
	1780	Verschueren, 1983
	1780	McKenna et al., 1995
	1780	Heath et al., 1993
	1780	Sanders, 1995
	1780	Nyer et al., 1989
	1755	Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.077	Gherini et al., 1988
	0.108[1]	Calculated
	0.088	Dragun, 1988
	0.93	Heath et al., 1993
Henry's Law Constant (m^3-atm/mol) at 25°C	5.55×10^{-3}	USEPA, 1981
	5.55×10^{-3}	General Science Corp., 1990
	5.48×10^{-3}	Montgomery et al., 1990
	5.43×10^{-3}	Howard, 1990
	5.566×10^{-3}	Yaws, 1992
	5.5×10^{-3}	McKenna et al., 1995
	5.5×10^{-3}	Heath et al., 1993
Molecular Weight (g/mole)	78.12	USEPA, 1981
	78.11	Montgomery et al., 1990
	78.11	Verschueren, 1983
	78.113	Yaws, 1992
	78.1	McKenna et al., 1995
	78	Heath et al., 1993
	78.11	Nyer et al., 1989

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[1] **The diffusion coefficient was estimated using the following equation:**

$$D_A = D_A'(MWT'/MWT)^{1/2}$$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of benzene

Benzene

CAS Number 71-43-2

C_6H_6

(Continued)

SESOIL Input Parameter	Range of Values	Source
K_{oc}	49, 83, 91, 100	Montgomery et al., 1990
(µg/g)/ (µg/ml)	83	Karickhoff et al., 1979
	60	Karickhoff, 1981
	31	General Science Corp., 1990
	83	Dragun, 1988, Yaws, 1992
	18, 92, 100	Gherini et al., 1988
	92, 100	Rogers et al., 1980
	122 - 214	Mackay et al., 1992
	31 - 143	Howard, 1990
	65	Myrand et al., 1992
	116 - 930	Chen et al., 1992
	83, 95	Schwarzenbach, 1981
	80	Jury et al., 1990
	32	Sanders, 1995
	100	Chiou et al., 1983
	84 - 89[1]	Calculated
	63 - 79.4	McKenna et al., 1995
	49 - 100	Heath et al., 1993
	50	Nyer et al., 1989

[1] **K_{oc} was estimated using the following equation:**
$\log K_{oc} = 3.95 - 0.62 \log S$
S = Water solubility mg/l

n-Butylbenzene

CAS Number 104-51-8

$C_{10}H_{14}$

SESOIL Input Parameter	Range of Values	Source
Water Solubility (μg/ml) at 25°C	50 14 13.82	Heath et al., 1993 US EPA Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.082[1]	Calculated
Henry's Law Constant (m^3-atm/mol) at 25°C	0.013 0.013	Heath et al., 1993 Yaws, 1992
Molecular Weight (g/mole)	134 134.22 134.220 134.22	Heath et al., 1993 US EPA Yaws, 1992 Jeng et al., 1992
K_{oc} (μg/g)/ (μg/ml)	2942[2] 1500[2] 1735 - 1750[3]	Yaws, 1992 Jeng et al., 1992 Calculated

[1] The diffusion coefficient was estimated using the following equation:

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT= Molecular weight of benzene

[2] Estimated value

[3] K_{oc} was estimated using the following equation:

$\log K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

Chloroform

CAS Number 67-66-3

$CHCl_3$

SESOIL Input Parameter	Range of Values	Source
Water Solubility (µg/ml) at 25°C	9300 7900 8200 7500	US EPA Sanders, 1995 Nyer et al., 1991 Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.087[1]	Calculated
Henry's Law Constant (m^3-atm/mol) at 25°C	3.39×10^{-3} 1.053×10^{-3}	US EPA Yaws, 1992
Molecular Weight (g/mole)	119.38 119.39 119.378	US EPA Jeng et al, 1992 Yaws, 1992
K_{oc} (µg/g)/ (µg/ml)	30 76.8 30.9 - 35[2]	Sanders, 1995 Jeng et al, 1992 Calculated

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[1] The diffusion coefficient was estimated using the following equation:

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of benzene

[2] K_{oc} was estimated using the following equation:

$\log K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

1,1-Dichloroethane

CAS Number 75-34-3

$C_2H_4Cl_2$

SESOIL Input Parameter	Range of Values	Source
Water Solubility (µg/ml) at 25°C	5060 5500 (20°C) 5100 5500 5032	Heath et al., 1993 US EPA Sanders, 1995 Nyer et al., 1991 Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.096[1]	Calculated
Henry's Law Constant (m^3-atm/mol) at 25°C	5.9×10^{-3} 5.45×10^{-3} 2.286×10^{-3}	Heath et al., 1993 US EPA Yaws, 1992
Molecular Weight (g/mole)	99 98.96 98.960 98.96	Heath et al., 1993 US EPA Yaws, 1992 Jeng et al, 1992
K_{oc} (µg/g)/ (µg/ml)	30.2 104.1[2] 46 80.2[2] 42.8 - 45.2[3]	Heath et al., 1993 Yaws, 1992 Sanders, 1995 Jeng et al, 1992 Calculated

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[1] **The diffusion coefficient was estimated using the following equation:**

$$D_A = D_A'(MWT'/MWT)^{1/2}$$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT= Molecular weight of benzene

[2] **Estimated value**

[3] **K_{oc} was estimated using the following equation:**

$$\text{Log } K_{oc} = 3.95 - 0.62 \log S$$

S = Water solubility mg/l

1,2-Dichloroethane

CAS Number 107-06-2

$C_2H_4Cl_2$

SESOIL Input Parameter	Range of Values	Source
Water Solubility	8300 (20°C)	US EPA, 1981
(µg/ml) at 25°C	8690 (20°C)	US EPA
	7986, 8300, 8650	Montgomery et al., 1990
	8520	Nyer et al., 1991
	10500	Olsen et al., 1990
	8524	Howard, 1990
	7986 - 8650	Heath et al., 1993
	8679	Yaws, 1992
	8700	Sanders, 1995
	8520	Nyer et al., 1991
Diffusion Coefficient	0.09451	Heath et al., 1993
(cm^2/sec)	0.096[1]	Calculated
Henry's Law Constant	1.10×10^{-3}	US EPA, 1981
(m^3-atm/mol) at 25°C	9.1×10^{-4}	Montgomery et al., 1990
	1.1×10^{-3}	Montgomery et al., 1990
	9.8×10^{-4}	Montgomery et al., 1990
	1.31×10^{-3}	Montgomery et al., 1990
	9.77×10^{-4}	Howard, 1990
	1.3×10^{-3}	Heath et al., 1993
	1.178×10^{-3}	Yaws, 1992
	4.44×10^{-2}	Sanders, 1995
Molecular Weight	98.96	US EPA
(g/mole)	99	Heath et al., 1993
	98.960	Yaws, 1992
	98.97	Jeng et al, 1992
K_{oc}	14	Montgomery et al., 1990
(µg/g)/ (µg/ml)	19	Montgomery et al., 1990
	3232	Chiou et al., 1979
	22	Karickhoff, 1981
	33	Jury, 1990
	152	Howard, 1990
	65	Heath et al., 1993
	104.1[2]	Yaws, 1992
	30	Sanders, 1995
	32.8	Jeng et al, 1992
	32.6[3]	Calculated

[1] The diffusion coefficient was estimated using the following equation:

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of benzene

[2] Estimated value

[3] K_{oc} was estimated using the following equation:

$\log K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

cis 1,2-Dichloroethene

CAS Number 156-59-2

$C_2H_2Cl_2$

SESOIL Input Parameter	Range of Values	Source
Water Solubility (μg/ml) at 25°C	800 (20°C) 3500 3500	US EPA Sanders, 1995 Nyer et al., 1991
Diffusion Coefficient (cm^2/sec)	0.097[1]	Calculated
Henry's Law Constant (m^3-atm/mol) at 25°C	4.08×10^{-3} (24.8°C) 7.358×10^{-3}	US EPA Yaws, 1992
Molecular Weight (g/mole)	96.94 96.944 96.94	US EPA Yaws, 1992 Jeng et al, 1992
K_{oc} (μg/g)/ (μg/ml)	104.1[2] 49 80.2[2] 56.6 - 141[3]	Yaws, 1992 Sanders, 1995 Jeng et al, 1992 Calculated

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[1] **The diffusion coefficient was estimated using the following equation:**

$$D_A = D_A'(MWT'/MWT)^{1/2}$$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)
MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)
MWT = Molecular weight of benzene

[2] **Estimated value**

[3] K_{oc} **was estimated using the following equation:**

$$\text{Log } K_{oc} = 3.95 - 0.62 \log S$$

S = Water solubility mg/l

trans 1,2-Dichloroethene

CAS Number 156-60-5

$C_2H_2Cl_2$

SESOIL Input Parameter	Range of Values	Source
Water Solubility (μg/ml) at 25°C	600 (20°C) 6300 6300	US EPA Sanders, 1995 Nyer et al., 1991
Diffusion Coefficient (cm^2/sec)	0.097[1]	Calculated
Henry's Law Constant (m^3-atm/mol) at 25°C	5.32×10^{-3} 6.673×10^{-3}	US EPA Yaws, 1992
Molecular Weight (g/mole)	96.94 96.944 96.94	US EPA Yaws, 1992 Jeng et al, 1992
K_{oc} (μg/g)/ (μg/ml)	104.1[2] 59 80.2[2] 39[3]	Yaws, 1992 Sanders, 1995 Jeng et al, 1992 Calculated

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[1] The diffusion coefficient was estimated using the following equation:

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT= Molecular weight of benzene

[2] Estimated value

[3] K_{oc} was estimated using the following equation:

Log K_{oc} = 3.95 - 0.62 log S

S = Water solubility mg/l

Di-Isopropyl Ether

CAS Number 108-20-3

$C_6H_{14}O$

SESOIL Input Parameter	Range of Values	Source
Water Solubility (µg/ml) at 25°C	9000 (20°C) 11250	US EPA Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.094[1]	Calculated
Henry's Law Constant (m^3-atm/mol) at 25°C	1.734×10^{-3}	Yaws, 1992
Molecular Weight (g/mole)	102.17 102.176	US EPA Yaws, 1992
K_{oc} (µg/g)/ (µg/ml)	27.4 - 31.5[2]	Calculated

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[1] **The diffusion coefficient was estimated using the following equation:**

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of benzene

[2] **K_{oc} was estimated using the following equation:**

$\text{Log } K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

Ethylbenzene

CAS Number 100-41-4

C_8H_{10}

SESOIL Input Parameter	Range of Values	Source
Water Solubility	206	USEPA, 1981
(μg/ml) at 25°C	131, 206	Montgomery et al., 1990
	152	Nyer et al., 1991
	110	Gherini et al., 1988
	149.47	General Science Corp., 1990
	113, 222	Mackay et al., 1992
	167	Sanders, 1995
	161	Howard, 1990
	152	Verschueren, 1983
	160 - 208	McKenna et al., 1995
	152 - 208	Heath et al., 1993
	167	Sanders, 1995
	152	Nyer et al., 1991
	165	Yaws, 1992
Diffusion Coefficient	0.076	Gherini et al., 1988
(cm^2/sec)	0.067	Heath et al., 1993
	0.092[1]	Calculated
Henry's Law Constant	6.44×10^{-3}	USEPA, 1981
(m^3-atm/mol) at 25°C	6.6×10^{-3}, 6.44×10^{-3}, 8.68×10^{-3}	Montgomery et al., 1990
	8.43×10^{-3}	General Science Corp., 1990
	6.44×10^{-3}	General Science Corp., 1990
	0.323	Sanders, 1995
	8.043×10^{-3}	Yaws, 1992
	8.44×10^{-3}	Howard, 1990
	8.7×10^{-3}	McKenna et al., 1995
	8.7×10^{-3}	Heath et al., 1993
	8.043×10^{-3}	Yaws, 1992
Molecular Weight	106.17	Montgomery et al., 1990
(g/mole)	106.17	General Science Corp., 1990
	106.167	Yaws, 1992
	106.16	Howard, 1990
	106.16	Verschueren, 1983
	106	McKenna et al., 1995
	106	Heath et al., 1993
	106.17	Jeng et al, 1992

[1] The diffusion coefficient was estimated using the following equation:

$$D_A = D_A'(MWT'/MWT)^{1/2}$$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of ethylbenzene

Ethylbenzene

CAS Number 100-41-4

C_8H_{10}

(Continued)

SESOIL Input Parameter	Range of Values	Source
K_{oc} (μg/g)/(μg/ml)	250	General Science Corp., 1990
	1140	Yaws, 1992
	380	Sanders, 1995
	313 - 483[1]	Calculated
	165 - 254	McKenna et al., 1995
	95 - 260	Heath et al., 1993
	519[2]	Jeng et al, 1992

[1] **K_{oc} was estimated using the following equation:**
Log K_{oc} = 3.95 - 0.62 log S
S = Water solubility mg/l

[2] **Estimated value**

Hexane

CAS Number 110-54-3

C_6H_{14}

SESOIL Input Parameter	Range of Values	Source
Water Solubility	13 (20°C)	Mailhot et al., 1988
(µg/ml) at 25°C	9.57	Mailhot et al., 1988
	75.5 (20°C)	Verschueren, 1983
	140	Mackay et al., 1992
	36	Mackay et al., 1992
	120	Mackay et al., 1992
	9.5	Mackay et al., 1992
	34	Mackay et al., 1992
	18.8	Mackay et al., 1992
	16.21	Mackay et al., 1992
	9.52	Mackay et al., 1992
	18.3	Mackay et al., 1992
	9.49	Mackay et al., 1992
	12.3	Mackay et al., 1992
	12.4	Mackay et al., 1992
	12.6	Mackay et al., 1992
	13	Mackay et al., 1992
	9.56	Mackay et al., 1992
	16.2	Mackay et al., 1992
	9.44	Mackay et al., 1992
	11.98	Mackay et al., 1992
	9.47	Mackay et al., 1992
	13.7	Mackay et al., 1992
	46.3	Mackay et al., 1992
	12.24	Mackay et al., 1992
	14.1	Mackay et al., 1992
	10.09	Mackay et al., 1992
	9.55	Mackay et al., 1992
	8.44	Mackay et al., 1992
	9.6	Mackay et al., 1992
	10.85	Mackay et al., 1992
	9.67	Mackay et al., 1992
	13.04	Mackay et al., 1992
	23.2	Mackay et al., 1992
	9.23	Mackay et al., 1992
	14.3	Mackay et al., 1992
	10	Mackay et al., 1992
	14	Mackay et al., 1992
	23.4	Mackay et al., 1992
	12.2	Mackay et al., 1992
	9.95	Mackay et al., 1992
	11.8	Mackay et al., 1992
	14.8	Mackay et al., 1992
	10.8	Mackay et al., 1992
	16.05	Mackay et al., 1992
	9.5	McKenna et al., 1995
	18	Heath et al., 1993
	13	Nyer et al., 1989
	13.31	Yaws, 1992

Hexane

CAS Number 110-54-3

C_6H_{14}

(Continued)

SESOIL Input Parameter	Range of Values	Source
Henry's Law Constant (m^3-atm/mol) at 25°C	1.291×10^{-3} 1.81 .77	Yaws, 1992 McKenna et al., 1995 Heath et al., 1993
Diffusion Coefficient (cm^2/sec)	0.080 0.102[1] 0.075	Dragun, 1988 Calculated Heath et al., 1993
Molecular Weight (g/mole)	86.177 86.17 86.2 86 86.17	Yaws, 1992 Verschueren, 1983 McKenna et al., 1995 Heath et al., 1993 Nyer et al., 1989
K_{oc} (μg/g)/(μg/ml)	1,250 - 4,100 1445 - 2250[2] 890 1097	McKenna et al., 1995 Calculated Heath et al., 1993 Nyer et al., 1989

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[1] The diffusion coefficient was estimated using the following equation:

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of hexane

[2] K_{oc} was estimated using the following equation:

$\text{Log } K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

Methylene Chloride

CAS Number 75-09-2

CH_2Cl_2

SESOIL Input Parameter	Range of Values	Source
Water Solubility (µg/ml) at 25°C	20000 mg/l (20°C)	Verschuren, 1983
	16700 mg/l (25°C)	Verschuren, 1983
	13151.78	Howard, 1990
	13671.32	Howard, 1990
	16700	Howard, 1990
	19800	Howard, 1990
	13000	Howard, 1990
	19400	Sanders, 1995
	20000	Nyer et al., 1991
	19380	Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.103	Calculated[1]
Henry's Law Constant (m^3-atm/mol) at 25°C	2.68×10^{-3}	Howard, 1990
	2.476×10^{-3}	Yaws, 1992
Molecular Weight (g/mole)	84.94	Howard, 1990
	84.9	Howard, 1990
	84.93	Howard, 1990
	84.94	Jeng et al, 1992
K_{oc}	19.2 - 24.9[2]	Calculated
	47.9	Howard, 1990
	25	Sanders, 1995
	47.4	Jeng et al, 1992

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[1] The diffusion coefficient was estimated using the following equation:

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of methylene chloride

[2] K_{oc} was estimated using the following equation:

$\log K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

Naphthalene

CAS Number 91-20-3

$C_{10}H_8$

SESOIL Input Parameter	Range of Values	Source
Water Solubility	34.4	USEPA 1991
(µg/ml) at 25°C	20 - 40	Montgomery et al., 1990
	32	Nyer et al., 1991
	31.7	Olsen et al., 1990
	31.7	Howard, 1990
	30	Verschueren, 1983
	30.0	Mackay et al., 1992
	31.5	Mackay et al., 1992
	12.5	Mackay et al., 1992
	34.4	Mackay et al., 1992
	30.6	Mackay et al., 1992
	20.4	Mackay et al., 1992
	33.47	Mackay et al., 1992
	38.4	Mackay et al., 1992
	31.2	Mackay et al., 1992
	33.0	Mackay et al., 1992
	32.17	Mackay et al., 1992
	34.5	Mackay et al., 1992
	31.3	Mackay et al., 1992
	22	Mackay et al., 1992
	31.7	Mackay et al., 1992
	30.3	Mackay et al., 1992
	31.69	Mackay et al., 1992
	21.3	Mackay et al., 1992
	25.0	Mackay et al., 1992
	32.4	Mackay et al., 1992
	28.4	Mackay et al., 1992
	125.3	Mackay et al., 1992
	31.5	Mackay et al., 1992
	37.7	Mackay et al., 1992
	32.0	Mackay et al., 1992
	31.41	Mackay et al., 1992
	14.30	Mackay et al., 1992
	30.64	Mackay et al., 1992
	32.2	Mackay et al., 1992
	32.90	Mackay et al., 1992
	31.1	Mackay et al., 1992
	33.56	Mackay et al., 1992
	30.6	Mackay et al., 1992
	16.1	Mackay et al., 1992
	31.7	Mackay et al., 1992
	137.35	Mackay et al., 1992
	31.8	Mackay et al., 1992
	31.12	Mackay et al., 1992
	29.5	Mackay et al., 1992
	31.3	Mackay et al., 1992
	31.9	Mackay et al., 1992
	30.2	Mackay et al., 1992
	34.0	Mackay et al., 1992
	33.7	Mackay et al., 1992
	31.7	McKenna et al., 1995
	30 - 34	Heath et al., 1993
	32	Nyer et al., 1991
	32.05	Yaws, 1992

Naphthalene

CAS Number 91-20-3

$C_{10}H_8$

(Continued)

SESOIL Input Parameter	Range of Values	Source
Diffusion Coefficient (cm^2/sec)	0.051	Gherini et al., 1988
	0.0840[1]	Calculated
	0.082	Heath et al., 1993
Henry's Law Constant (m^3-atm/mol) at 25°C	3.6×10^{-4}	USEPA, 1981
	4.6, 4,8, 12.2 $\times 10^{-4}$	Montgomery et al., 1990
	3.6, 5.53 $\times 10^{-4}$	Montgomery et al., 1990
	4.83×10^{-4}	Howard, 1990
	5.53×10^{-4}	Howard, 1990
	1.229×10^{-3}	Yaws, 1992
	4.6×10^{-4}	McKenna et al., 1995
	4.6×10^{-4}	Heath et al., 1993
Molecular Weight (g/mole)	128.173	Yaws, 1992
	128.16	Howard, 1990
	128.16	Verschueren, 1983
	128.2	McKenna et al., 1995
	128	Heath et al., 1993
	128.16	Jeng et al, 1992
K_{oc}	1300	Dragun, 1988
	1300	Yaws, 1992
	939 - 1391[2]	Calculated
	1288	Mackay et al., 1992
	1412	Mackay et al., 1992
	240	Mackay et al., 1992
	871	Mackay et al., 1992
	813	Mackay et al., 1992
	933	Mackay et al., 1992
	1514	Mackay et al., 1992
	1000	Mackay et al., 1992
	891	Mackay et al., 1992
	851	Mackay et al., 1992
	1862	Mackay et al., 1992
	537 - 8128	Mackay et al., 1992
	100000	Mackay et al., 1992
	457	Mackay et al., 1992
	1950	Mackay et al., 1992
	1479	Mackay et al., 1992
	933	McKenna et al., 1995
	550 - 3160	Heath et al., 1993
	1300	Jeng et al, 1992

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[1] The diffusion coefficient was estimated using the following equation:

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of naphthalene

[2] K_{oc} was estimated using the following equation:

Log K_{oc} = 3.95 - 0.62 log S

S = Water solubility mg/l

n-Propylbenzene

CAS Number 103-65-1

C_9H_{12}

SESOIL Input Parameter	Range of Values	Source
Water Solubility (μg/ml) at 25°C	60 (15°C) 60 (15°C) 52.16	Heath et al., 1993 US EPA Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.059 0.087[1]	Dragun, 1988 Calculated
Henry's Law Constant (m^3-atm/mol) at 25°C	5.6×10^{-3} (15°C) 1.021×10^{-2}	Heath et al., 1993 Yaws, 1992
Molecular Weight (g/mole)	120 120.19 120.193 120.19	Heath et al., 1993 US EPA Yaws, 1992 Jeng et al., 1992
K_{oc} (μg/g)/ (μg/ml)	1837[2] 884[2] 704 - 768[3]	Yaws, 1992 Jeng et al., 1992 Calculated

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[1] **The diffusion coefficient was estimated using the following equation:**

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of benzene

[2] **Estimated value**

[3] K_{oc} **was estimated using the following equation:**

$\text{Log } K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

Tetrachloroethene

CAS Number 127-18-4

C_2Cl_4

SESOIL Input Parameter	Range of Values	Source
Water Solubility (µg/ml) at 25°C	150 180 150 131.0	US EPA Sanders, 1995 Nyer et al., 1991 Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.074[1]	Calculated
Henry's Law Constant (m^3-atm/mol) at 25°C	2.87×10^{-2} 2.685×10^{-2}	US EPA Yaws, 1992
Molecular Weight (g/mole)	165.83 165.834 165.85	US EPA Yaws, 1992 Jeng et al, 1992
K_{oc} (µg/g)/ (µg/ml)	137.3[2] 302 359 363 356 - 433[3]	Yaws, 1992 Sanders, 1995 Jeng et al, 1992 Dragun, 1988 Calculated

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[1] **The diffusion coefficient was estimated using the following equation:**

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of benzene

[2] **Estimated value**

[3] **K_{oc} was estimated using the following equation:**

$\log K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

Toluene

CAS Number 108-88-3

C_7H_8

SESOIL Input Parameter	Range of Values	Source
Water Solubility	535	US EPA, 1981
(μg/ml) at 25°C	490 - 627	Montgomery et al., 1990
	535	Nyer et al., 1991
	515	Gherini et al., 1988
	845.63	General Science Corp., 1990
	347 - 707	Mackay et al., 1992
	534.8	Howard, 1990
	448	McKenna et al., 1995
	490 - 627	Heath et al., 1993
	515 (20°C)	US EPA
	522	Sanders, 1995
	535	Nyer et al., 1991
	515	Nyer et al., 1989
	542.4	Yaws, 1992
Diffusion Coefficient	0.085	Gherini et al., 1988
(cm^2/sec)	0.078	Heath et al., 1993
	0.088 (30°C)	Dragun, 1988
	0.099[1]	Calculated
Henry's Law Constant	5.93×10^{-3}	US EPA, 1981
(m^3-atm/mol) at 25°C	6.7×10^{-3}	Montgomery et al., 1990
	6.74×10^{-3}	Montgomery et al., 1990
	6.64×10^{-3}	General Science Corp., 1990
	5.94×10^{-3}	Howard, 1990
	6.7×10^{-3}	McKenna et al., 1995
	6.7×10^{-3}	Heath et al., 1993
	5.92×10^{-3}	US EPA
	6.356×10^{-3}	Yaws, 1992
Molecular Weight	92.1	McKenna et al., 1995
(g/mole)	92	Heath et al., 1993
	92.14	US EPA
	92.140	Yaws, 1992
	92.14	Jeng et al, 1992

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[1] **The diffusion coefficient was estimated using the following equation:**

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of benzene

Toluene

CAS Number 108-88-3

C_7H_8

(Continued)

SESOIL Input Parameter	Range of Values	Source
K_{oc}	115	Montgomery et al., 1990
(µg/g)/ (µg/ml)	151	Montgomery et al., 1990
	151	Garbarini et al., 1986
	331	Calculated
	115	Abdual et al., 1987
	98	Jury et al., 1990
	269	General Science Corp., 1990
	250 (0.15% o.m.)	Gherini et al., 1988
	160 (2.6% o.m.)	Gherini et al., 1988
	37 - 178	Howard, 1990
	85 - 380	Mackay et al., 1992
	126	Myrand et al., 1902
	178 - 1,390	Chen et al., 1992
	295	McKenna et al., 1995
	115 - 150	Heath et al., 1993
	703.4[1]	Yaws, 1992
	200	Sanders, 1995
	303[2]	Jeng et al, 1992
	339	Nyer et al., 1989
	136 - 237[2]	Calculated

[1] **Estimated value**

[2] **K_{oc} was estimated using the following equation:**

$\text{Log } K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

Trichloroethene

CAS Number 79-01-6

C_2HCl_3

SESOIL Input Parameter	Range of Values	Source
Water Solubility (µg/ml) at 25°C	1100 1100 1100 1100	US EPA Sanders, 1995 Nyer et al., 1991 Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.083[1]	Calculated
Henry's Law Constant (m^3-atm/mol) at 25°C	1.17×10^{-2} 1.167×10^{-2}	US EPA Yaws, 1992
Molecular Weight (g/mole)	131.39 131.388 131.39	US EPA Yaws, 1992 Jeng et al, 1992
K_{oc} (µg/g)/ (µg/ml)	122.8[2] 100 137[2] 116[3]	Yaws, 1992 Sanders, 1995 Jeng et al, 1992 Calculated

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[1] **The diffusion coefficient was estimated using the following equation:**

$$D_A = D_A'(MWT'/MWT)^{1/2}$$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)
MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)
MWT= Molecular weight of benzene

[2] **Estimated value**

[3] **K_{oc} was estimated using the following equation:**

$$\log K_{oc} = 3.95 - 0.62 \log S$$

S = Water solubility mg/l

1,2,4-Trimethylbenzene

CAS Number 95-63-6

C_9H_{12}

SESOIL Input Parameter	Range of Values	Source
Water Solubility (μg/ml) at 25°C	30	Nyer et al., 1991
	57 (20°C)	Verschueren, 1983
	57	Mackay et al., 1992
	57.5	Mackay et al., 1992
	31.5	Mackay et al., 1992
	59	Mackay et al., 1992
	79.4	Mackay et al., 1992
	51.9	Mackay et al., 1992
	616	Mackay et al., 1992
	56.1	Mackay et al., 1992
	63.6	Mackay et al., 1992
	58	Mackay et al., 1992
	56.2	Mackay et al., 1992
	66	Mackay et al., 1992
	282	Mackay et al., 1992
	77.1	Mackay et al., 1992
	60	Mackay et al., 1992
	57 (20°C)	Heath et al., 1993
	30	Nyer et al., 1991
	57.04	Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.087[1]	Calculated
Henry's Law Constant (m^3-atm/mol) at 25°C	5.633×10^{-3}	Yaws, 1992
	3.9×10^{-1} (20°C)	Heath et al., 1993
Molecular Weight (g/mole)	120.194	Yaws, 1992
	120.19	Verschueren, 1983
	120	Heath et al., 1993
	120.19	Jeng et al, 1992
K_{oc} (μg/g)/(μg/ml)	1837	Yaws, 1992
	592 - 1082[2]	Calculated
	1600	Heath et al., 1993
	884[3]	Jeng et al, 1992

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[1] **The diffusion coefficient was estimated using the following equation:**

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of 1,2,4-trimethylbenzene

[2] **K_{oc} was estimated using the following equation:**

$\log K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

[3] **Estimated value**

1,3,5-Trimethylbenzene

CAS Number 108-67-8

C_9H_{12}

SESOIL Input Parameter	Range of Values	Source
Water Solubility (μg/ml) at 25°C	173	Mackay et al., 1992
	97	Mackay et al., 1992
	39.4	Mackay et al., 1992
	48.2	Mackay et al., 1992
	97.5	Mackay et al., 1992
	72.8	Mackay et al., 1992
	132	Mackay et al., 1992
	69.2	Mackay et al., 1992
	67.6	Mackay et al., 1992
	178	Mackay et al., 1992
	50	Mackay et al., 1992
	49.5	Mackay et al., 1992
	46.4	Mackay et al., 1992
	97.7	Mackay et al., 1992
	64	Heath et al., 1993
	48.20	Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.087[1]	Calculated
	0.0016	Heath et al., 1993
Henry's Law Constant (m^3-atm/mol) at 25°C	7.927×10^{-3}	Yaws, 1992
	3.7×10^{-1}	Heath et al., 1993
Molecular Weight (g/mole)	120.19	Verschueren, 1983
	120.194	Yaws, 1992
	120.2	Mackay et al., 1992
	120	Heath et al., 1993
K_{oc} (μg/g)/(μg/ml)	660	Mackay et al., 1992
	589	Mackay et al., 1992
	562	Mackay et al., 1992
	707	Mackay et al., 1992
	3.4	Heath et al., 1993
	365 - 914[2]	Calculated

[1] The diffusion coefficient was estimated using the following equation:

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT= Molecular weight of 1,2,4-trimethylbenzene

[2] K_{oc} was estimated using the following equation:

Log K_{oc} = 3.95 - 0.62 log S

S = Water solubility mg/l

o-Xylene

CAS Number 95-47-6

C_8H_{10}

(Continued)

SESOIL Input Parameter	Range of Values	Source
Henry's Law Constant (m^3-atm/mol) at 25°C	5.27×10^{-3}	Montgomery and Welkom, 1990
	5.0×10^{-3}	Montgomery and Welkom, 1990
	5.35×10^{-3}	Montgomery and Welkom, 1990
	5.1×10^{-3}	Howard, 1990
	5.2×10^{-3} - 7.6×10^{-3}	McKenna et al., 1995
	5.4×10^{-3}	Heath et al., 1993
	6.3×10^{-3} (Xylenes)	Heath et al., 1993
	4.208×10^{-3}	Yaws, 1992
Molecular Weight (g/mole)	106.2	US EPA, 1981
	106.17	Montgomery and Welkom, 1990
	106.167	Yaws, 1992
	106.16	Howard, 1990
	106.2	McKenna et al., 1995
	106	Heath et al., 1993
	106.17	Jeng et al, 1992
	106.17	Nyer et al., 1989
K_{oc} (µg/g)/(µg/ml)	129	Montgomery and Welkom, 1990
	311 - 373[1]	Calculated
	48 - 68	Howard, 1990
	129	Howard, 1990
	295	Jury et al., 1990
	255	Kenega et al, 1980
	75	Nyer et al, 1991
	129	Abdual, 1987
	48 - 219	Mackay et al., 1992
	48 - 260 (Xylenes)	McKenna et al., 1995
	129	Heath et al., 1993
	128 - 1580 (Xylenes)	Heath et al., 1993
	300	Sanders, 1995
	519[2]	Jeng et al, 1992
	255	Nyer et al., 1989

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[1] **K_{oc} was estimated using the following equation:**
$\text{Log } K_{oc} = 3.95 - 0.62 \log S$
S = Water solubility mg/l

[2] **Estimated value**

m-Xylene

CAS Number 108-38-3

C_8H_{10}

SESOIL Input Parameter	Range of Values	Source
Water Solubility (µg/ml) at 25°C	162	Sanders, 1995
	146 - 173	Montgomery and Welkom, 1990
	174.0	Yaws, 1992
	146	Howard, 1990
	134 - 213 (Xylenes)	McKenna et al., 1995
	173	Heath et al., 1993
	162 - 200	Heath et al., 1993
	162	Sanders, 1995
	175 (20°C)	Nyer et al., 1989
	174.0	Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.069	Gherini et. al., 1988
	0.103[1]	Calculated
	0.071 (Xylenes)	Dragun, 1988
	0.072 (Xylenes)	Heath et al., 1993
Henry's Law Constant (m^3-atm/mol) at 25°C	0.282	Sanders, 1995
	7.0×10^{-3}	Montgomery and Welkom, 1990
	6.3×10^{-3}	Montgomery and Welkom, 1990
	7.68×10^{-3}	Howard, 1990
	5.2×10^{-3} - 7.6×10^{-3} (Xylenes)	McKenna et al., 1995
	6.3×10^{-3}	Heath et al., 1993
	6.3×10^{-3} (Xylenes)	Heath et al., 1993
Molecular Weight (g/mole)	106.17	Montgomery and Welkom, 1990
	106.167	Yaws, 1992
	106.17	Howard, 1990
	106.2	McKenna et al., 1995
	106	Heath et al., 1993
	106.17	Jeng et al, 1992
	106.17	Nyer et al., 1989
K_{oc} (µg/g)/(µg/ml)	1585	Montgomery and Welkom, 1990
	334 - 406[2]	Calculated
	977	GSC, 1990
	166	Howard, 1990
	166 - 339	Mackay et al., 1992
	48 - 260 (Xylenes)	McKenna et al., 1995
	1585	Heath et al., 1993
	128 - 1580 (Xylenes)	Heath et al., 1993
	300	Sanders, 1995
	519[3]	Jeng et al, 1992

[1] **The diffusion coefficient was estimated using the following equation:**

$D_A = D_A'(MWT'/MWT)^{1/2}$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of 1,2,4-trimethylbenzene

[2] **K_{oc} was estimated using the following equation:**

$\log K_{oc} = 3.95 - 0.62 \log S$

S = Water solubility mg/l

[3] **Estimated value**

p-Xylene

CAS Number 106-42-3

C_8H_{10}

SESOIL Input Parameter	Range of Values	Source
Water Solubility (µg/ml) at 25°C	179	Sanders, 1995
	156 - 200	Montgomery and Welkom, 1990
	175	Nyer, and Morello, 1991
	201.7	Yaws, 1992
	156	Howard, 1990
	134 - 213 (Xylenes)	McKenna et al., 1995
	200	Heath et al., 1993
	162 - 200 (Xylenes)	Heath et al., 1993
	179	Sanders, 1995
	198	Nyer et al., 1989
	201.7	Yaws, 1992
Diffusion Coefficient (cm^2/sec)	0.067	Gherini et. al., 1988
	0.103[1]	Calculated
	0.071 (Xylenes)	Dragun, 1988
	0.071 (Xylenes)	Heath et al., 1993
Henry's Law Constant (m^3-atm/mol) at 25°C	0.286	Sanders, 1995
	7.1×10^{-3}	Montgomery and Welkom, 1990
	6.3×10^{-3}	Montgomery and Welkom, 1990
	7.68×10^{-3}	Howard, 1990
	5.2×10^{-3} - 7.6×10^{-3} (Xylenes)	McKenna et al., 1995
	6.3×10^{-3}	Heath et al., 1993
	6.3×10^{-3} (Xylenes)	Heath et al., 1993
	4.917×10^{-3}	Yaws, 1992
Molecular Weight (g/mole)	106.2	US EPA, 1981
	106.17	Montgomery and Welkom, 1990
	106.167	Yaws, 1992
	106.17	Howard, 1990
	106.2	McKenna et al., 1995
	106	Heath et al., 1993
	106.17	Jeng et al, 1992
	106.17	Nyer et al., 1989

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[1] The diffusion coefficient was estimated using the following equation:

$$D_A = D_A'(MWT'/MWT)^{1/2}$$

Where

DA' = Diffusion coefficient of a substance (0.083 cm2/sec for trichloroethylene)

MWT' = Molecular weight of a substance (131.5 g/mole for trichloroethylene)

MWT = Molecular weight of 1,2,4-trimethylbenzene

p-Xylene

CAS Number 106-42-3

C_8H_{10}

(Continued)

SESOIL Input Parameter	Range of Values	Source
K_{oc} (µg/g)/(µg/ml)	204	Montgomery and Welkom, 1990
	332 - 389[1]	Calculated
	260	GSC, 1990
	25.4	Howard, 1990
	204	Howard, 1990
	204 - 447	Mackay et al., 1992
	48 - 260 (Xylenes)	McKenna et al., 1995
	204	Heath et al., 1993
	128 - 1580 (Xylenes)	Heath et al., 1993
	300	Sanders, 1995
	519[2]	Jeng et al, 1992

[1] **K_{oc} was estimated using the following equation:**
$\log K_{oc} = 3.95 - 0.62 \log S$
S = Water solubility mg/l

[2] **Estimated value**

Chemical References

Abdual, A.S., T.L. Gibson, and D.N. Rai, 1987, Statistical Corrections for Predicting the Partition Coefficient for Nonpolar Organic Contaminants Between Aquifer Organic Carbon and Water, Haz. Waste and Haz. Matls., Volume 4, pp 211-222

Chen, Y.M., L.M. Abriola, P.J. Alvarez, P.J. Arid, and T.M. Vogel, 1992, Modeling Transport and Biodegradation of Benzene and Toluene in Sandy Aquifer Material: Comparisons with Experimental Measurements, Water Resources Research, V. 28, No. 7, pp. 1833-1847.

Chiou, C.T., P.E. Porter, and D.W. Schmedding, 1983, Partition Uptake of Nonionic Compounds by Soil Organic Matter, In Reaction and Movement of Organic Chemicals in Soils, B.L. Sawhney and K. Brown (eds.), Soil Sci. Soc Am. Special Publication Number 22, pp. 1-29.

Dragun, J., 1988, The Soil Chemistry of Hazardous Materials, Hazardous Materials Control Research Institute, Silver Spring, Maryland.

Gherini, S.A., K.V. Summers, R.K., Munson, and W.B., Mills, 1988, Chemical Data for predicting the Fate of Organic Compounds in water, V. 2: Database. Electric Power Research Institute, Palo Alto, California, EPRI EA-5818, V. 2, Project 2879-2, 411 p.

Heath, J.S, K. Koblis, and S.L. Gager, 1993, Review of Chemical Physical, and Toxicological Properties of Compounds of Total Petroleum Hydrocarbons, Journal of Soil Contamination, Volume 2 No. 1, pp. 1-25.

Howard, P.H., 1990, Handbook of Fate and Exposure Data for Organic Chemicals, Lewis Publishers, Inc. Chelsea, Michigan.

Jeng, C.Y., D.H Chen, and C.L. Yaws, 1992, Data Compilation for Soil Sorption Coefficient, Pollution Engineering, pp 54-60.

Karickhoff, S.W., D.S. Brown, and T.A. Scott, 1979, Sorption of Hydrophobic Pollutants on Natural Sediments. Water Research, V. 13, pp. 241-248.

Karickhoff, S.W., 1981, Semi-Empirical Estimation of Sorption of Hydrophobic Pollutants on Natural Sediments and Soils. Chemosphere, V. 13 pp. 241-248.

Lide, D.R., 1994, Handbook of Chemistry and Physics, 75th Edition, The CRC Press, Boca Raton Florida.

Mackay, D., W.Y. Shiu, and K.C. Ma, 1992 Illustrated Handbook of Physical-Chemical Properties and Environmental Fate for Organic Chemicals; Monoaromatic Hydrocarbons, Chlorobenzenes, and PCBs. Lewis Publishers Inc., Chelsea, Michigan.

McKenna, E.A., S.H. Youngren, S.R. Baker, J.R. Schroeder, T.B. Piccin, W.H. Weisman, and C. Long, 1995, Evaluation of the Total Petroleum Hydrocarbon (TPH) Standard for JP-4 Jet Fuel, Journal of Soil Contamination, Volume 4 No. 4, pp. 355-406.

Montgomery, J.H., and L.M. Welkom, 1990, Groundwater Chemicals Desk Reference. Lewis Publishers Inc., Chelsea, Michigan.

Myrand, D., R.W. Gillham, E.A. Sudicky, S.F. Hannesin, and R.L. Johnson, 1992, Diffusion of Volatile Organic Compounds in Natural Clay Deposits: Laboratory Tests. J. of Contaminant Hydrology, V. 10, pp. 159-177.

Nyer, E., and G.J. Skladany, 1989, Relating the physical and Chemical Properties of Petroleum Hydrocarbons to Soil and Aquifer Remediation, Ground Water Monitoring Review, Volume 9 No. 1, pp. 54-60.

Nyer, E., G. Boettcher, and B. Morello, 1991, Using the Properties of Organic Compounds to Help Design a Treatment System, Ground Water Monitoring Review, Volume 2 No. 4, pp. 81-86.

Olsen, R.L. and Davis, A., 1990, Predicting the Fate and Transport of Organic Compounds in Groundwater, Part 1: Hazardous Materials Control, vol. 3, no 3, p. 39-64.

Rogers, R.D., J.C. MacFarlane, and A.J. Cross, 1980, Adsorption and Desorption of Benzene in Two Soils and Montmorillanite Clay, Env. Sci. & Tech., V. 14, No. 4, pp. 457-460.

Sanders, P.F., 1995, Calculation of Soil Cleanup Criteria for Volatile Organic Compounds as Controlled by the Soil-to-Groundwater Pathway: Comparison of Four Unsaturated Soil Zone Leaching Models, Journal of Soil Contamination, Volume 3 No. 1, pp. 1-24.

Schwarzenbach, R.P., R. Stierli, B.R. Folsom, and J. Zeyer, 1988, Compound Properties Relevant for Assessing the Environmental Partitioning on Nitrophenols, Environ. Sci. Technol., vol 22, pp. 83-92.

USEPA, 1981, Treatability Manual, vol. 1, Treatability Data. Office of Research and Development, Washington, D.C., EPA - 600/2-82-001a.

Verschuren, K., Handbook of Environmental Data on Organic Chemicals, Second Edition, Van Nostrand Reinhold Company, New York, New York.

Yaws, C.L., 1992, Thermodynamic and Physical Property Data, Gulf Publishing Company, Houston, Texas.

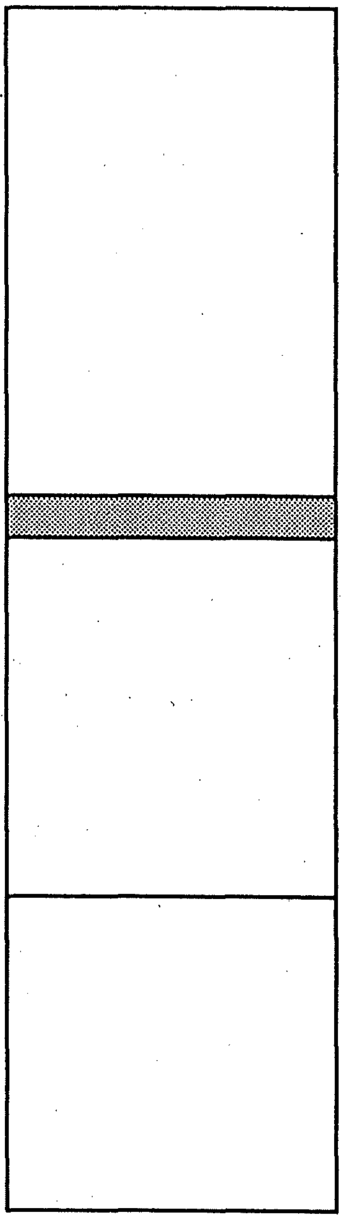
APPENDIX B

SESOIL COMPARTMENT CONFIGURATIONS

Soil Profile
UST Excavation Base
(Ba-1)

GRO, benzene, n-butylbenzene, di-isopropyl ether, ethylbenzene, methylene chloride, naphthalene, n-propylbenzene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and xylene compartment configuration soil impacts at the base of the excavation.

Soil Profile | **Depth** | **Description**



0

12

13

21.5

30

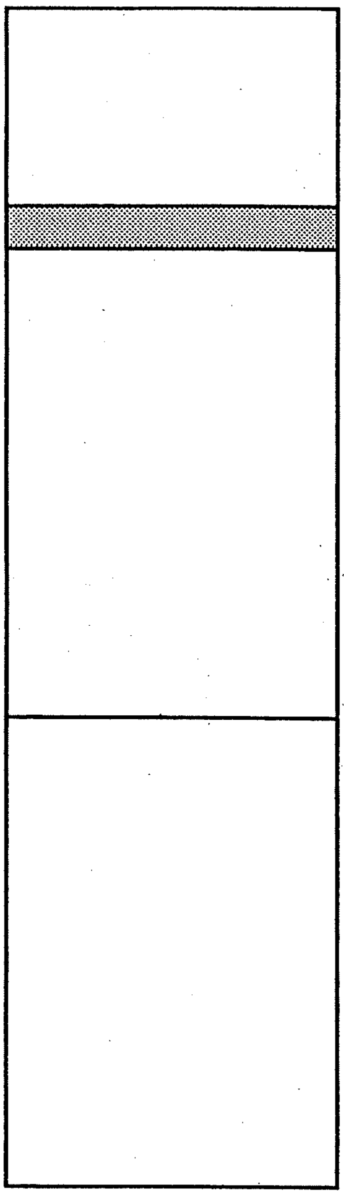
Parameter	Detected Concentration (µg/kg)	Depth (feet)
GRO	172	12 - 13'
Benzene	1210	12 - 13'
n-Butylbenzene	2950	12 - 13'
Di-isopropyl Ether	3320	12 - 13'
Ethylbenzene	9610	12 - 13'
Methylene Chloride	3050	12 - 13'
Naphthalene	4620	12 - 13'
n-Propylbenzene	2400	12 - 13'
Toluene	19300	12 - 13'
1,2,4-Trimethylbenzene	19200	12 - 13'
1,3,5-Trimethylbenzene	6030	12 - 13'
Xylenes (total)	56900	12 - 13'

Estimated water table depth

Soil Profile
UST Excavation Side walls
(N-1, S-1, E-1 and W-1)

Methylene chloride, tetrachloroethene and trichloroethene compartment configuration side wall soil impacts in the UST excavation.

Soil Profile **Depth** **Description**



0

5

6

Parameter	Detected Concentration (µg/kg)	Location	Depth (feet)
Methylene chloride	39	N-1	5 - 6'
Methylene chloride	37	S-1	5 - 6'
Methylene chloride	15	E-1	5 - 6'
Methylene chloride	34	W-1	5 - 6'
Tetrachloroethene	131	N-1	5 - 6'
Tetrachloroethene	110	S-1	5 - 6'
Tetrachloroethene	145	E-1	5 - 6'
Tetrachloroethene	14	W-1	5 - 6'
Trichloroethene	3.4	N-1	5 - 6'
Trichloroethene	7.5	S-1	5 - 6'
Trichloroethene	13	E-1	5 - 6'
Trichloroethene	3.3	W-1	5 - 6'

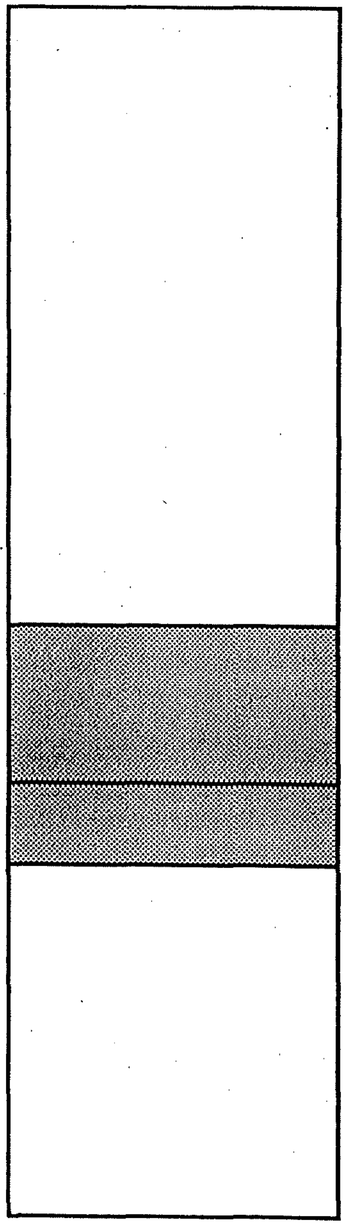
18

30 Estimated water table depth

Soil Profile
Soil Boring B-1

Benzene and methylene chloride compartment configuration soil borings B-1.

Soil Profile | **Depth** | **Description**



0

Parameter	Detected Concentration (µg/kg)	Depth (feet)
Benzene	537	15 - 17'
Methylene Chloride	132	15 - 17'
Benzene	1007	19 - 21'
Methylene Chloride	215	19 - 21'

15

19

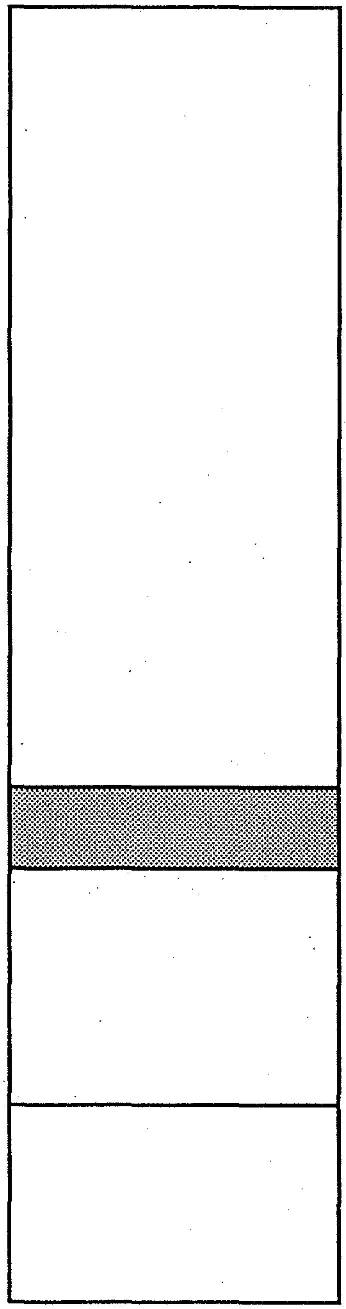
21

30 Estimated water table depth

Soil Profile
Soil Boring B-1

1,2-Dichloroethane compartment configuration soil borings B-1.

Soil Profile | **Depth** | **Description**



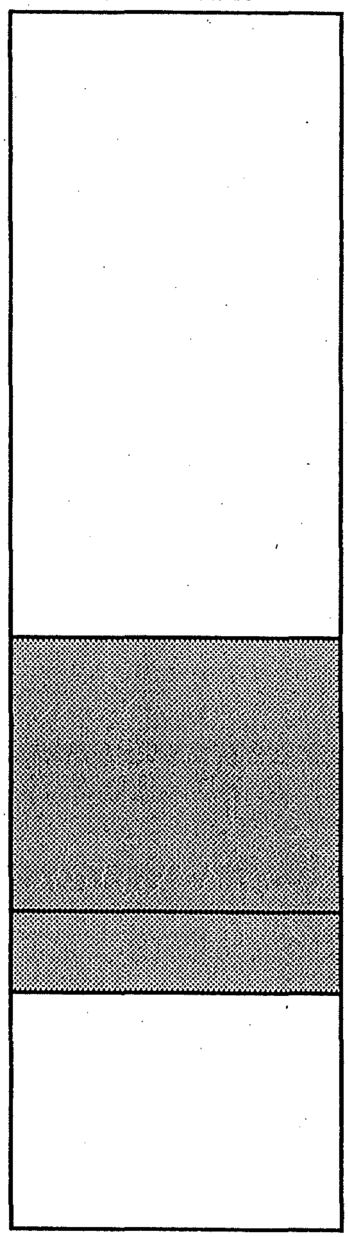
Parameter	**Detected Concentration (µg/kg)**	**Depth (feet)**
1,2-Dichloroethane	75.2	19 - 21’

30 Estimated water table depth

Soil Profile
GP-1

Chloroform compartment configuration soil borings GP-1.

Soil Profile

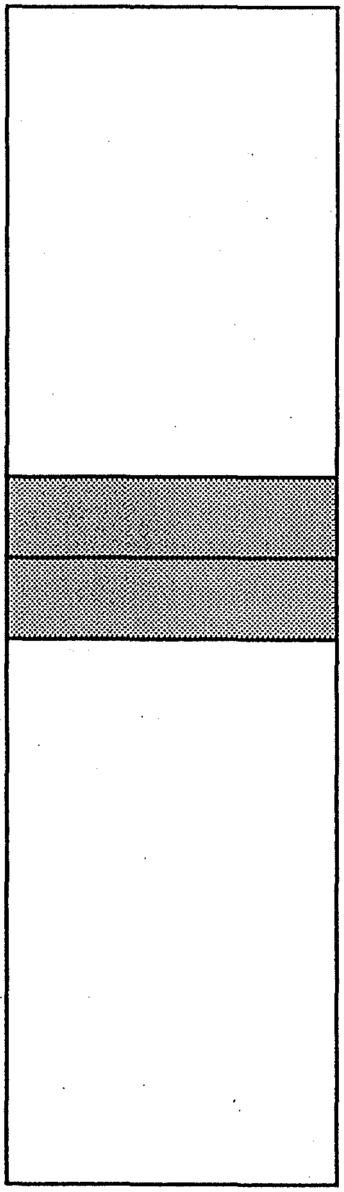


Depth	Description		
	Parameter	**Detected Concentration (µg/kg)**	**Depth (feet)**
0			
16	Chloroform	2.2	16 - 18’
	Chloroform	6.05	18 - 20’
22	Chloroform	2.14	22 - 24’
24			
30	Estimated water table depth		

Soil Profile
GP-1

DRO and benzene compartment configuration soil borings GP-1.

Soil Profile | **Depth** | **Description**



0

Parameter	Detected Concentration (µg/kg)	Depth (feet)
DRO	378	12 - 14'
Benzene	567	12 - 14'
DRO	105	14 - 16'
Benzene	1260	14 - 16'

12

14

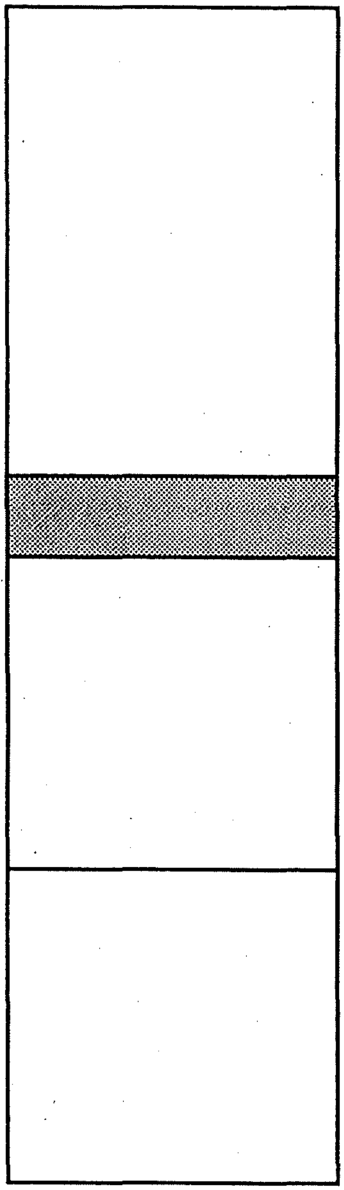
16

30 Estimated water table depth

Soil Profile
GP-1

1,1-Dichloroethane, cis 1,2-dichloroethene, trans 1,2-dichloroethene and trichloroethene compartment configuration soil borings GP-1.

Soil Profile | **Depth** | **Description**



Depth: 0, 12, 14, 22, 30

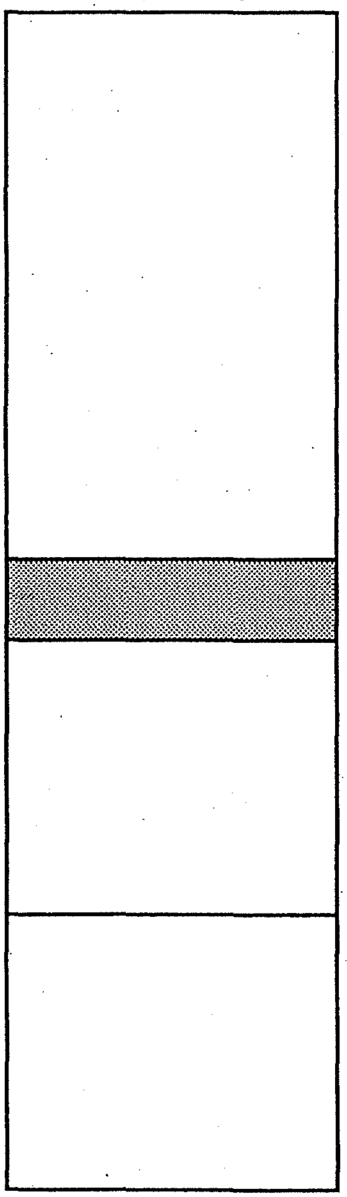
Parameter	Detected Concentration (µg/kg)	Depth (feet)
1,1-Dichloroethane	62.7	12 - 14'
cis 1,2-Dichloroethene	2030	12 - 14'
trans 1,2-Dichloroethene	10.9	12 - 14'
Trichloroethene	18.5	12 - 14'

30 Estimated water table depth

Soil Profile
GP-1

Naphthalene, n-propylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and hexane compartment configuration soil borings GP-1.

Soil Profile | **Depth** | **Description**



0

14

Parameter	Detected Concentration (µg/kg)	Depth (feet)
Naphthalene	2.58	14 - 16'
n-Propylbenzene	7.72	14 - 16'
1,2,4-Trimethylbenzene	62.1	14 - 16'
1,3,5-Trimethylbenzene	46.3	14 - 16'
Hexane	55.4	14 - 16'

16

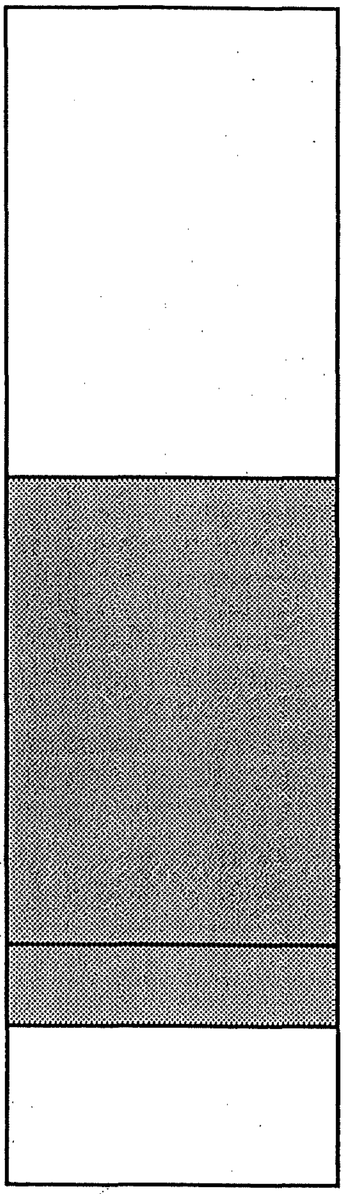
23

30 Estimated water table depth

Soil Profile
GP-1

Methylene chloride compartment configuration soil borings GP-1.

Soil Profile **Depth** **Description**



Depth	Parameter	Detected Concentration (μg/kg)	Depth (feet)
12	Methylene chloride	31.1	12 - 14'
	Methylene chloride	31.4	14 - 16'
	Methylene chloride	26.3	16 - 18'
	Methylene chloride	54.1	18 - 20'
	Methylene chloride	16.9	20 - 22'
	Methylene chloride	28.1	22 - 22'
24	Methylene chloride	16.4	24 - 25.5'
25.5			
30	Estimated water table depth		

APPENDIX C

SESOIL INPUT FILES

SESOIL Climate File Input Parameters

TA	Monthly mean air temperature (degrees Celsius)
NN	Monthly mean cloud cover
S	Monthly mean relative humidity
A	Monthly short wave albedo fraction
REP	Monthly mean evapotranspiration rate (cm/day)
MPM	Monthly precipitation (cm)
MTR	Monthly mean duration of individual storm (days)
MN	Monthly number of storm events
MT	Length of rainy season (days)

SESOIL Soil File Input Parameters

RS	Bulk density (g/cm^3)
K1	Intrinsic permeability (cm^2)
C	Soil disconnecbdness index
N	Effective porosity
OC	Organic carbon content (percent)
CEC	Cation exchange capacity (meg/100g)
FRN	Freundlich exponent

SESOIL Chemical File Input Parameters

SL	Solubility in water (μg/ml)
DA	Air diffusion coefficient (cm^2/sec)
H	Henrys law constant (m^3-atm/mol)
KOC	Organic carbon adsorption coefficient (μg/g)/(μg/ml)
K	Soil partition coefficient (μg/g)/(μg/ml)
MWT	Molecular weight (g/mole)
VAL	Valence of the compound
KNH	Neutral hydrolysis rate constant (1/day)
KBH	Base hydrolysis rate constant (l/mol/day)
KAH	Acid hydrolysis rate constant (l/mol/day)
KDEL	Liquid phase biodegradation rate (1/day)
KDES	Solid phase biodegradation rate (1/day)
SK	Ligand stability (dissociation) constant
B	Moles Ligand per mole compound
MWTLIG	Molecular weight of ligand (g/mol)

SESOIL Application File Input Parameters

ILYS	Number of soil layers
AR	Application area (cm^2)
LAT	Latitude of site (degrees)
ISPILL	Spill index
D1	Upper soil layer thickness (cm)
D2	Second soil layer thickness (cm)
D3	Third soil layer thickness (cm)
D4	Lower soil layer thickness (cm)
NSUB1	Number of sublayers in upper soil layer
NSUB2	Number of sublayers in second soil layer
NSUB3	Number of sublayers in third soil layer
NSUB4	Number of sublayers in lower soil layer
PH1	pH of upper soil layer
PH2	pH of second soil layer
PH3	pH of third soil layer
PH4	pH of lower soil layer
K11	Permeability of the upper soil layer (cm^2)
K12	Permeability of second soil layer (cm^2)
K13	Permeability of third soil layer (cm^2)
K14	Permeability of lower soil layer (cm^2)
KDEL2	Ratio of KDEL (liquid phase biodegradation) layer 2 to 1
KDEL3	Ratio of KDEL (liquid phase biodegradation) layer 3 to 1
KDEL4	Ratio of KDEL (liquid phase biodegradation) layer 4 to 1
KDES2	Ratio of KDES (solid phase biodegradation) layer 2 to 1
KDES3	Ratio of KDES (solid phase biodegradation) layer 3 to 1
KDES4	Ratio of KDES (solid phase biodegradation) layer 4 to 1
OC2	Ratio of OC (organic carbon content) layer 2 to 1
OC3	Ratio of OC (organic carbon content) layer 3 to 1
OC4	Ratio of OC (organic carbon content) layer 4 to 1
CEC2	Ratio of CEC (cation exchange capacity) layer 2 to 1
CEC3	Ratio of CEC (cation exchange capacity) layer 3 to 1
CEC4	Ratio of CEC (cation exchange capacity) layer 4 to 1
FRN2	Ratio of FRN (Freundlich exponent) layer 2 to 1
FRN3	Ratio of FRN (Freundlich exponent) layer 3 to 1
FRN4	Ratio of FRN (Freundlich exponent) layer 4 to 1
ADS2	Ratio of ADS (organic carbon adsorption coefficient) layer 2 to 1
ADS3	Ratio of ADS (organic carbon adsorption coefficient) layer 3 to 1
ADS4	Ratio of ADS (organic carbon adsorption coefficient) layer 4 to 1
POLIN	Monthly pollutant load ($\mu g/cm^2$)
TRANS	Monthly mass transformed by other process ($\mu g/cm^2$)
SINK	Monthly mass removed by other processes ($\mu g/cm^2$)
LIG	Monthly input ligand mass ($\mu g/cm^2$)
VOLF	Index of volatilization
ISMR	Index of pollutant transport in surface runoff
ALS	Ratio of the pollutant concentration in precipitation to the maximum water solubility

Climate Input Files

```
D:\PROJECTS\FINDLEY\MKECLIM.INP
   1 Milwaukee WSO AP                                        1
       ****  YEAR 1  ****
 TA       11.27  3.05 -3.94 -6.50 -4.83  0.38  7.94 13.55 19.16 21.88 21.38 16.88
 NN        0.50  0.75  0.75  0.70  0.70  0.70  0.65  0.60  0.60  0.50  0.50  0.50
 S         0.70  0.75  0.80  0.80  0.80  0.70  0.70  0.70  0.70  0.70  0.70  0.70
 A         0.17  0.21  0.30  0.33  0.30  0.29  0.19  0.17  0.17  0.17  0.17  0.17
 REP       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 MPM       5.52  5.29  5.39  4.19  3.52  6.55  8.71  6.91  8.96  9.08  7.94  7.07
 MTR       0.45  0.51  0.57  0.54  0.53  0.54  0.49  0.39  0.33  0.31  0.27  0.35
 MN        4.02  4.50  4.38  3.48  3.00  5.05  6.31  5.88  6.05  5.40  5.62  4.55
 MT       30.40 30.40 30.40 30.40 30.40 30.40 30.40 30.40 30.40 30.40 30.40 30.40
  999 END OF FILE
```

Chemical Input Files

```
D:\PROJECTS\FINDLEY\11DICH\11DICHET.INP
    1 1,1-Dichloroethane Baseline
          - SL,DA,H,KOC,K                5100.00  0.0960.00545  46.00    0.00
          - MWT,VAL,KNH,KBH,KAH            98.96   0.00   0.00   0.00    0.00
          - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\11DICH\11DICK30.INP
    1 1,1-Dichloroethane Koc = 30.2
          - SL,DA,H,KOC,K                5100.00  0.0960.00545  30.20    0.00
          - MWT,VAL,KNH,KBH,KAH            98.96   0.00   0.00   0.00    0.00
          - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\11DICH\11DIK104.INP
    1 1,1-Dichloroethane Koc = 104
          - SL,DA,H,KOC,K                5100.00  0.0960.00545  104.0    0.00
          - MWT,VAL,KNH,KBH,KAH            98.96   0.00   0.00   0.00    0.00
          - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\124TMB\124K1837.INP
    1 1,2,4-Trimethylbenzene Koc=1837
          - SL,DA,H,KOC,K                  60.00  0.0870.00563 1837.0    0.00
          - MWT,VAL,KNH,KBH,KAH           120.19   0.00   0.00   0.00    0.00
          - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\124TMB\124TK592.INP
    1 1,2,4-Trimethylbenzene Koc=592
          - SL,DA,H,KOC,K                  60.00  0.0870.00563  592.0    0.00
          - MWT,VAL,KNH,KBH,KAH           120.19   0.00   0.00   0.00    0.00
          - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\124TMB\124TMB.INP
    1 1,2,4-Trimethylbenzene Baseline
          - SL,DA,H,KOC,K                  60.00  0.0870.00563 1082.0    0.00
          - MWT,VAL,KNH,KBH,KAH           120.19   0.00   0.00   0.00    0.00
          - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\135TMB\135TK365.INP
    1 1,3,5-Trimethylbenzene Koc=365
          - SL,DA,H,KOC,K                  50.00  0.0870.00793  365.0    0.00
          - MWT,VAL,KNH,KBH,KAH           120.19   0.00   0.00   0.00    0.00
          - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\135TMB\135TK914.INP
    1 1,3,5-Trimethylbenzene Koc=914
          - SL,DA,H,KOC,K                  50.00  0.0870.00793  914.0    0.00
          - MWT,VAL,KNH,KBH,KAH           120.19   0.00   0.00   0.00    0.00
          - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\135TMB\135TMB.INP
    1 1,3,5-Trimethylbenzene Baseline
          - SL,DA,H,KOC,K                  50.00  0.0870.00793  660.0    0.00
          - MWT,VAL,KNH,KBH,KAH           120.19   0.00   0.00   0.00    0.00
          - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

Chemical Input Files
(Continued)

```
D:\PROJECTS\FINDLEY\BENZENE\BENK214.INP
    1 Benzene Koc = 214
        - SL,DA,H,KOC,K                  1780.00  0.0770.00555  214.0    0.00
        - MWT,VAL,KNH,KBH,KAH              78.11   0.00   0.00   0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG             0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\BENZENE\BENK31.INP
    1 Benzene Koc = 31
        - SL,DA,H,KOC,K                  1780.00  0.0770.00555  31.00    0.00
        - MWT,VAL,KNH,KBH,KAH              78.11   0.00   0.00   0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG             0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\BENZENE\BENZENE.INP
    1 Benzene Baseline Values
        - SL,DA,H,KOC,K                  1780.00  0.0770.00555  83.00    0.00
        - MWT,VAL,KNH,KBH,KAH              78.11   0.00   0.00   0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG             0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\C12DICH\C12DICH.INP
    1 cis 1,2-Dichloroethene Baseline
        - SL,DA,H,KOC,K                  3500.00  0.0970.00408  80.20    0.00
        - MWT,VAL,KNH,KBH,KAH              96.94   0.00   0.00   0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG             0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\C12DICH\C12DK141.INP
    1 cis 1,2-Dichloroethene Koc = 141
        - SL,DA,H,KOC,K                  3500.00  0.0970.00408  141.0    0.00
        - MWT,VAL,KNH,KBH,KAH              96.94   0.00   0.00   0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG             0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\C12DICH\C12DK49.INP
    1 cis 1,2-Dichloroethene Koc = 49
        - SL,DA,H,KOC,K                  3500.00  0.0970.00408  49.00    0.00
        - MWT,VAL,KNH,KBH,KAH              96.94   0.00   0.00   0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG             0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\CHLOROFM\CHLOK30.INP
    1 Chloroform Koc = 30
        - SL,DA,H,KOC,K                  8200.00  0.0870.00105  30.00    0.00
        - MWT,VAL,KNH,KBH,KAH             119.38   0.00   0.00   0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG             0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\CHLOROFM\CHLOK76.INP
    1 Chloroform Koc = 76.8
        - SL,DA,H,KOC,K                  8200.00  0.0870.00105  76.80    0.00
        - MWT,VAL,KNH,KBH,KAH             119.38   0.00   0.00   0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG             0.00   0.00   0.00   0.00    0.00
  999 END OF FILE
```

Chemical Input Files
(Continued)

```
D:\PROJECTS\FINDLEY\CHLOROFM\CHLOROFM.INP
    1 Chloroform Baseline
        - SL,DA,H,KOC,K              8200.00   0.0870.00105   35.00    0.00
        - MWT,VAL,KNH,KBH,KAH         119.38    0.00    0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00    0.00    0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\DIISOPR\DIISK31.INP
    1 di-Isopropyl Ether Koc = 31.4
        - SL,DA,H,KOC,K              9000.00   0.0940.00173   31.40    0.00
        - MWT,VAL,KNH,KBH,KAH         102.17    0.00    0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00    0.00    0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\DIISOPR\DIISOPR.INP
    1 di-Isopropyl Ether Baseline
        - SL,DA,H,KOC,K              9000.00   0.0940.00173   27.40    0.00
        - MWT,VAL,KNH,KBH,KAH         102.17    0.00    0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00    0.00    0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\ETHYLENE\ETHYK380.INP
    1 Ethylbenzene Koc=380
        - SL,DA,H,KOC,K               152.00   0.0760.00840   380.0    0.00
        - MWT,VAL,KNH,KBH,KAH         106.17    0.00    0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00    0.00    0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\ETHYLENE\ETHYK95.INP
    1 Ethylbenzene Koc=95
        - SL,DA,H,KOC,K               152.00   0.0760.00840   95.00    0.00
        - MWT,VAL,KNH,KBH,KAH         106.17    0.00    0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00    0.00    0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\ETHYLENE\ETHYLBEN.INP
    1 Ethylbenzene Baseline
        - SL,DA,H,KOC,K               152.00   0.0760.00840   165.0    0.00
        - MWT,VAL,KNH,KBH,KAH         106.17    0.00    0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00    0.00    0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\HEXANE\HEXANE.INP
    1 Hexane Baseline
        - SL,DA,H,KOC,K                13.00   0.0750.00129  1445.0    0.00
        - MWT,VAL,KNH,KBH,KAH          86.17    0.00    0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00    0.00    0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\HEXANE\HEXK4100.INP
    1 Hexane Koc=4100
        - SL,DA,H,KOC,K                13.00   0.0750.00129  4100.0    0.00
        - MWT,VAL,KNH,KBH,KAH          86.17    0.00    0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00    0.00    0.00    0.00    0.00
  999 END OF FILE
```

Chemical Input Files
(Continued)

```
D:\PROJECTS\FINDLEY\HEXANE\HEXK890.INP
    1 Hexane Koc=890
        - SL,DA,H,KOC,K              13.00   0.0750.00129   890.0    0.00
        - MWT,VAL,KNH,KBH,KAH        86.17    0.00   0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG       0.00    0.00   0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\METHCHLO\METHCHLO.INP
    1 Methylene Chloride Baseline
        - SL,DA,H,KOC,K           16700.0   0.1030.00248   25.00    0.00
        - MWT,VAL,KNH,KBH,KAH        84.93    0.00   0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG       0.00    0.00   0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\METHCHLO\METHK19.INP
    1 Methylene Chloride Koc=19.2
        - SL,DA,H,KOC,K           16700.0   0.1030.00248   19.20    0.00
        - MWT,VAL,KNH,KBH,KAH        84.93    0.00   0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG       0.00    0.00   0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\METHCHLO\METHK47.INP
    1 Methylene Chloride Koc=47.9
        - SL,DA,H,KOC,K           16700.0   0.1030.00248   47.90    0.00
        - MWT,VAL,KNH,KBH,KAH        84.93    0.00   0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG       0.00    0.00   0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\NAPH\NAPH.INP
    1 Naphthalene Baseline
        - SL,DA,H,KOC,K              31.70   0.0510.00048 1300.0    0.00
        - MWT,VAL,KNH,KBH,KAH       128.18    0.00   0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG       0.00    0.00   0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\NAPH\NAPHK240.INP
    1 Naphthalene Koc=240
        - SL,DA,H,KOC,K              31.70   0.0510.00048   240.0    0.00
        - MWT,VAL,KNH,KBH,KAH       128.18    0.00   0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG       0.00    0.00   0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\NAPH\NAPK3160.INP
    1 Naphthalene Koc=3160
        - SL,DA,H,KOC,K              31.70   0.0510.00048 3160.0    0.00
        - MWT,VAL,KNH,KBH,KAH       128.18    0.00   0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG       0.00    0.00   0.00    0.00    0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\NPROPBEN\NPRK1837.INP
    1 n-Propylbenzene Koc=1837
        - SL,DA,H,KOC,K              60.00   0.0590.01020 1837.0    0.00
        - MWT,VAL,KNH,KBH,KAH       120.19    0.00   0.00    0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG       0.00    0.00   0.00    0.00    0.00
  999 END OF FILE
```

Chemical Input Files

(Continued)

```
D:\PROJECTS\FINDLEY\NPROPBEN\NPROK704.INP
    1 n-Propylbenzene Koc=704
        - SL,DA,H,KOC,K                60.00  0.0590.01020  704.0   0.00
        - MWT,VAL,KNH,KBH,KAH         120.19   0.00   0.00   0.00   0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\NPROPBEN\NPROPBEN.INP
    1 n-Propylbenzene Baseline
        - SL,DA,H,KOC,K                60.00  0.0590.01020  884.0   0.00
        - MWT,VAL,KNH,KBH,KAH         120.19   0.00   0.00   0.00   0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\PCE\PCE.INP
    1 Tetrachloroethene Baseline
        - SL,DA,H,KOC,K               150.00  0.0740.00269  302.0   0.00
        - MWT,VAL,KNH,KBH,KAH         165.83   0.00   0.00   0.00   0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\PCE\PCEK137.INP
    1 Tetrachloroethene Koc=137.3
        - SL,DA,H,KOC,K               150.00  0.0740.00269  137.3   0.00
        - MWT,VAL,KNH,KBH,KAH         165.83   0.00   0.00   0.00   0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\PCE\PCEK433.INP
    1 Tetrachloroethene Koc=433
        - SL,DA,H,KOC,K               150.00  0.0740.00269  433.0   0.00
        - MWT,VAL,KNH,KBH,KAH         165.83   0.00   0.00   0.00   0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\T12DICH\T12DICH.INP
    1 trans 1,2-Dichloroethene Baseline
        - SL,DA,H,KOC,K              6300.00  0.0970.00532  59.00   0.00
        - MWT,VAL,KNH,KBH,KAH          96.94   0.00   0.00   0.00   0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\T12DICH\T12DK104.INP
    1 trans 1,2-Dichloroethene Koc=104
        - SL,DA,H,KOC,K              6300.00  0.0970.00532  104.0   0.00
        - MWT,VAL,KNH,KBH,KAH          96.94   0.00   0.00   0.00   0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\T12DICH\T12DK39.INP
    1 trans 1,2-Dichloroethene Koc=39
        - SL,DA,H,KOC,K              6300.00  0.0970.00532  39.00   0.00
        - MWT,VAL,KNH,KBH,KAH          96.94   0.00   0.00   0.00   0.00
        - KDEL,KDES,SK,B,MWTLIG         0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

Chemical Input Files
(Continued)

```
D:\PROJECTS\FINDLEY\TCE\TCE.INP
   1 Trichloroethene Baseline
       - SL,DA,H,KOC,K                 1100.0  0.0830.00117  122.8   0.00
       - MWT,VAL,KNH,KBH,KAH           131.39   0.00   0.00   0.00   0.00
       - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\TCE\TCEK100.INP
   1 Trichloroethene Koc=100
       - SL,DA,H,KOC,K                 1100.0  0.0830.00117  100.0   0.00
       - MWT,VAL,KNH,KBH,KAH           131.39   0.00   0.00   0.00   0.00
       - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\TCE\TCEK137.INP
   1 Trichloroethene Koc=137
       - SL,DA,H,KOC,K                 1100.0  0.0830.00117  137.0   0.00
       - MWT,VAL,KNH,KBH,KAH           131.39   0.00   0.00   0.00   0.00
       - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\TOLUENE\TOLUENE.INP
   1 Toluene Baseline
       - SL,DA,H,KOC,K                 535.00  0.0850.00593  250.0   0.00
       - MWT,VAL,KNH,KBH,KAH            92.14   0.00   0.00   0.00   0.00
       - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\TOLUENE\TOLUK380.INP
   1 Toluene Koc=380
       - SL,DA,H,KOC,K                 535.00  0.0850.00593  380.0   0.00
       - MWT,VAL,KNH,KBH,KAH            92.14   0.00   0.00   0.00   0.00
       - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\TOLUENE\TOLUK85.INP
   1 Toluene Koc=85
       - SL,DA,H,KOC,K                 535.00  0.0850.00593  85.00   0.00
       - MWT,VAL,KNH,KBH,KAH            92.14   0.00   0.00   0.00   0.00
       - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\XYLENE\XYLEK25.INP
   1 Xylene Koc=25.4
       - SL,DA,H,KOC,K                 175.00  0.0730.00520  25.40   0.00
       - MWT,VAL,KNH,KBH,KAH           106.17   0.00   0.00   0.00   0.00
       - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\XYLENE\XYLENE.INP
   1 Xylene Baseline
       - SL,DA,H,KOC,K                 175.00  0.0730.00520  295.0   0.00
       - MWT,VAL,KNH,KBH,KAH           106.17   0.00   0.00   0.00   0.00
       - KDEL,KDES,SK,B,MWTLIG           0.00   0.00   0.00   0.00   0.00
  999 END OF FILE
```

Chemical Input Files

(Continued)

```
D:\PROJECTS\FINDLEY\XYLENE\XYLK1585.INP
    1 Xylene Koc=1585
        - SL,DA,H,KOC,K                 175.00  0.0730.00520 1585.0    0.00
        - MWT,VAL,KNH,KBH,KAH           106.17    0.00   0.00   0.00    0.00
        - KDEL,KDES,SK,B,MWTLIG           0.00    0.00   0.00   0.00    0.00
  999 END OF FILE
```

Soil Input Files

```
D:\PROJECTS\FINDLEY\CLAYSILT.INP
    1 Clayey Silt
        -  RS,K1,C,N,OC                  1.70.12E-10  12.00   0.15  0.34
        -  CEC,FRN                       0.00    1.00
  999 END OF FILE
```

```
D:\PROJECTS\FINDLEY\CLYSLT1.INP
    1 Clayey Silt OC = 1.0 %
        -  RS,K1,C,N,OC                  1.70.12E-10  12.00   0.15  1.00
        -  CEC,FRN                       0.00    1.00
  999 END OF FILE
```

Application Input Files

```
D:\PROJECTS\FINDLEY\B-112DAP.INP
   1 B-1 1,2-Dichloroethane
  -ILYS,IYRS,AR,L,ISPILL                  4.00    2.00100000.   42.95   1
  -D1,D2,D3,D4,NSUBL1 to NSUBL4          580.0   60.00   140.0   140.0   1   1   1   1
  -PH1,PH2,PH3,PH4                        6.50    6.50    6.50    6.50
  -K11,K12,K13,K14                        0.00    0.00    0.00    0.00
  -KDEL MULTIPLIERS                       1.00    1.00    1.00
  -KDES MULTIPLIERS                       1.00    1.00    1.00
  -OC MULTIPLIERS                         1.00    1.00    1.00
  -CEC MULTIPLIERS                        1.00    1.00    1.00
  -FRN MULTIPLIERS                        1.00    1.00    1.00
  -ADS MULTIPLIERS                        1.00    1.00    1.00
              **** LAYER 1 **  YEAR 1 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
              **** LAYER 2 **  YEAR 1 ****
 POLIN2   1.02  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 3 **  YEAR 1 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 4 **  YEAR 1 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 1 **  YEAR 2 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
              **** LAYER 2 **  YEAR 2 ****
 POLIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 3 **  YEAR 2 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 4 **  YEAR 2 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
  999 END OF FILE
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Application Input Files
(Continued)

```
D:\PROJECTS\FINDLEY\B-1BMAP.INP
   1 B-1 Benzene & Methylene Chloride
  -ILYS,IYRS,AR,L,ISPILL                 4.00    2.00100000.   42.95   1
  -D1,D2,D3,D4,NSUBL1 to NSUBL4        460.0    120.0    60.00  280.0   1   1   1   1
  -PH1,PH2,PH3,PH4                       6.50    6.50     6.50    6.50
  -K11,K12,K13,K14                       0.00    0.00     0.00    0.00
  -KDEL MULTIPLIERS                      1.00    1.00     1.00
  -KDES MULTIPLIERS                      1.00    1.00     1.00
  -OC MULTIPLIERS                        1.00    1.00     1.00
  -CEC MULTIPLIERS                       1.00    1.00     1.00
  -FRN MULTIPLIERS                       1.00    1.00     1.00
  -ADS MULTIPLIERS                       1.00    1.00     1.00
              **** LAYER 1 **  YEAR 1 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
              **** LAYER 2 **  YEAR 1 ****
 POLIN2   2.04  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 3 **  YEAR 1 ****
 POLIN3   1.02  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 4 **  YEAR 1 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 1 **  YEAR 2 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
              **** LAYER 2 **  YEAR 2 ****
 POLIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 3 **  YEAR 2 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 4 **  YEAR 2 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
  999 END OF FILE
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```
D:\PROJECTS\FINDLEY\BA1AP.INP
   1 Ba-1 Base of UST Excavation
  -ILYS,IYRS,AR,L,ISPILL               4.00    2.00100000.  42.95  1
  -D1,D2,D3,D4,NSUBL1 to NSUBL4       370.0   30.00  260.0  260.0  1  1  1  1
  -PH1,PH2,PH3,PH4                     6.50    6.50   6.50   6.50
  -K11,K12,K13,K14                     0.00    0.00   0.00   0.00
  -KDEL MULTIPLIERS                    1.00    1.00   1.00
  -KDES MULTIPLIERS                    1.00    1.00   1.00
  -OC MULTIPLIERS                      1.00    1.00   1.00
  -CEC MULTIPLIERS                     1.00    1.00   1.00
  -FRN MULTIPLIERS                     1.00    1.00   1.00
  -ADS MULTIPLIERS                     1.00    1.00   1.00
                **** LAYER 1 **  YEAR 1 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
                **** LAYER 2 **  YEAR 1 ****
 POLIN2   0.51  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 3 **  YEAR 1 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 4 **  YEAR 1 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 1 **  YEAR 2 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
                **** LAYER 2 **  YEAR 2 ****
 POLIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 3 **  YEAR 2 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 4 **  YEAR 2 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
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Application Input Files
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D:\PROJECTS\FINDLEY\GP-112AP.INP
   1 GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE
  -ILYS,IYRS,AR,L,ISPILL                   4.00    2.00100000.  42.95  1
  -D1,D2,D3,D4,NSUBL1 to NSUBL4          300.0   60.00   280.0   280.0  1  1  1  1
  -PH1,PH2,PH3,PH4                         6.50    6.50    6.50    6.50
  -K11,K12,K13,K14                         0.00    0.00    0.00    0.00
  -KDEL MULTIPLIERS                        1.00    1.00    1.00
  -KDES MULTIPLIERS                        1.00    1.00    1.00
  -OC MULTIPLIERS                          1.00    1.00    1.00
  -CEC MULTIPLIERS                         1.00    1.00    1.00
  -FRN MULTIPLIERS                         1.00    1.00    1.00
  -ADS MULTIPLIERS                         1.00    1.00    1.00
              **** LAYER 1 **  YEAR 1 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
              **** LAYER 2 **  YEAR 1 ****
 POLIN2   1.02  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 3 **  YEAR 1 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 4 **  YEAR 1 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 1 **  YEAR 2 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
              **** LAYER 2 **  YEAR 2 ****
 POLIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 3 **  YEAR 2 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 4 **  YEAR 2 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
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Application Input Files

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D:\PROJECTS\FINDLEY\GP-1CFAP.INP
    1 GP-1 Chloroform
  -ILYS,IYRS,AR,L,ISPILL                4.00    2.00100000.   42.95   1
  -D1,D2,D3,D4,NSUBL1 to NSUBL4       430.0   180.0   60.00   250.0   1   1   1   1
  -PH1,PH2,PH3,PH4                      6.50    6.50   6.50    6.50
  -K11,K12,K13,K14                      0.00    0.00   0.00    0.00
  -KDEL MULTIPLIERS                     1.00    1.00   1.00
  -KDES MULTIPLIERS                     1.00    1.00   1.00
  -OC MULTIPLIERS                       1.00    1.00   1.00
  -CEC MULTIPLIERS                      1.00    1.00   1.00
  -FRN MULTIPLIERS                      1.00    1.00   1.00
  -ADS MULTIPLIERS                      1.00    1.00   1.00
              **** LAYER 1 **  YEAR 1 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
              **** LAYER 2 **  YEAR 1 ****
 POLIN2   3.06  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 3 **  YEAR 1 ****
 POLIN3   1.02  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 4 **  YEAR 1 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 1 **  YEAR 2 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
              **** LAYER 2 **  YEAR 2 ****
 POLIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 3 **  YEAR 2 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 4 **  YEAR 2 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
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Application Input Files
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D:\PROJECTS\FINDLEY\GP-1DBAP.INP
   1 GP-1 DRO & Benzene
  -ILYS,IYRS,AR,L,ISPILL                 4.00    2.00100000.  42.95  1
  -D1,D2,D3,D4,NSUBL1 to NSUBL4        300.0   60.00   60.00  500.0  1  1  1  1
  -PH1,PH2,PH3,PH4                       6.50    6.50    6.50   6.50
  -K11,K12,K13,K14                       0.00    0.00    0.00   0.00
  -KDEL MULTIPLIERS                      1.00    1.00    1.00
  -KDES MULTIPLIERS                      1.00    1.00    1.00
  -OC MULTIPLIERS                        1.00    1.00    1.00
  -CEC MULTIPLIERS                       1.00    1.00    1.00
  -FRN MULTIPLIERS                       1.00    1.00    1.00
  -ADS MULTIPLIERS                       1.00    1.00    1.00
                **** LAYER 1 **  YEAR 1 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
                **** LAYER 2 **  YEAR 1 ****
 POLIN2   1.02  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 3 **  YEAR 1 ****
 POLIN3   1.02  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 4 **  YEAR 1 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 1 **  YEAR 2 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
                **** LAYER 2 **  YEAR 2 ****
 POLIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 3 **  YEAR 2 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 4 **  YEAR 2 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
  999 END OF FILE
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D:\PROJECTS\FINDLEY\GP-1MCAP.INP
   1 GP-1 Methylene Chloride
  -ILYS,IYRS,AR,L,ISPILL                 4.00    2.00100000.   42.95  1
  -D1,D2,D3,D4,NSUBL1 to NSUBL4        300.0   370.0    50.0   200.0  1  1  1  1
  -PH1,PH2,PH3,PH4                       6.50    6.50    6.50    6.50
  -K11,K12,K13,K14                       0.00    0.00    0.00    0.00
  -KDEL MULTIPLIERS                      1.00    1.00    1.00
  -KDES MULTIPLIERS                      1.00    1.00    1.00
  -OC MULTIPLIERS                        1.00    1.00    1.00
  -CEC MULTIPLIERS                       1.00    1.00    1.00
  -FRN MULTIPLIERS                       1.00    1.00    1.00
  -ADS MULTIPLIERS                       1.00    1.00    1.00
                **** LAYER 1 **  YEAR 1 ****
 POLIN1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1     1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
                **** LAYER 2 **  YEAR 1 ****
 POLIN2    6.29  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 3 **  YEAR 1 ****
 POLIN3    0.85  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 4 **  YEAR 1 ****
 POLIN4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 1 **  YEAR 2 ****
 POLIN1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1     1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
                **** LAYER 2 **  YEAR 2 ****
 POLIN2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 3 **  YEAR 2 ****
 POLIN3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 4 **  YEAR 2 ****
 POLIN4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
  999 END OF FILE
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Application Input Files

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D:\PROJECTS\FINDLEY\GP-1NPAP.INP
   1 GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane
  -ILYS,IYRS,AR,L,ISPILL                  4.00    2.00100000.   42.95  1
  -D1,D2,D3,D4,NSUBL1 to NSUBL4          360.0   60.00   250.0   250.0  1  1  1  1
  -PH1,PH2,PH3,PH4                        6.50    6.50    6.50    6.50
  -K11,K12,K13,K14                        0.00    0.00    0.00    0.00
  -KDEL MULTIPLIERS                       1.00    1.00    1.00
  -KDES MULTIPLIERS                       1.00    1.00    1.00
  -OC MULTIPLIERS                         1.00    1.00    1.00
  -CEC MULTIPLIERS                        1.00    1.00    1.00
  -FRN MULTIPLIERS                        1.00    1.00    1.00
  -ADS MULTIPLIERS                        1.00    1.00    1.00
              **** LAYER 1 **  YEAR 1 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
              **** LAYER 2 **  YEAR 1 ****
 POLIN2   1.02  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 3 **  YEAR 1 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 4 **  YEAR 1 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 1 **  YEAR 2 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
              **** LAYER 2 **  YEAR 2 ****
 POLIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 3 **  YEAR 2 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
              **** LAYER 4 **  YEAR 2 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
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Application Input Files
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D:\PROJECTS\FINDLEY\SIDEWAP.INP
    1 Side walls of UST Excavation
  -ILYS,IYRS,AR,L,ISPILL                      4.00    2.00100000.   42.95  1
  -D1,D2,D3,D4,NSUBL1 to NSUBL4              150.0   30.00   370.0   370.0  1  1  1  1
  -PH1,PH2,PH3,PH4                            6.50    6.50    6.50    6.50
  -K11,K12,K13,K14                            0.00    0.00    0.00    0.00
  -KDEL MULTIPLIERS                           1.00    1.00    1.00
  -KDES MULTIPLIERS                           1.00    1.00    1.00
  -OC MULTIPLIERS                             1.00    1.00    1.00
  -CEC MULTIPLIERS                            1.00    1.00    1.00
  -FRN MULTIPLIERS                            1.00    1.00    1.00
  -ADS MULTIPLIERS                            1.00    1.00    1.00
                **** LAYER 1 **  YEAR 1 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
                **** LAYER 2 **  YEAR 1 ****
 POLIN2   0.51  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 3 **  YEAR 1 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 4 **  YEAR 1 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 1 **  YEAR 2 ****
 POLIN1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS1   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF1    1.00  1.00  0.00  0.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
 ISRM     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 ASL      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
                **** LAYER 2 **  YEAR 2 ****
 POLIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG2     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF2    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 3 **  YEAR 2 ****
 POLIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG3     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF3    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
                **** LAYER 4 **  YEAR 2 ****
 POLIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 TRANS4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 SINK4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 LIG4     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 VOLF4    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
  999 END OF FILE
```

Executive Input Files

```
D:\PROJECTS\FINDLEY\EXEC02.INP
  RUN OPTN CLIM SOIL CHEM WASH APPL  YRS
    1    M    1    1    1    0    1    2
  999
```

```
D:\PROJECTS\FINDLEY\EXEC99.INP
  RUN OPTN CLIM SOIL CHEM WASH APPL  YRS
    1    M    1    1    1    0    1   99
  999
```

APPENDIX D

SESOIL MASS BALANCE REPORTS

AND

GRAPHICAL ANALYSIS

SESOIL Modeling Journal

CLIMATE INPUT FILES	CHEMICAL INPUT FILES	SOIL INPUT FILES	APPLICATION INPUT FILES	EXECUTIVE INPUT FILES	SESOIL OUTPUT FILES	SIMULATED CONDITION AND MODIFICATION OF THE MODEL INPUT
d:\projects\findley\mkeclim.inp	d:\projects\findley\11dich\11dichet.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\11dich\11di01.out	1,1-Dichloroethane baseline, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\11dich\11dick30.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\11dich\11di02.out	1,1-Dichloroethane Koc = 30, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\11dich\11dik104.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\11dich\11di03.out	1,1-Dichloroethane Koc = 104, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\11dich\11dichet.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\11dich\test7.out	Test of 1,1-Dichloroethane & GP-1 application files.
d:\projects\findley\mkeclim.inp	d:\projects\findley\11dich\11dick30.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\11dich\test8.out	Test of 1,1-Dichloroethane Koc = 30 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\11dich\11dik104.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\11dich\test9.out	Test of 1,1-Dichloroethane Koc = 104 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\124tmb\124tmb.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\124tmb\124tmb01.out	1,2,4-Trimethylbenzene baseline, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\124tmb\124tk592.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\124tmb\124tmb02.out	1,2,4-Trimethylbenzene Koc = 592, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\124tmb\124k1837.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\124tmb\124tmb03.out	1,2,4-Trimethylbenzene Koc = 1837, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\124tmb\124tmb.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\124tmb\124tmb04.out	1,2,4-Trimethylbenzene baseline, GP–1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\124tmb\124tk592.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\124tmb\124tmb05.out	1,2,4-Trimethylbenzene Koc = 592, GP–1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\124tmb\124k1837.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\124tmb\124tmb06.out	1,2,4-Trimethylbenzene Koc = 1837, GP–1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\124tmb\124tmb.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\124tmb\test41.out	Test of 124-TMB file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\124tmb\124tk592.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\124tmb\test42.out	Test of 124-TMB Koc = 592 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\124tmb\124k1837.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\124tmb\test43.out	Test of 124-TMB Koc = 1837 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\12dich\12dich.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-112dap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\12dich\12dich01.out	1,2-Dichloroethane baseline, B-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\12dich\12dick14.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-112dap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\12dich\12dich02.out	1,2-Dichloroethane, B-1 99 year run, Koc = 14.
d:\projects\findley\mkeclim.inp	d:\projects\findley\12dich\12dik152.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-112dap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\12dich\12dich03.out	1,2-Dichloroethane, B-1 99 year run, Koc = 152.
d:\projects\findley\mkeclim.inp	d:\projects\findley\135tmb\135tmb.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\135tmb\135tmb01.out	1,3,5-Trimethylbenzene baseline, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\135tmb\135tk365.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\135tmb\135tmb02.out	1,3,5-Trimethylbenzene Koc = 365, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\135tmb\135tk914.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\135tmb\135tmb03.out	1,3,5-Trimethylbenzene Koc = 914, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\135tmb\135tmb.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\135tmb\135tmb04.out	1,3,5-Trimethylbenzene baseline, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\135tmb\135tk365.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\135tmb\135tmb05.out	1,3,5-Trimethylbenzene Koc = 365, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\135tmb\135tk914.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\135tmb\135tmb06.out	1,3,5-Trimethylbenzene Koc = 914, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\135tmb\135tmb.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\135tmb\test44.out	Test of 135-TMB file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\135tmb\135tk365.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\135tmb\test45.out	Test of 135-TMB Koc = 365 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\135tmb\135tk914.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\135tmb\test46.out	Test of 135-TMB Koc = 914 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benzene.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1dbap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\benzene\benz01.out	Benzene baseline, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benk31.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1dbap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\benzene\benz02.out	Benzene Koc = 31, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benk214.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1dbap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\benzene\benz03.out	Benzene Koc = 214, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benzene.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-1bmap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\benzene\benz04.out	Benzene baseline, B-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benk31.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-1bmap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\benzene\benz05.out	Benzene Koc = 31, B-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benk214.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-1bmap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\benzene\benz06.out	Benzene Koc = 214, B-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benzene.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\benzene\benz07.out	Benzene baseline, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benk31.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\benzene\benz08.out	Benzene Koc = 31, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benk214.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\benzene\benz09.out	Benzene Koc = 214, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benzene.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\benzene\test1.out	Test run Benzene, application, climate, soil & climate files.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benk31.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\benzene\test2.out	Test of Benzene Koc = 31 input file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\benzene\benk214.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\benzene\test3.out	Test of Benzene Koc = 214 input file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\c12dich\c12dich.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\c12dich\c12di01.out	cis 1,2-Dichloroethene baseline, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\c12dich\c12dk49.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\c12dich\c12di02.out	cis 1,2-Dichloroethene Koc = 49, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\c12dich\c12dk141.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\c12dich\c12di03.out	cis 1,2-Dichloroethene Koc = 141, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\c12dich\c12dich.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\c12dich\test10.out	Test of cis 1,2-Dichloroethene file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\c12dich\c12dk49.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\c12dich\test11.out	Test of cis 1,2-Dichloroethene Koc = 49.
d:\projects\findley\mkeclim.inp	d:\projects\findley\c12dich\c12dk141.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\c12dich\test12.out	Test of cis 1,2-Dichloroethene Koc = 141.
d:\projects\findley\mkeclim.inp	d:\projects\findley\c12dich\c12dich.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-112dap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\ c12dich \test53.out	Test of B-1 Application file.

SESOIL Modeling Journal
(Continued)

CLIMATE INPUT FILES	CHEMICAL INPUT FILES	SOIL INPUT FILES	APPLICATION INPUT FILES	EXECUTIVE INPUT FILES	SESOIL OUTPUT FILES	SIMULATED CONDITION AND MODIFICATION OF THE MODEL INPUT
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\naph.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1dbap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\naph\dro01.out	Naphthalene baseline, GP-1 DRO 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\naphk240.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1dbap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\naph\dro02.out	Naphthalene Koc = 240, GP-1 DRO 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\napk3160.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1dbap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\naph\dro03.out	Naphthalene Koc = 3160, GP-1 DRO 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\naph.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\naph\naph01.out	Naphthalene Baseline, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\naphk240.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\naph\naph02.out	Naphthalene Koc = 240, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\napk3160.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\naph\naph03.out	Naphthalene Koc = 3160, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\naph.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\naph\naph04.out	Naphthalene Baseline, GP–1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\naphk240.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\naph\naph05.out	Naphthalene Koc = 240, GP–1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\napk3160.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\naph\naph06.out	Naphthalene Koc = 3160, GP–1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\naph.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\naph\test29.out	Test of Naphthalene file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\naphk240.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\naph\test30.out	Test of Naphthalene Koc =240 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\napk3160.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\naph\test31.out	Test of Naphthalene Koc = 3160 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\naph\naph.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1dbap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\naph\test54.out	Test of GP-1 DRO and Benzene application file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\npropben\npropben.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\npropben\nprop01.out	n-Propylbenzene baseline, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\npropben\nprok704.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\npropben\nprop02.out	n-Propylbenzene Koc = 704, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\npropben\nprk1837.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\npropben\nprop03.out	n-Propylbenzene Koc = 1837, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\npropben\npropben.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\npropben\nprop04.out	n-Propylbenzene baseline, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\npropben\nprok704.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\npropben\nprop05.out	n-Propylbenzene Koc = 704, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\npropben\nprk1837.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\npropben\nprop06.out	n-Propylbenzene Koc = 1837, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\npropben\npropben.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\npropben\test32.out	Test of n-Propylbenzene file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\npropben\nprok704.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\npropben\test33.out	Test of n-Propylbenzene Koc = 704 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\npropben\nprk1837.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\npropben\test34.out	Test of n-Propylbenzene Koc = 1837 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\pce\pce.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\pce\pce01.out	Tetrachloroethene baseline, Side wall 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\pce\pcek137.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\pce\pce02.out	Tetrachloroethene Koc = 137, Side wall 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\pce\pcek433.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\pce\pce03.out	Tetrachloroethene Koc = 433, Side wall 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\pce\pce.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\pce\test35.out	Test of Tetrachloroethene file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\pce\pcek137.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\pce\test36.out	Test of Tetrachloroethene Koc = 137 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\pce\pcek433.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\pce\test37.out	Test of Tetrachloroethene Koc = 433 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\t12dich\t12dich.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\t12dich\t12di01.out	trans 1,2-Dichloroethene baseline, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\t12dich\t12dk39.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\t12dich\t12di02.out	trans 1,2-Dichloroethene Koc = 39, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\t12dich\t12dk104.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\t12dich\t12di03.out	trans 1,2-Dichloroethene Koc = 104.1, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\t12dich\t12dich.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\t12dich\test13.out	Test of trans 1,2-Dichloroethene file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\t12dich\t12dk39.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\t12dich\test14.out	Test of trans 1,2-Dichloroethene Koc = 39.
d:\projects\findley\mkeclim.inp	d:\projects\findley\t12dich\t12dk104.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\t12dich\test15.out	Test of trans 1,2-Dichloroethene Koc = 104.
d:\projects\findley\mkeclim.inp	d:\projects\findley\tce\tce.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\tce\tce01.out	Trichloroethene baseline, Side wall 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\tce\tcek100.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\tce\tce02.out	Trichloroethene Koc=100, Side wall 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\tce\tcek137.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\tce\tce03.out	Trichloroethene Koc=137, Side wall 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\tce\tce.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\tce\test38.out	Test of Trichloroethene file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\tce\tcek100.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\tce\test39.out	Test of Trichloroethene Koc = 100 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\tce\tcek137.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\tce\test40.out	Test of Trichloroethene Koc = 137 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\tce\tce.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\tce\tri01.out	Trichloroethene baseline, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\tce\tcek100.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\tce\tri02.out	Trichloroethene Koc = 100, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\tce\tcek137.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-112ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\tce\tri03.out	Trichloroethene Koc = 137, GP-1 99 year run.

SESOIL Modeling Journal
(Continued)

CLIMATE INPUT FILES	CHEMICAL INPUT FILES	SOIL INPUT FILES	APPLICATION INPUT FILES	EXECUTIVE INPUT FILES	SESOIL OUTPUT FILES	SIMULATED CONDITION AND MODIFICATION OF THE MODEL INPUT
d:\projects\findley\mkeclim.inp	d:\projects\findley\chlorofm\chlorofm.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1cfap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\chlorofm\test4.out	Test of Chloroform & GP-1 Application file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\chlorofm\chlok30.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1cfap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\chlorofm\test5.out	Test of Chloroform Koc = 30
d:\projects\findley\mkeclim.inp	d:\projects\findley\chlorofm\chlok76.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1cfap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\chlorofm\test6.out	Test of Chloroform Koc = 76
d:\projects\findley\mkeclim.inp	d:\projects\findley\diisopr\diisk31.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\diisopr\diiso02.out	di-Isopropyl Ether Koc = 31.4, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\diisopr\diisopr.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\diisopr\dioso01.out	di-Isopropyl Ether baseline, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\diisopr\diisopr.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\diisopr\test16.out	Test of di-Isopropyl Ether.
d:\projects\findley\mkeclim.inp	d:\projects\findley\diisopr\diisk31.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\diisopr\test17.out	Test of di-Isopropyl Ether Koc = 31
d:\projects\findley\mkeclim.inp	d:\projects\findley\ethylene\ethylben.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\ethylene\ethyl01.out	Ethylbenzene baseline, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\ethylene\ethyk95.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\ethylene\ethyl02.out	Ethylbenzene Koc = 95, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\ethylene\ethyk380.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\ethylene\ethyl03.out	Ethylbenzene Koc = 380, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\ethylene\ethylben.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\ethylene\test18.out	Test of Ethylbenzene.
d:\projects\findley\mkeclim.inp	d:\projects\findley\ethylene\ethyk95.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\ethylene\test19.out	Test of Ethylbenzene Koc = 95.
d:\projects\findley\mkeclim.inp	d:\projects\findley\ethylene\ethyk380.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\ethylene\test20.out	Test of Ethylbenzene Koc = 380.
d:\projects\findley\mkeclim.inp	d:\projects\findley\hexane\hexane.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\hexane\gro01.out	Hexane baseline, Ba-1 GRO 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\hexane\hexk890.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\hexane\gro02.out	Hexane Koc = 890, Ba-1 GRO 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\hexane\hexk4100.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\hexane\gro03.out	Hexane Koc = 4100, Ba-1 GRO 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\hexane\hexane.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\hexane\hexane01.out	Hexane baseline, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\hexane\hexk890.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\hexane\hexane02.out	Hexane Koc = 890, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\hexane\hexk4100.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\hexane\hexane03.out	Hexane Koc = 4100, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\hexane\hexane.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\hexane\test21.out	Test of Hexane & GP-1 Input files.
d:\projects\findley\mkeclim.inp	d:\projects\findley\hexane\hexk890.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\hexane\test22.out	Test of Hexane Koc = 890.
d:\projects\findley\mkeclim.inp	d:\projects\findley\hexane\hexk4100.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1npap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\hexane\test23.out	Test of Hexane Koc = 4100.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methchlo.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth01.out	Methylene Chloride baseline, Side walls 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk19.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth02.out	Methylene Chloride Koc = 19.2, Side walls 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk47.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth03.out	Methylene Chloride Koc = 47.9, Side walls 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methchlo.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1mcap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth04.out	Methylene Chloride baseline, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk19.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1mcap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth05.out	Methylene Chloride Koc = 19.2, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk47.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1mcap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth06.out	Methylene Chloride Koc = 47.9, GP-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methchlo.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-1bmap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth07.out	Methylene Chloride baseline, B-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk19.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-1bmap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth08.out	Methylene Chloride Koc = 19.2, B-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk47.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-1bmap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth09.out	Methylene Chloride Koc = 47.9, B-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methchlo.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth10.out	Methylene Chloride baseline, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk19.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth11.out	Methylene Chloride Koc = 19.2, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk47.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth12.out	Methylene Chloride Koc = 47.9, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methchlo.inp	d:\projects\findley\clyslt1.inp	d:\projects\findley\gp-1mcap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth13.out	Methylene Chloride baseline, GP-1 99 year run, OC = 1.0 %.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk19.inp	d:\projects\findley\clyslt1.inp	d:\projects\findley\gp-1mcap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth14.out	Methylene Chloride Koc = 19.2, GP-1 99 year run, OC = 1.0 %.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk47.inp	d:\projects\findley\clyslt1.inp	d:\projects\findley\gp-1mcap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\methchlo\meth15.out	Methylene Chloride Koc = 47.9, GP-1 99 year run, OC = 1.0 %.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methchlo.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1mcap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\methchlo\test24.out	Test of Methylene Chloride & GP-1 files.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk19.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1mcap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\methchlo\test25.out	Test of Methylene Chloride Koc = 19.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methk47.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\gp-1mcap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\methchlo\test26.out	Test of Methylene Chloride Koc = 47.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methchlo.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\sidewap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\methchlo\test27.out	Test of Side wall application file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\methchlo\methchlo.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\b-1bmap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\methchlo\test28.out	Test of SB-1 application file.

SESOIL Modeling Journal

(Continued)

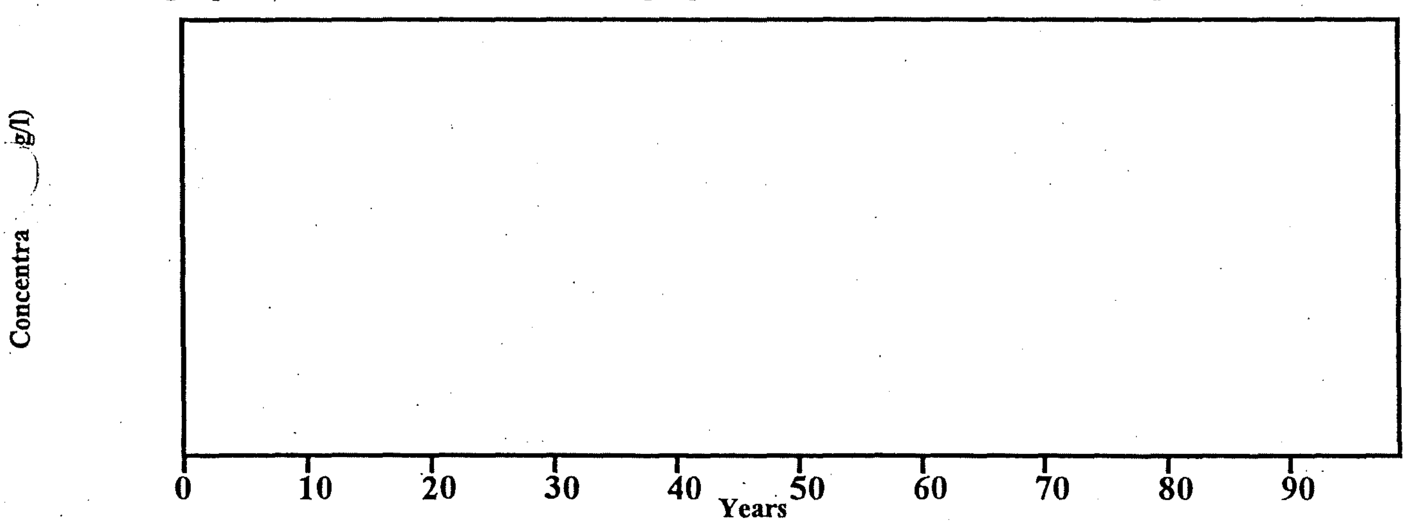
CLIMATE INPUT FILES	CHEMICAL INPUT FILES	SOIL INPUT FILES	APPLICATION INPUT FILES	EXECUTIVE INPUT FILES	SESOIL OUTPUT FILES	SIMULATED CONDITION AND MODIFICATION OF THE MODEL INPUT
d:\projects\findley\mkeclim.inp	d:\projects\findley\toluene\toluene.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\toluene\test50.out	Test of Toluene file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\toluene\toluk92.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\toluene\test51.out	Test of Toluene Koc = 92 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\toluene\toluk380.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\toluene\test52.out	Test of Toluene Koc = 380 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\toluene\toluene.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\toluene\toluen01.out	Toluene Baseline, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\toluene\toluk85.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\toluene\toluen02.out	Toluene Koc = 85, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\toluene\toluk380.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\toluene\toluen03.out	Toluene Koc = 380, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\xylene\xylene.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\xylene\test47.out	Test of Xylene file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\xylene\xylek25.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\xylene\test48.out	Test of Xylene Koc = 25 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\xylene\xylk1585.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec02.inp	d:\projects\findley\xylene\test49.out	Test of Xylene Koc = 1825 file.
d:\projects\findley\mkeclim.inp	d:\projects\findley\xylene\xylene.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\xylene\xylene01.out	Xylene baseline, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\xylene\xylek25.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\xylene\xylene02.out	Xylene Koc = 25.4, Ba-1 99 year run.
d:\projects\findley\mkeclim.inp	d:\projects\findley\xylene\xylk1585.inp	d:\projects\findley\claysilt.inp	d:\projects\findley\ba1ap.inp	d:\projects\findley\exec99.inp	d:\projects\findley\xylene\xylene03.out	Xylene Koc = 1585, Ba-1 99 year run.

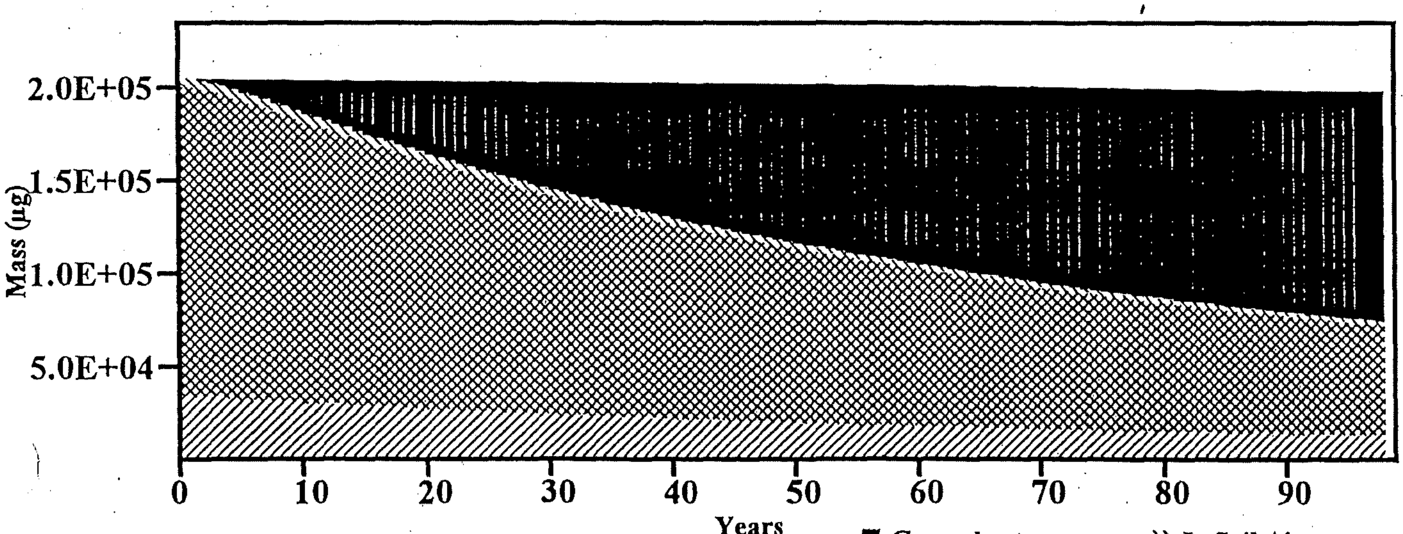
Benzene Baseline Values

Benzene baseline, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.246E+05	61.11	1.293E+05	63.39
Diffused Up	2.766E+01	0.01	2.869E+01	0.01
Soil Air	1.675E+03	0.82	1.738E+03	0.85
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	5.910E+04	28.97	6.130E+04	30.05
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.119E+04	5.49	1.161E+04	5.69
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	1.966E+05	96.41	2.040E+05	100.00
Total Input	2.040E+05		2.040E+05	
Input - Output	7.326E+03			

Starting depth: 460.20 cm **Ending depth: 586.20 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 DRO & Benzene

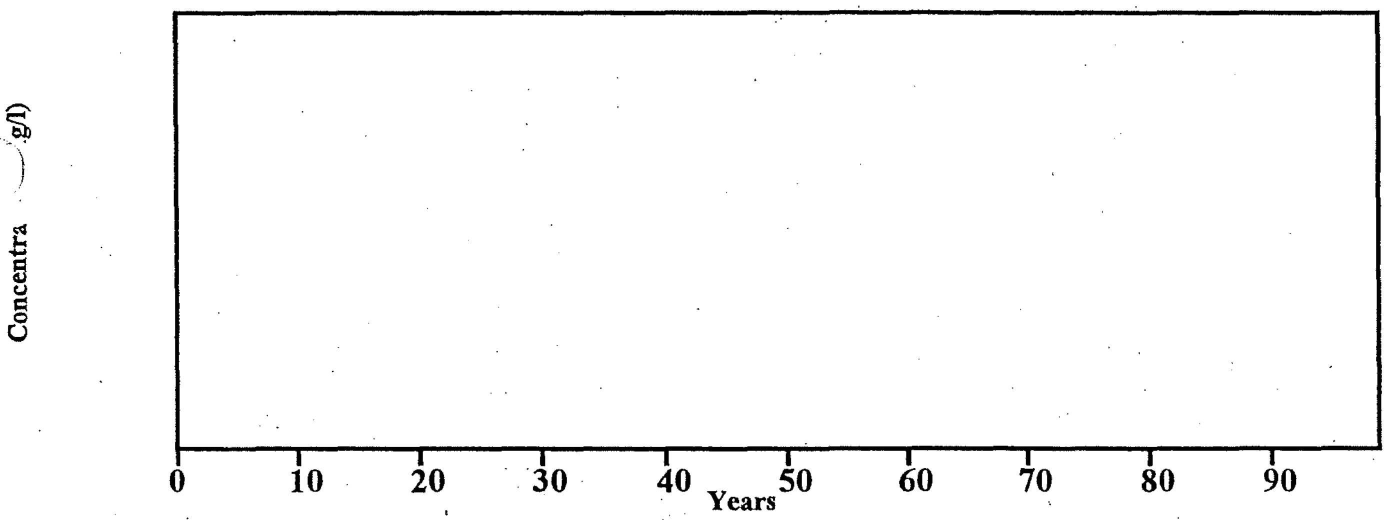
D:\PROJECTS\FINDLEY\BENZENE\BENZ01.OUT

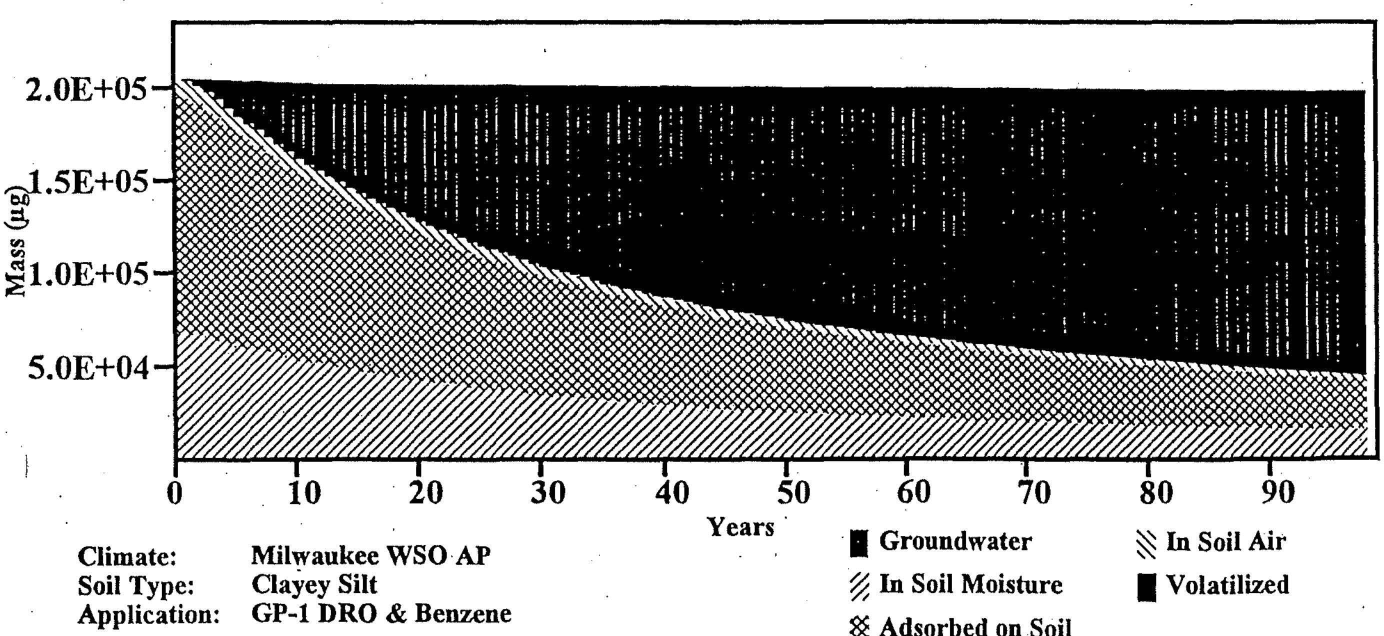
Benzene Koc = 31

Benzene Koc = 31, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.543E+05	75.68	1.598E+05	78.36
Diffused Up	1.130E+02	0.06	1.170E+02	0.06
Soil Air	2.038E+03	1.00	2.111E+03	1.03
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.685E+04	13.16	2.780E+04	13.63
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.362E+04	6.68	1.410E+04	6.92
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	1.970E+05	96.58	2.040E+05	100.00
Total Input	2.040E+05		2.040E+05	
Input - Output	6.975E+03			

Starting depth: 460.40 cm **Ending depth: 703.50 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 DRO & Benzene

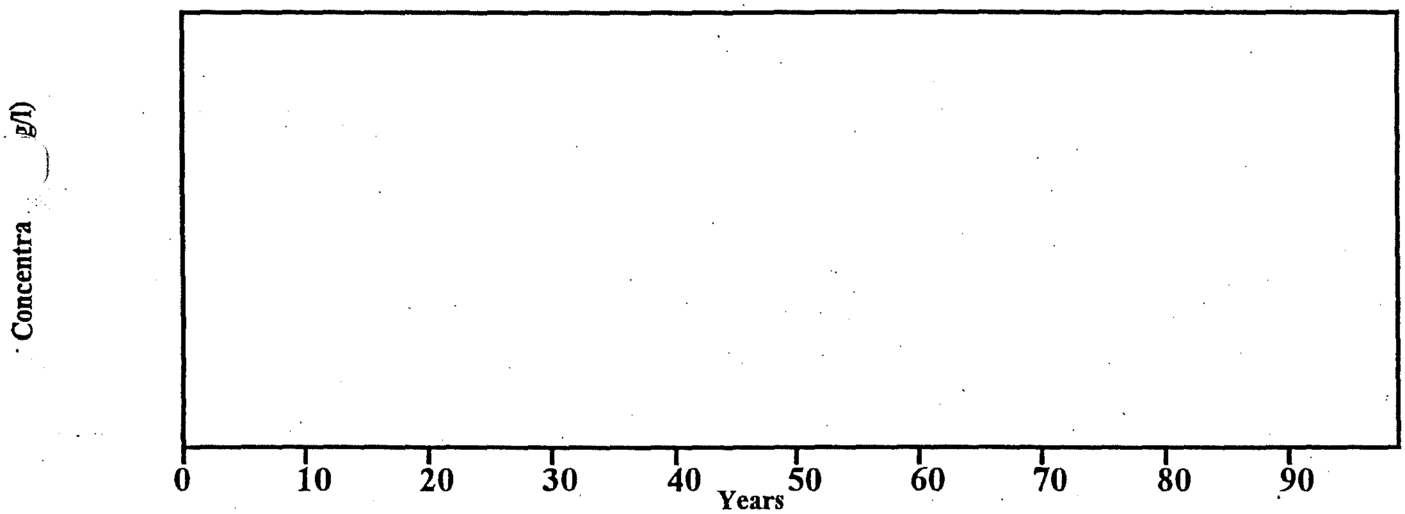
D:\PROJECTS\FINDLEY\BENZENE\BENZ02.OUT

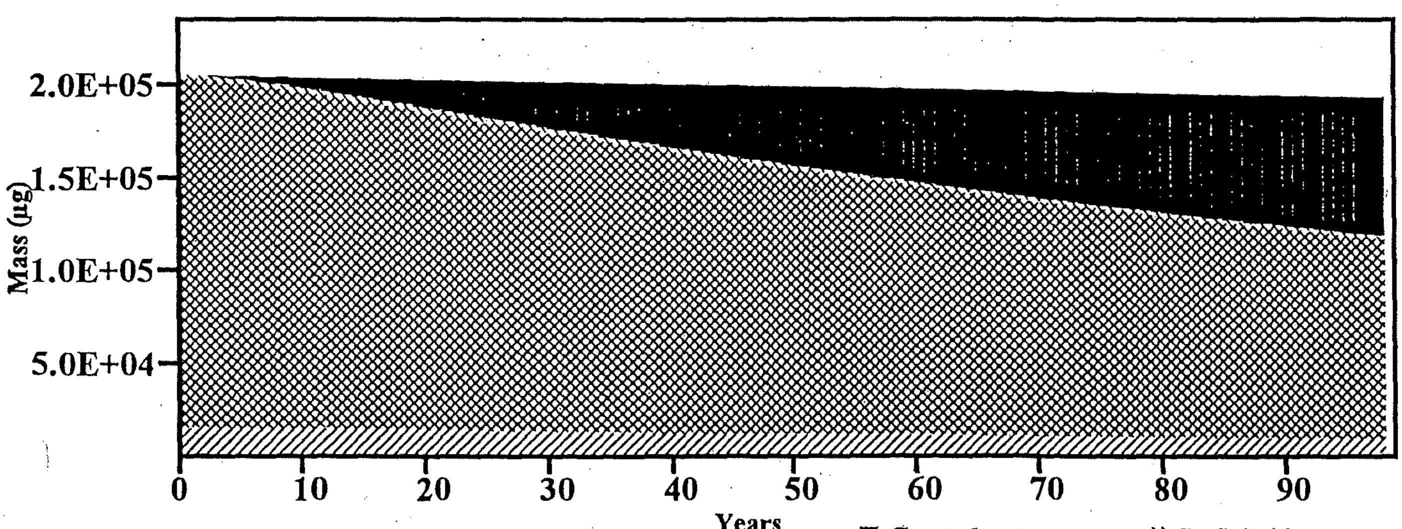
Benzene Koc = 214

Benzene Koc = 214, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	7.606E+04	37.29	8.093E+04	39.68
Diffused Up	3.117E+01	0.02	3.316E+01	0.02
Soil Air	1.172E+03	0.57	1.247E+03	0.61
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.066E+05	52.26	1.134E+05	55.61
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	7.833E+03	3.84	8.335E+03	4.09
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	1.917E+05	93.98	2.040E+05	100.00
Total Input	2.040E+05		2.040E+05	
Input - Output	1.228E+04			

Starting depth: 460.10 cm **Ending depth: 523.40 cm** **Total depth: 920.00 cm**





Groundwater
In Soil Air
In Soil Moisture
Volatilized
Adsorbed on Soil

Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 DRO & Benzene

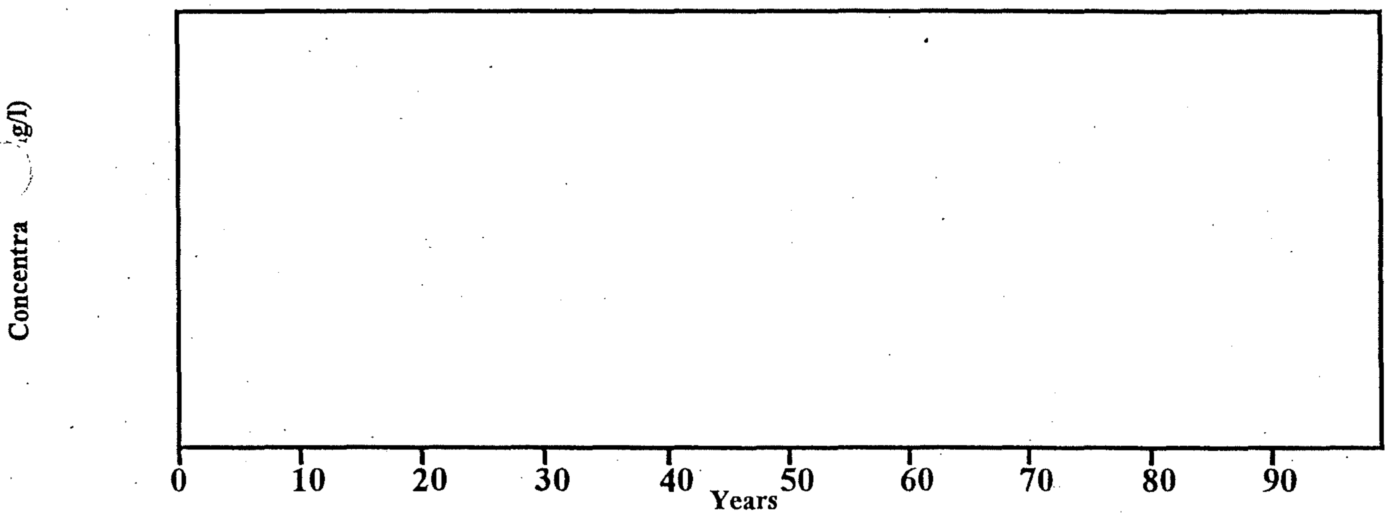
D:\PROJECTS\FINDLEY\BENZENE\BENZ03.OUT

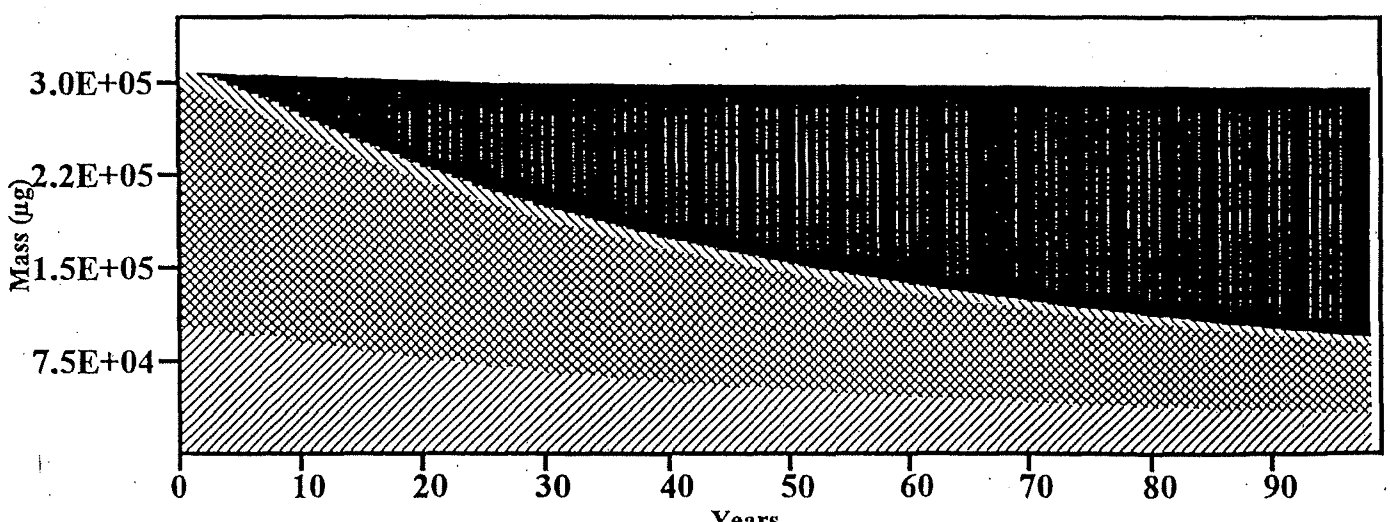
Benzene Koc = 31

Benzene Koc = 31, B-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.039E+05	66.64	2.120E+05	69.28
Diffused Up	1.927E+02	0.06	2.004E+02	0.07
Soil Air	4.327E+03	1.41	4.498E+03	1.47
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	5.699E+04	18.62	5.924E+04	19.36
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.890E+04	9.45	3.005E+04	9.82
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	2.943E+05	96.19	3.060E+05	100.00
Total Input	3.060E+05		3.060E+05	
Input - Output	1.165E+04			

Starting depth: 610.30 cm **Ending depth: 783.90 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: B-1 Benzene & Methylene Chloride

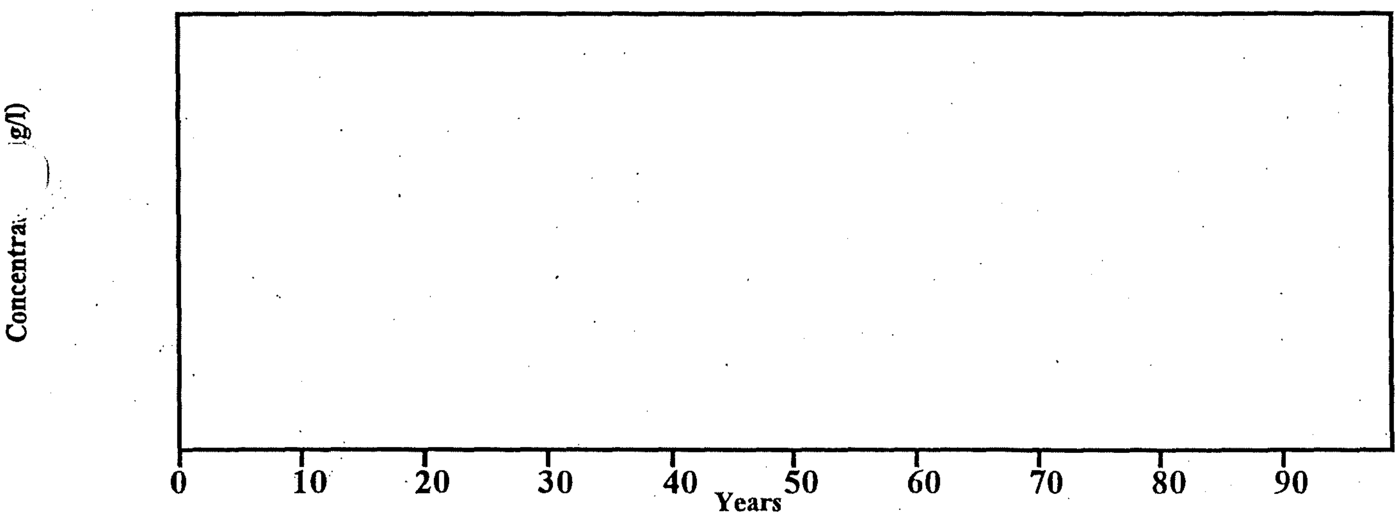
D:\PROJECTS\FINDLEY\BENZENE\BENZ05.OUT

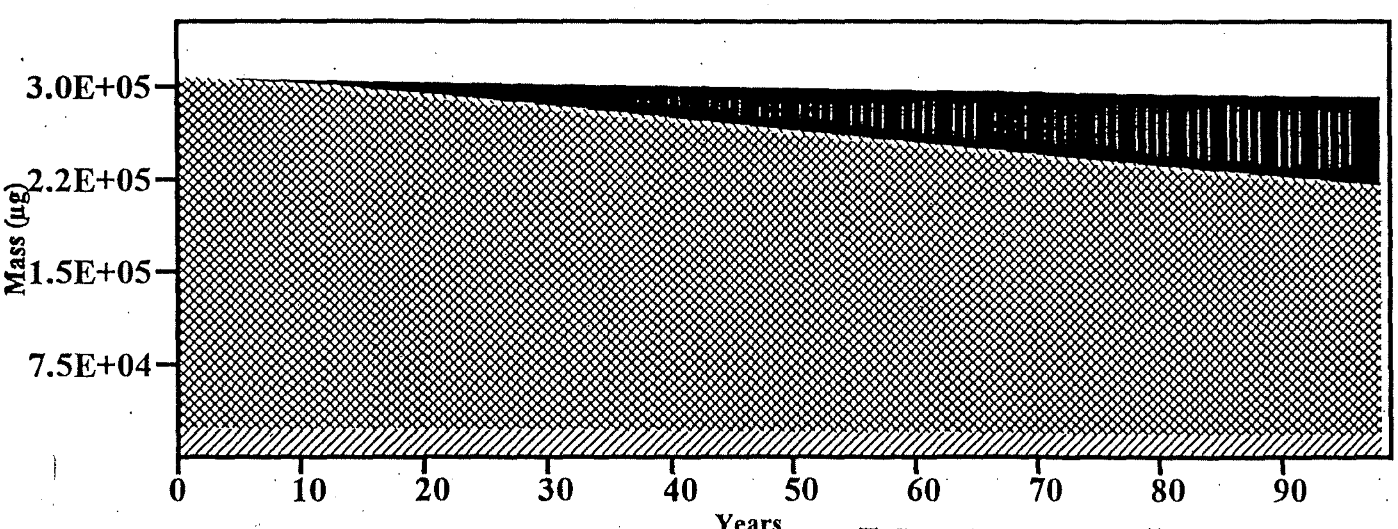
Benzene Koc = 214

Benzene Koc = 214, B-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	7.300E+04	23.86	7.719E+04	25.23
Diffused Up	4.501E+01	0.01	4.758E+01	0.02
Soil Air	2.194E+03	0.72	2.319E+03	0.76
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.995E+05	65.20	2.109E+05	68.94
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.465E+04	4.79	1.549E+04	5.07
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	2.894E+05	94.58	3.060E+05	100.00
Total Input	3.060E+05		3.060E+05	
Input - Output	1.658E+04			

Starting depth: 610.10 cm **Ending depth: 658.70 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: B-1 Benzene & Methylene Chloride

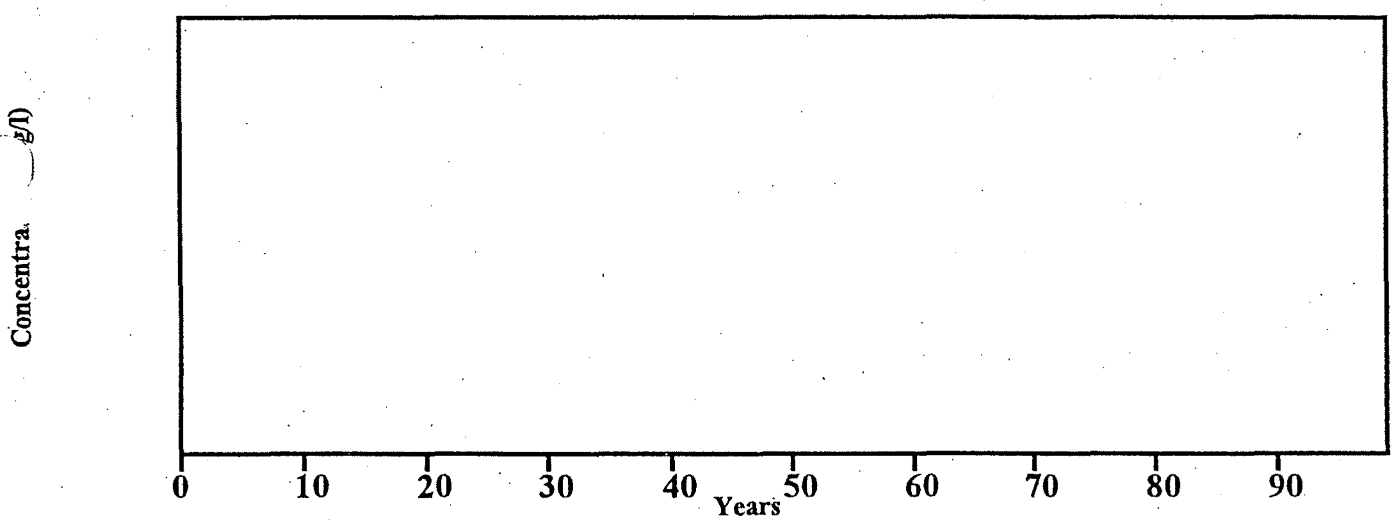
D:\PROJECTS\FINDLEY\BENZENE\BENZ06.OUT

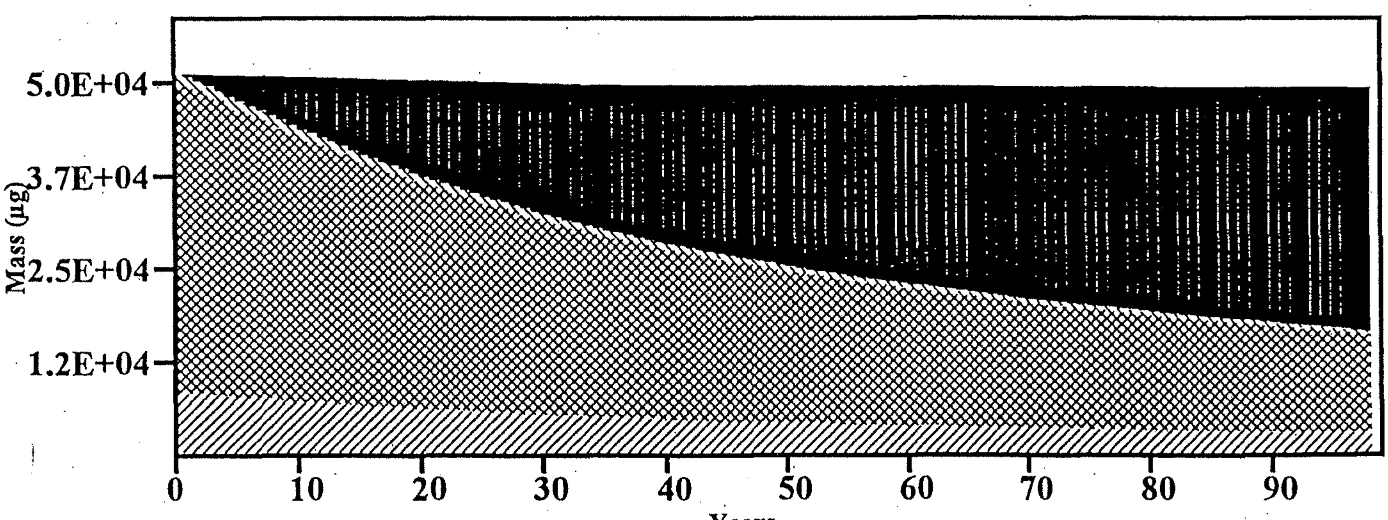
Benzene Baseline Values

Benzene baseline, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.302E+04	64.75	3.427E+04	67.20
Diffused Up	2.055E+01	0.04	2.133E+01	0.04
Soil Air	3.747E+02	0.73	3.889E+02	0.76
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.321E+04	25.92	1.371E+04	26.90
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.504E+03	4.91	2.599E+03	5.10
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.914E+04	96.36	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.857E+03			

Starting depth: 385.20 cm **Ending depth: 578.80 cm** **Total depth: 920.00 cm**





Climate:	Milwaukee WSO AP
Soil Type:	Clayey Silt
Application:	Ba-1 Base of UST Excavation

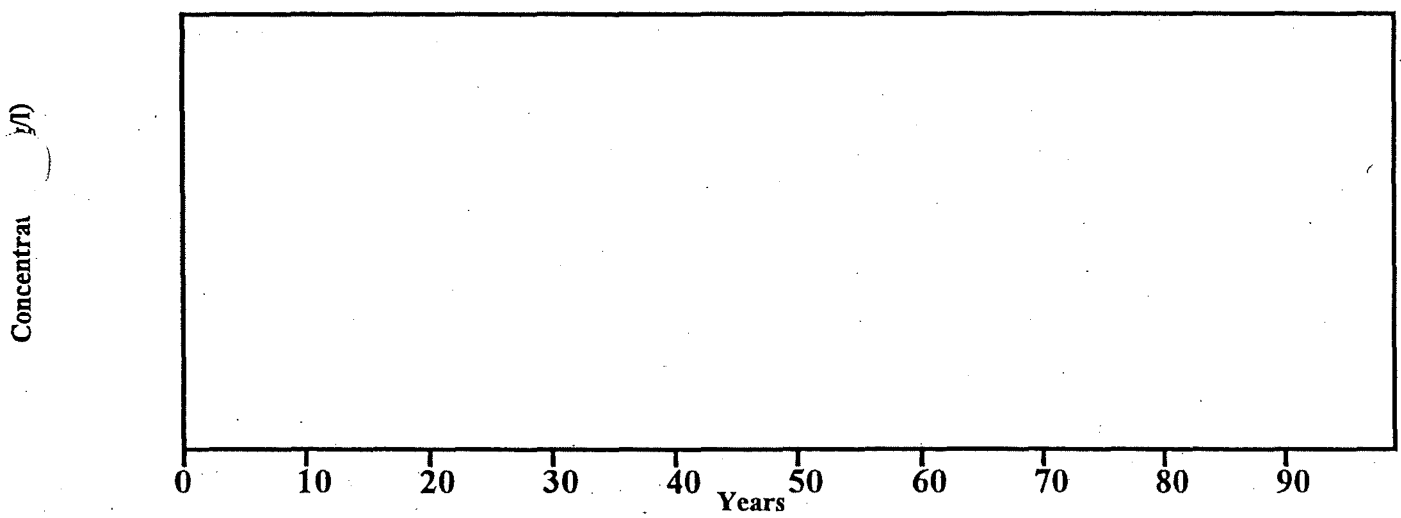
D:\PROJECTS\FINDLEY\BENZENE\BENZ07.OUT

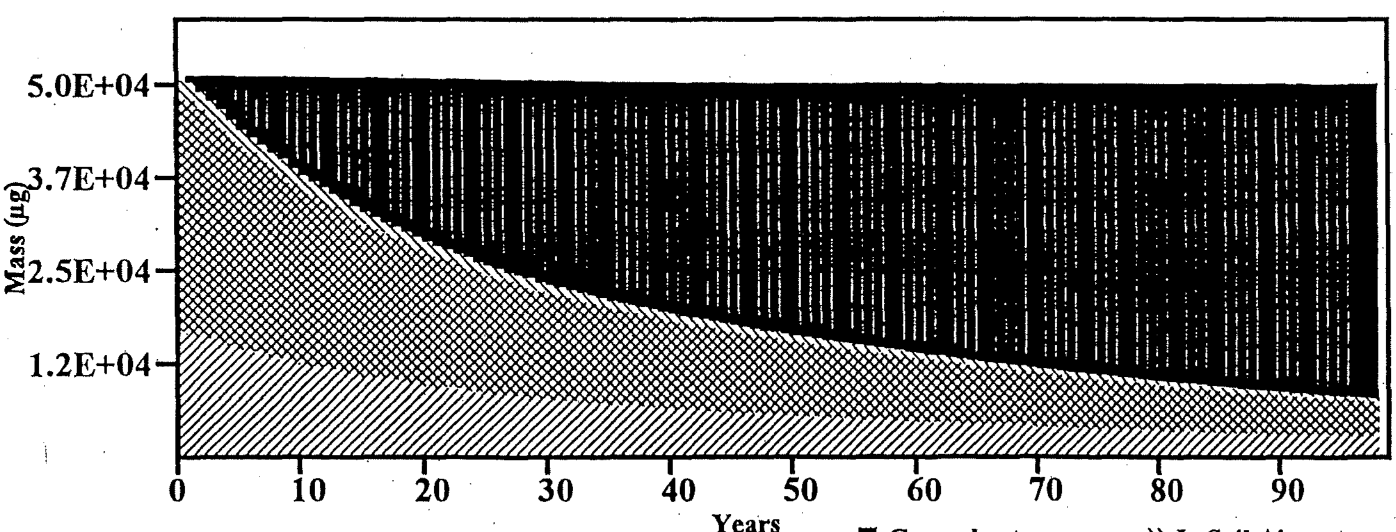
Benzene Koc = 31

Benzene Koc = 31, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	4.242E+04	83.19	4.348E+04	85.27
Diffused Up	1.420E+01	0.03	1.456E+01	0.03
Soil Air	3.509E+02	0.69	3.596E+02	0.71
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.621E+03	9.06	4.736E+03	9.29
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.344E+03	4.60	2.402E+03	4.71
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.976E+04	97.57	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.239E+03			

Starting depth: 385.40 cm **Ending depth: 705.60 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

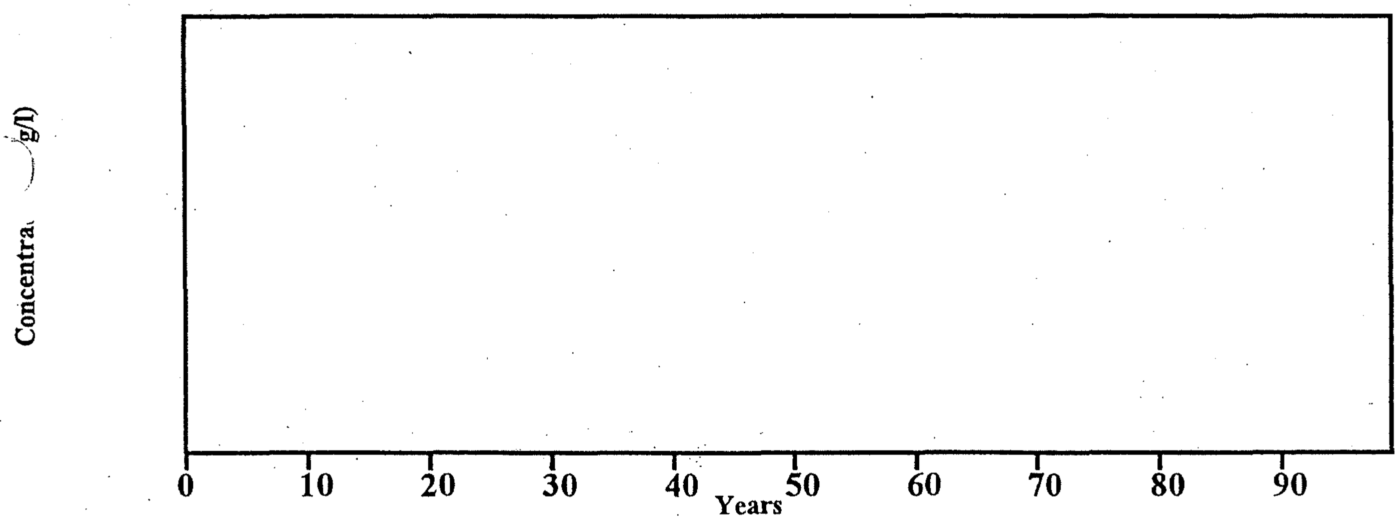
D:\PROJECTS\FINDLEY\BENZENE\BENZ08.OUT

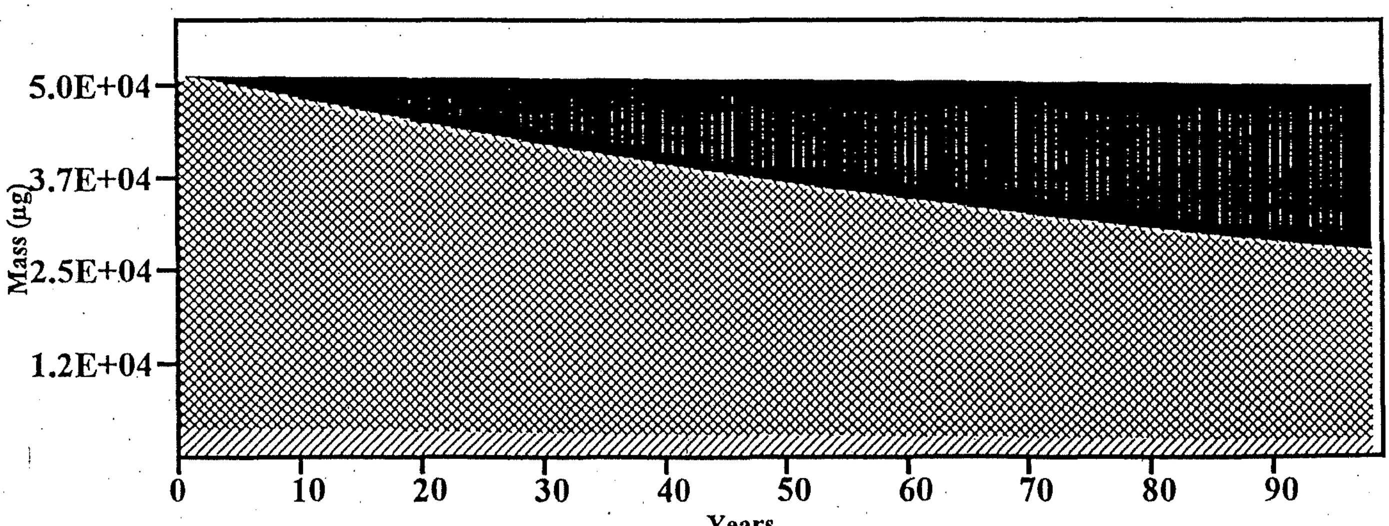
Benzene Koc = 214

Benzene Koc = 214, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.267E+04	44.47	2.324E+04	45.58
Diffused Up	1.645E+00	0.00	1.686E+00	0.00
Soil Air	2.745E+02	0.54	2.814E+02	0.55
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.496E+04	48.94	2.558E+04	50.17
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.834E+03	3.60	1.880E+03	3.69
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.975E+04	97.55	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.249E+03			

Starting depth: 385.10 cm **Ending depth: 471.70 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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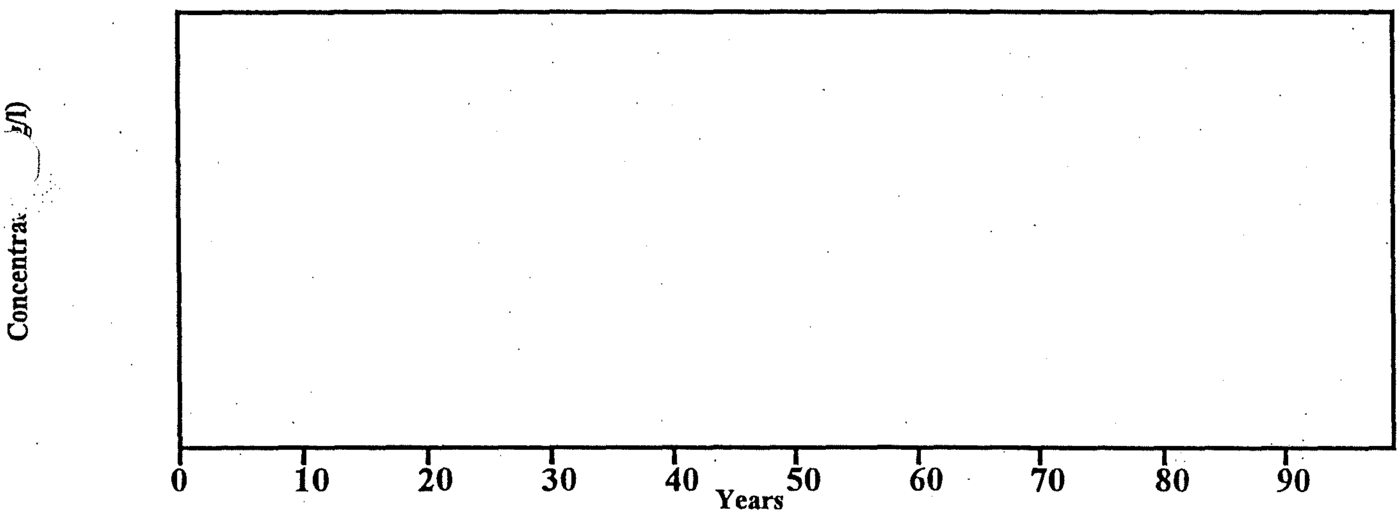
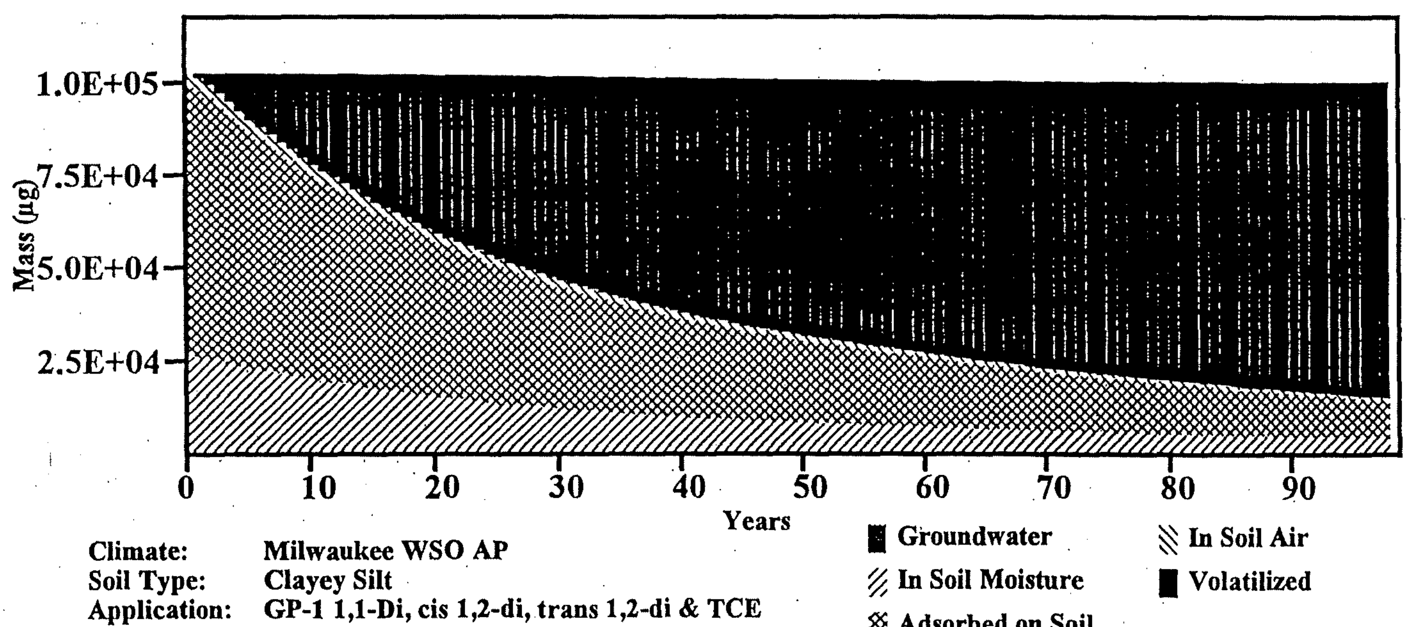
1,1-Dichloroethane Baseline

1,1-Dichloroethane baseline, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	8.550E+04	83.83	8.766E+04	85.95
Diffused Up	3.039E+01	0.03	3.115E+01	0.03
Soil Air	5.034E+02	0.49	5.161E+02	0.51
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.001E+04	9.82	1.027E+04	10.07
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	3.425E+03	3.36	3.512E+03	3.44
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.948E+04	97.53	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	2.516E+03			

Starting depth: 390.30 cm Ending depth: 676.60 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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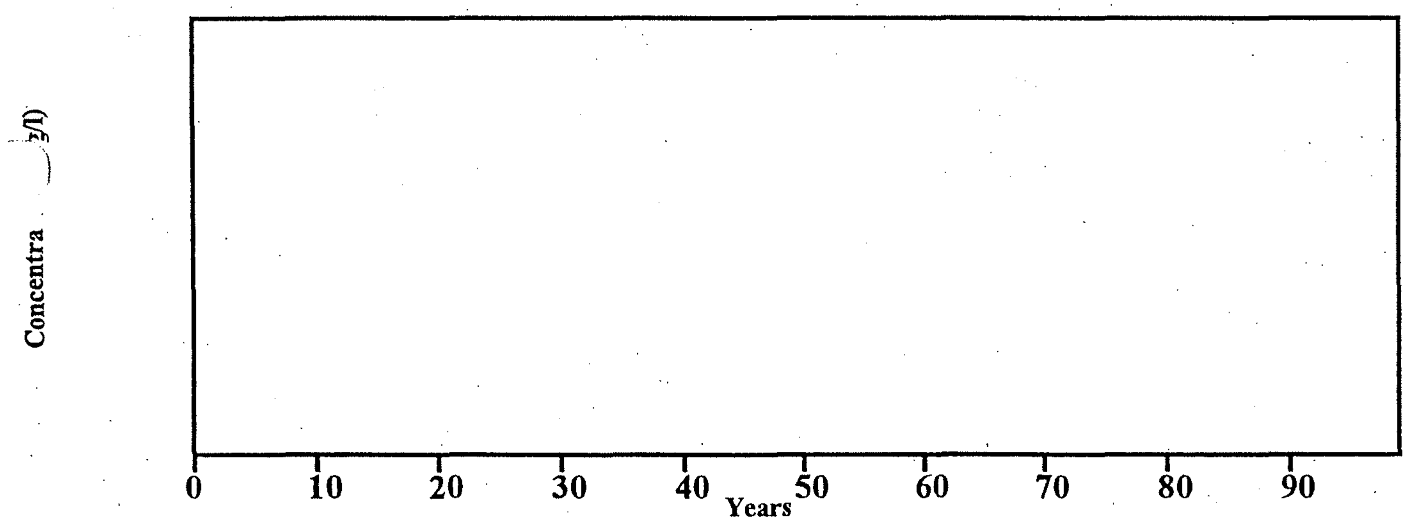
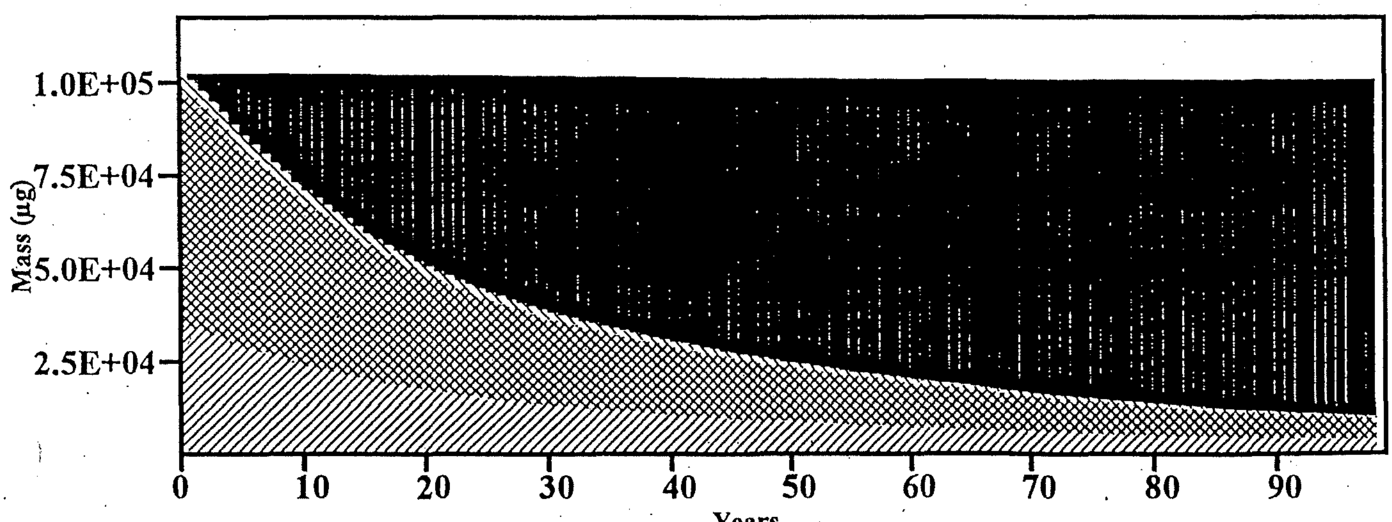
1,1-Dichloroethane Koc = 30.2

1,1-Dichloroethane Koc = 30, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	9.122E+04	89.43	9.295E+04	91.14
Diffused Up	2.041E+01	0.02	2.080E+01	0.02
Soil Air	4.242E+02	0.42	4.323E+02	0.42
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	5.542E+03	5.43	5.647E+03	5.54
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.885E+03	2.83	2.940E+03	2.88
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	1.000E+05	98.13	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	1.905E+03			

Starting depth: 390.40 cm Ending depth: 712.70 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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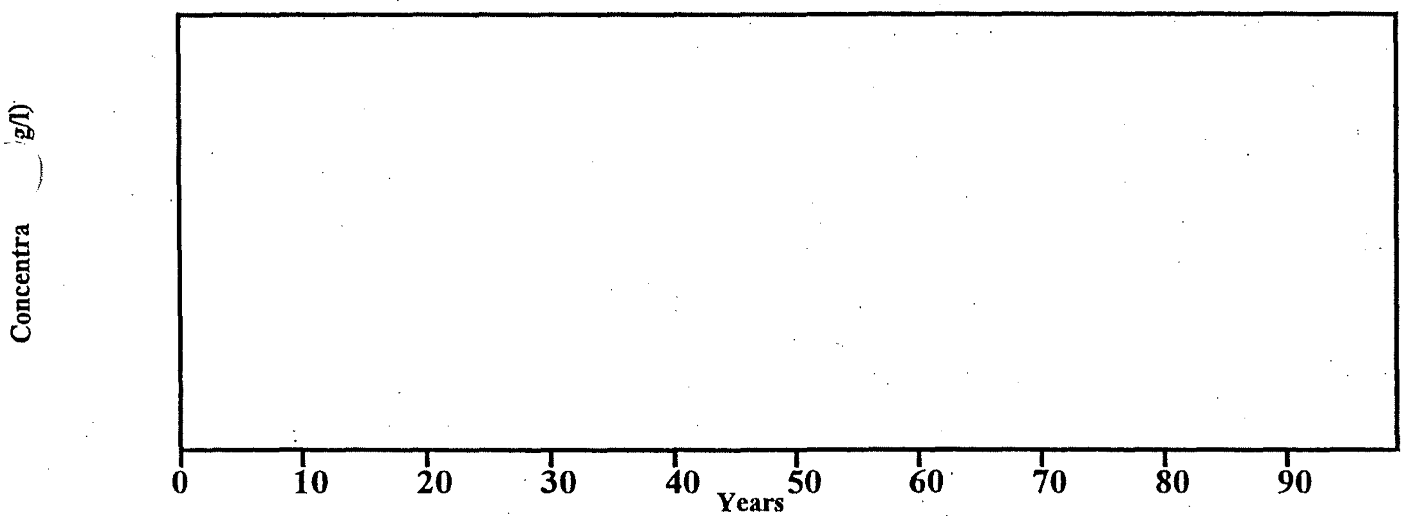
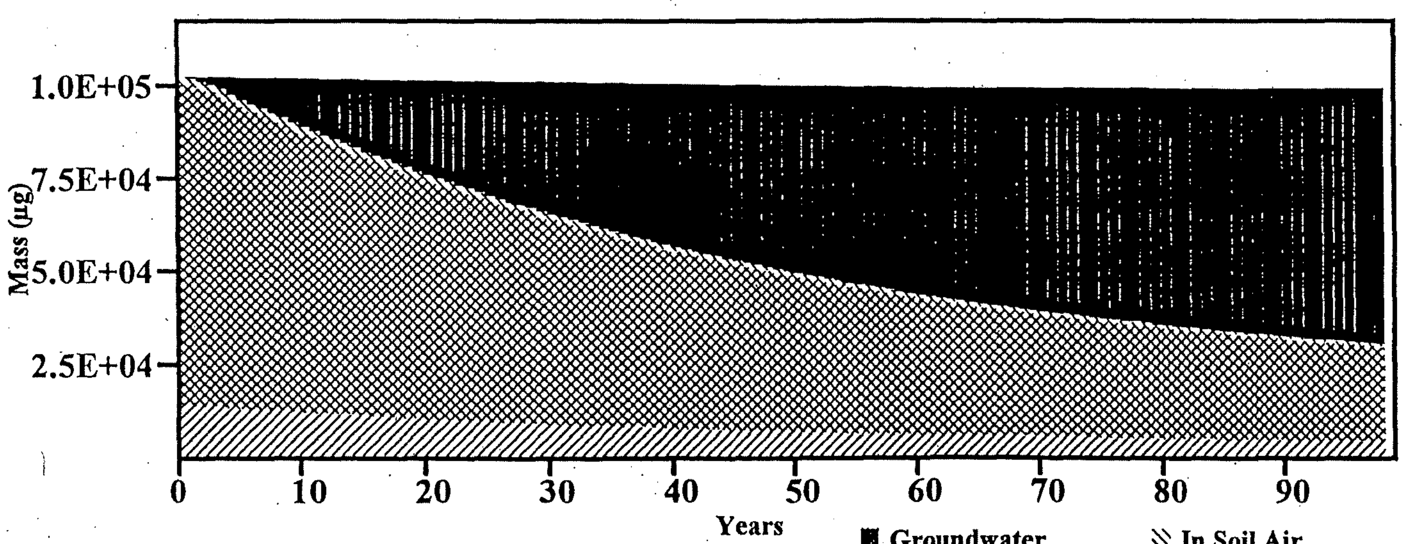
1,1-Dichloroethane Koc = 104

1,1-Dichloroethane Koc = 104, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	6.937E+04	68.01	7.175E+04	70.34
Diffused Up	3.061E+01	0.03	3.165E+01	0.03
Soil Air	5.532E+02	0.54	5.721E+02	0.56
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.490E+04	24.41	2.575E+04	25.25
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	3.764E+03	3.69	3.892E+03	3.82
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.862E+04	96.69	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	3.377E+03			

Starting depth: 390.20 cm Ending depth: 550.20 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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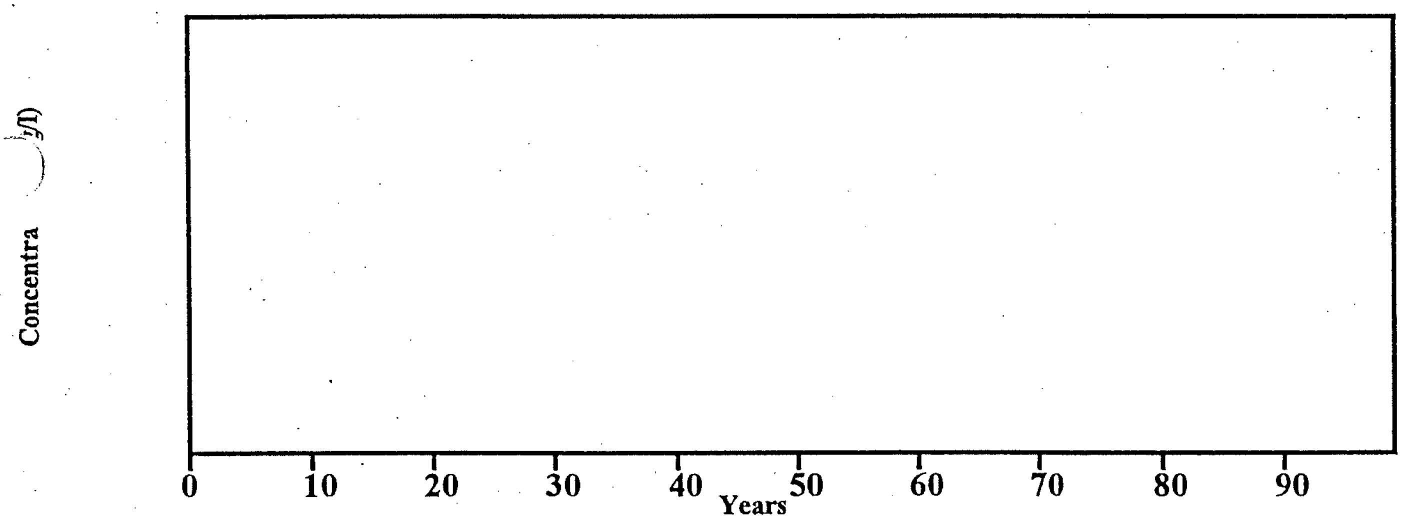
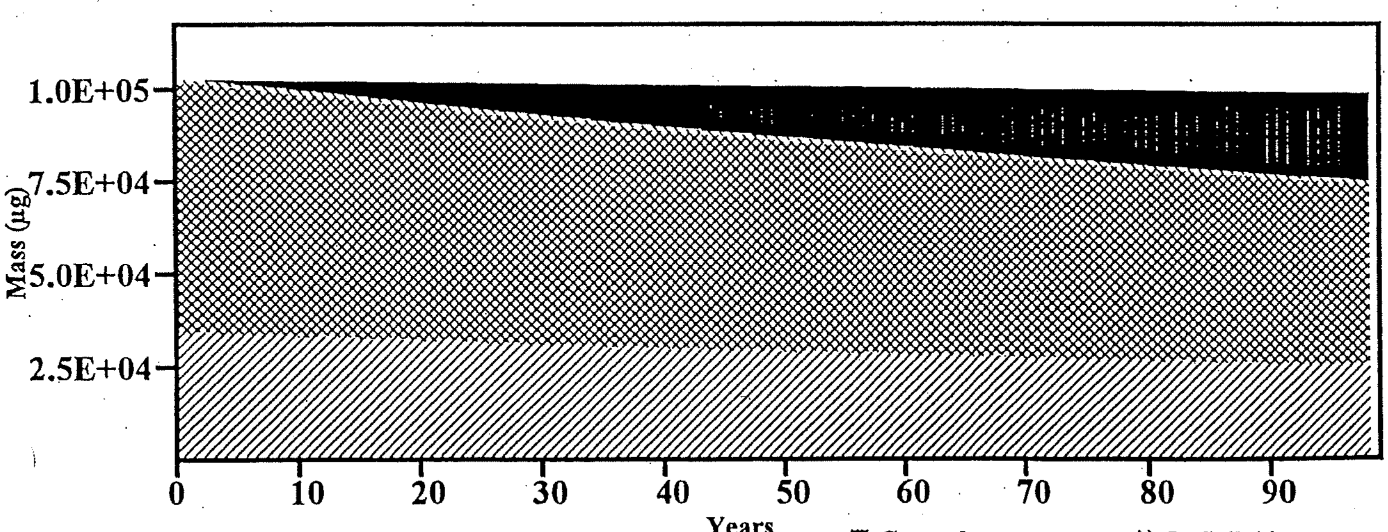
1,2-Dichloroethane Baseline

1,2-Dichloroethane baseline, B-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.424E+04	23.76	2.518E+04	24.69
Diffused Up	3.774E+01	0.04	3.920E+01	0.04
Soil Air	7.733E+02	0.76	8.033E+02	0.79
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.903E+04	48.07	5.093E+04	49.94
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.410E+04	23.63	2.503E+04	24.55
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.818E+04	96.26	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	3.813E+03			

Starting depth: 610.30 cm **Ending depth: 807.80 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: B-1 1,2-Dichloroethane

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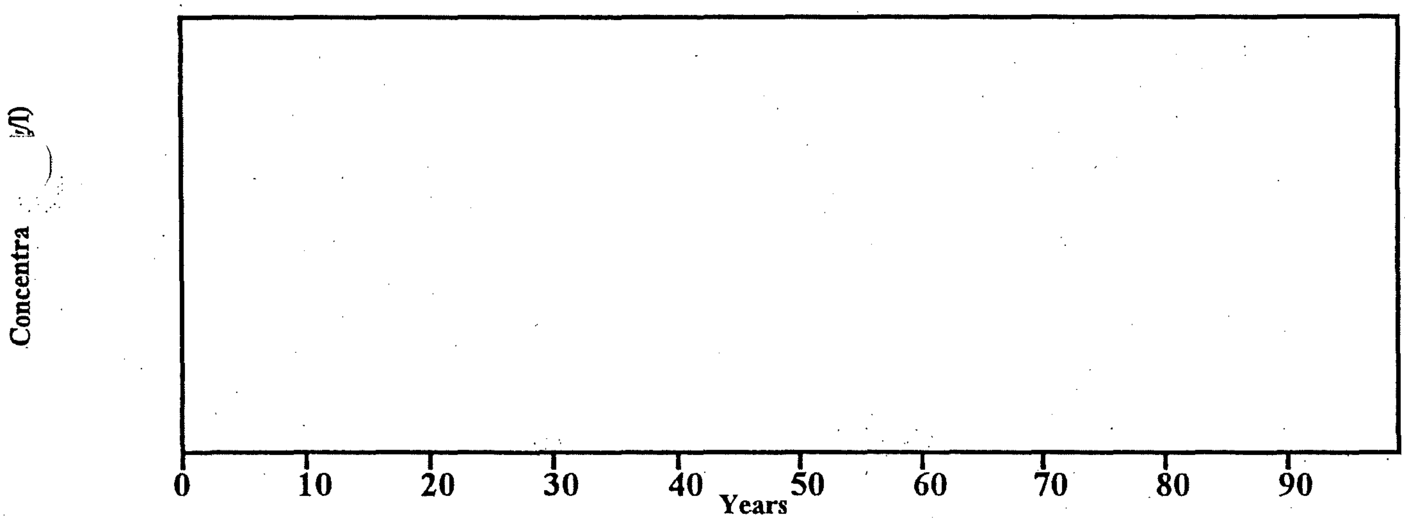
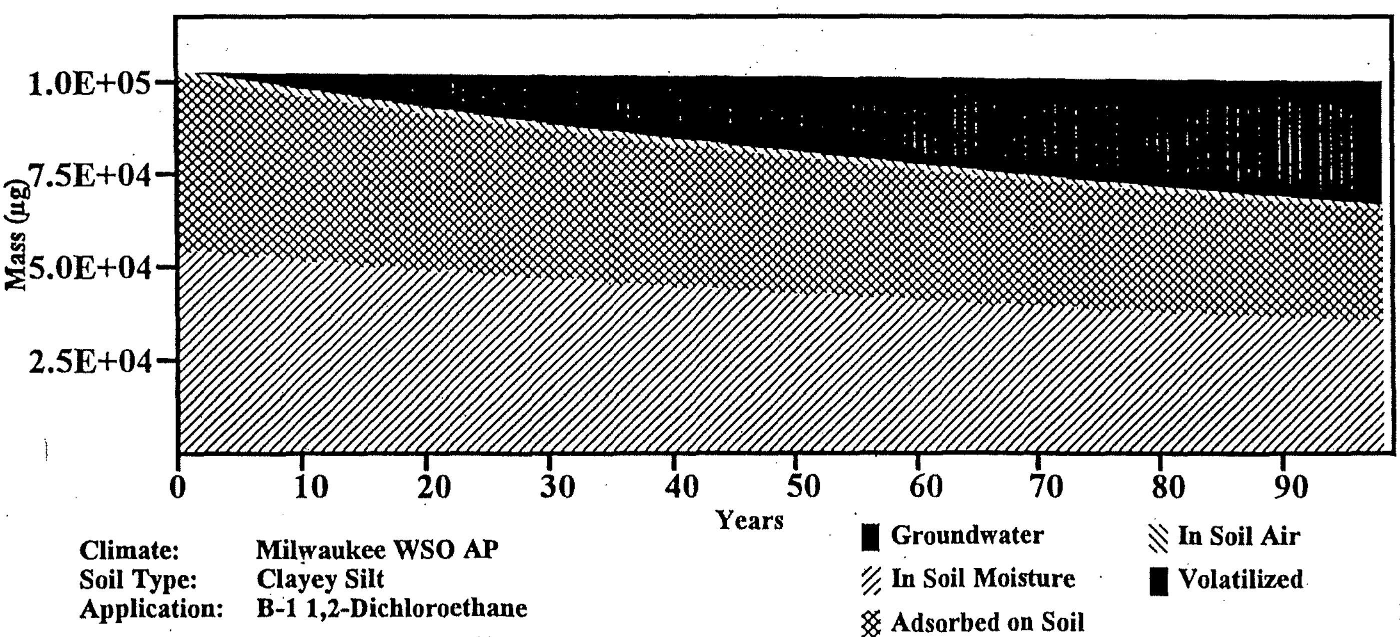
1,2-Dichloroethane Koc = 14

1,2-Dichloroethane, B-1 99 year run, Koc = 14.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.386E+04	33.20	3.470E+04	34.03
Diffused Up	7.206E+01	0.07	7.384E+01	0.07
Soil Air	1.094E+03	1.07	1.122E+03	1.10
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.037E+04	29.78	3.113E+04	30.52
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	3.411E+04	33.45	3.496E+04	34.28
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.952E+04	97.58	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	2.470E+03			

Starting depth: 610.40 cm **Ending depth: 864.40 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: B-1 1,2-Dichloroethane

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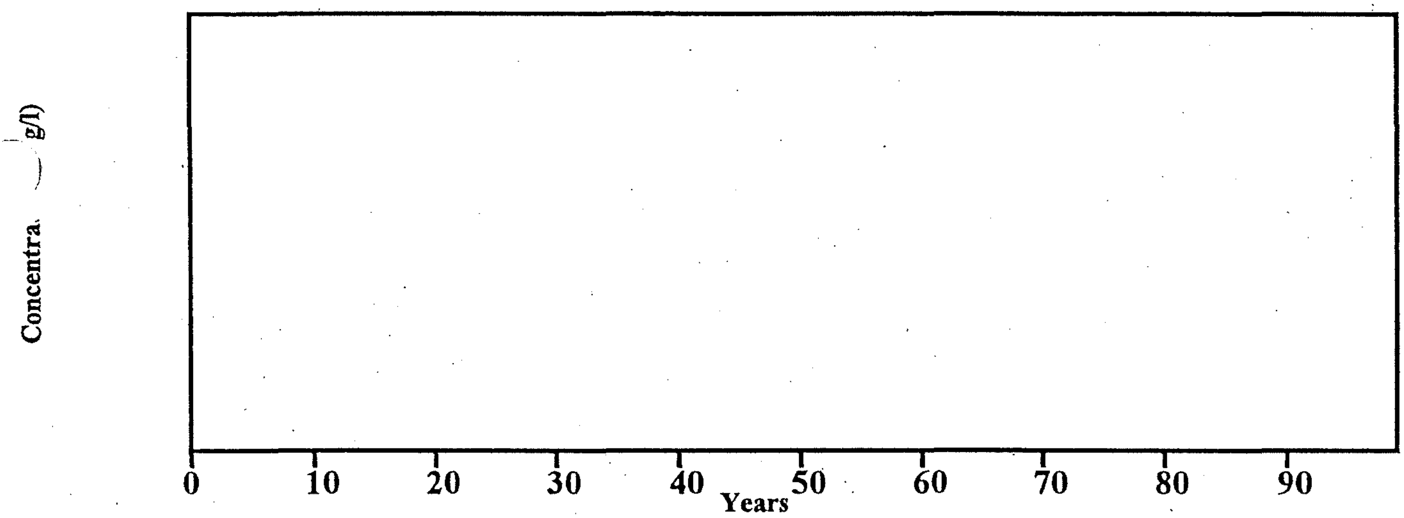
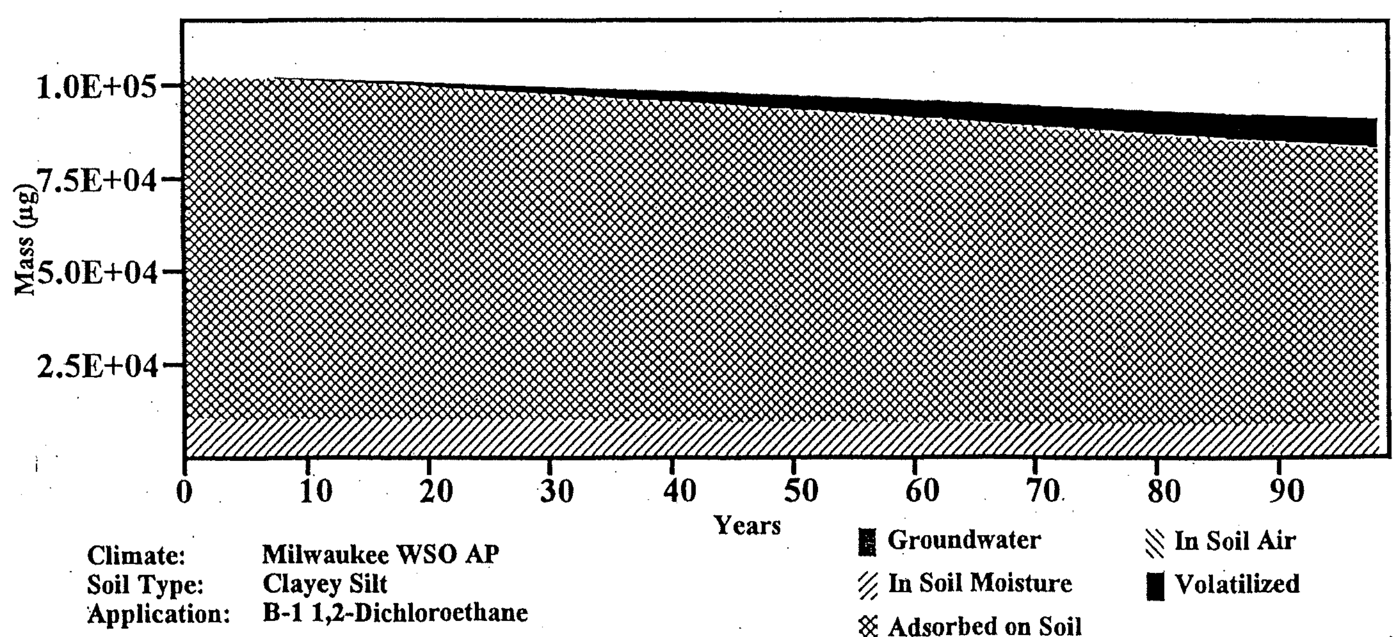
1,2-Dichloroethane Koc = 152

1,2-Dichloroethane, B-1 99 year run, Koc = 152.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	8.035E+03	7.88	9.057E+03	8.88
Diffused Up	3.004E+00	0.00	3.385E+00	0.00
Soil Air	2.473E+02	0.24	2.787E+02	0.27
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	7.450E+04	73.04	8.397E+04	82.33
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	7.707E+03	7.56	8.687E+03	8.52
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.049E+04	88.72	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	1.150E+04			

Starting depth: 610.10 cm   Ending depth: 684.40 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: B-1 1,2-Dichloroethane

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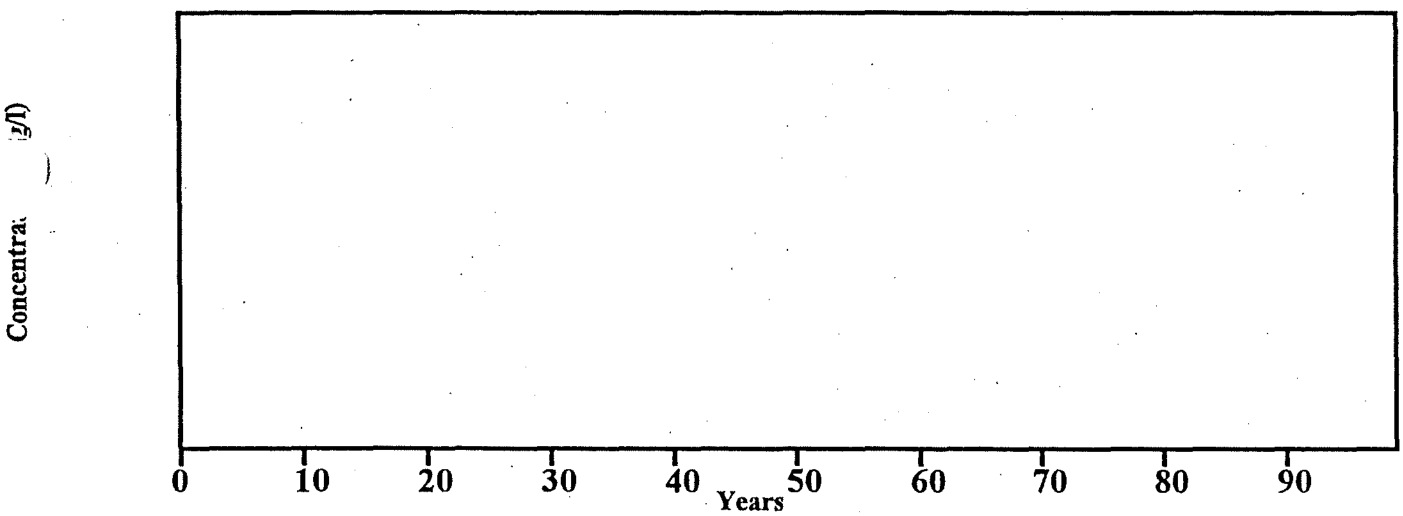
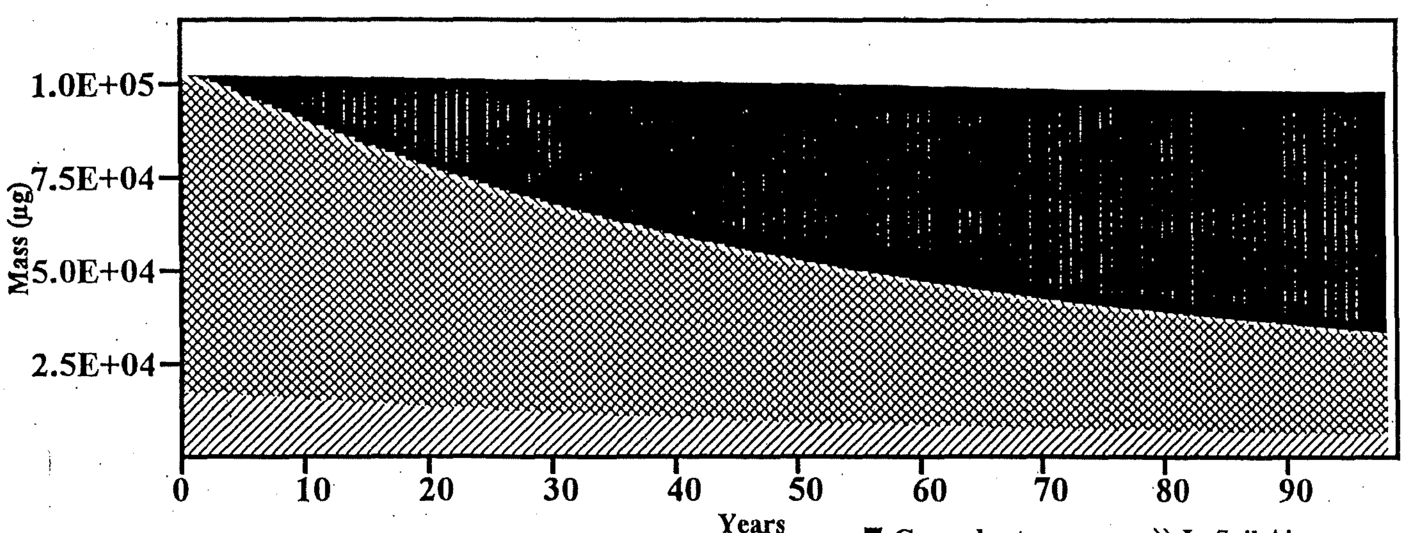
cis 1,2-Dichloroethene Baseline

cis 1,2-Dichloroethene baseline, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	6.524E+04	63.96	6.826E+04	66.93
Diffused Up	3.760E+01	0.04	3.934E+01	0.04
Soil Air	5.704E+02	0.56	5.968E+02	0.59
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.644E+04	25.93	2.767E+04	27.13
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.184E+03	5.08	5.424E+03	5.32
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.748E+04	95.57	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	4.518E+03			

Starting depth: 390.20 cm **Ending depth: 587.90 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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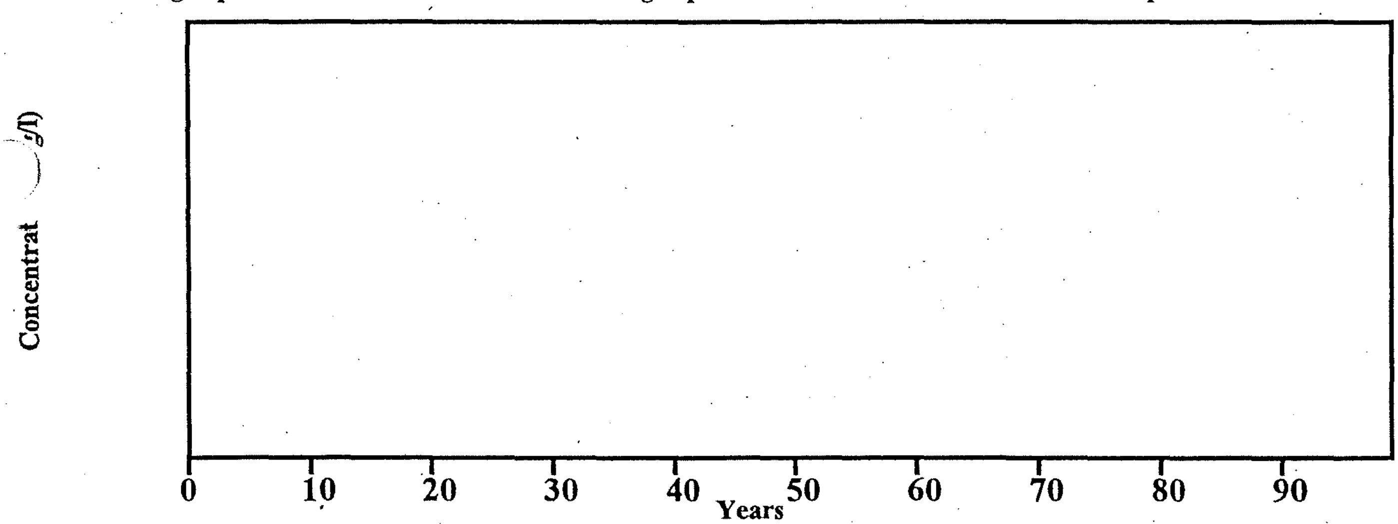
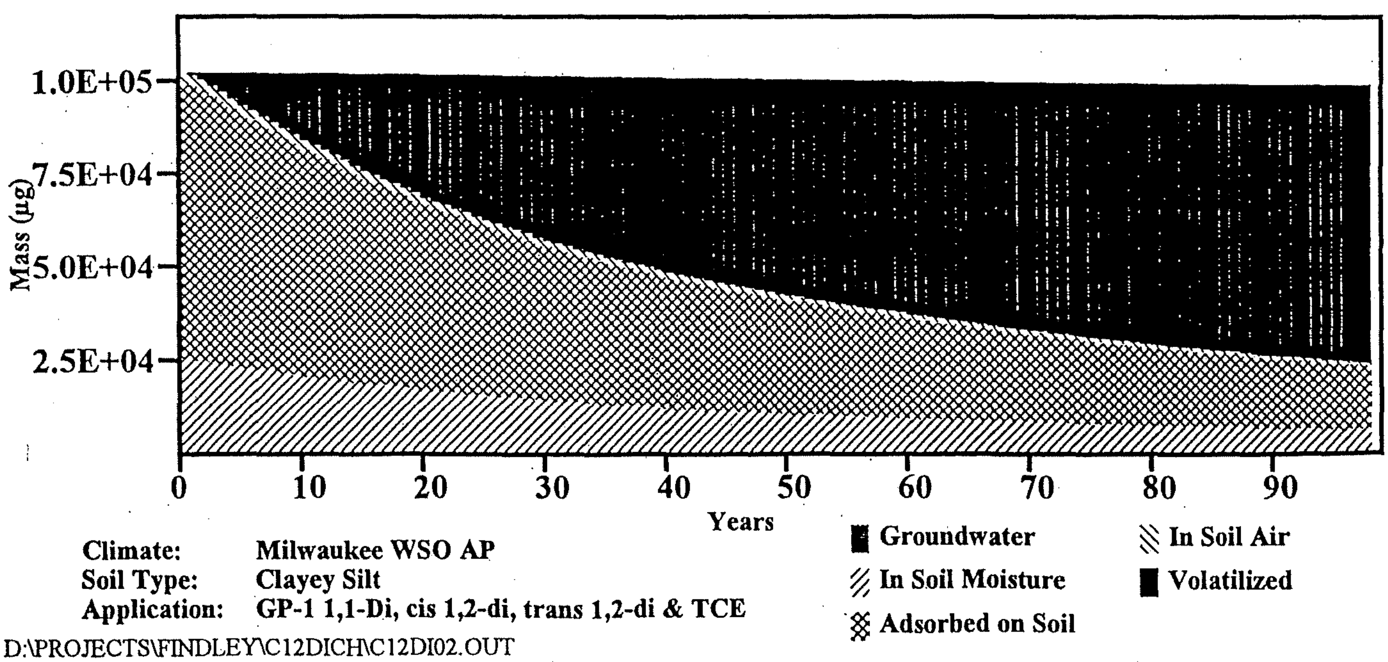
cis 1,2-Dichloroethene Koc = 49

cis 1,2-Dichloroethene Koc = 49, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	7.568E+04	74.20	7.830E+04	76.77
Diffused Up	4.161E+01	0.04	4.305E+01	0.04
Soil Air	5.950E+02	0.58	6.157E+02	0.60
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.685E+04	16.52	1.743E+04	17.10
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.408E+03	5.30	5.596E+03	5.49
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.858E+04	96.65	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	3.416E+03			

Starting depth: 390.30 cm **Ending depth: 672.50 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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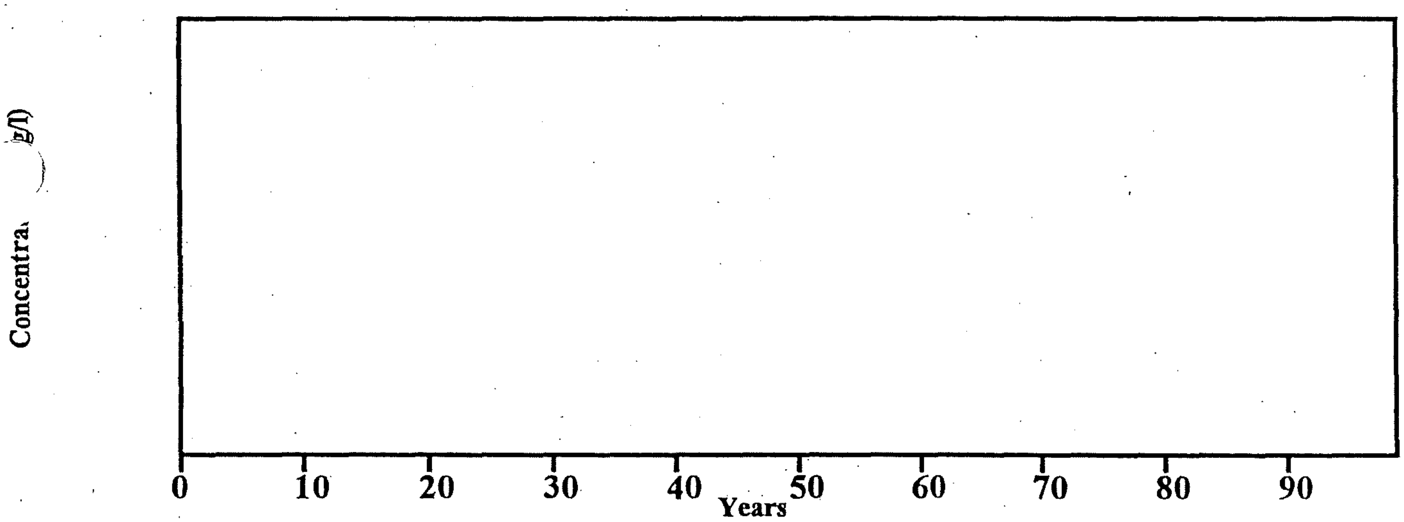
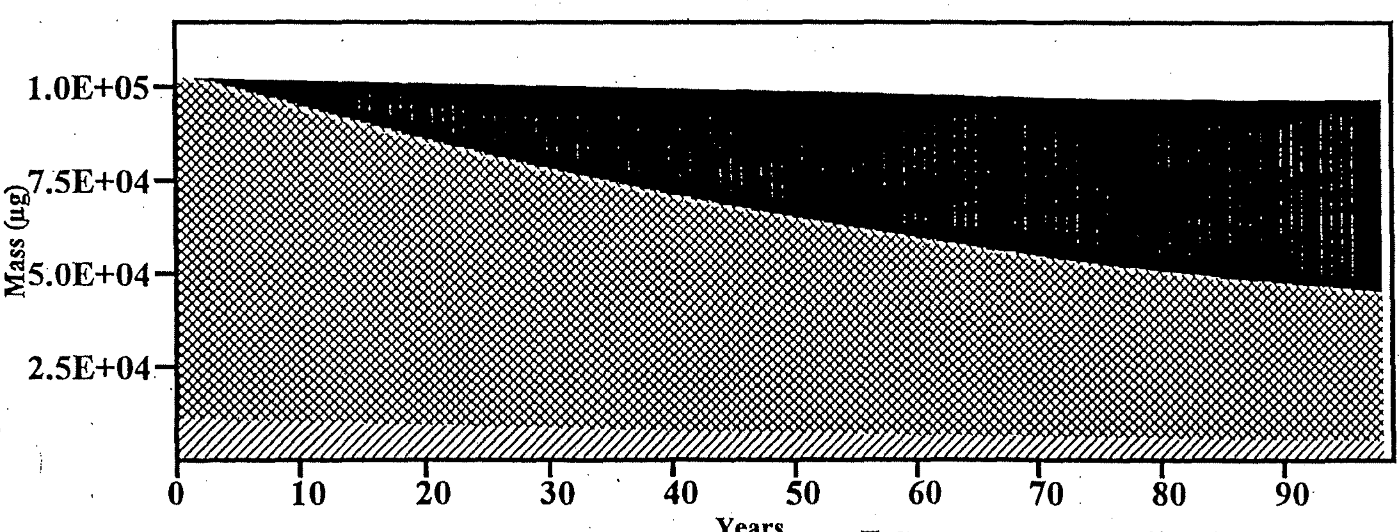
cis 1,2-Dichloroethene Koc = 141

cis 1,2-Dichloroethene Koc = 141, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	5.200E+04	50.98	5.523E+04	54.15
Diffused Up	5.724E+00	0.01	6.080E+00	0.01
Soil Air	4.807E+02	0.47	5.106E+02	0.50
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.916E+04	38.40	4.160E+04	40.79
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	4.368E+03	4.28	4.640E+03	4.55
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.602E+04	94.14	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	5.973E+03			

Starting depth: 390.10 cm Ending depth: 515.40 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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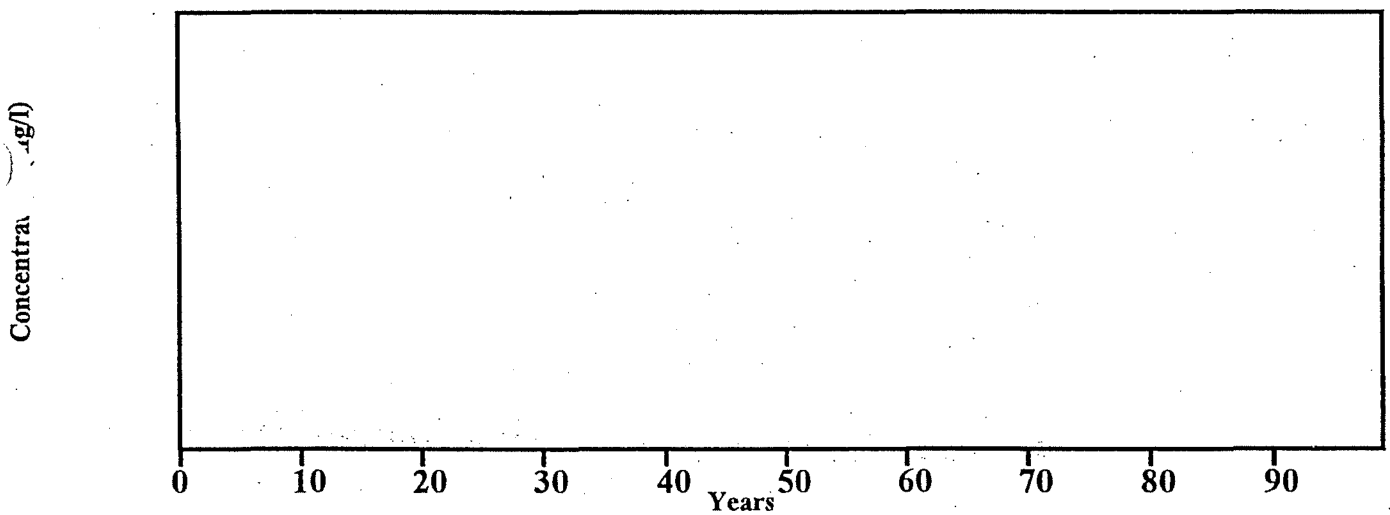
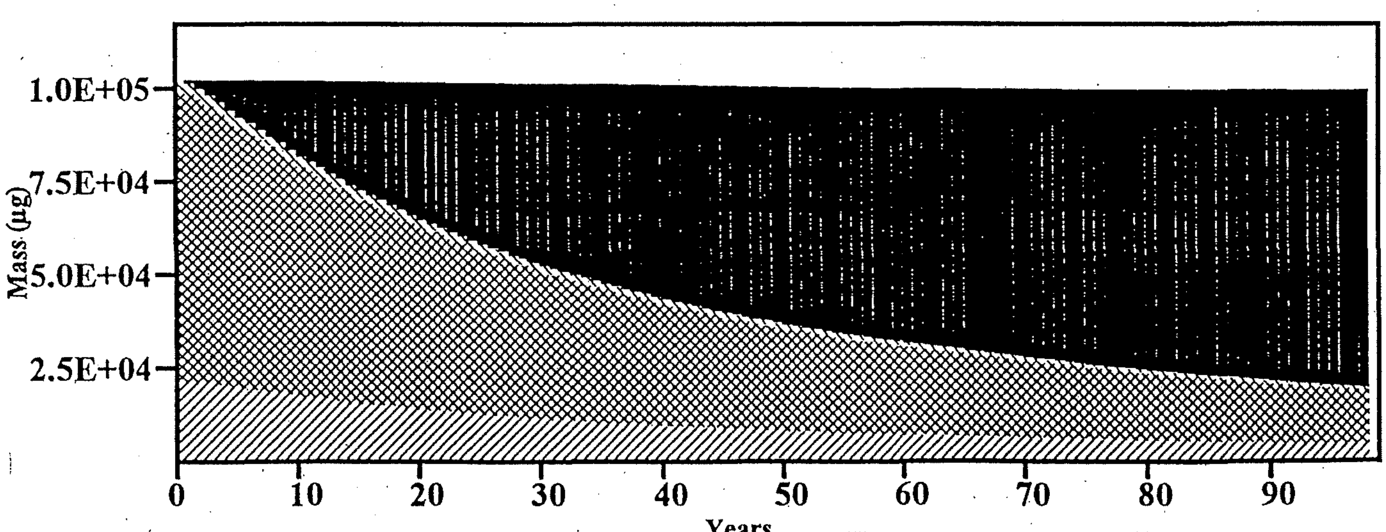
trans 1,2-Dichloroethene Baseline

trans 1,2-Dichloroethene baseline, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	8.069E+04	79.11	8.302E+04	81.40
Diffused Up	3.611E+01	0.04	3.715E+01	0.04
Soil Air	5.393E+02	0.53	5.549E+02	0.54
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.410E+04	13.83	1.451E+04	14.23
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	3.758E+03	3.69	3.867E+03	3.79
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.913E+04	97.19	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	2.868E+03			

Starting depth: 390.30 cm **Ending depth:** 638.50 cm **Total depth:** 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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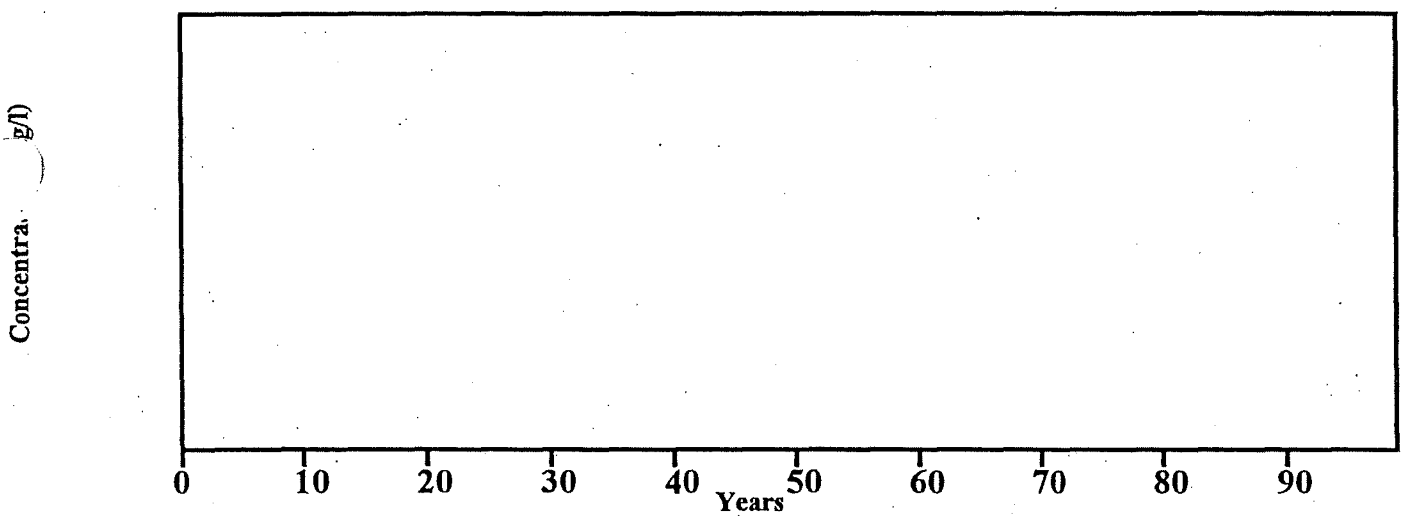
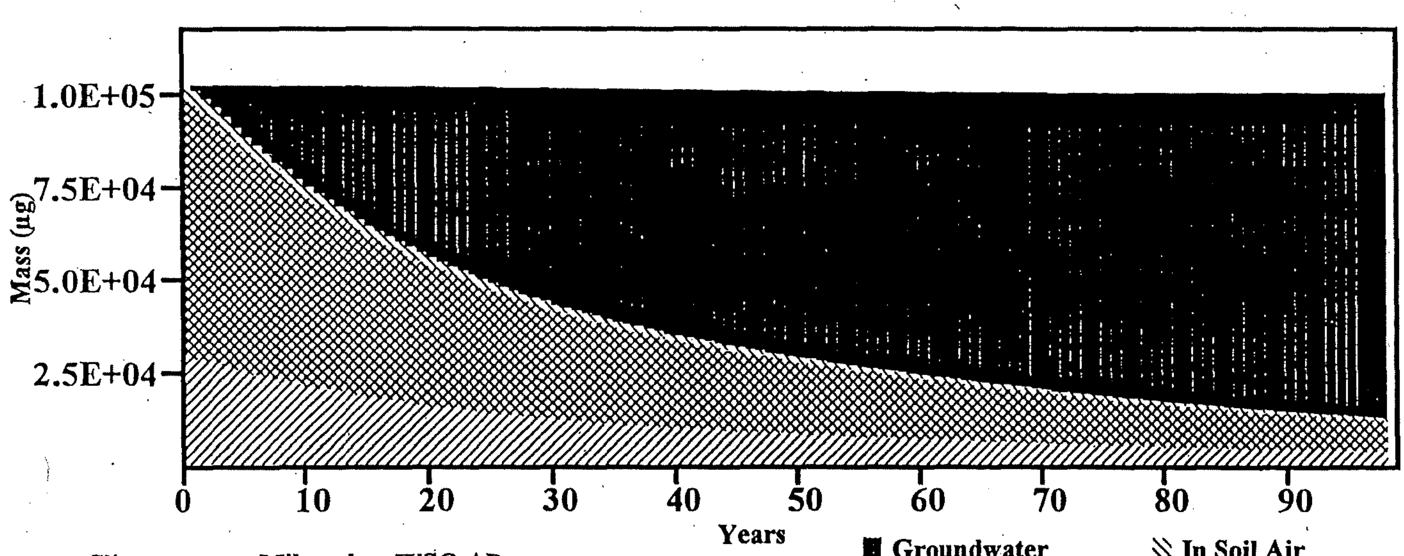
trans 1,2-Dichloroethene Koc=39

trans 1,2-Dichloroethene Koc = 39, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	8.771E+04	86.00	8.971E+04	87.95
Diffused Up	2.616E+01	0.03	2.675E+01	0.03
Soil Air	4.745E+02	0.47	4.853E+02	0.48
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	8.203E+03	8.04	8.390E+03	8.23
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	3.308E+03	3.24	3.383E+03	3.32
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.972E+04	97.77	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	2.271E+03			

Starting depth: 390.40 cm   Ending depth: 690.30 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

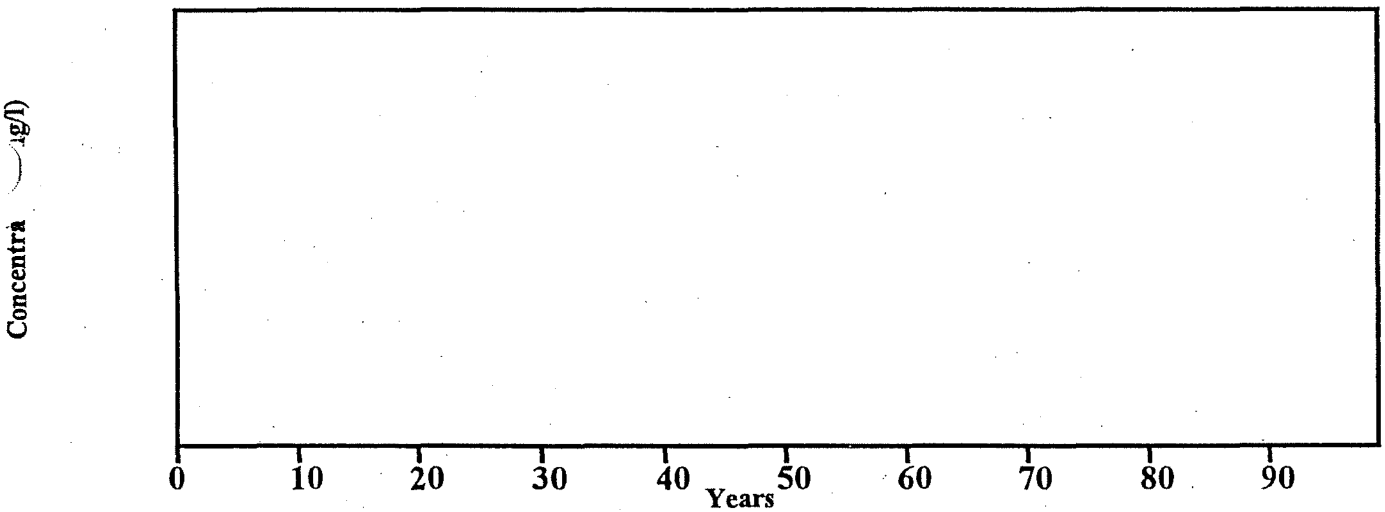
D:\PROJECTS\FINDLEY\T12DICH\T12DI02.OUT

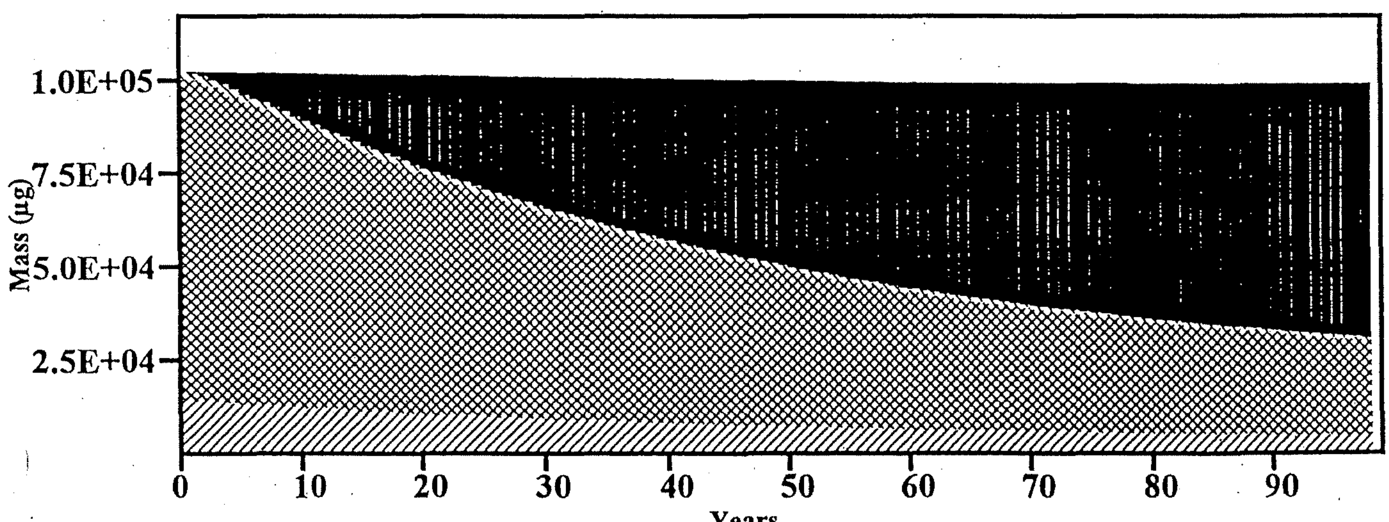
trans 1,2-Dichloroethene Koc=104

trans 1,2-Dichloroethene Koc = 104.1, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	6.890E+04	67.56	7.127E+04	69.88
Diffused Up	3.059E+01	0.03	3.164E+01	0.03
Soil Air	5.486E+02	0.54	5.675E+02	0.56
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.529E+04	24.80	2.616E+04	25.65
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	3.824E+03	3.75	3.955E+03	3.88
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.860E+04	96.67	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	3.395E+03			

Starting depth: 390.20 cm   Ending depth: 550.30 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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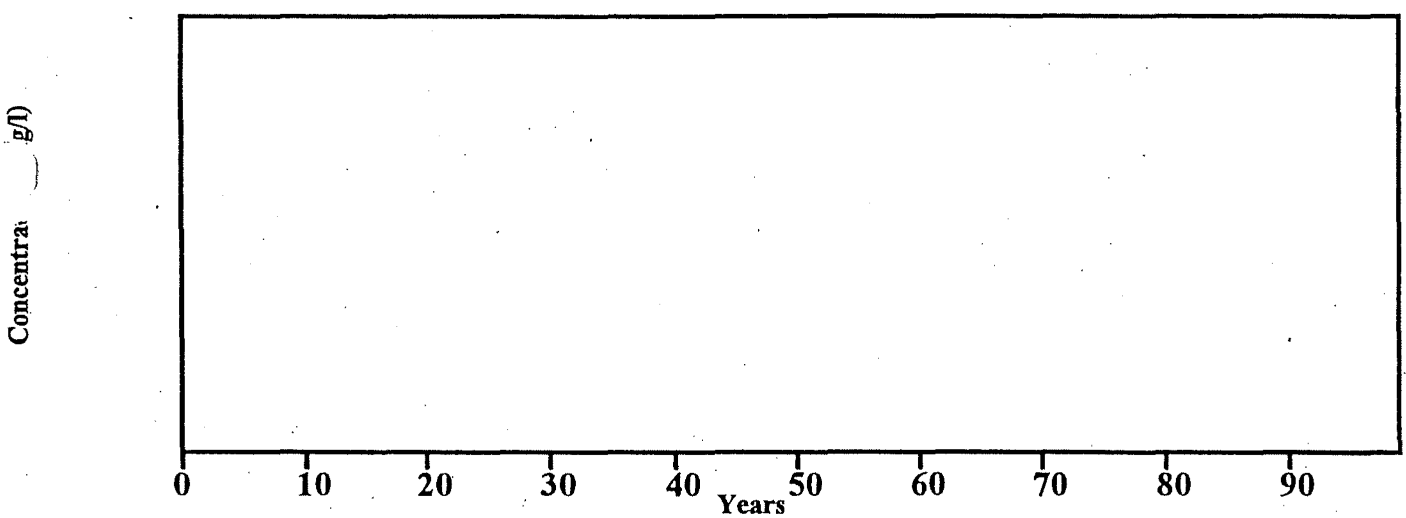
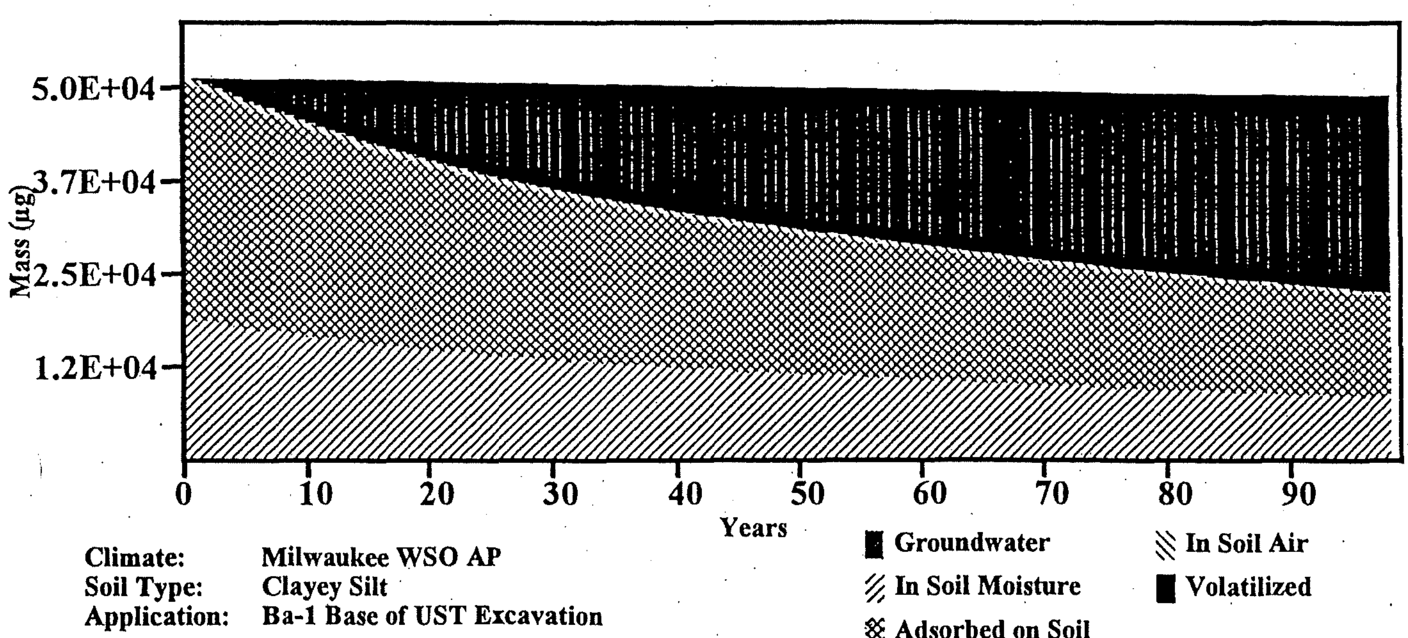
di-Isopropyl Ether Baseline

di-Isopropyl Ether baseline, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.657E+04	52.12	2.788E+04	54.67
Diffused Up	2.434E+01	0.05	2.553E+01	0.05
Soil Air	3.681E+02	0.72	3.862E+02	0.76
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.374E+04	26.96	1.442E+04	28.28
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	7.891E+03	15.47	8.279E+03	16.23
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.861E+04	95.32	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	2.386E+03			

Starting depth: 385.50 cm **Ending depth: 723.20 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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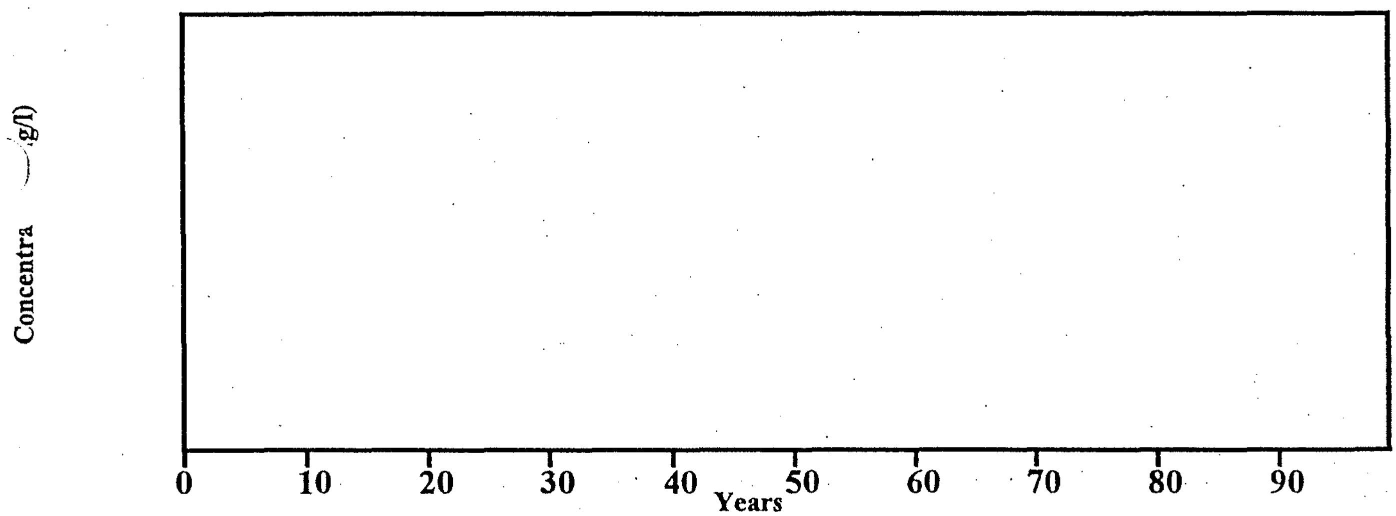
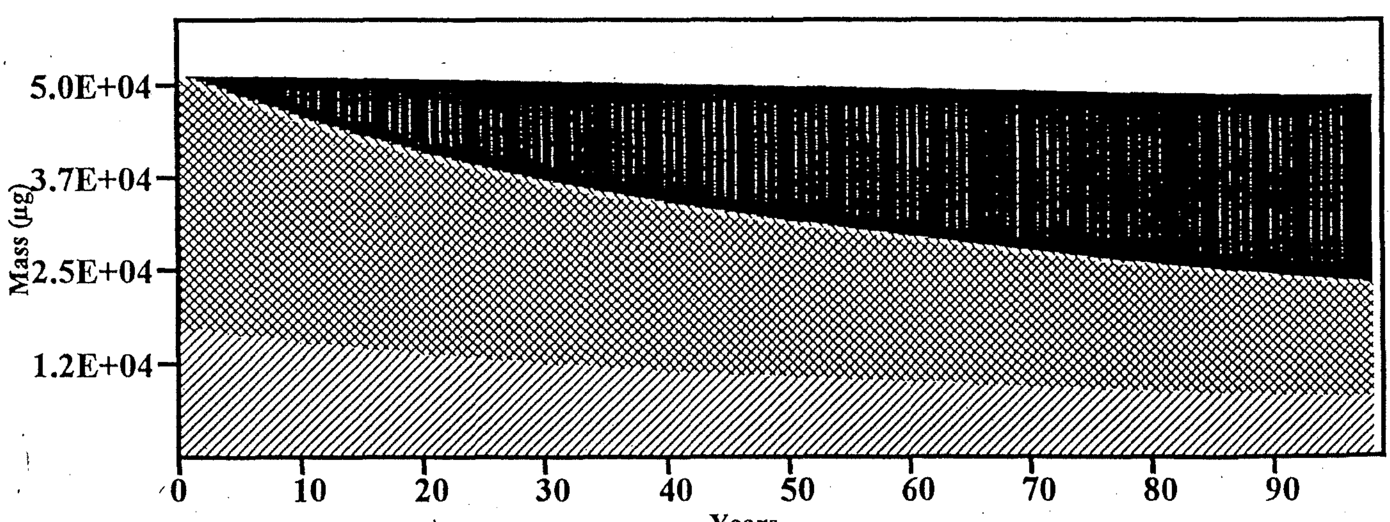
di-Isopropyl Ether Koc = 31.4

di-Isopropyl Ether Koc = 31.4, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.552E+04	50.05	2.691E+04	52.78
Diffused Up	2.483E+01	0.05	2.618E+01	0.05
Soil Air	3.497E+02	0.69	3.688E+02	0.72
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.496E+04	29.34	1.578E+04	30.95
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	7.495E+03	14.70	7.904E+03	15.50
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.835E+04	94.82	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	2.641E+03			

Starting depth: 385.40 cm **Ending depth: 709.40 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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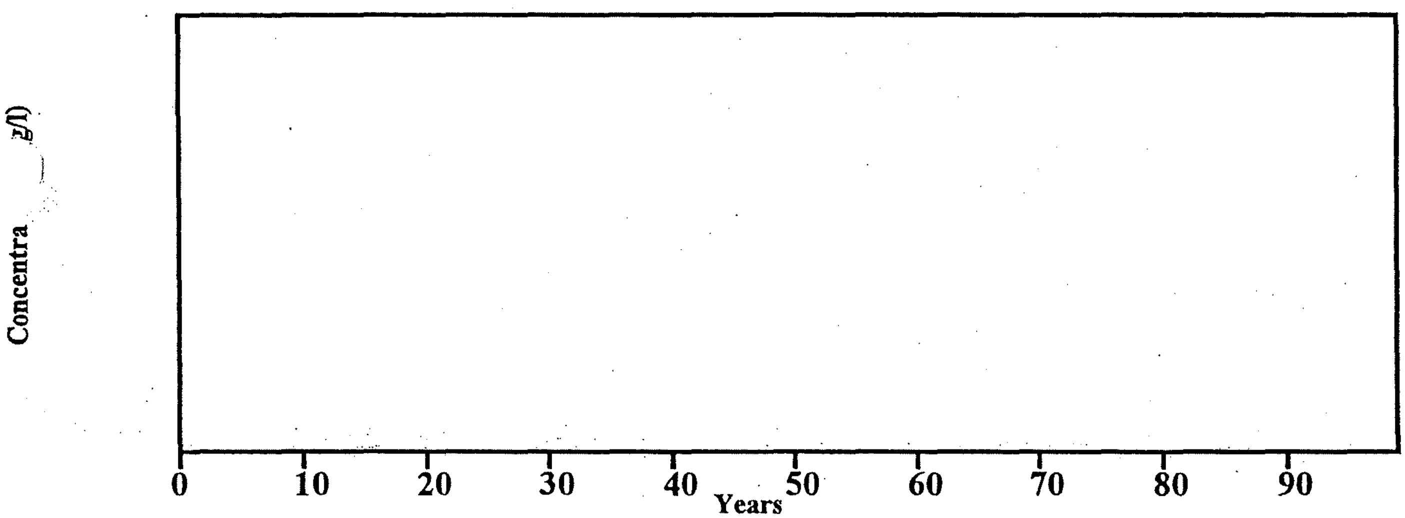
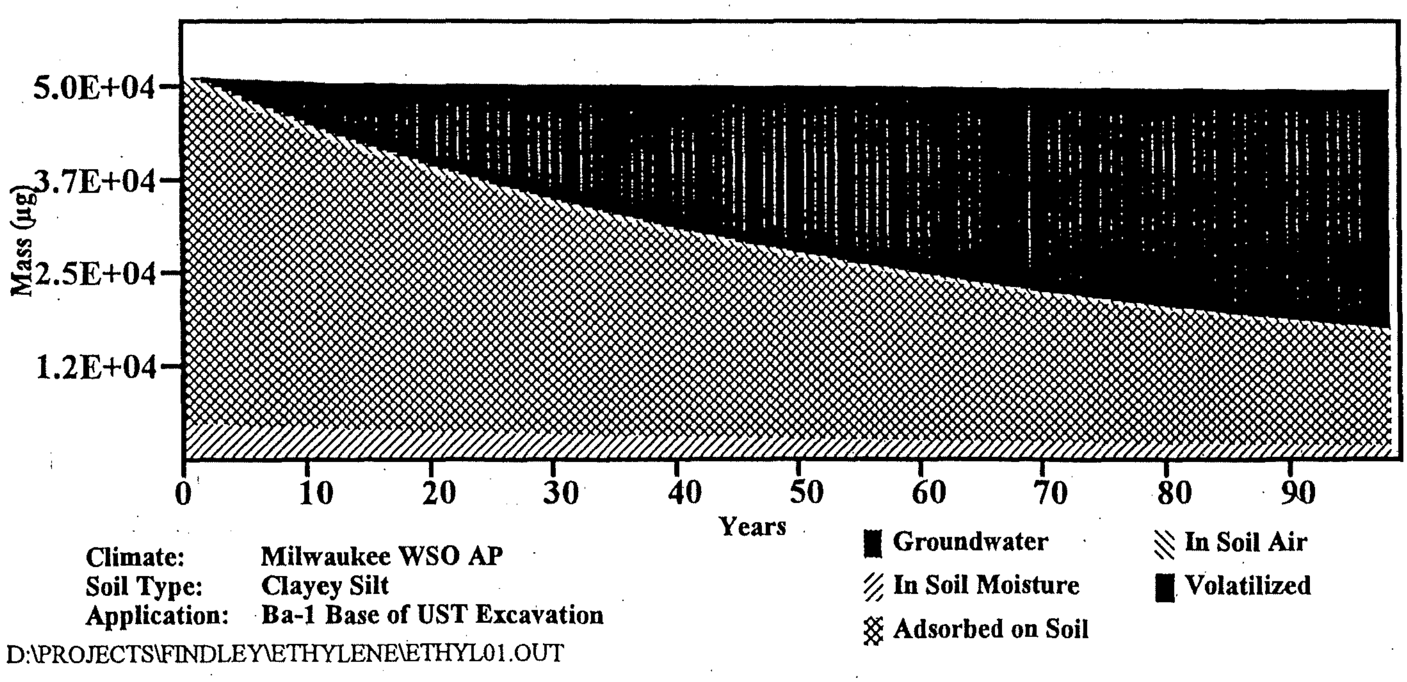
Ethylbenzene Baseline

Ethylbenzene baseline, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.242E+04	63.57	3.359E+04	65.87
Diffused Up	2.386E+00	0.00	2.472E+00	0.00
Soil Air	3.246E+02	0.64	3.364E+02	0.66
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.504E+04	29.49	1.558E+04	30.56
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.433E+03	2.81	1.485E+03	2.91
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.922E+04	96.51	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.779E+03			

Starting depth: 385.10 cm Ending depth: 493.30 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

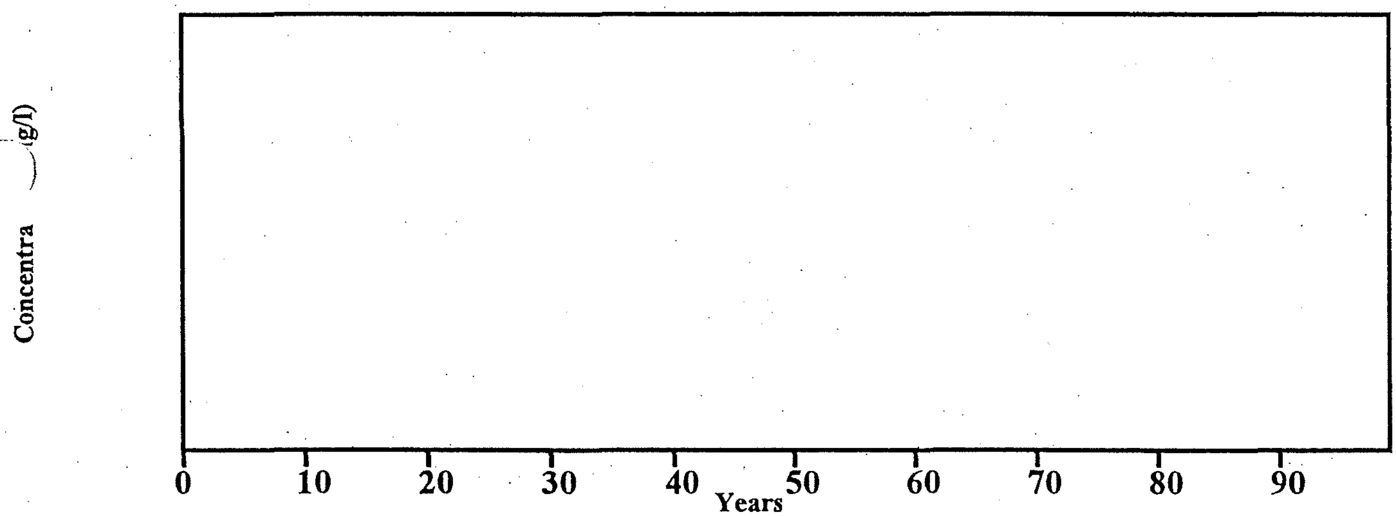
D:\PROJECTS\FINDLEY\ETHYLENE\ETHYL01.OUT

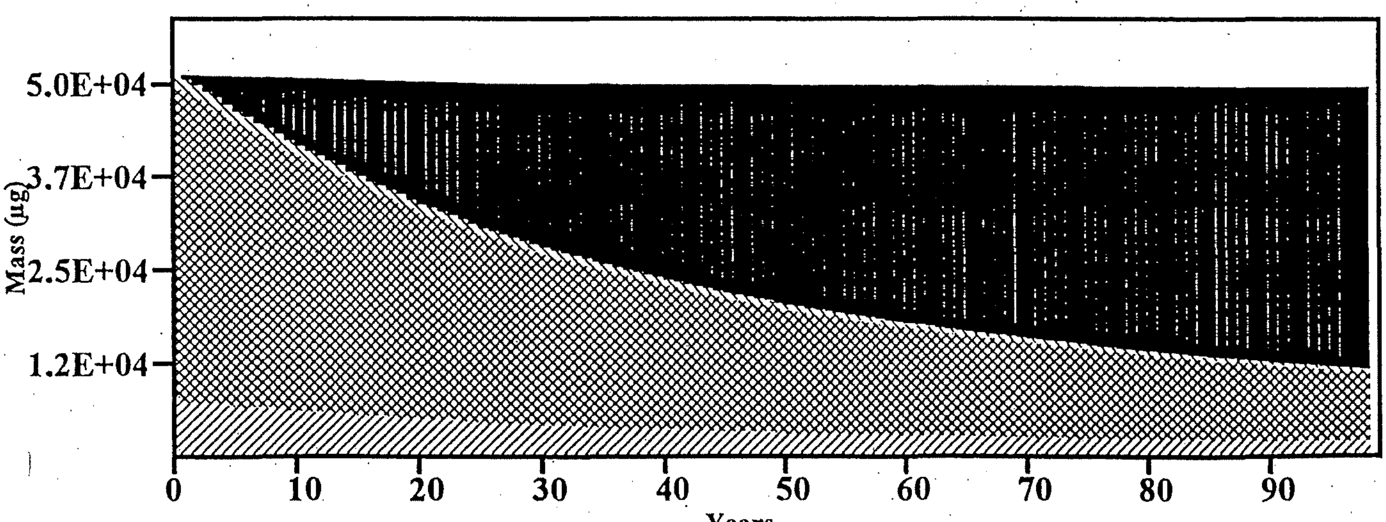
Ethylbenzene Koc=95

Ethylbenzene Koc = 95, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.826E+04	75.02	3.955E+04	77.56
Diffused Up	1.655E+01	0.03	1.710E+01	0.03
Soil Air	3.445E+02	0.68	3.562E+02	0.70
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	9.187E+03	18.02	9.498E+03	18.62
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.520E+03	2.98	1.572E+03	3.08
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.933E+04	96.73	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.668E+03			

Starting depth: 385.20 cm **Ending depth: 557.00 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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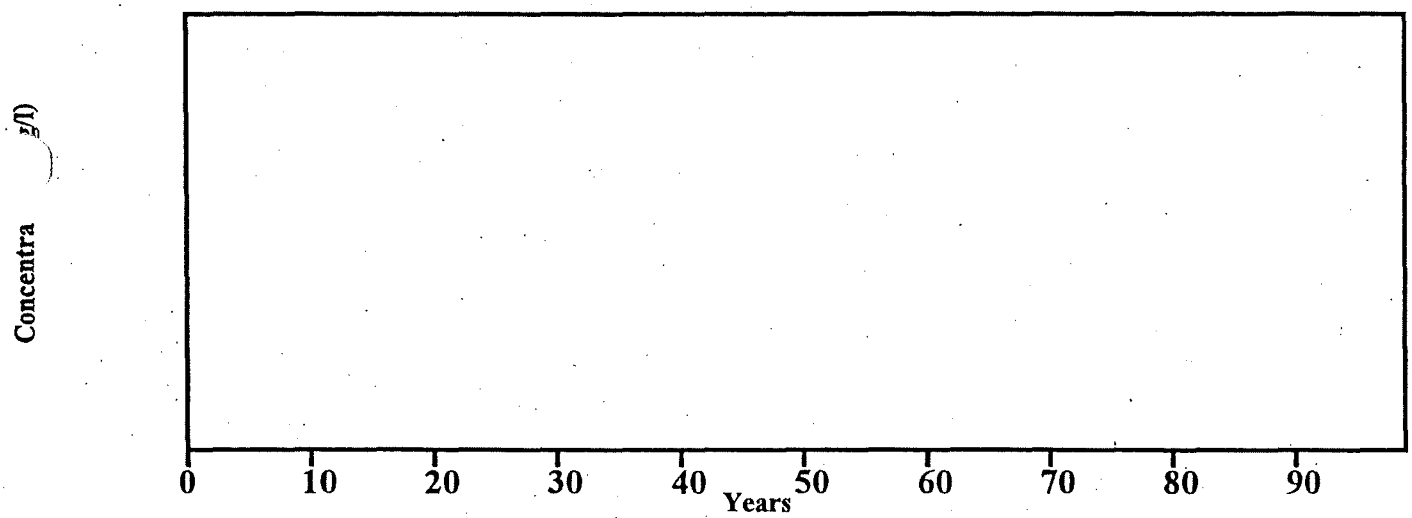
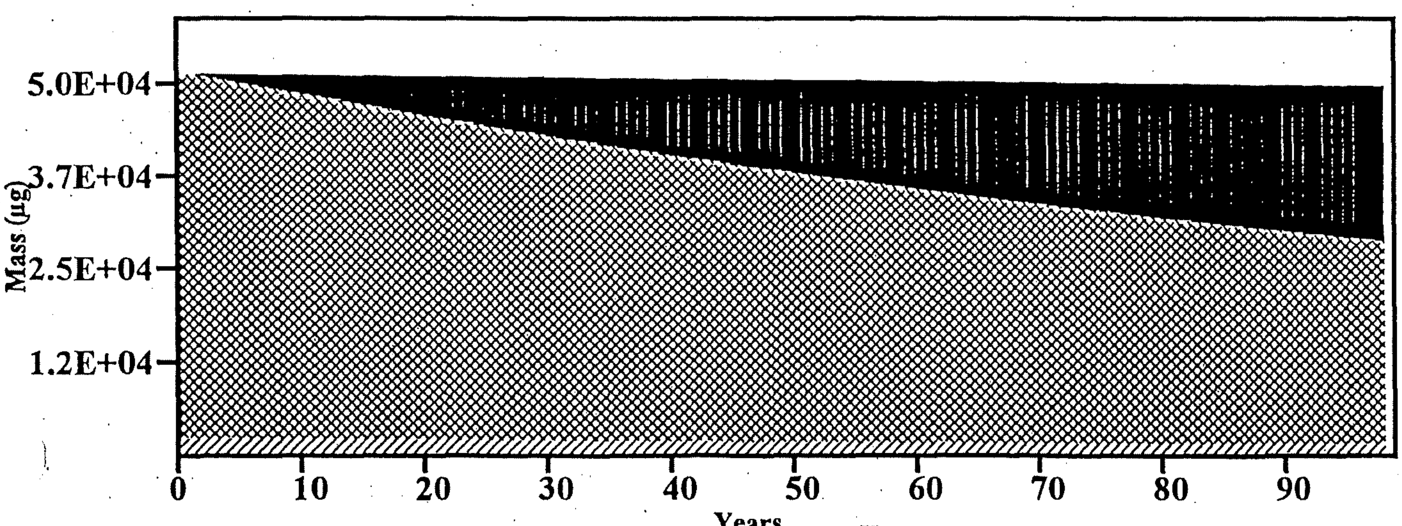
Ethylbenzene Koc=380

Ethylbenzene Koc = 380, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.130E+04	41.77	2.200E+04	43.15
Diffused Up	1.516E+00	0.00	1.566E+00	0.00
Soil Air	2.504E+02	0.49	2.587E+02	0.51
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.671E+04	52.37	2.759E+04	54.10
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.105E+03	2.17	1.141E+03	2.24
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.937E+04	96.81	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.629E+03			

Starting depth: 385.10 cm   Ending depth: 437.00 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

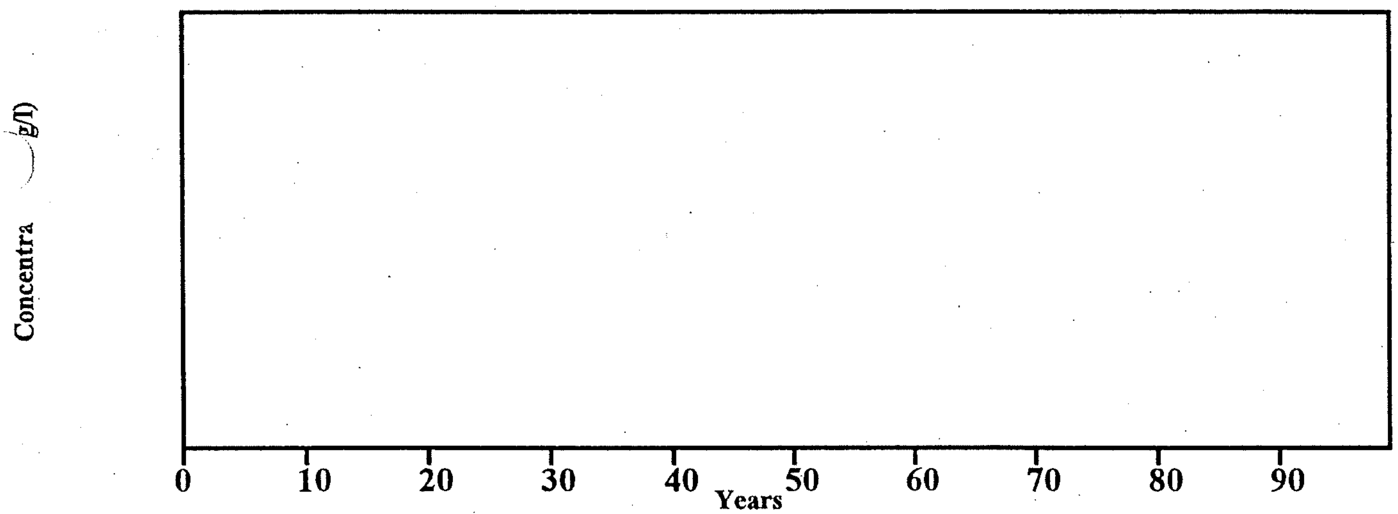
D:\PROJECTS\FINDLEY\ETHYLENE\ETHYL03.OUT

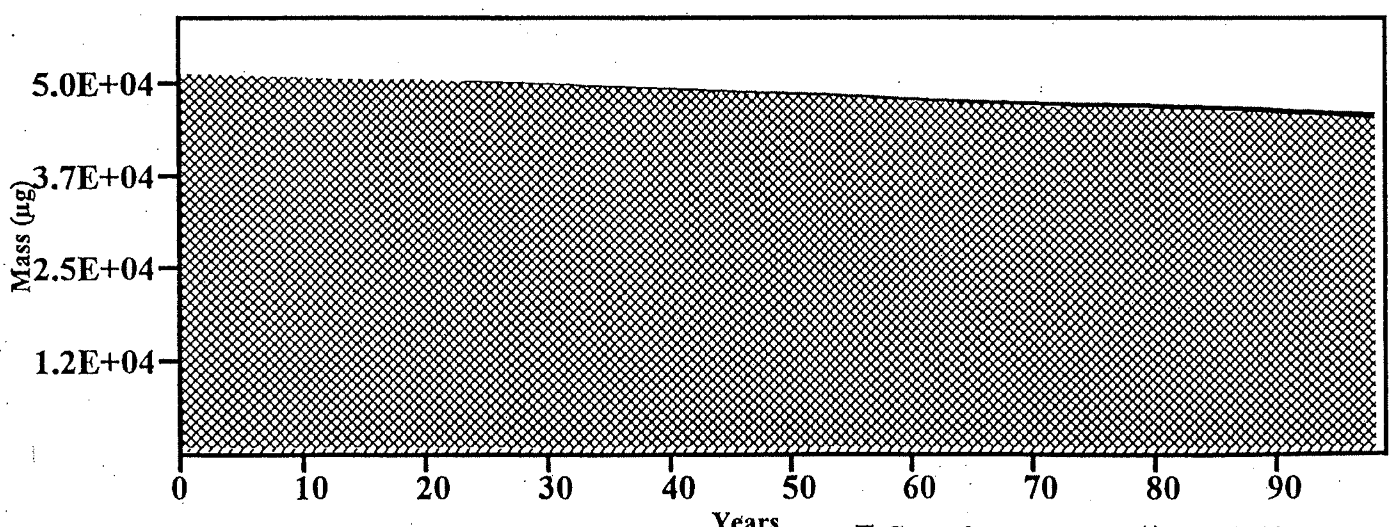
Hexane Baseline

Hexane baseline, Ba-1 GRO 99 year yun.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	9.549E+02	1.87	1.066E+03	2.09
Diffused Up	1.556E+00	0.00	1.738E+00	0.00
Soil Air	1.673E+01	0.03	1.869E+01	0.04
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.419E+04	86.67	4.937E+04	96.81
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	4.809E+02	0.94	5.372E+02	1.05
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.565E+04	89.52	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	5.346E+03			

Starting depth: 385.00 cm **Ending depth: 402.00 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

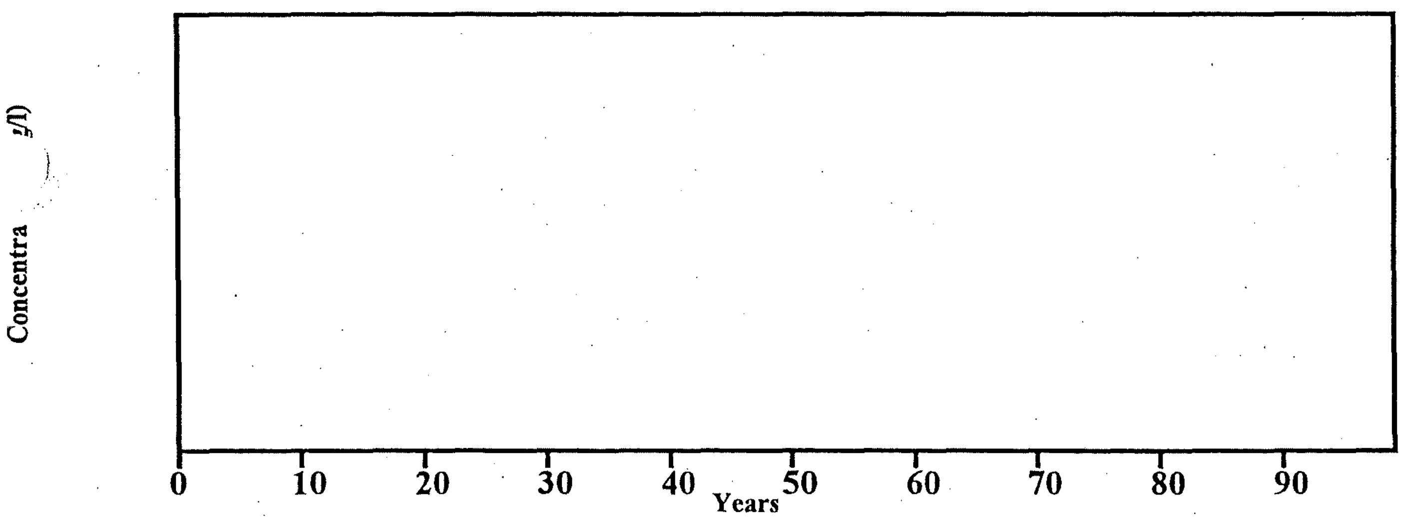
D:\PROJECTS\FINDLEY\HEXANE\GRO01.OUT

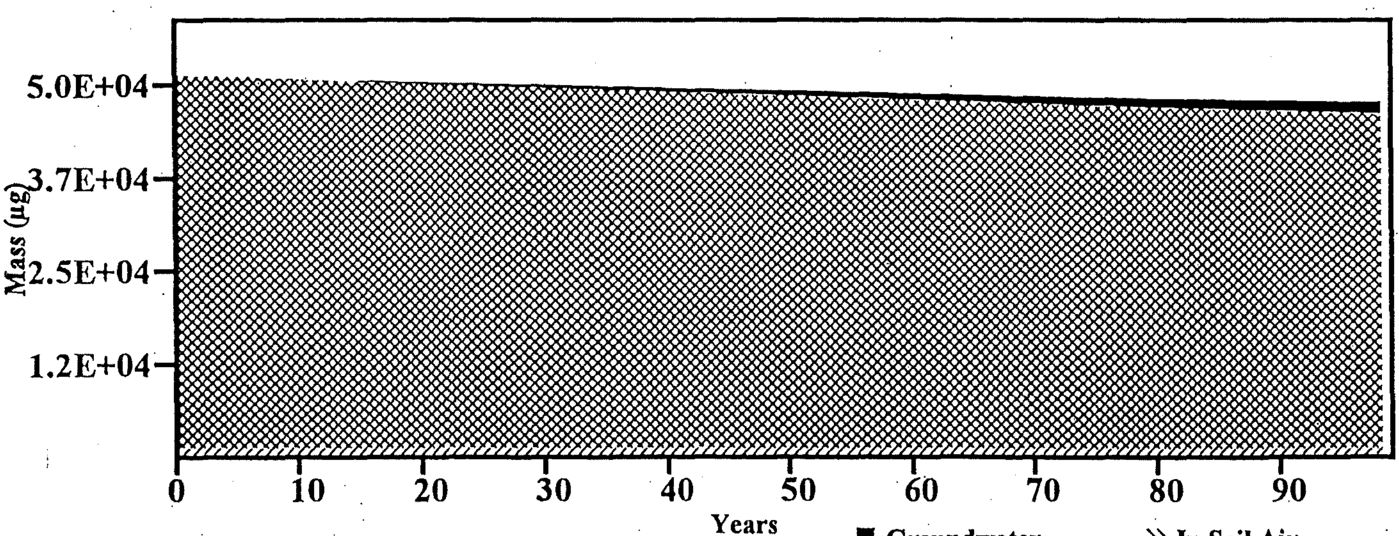
Hexane Koc=890

Hexane Koc = 890, Ba-1 GRO 99 year yun.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.663E+03	3.26	1.789E+03	3.51
Diffused Up	5.551E-01	0.00	5.971E-01	0.00
Soil Air	2.761E+01	0.05	2.970E+01	0.06
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.492E+04	88.08	4.832E+04	94.76
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	7.937E+02	1.56	8.539E+02	1.67
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.740E+04	92.95	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	3.593E+03			

Starting depth: 385.00 cm | Ending depth: 410.10 cm | Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

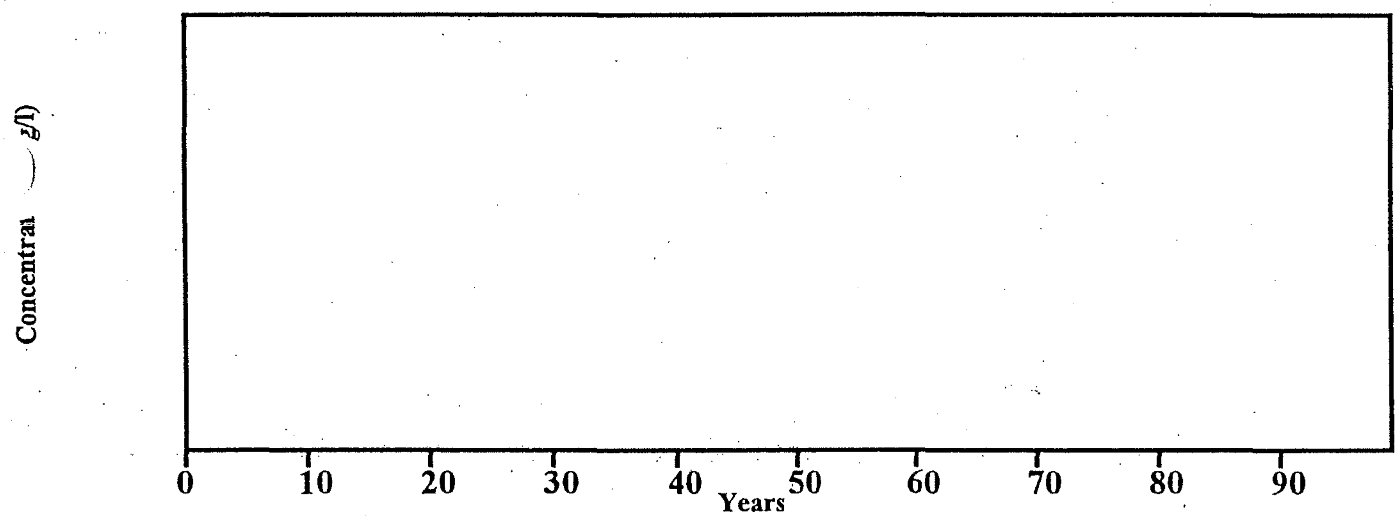
D:\PROJECTS\FINDLEY\HEXANE\GRO02.OUT

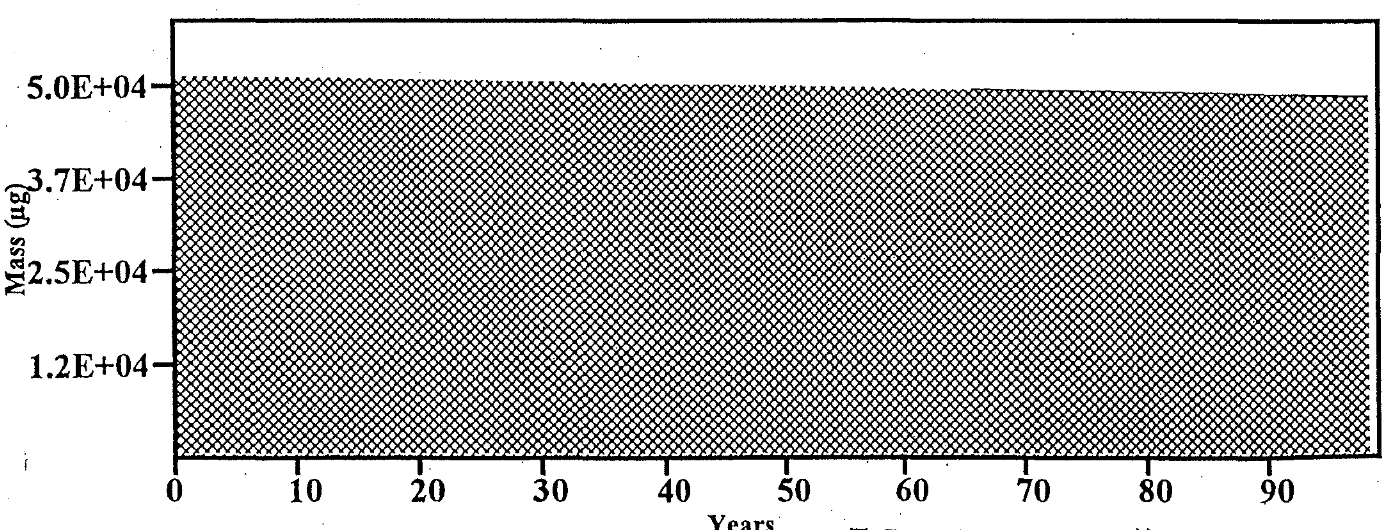
Hexane Koc=4100

Hexane Koc = 4100, Ba-1 GRO 99 year yun.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.456E+02	0.48	2.587E+02	0.51
Diffused Up	1.077E+01	0.02	1.134E+01	0.02
Soil Air	6.399E+00	0.01	6.742E+00	0.01
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.795E+04	94.04	5.052E+04	99.08
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.839E+02	0.36	1.937E+02	0.38
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.840E+04	94.91	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	2.595E+03			

Starting depth: 385.00 cm **Ending depth: 391.30 cm** **Total depth: 920.00 cm**





Climate:	**Milwaukee WSO AP**
Soil Type:	**Clayey Silt**
Application:	**Ba-1 Base of UST Excavation**

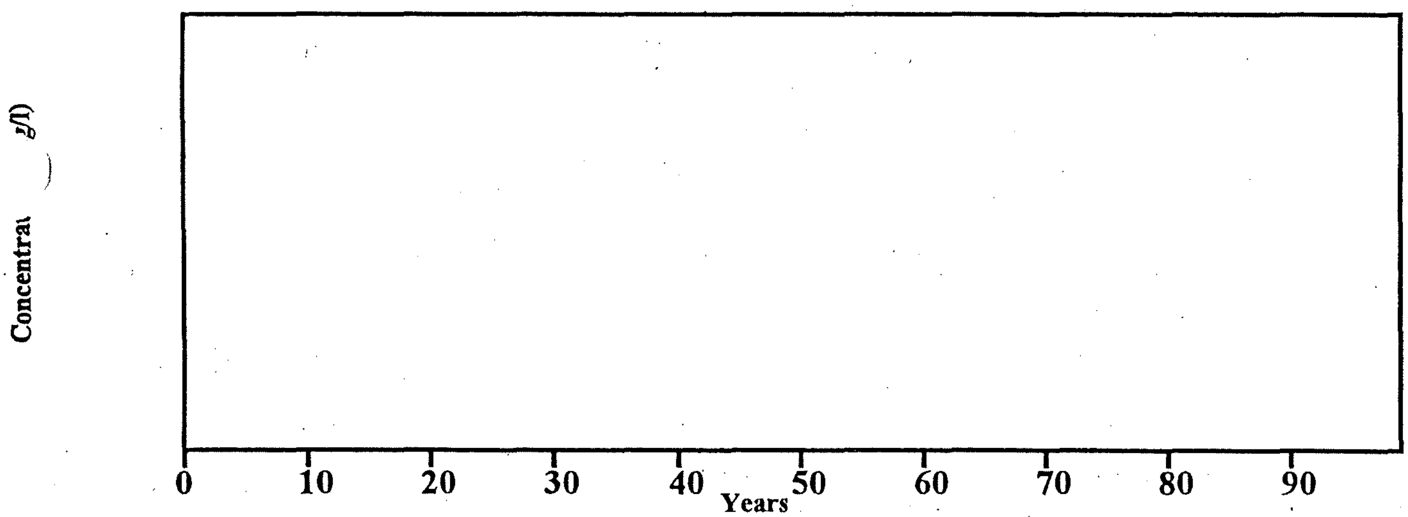
D:\PROJECTS\FINDLEY\HEXANE\GRO03.OUT

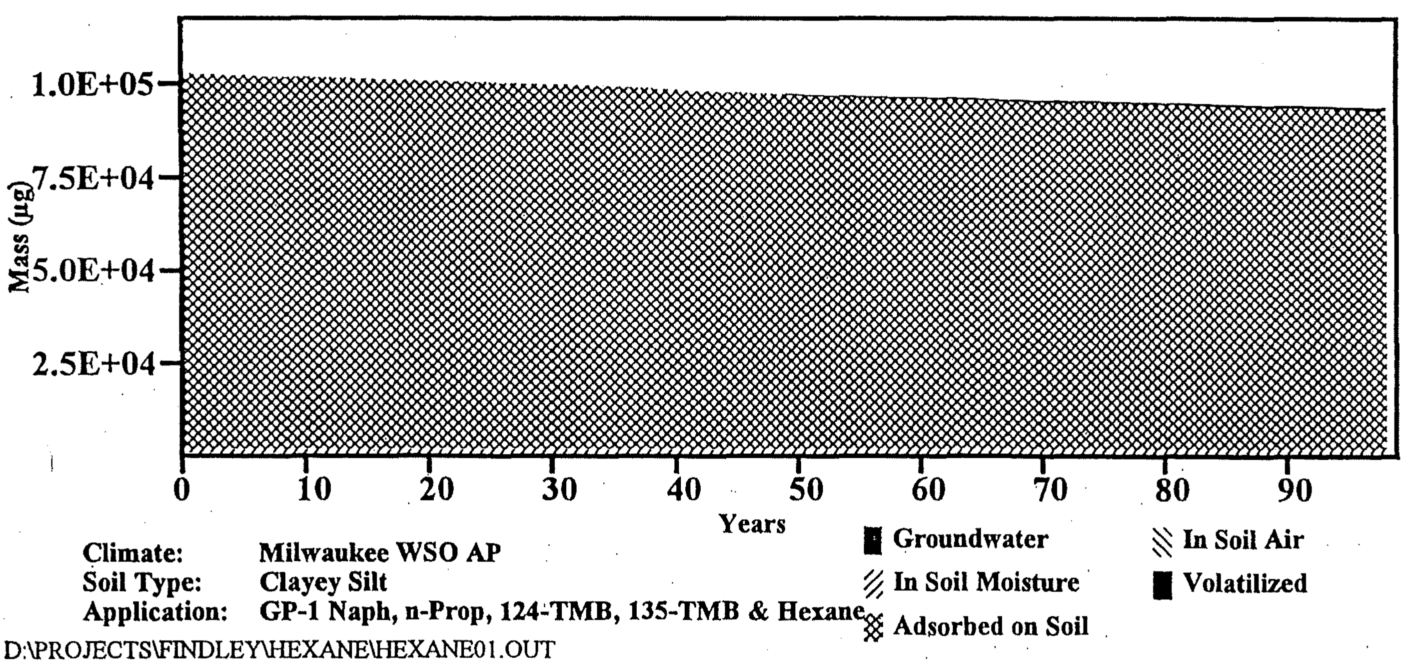
Hexane Baseline

Hexane baseline, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	8.265E+02	0.81	9.082E+02	0.89
Diffused Up	2.636E+01	0.03	2.896E+01	0.03
Soil Air	3.443E+01	0.03	3.783E+01	0.04
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	9.095E+04	89.17	9.993E+04	97.98
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	9.898E+02	0.97	1.087E+03	1.07
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.282E+04	91.01	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	9.172E+03			

Starting depth: 450.00 cm **Ending depth: 465.60 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

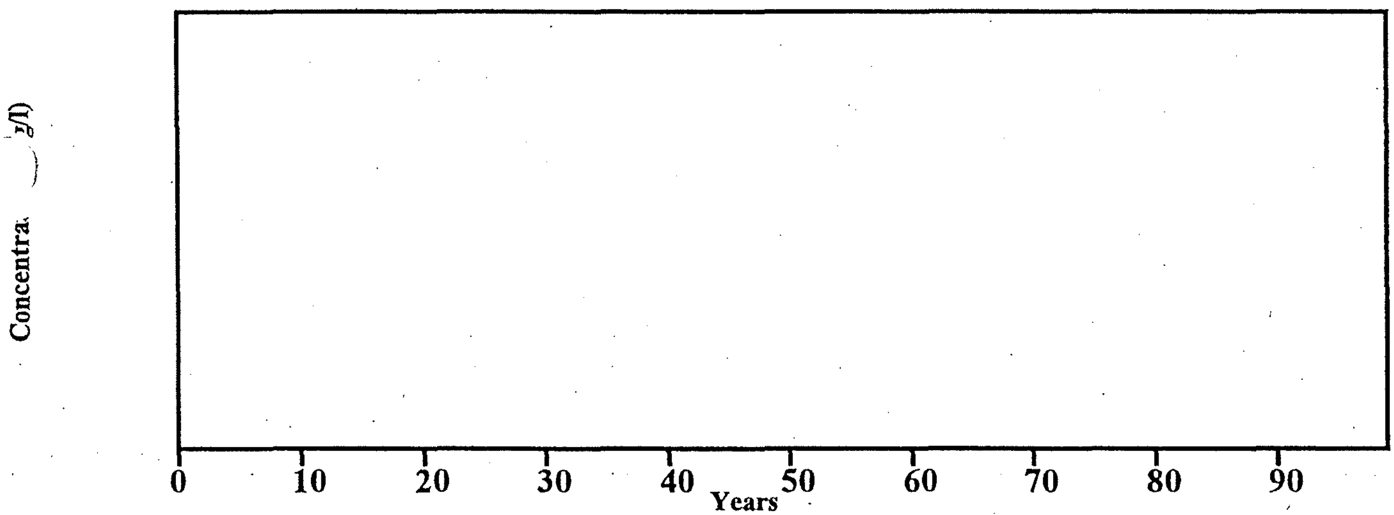
D:\PROJECTS\FINDLEY\HEXANE\HEXANE01.OUT

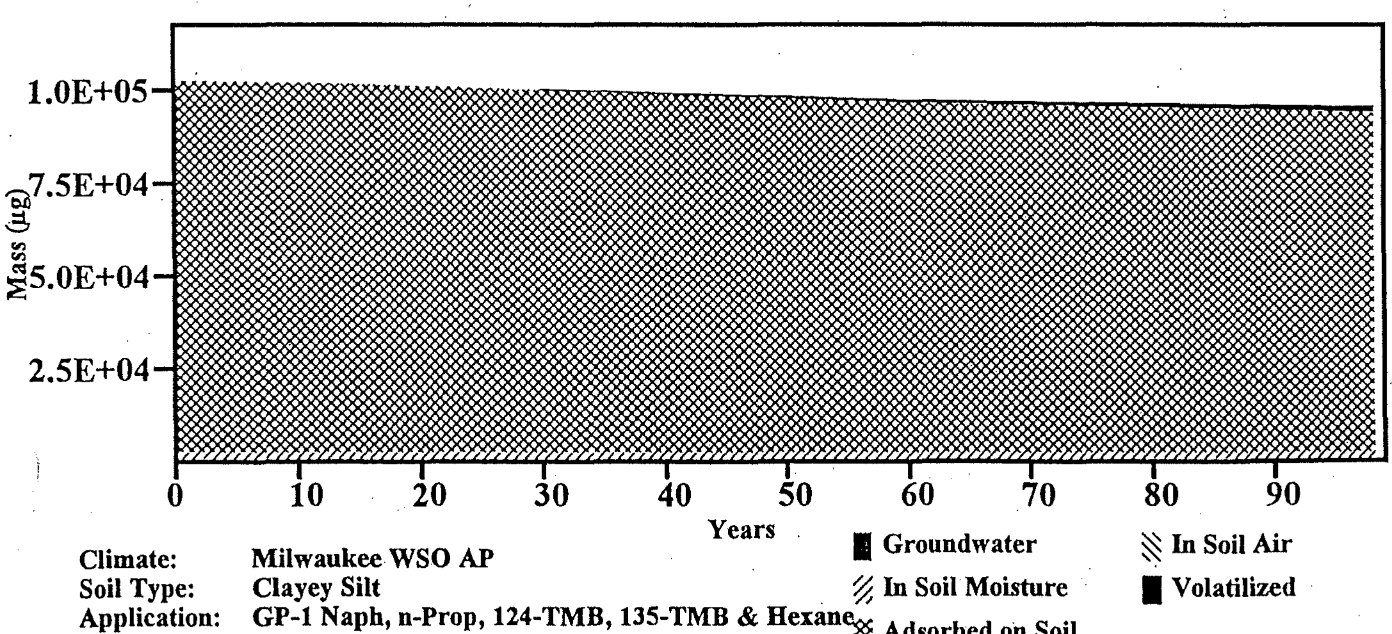
Hexane Koc=890

Hexane Koc = 890, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.728E+03	1.70	1.857E+03	1.82
Diffused Up	1.910E+01	0.02	2.051E+01	0.02
Soil Air	5.626E+01	0.06	6.043E+01	0.06
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	9.153E+04	89.74	9.832E+04	96.40
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.617E+03	1.59	1.737E+03	1.70
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.495E+04	93.09	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	7.048E+03			

Starting depth: 450.00 cm **Ending depth: 475.40 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

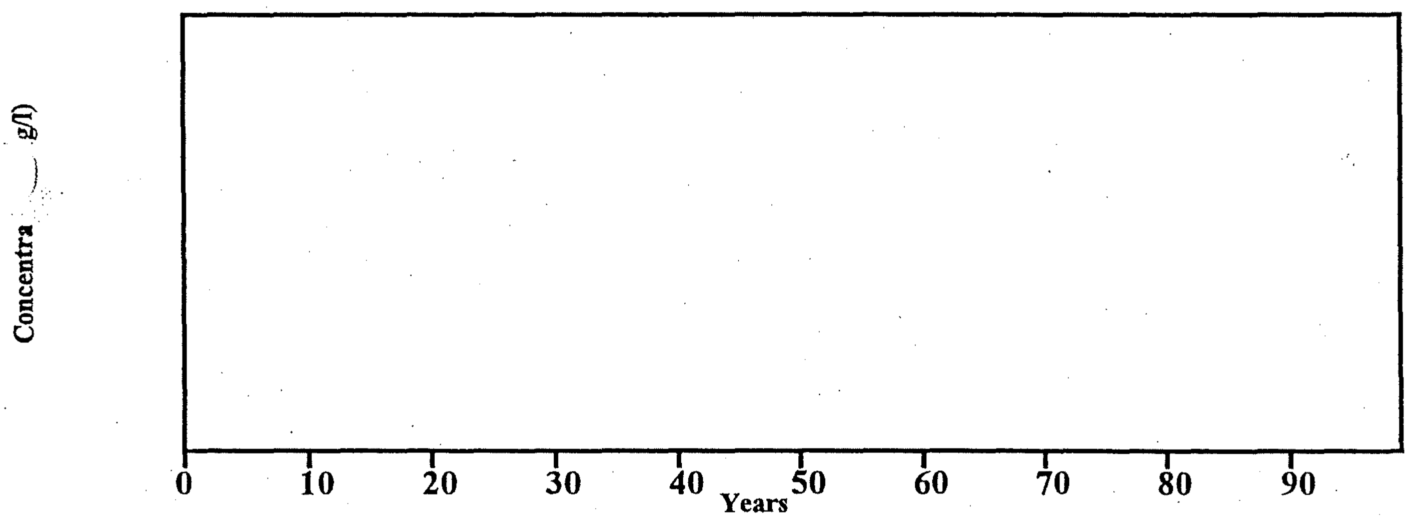
D:\PROJECTS\FINDLEY\HEXANE\HEXANE02.OUT

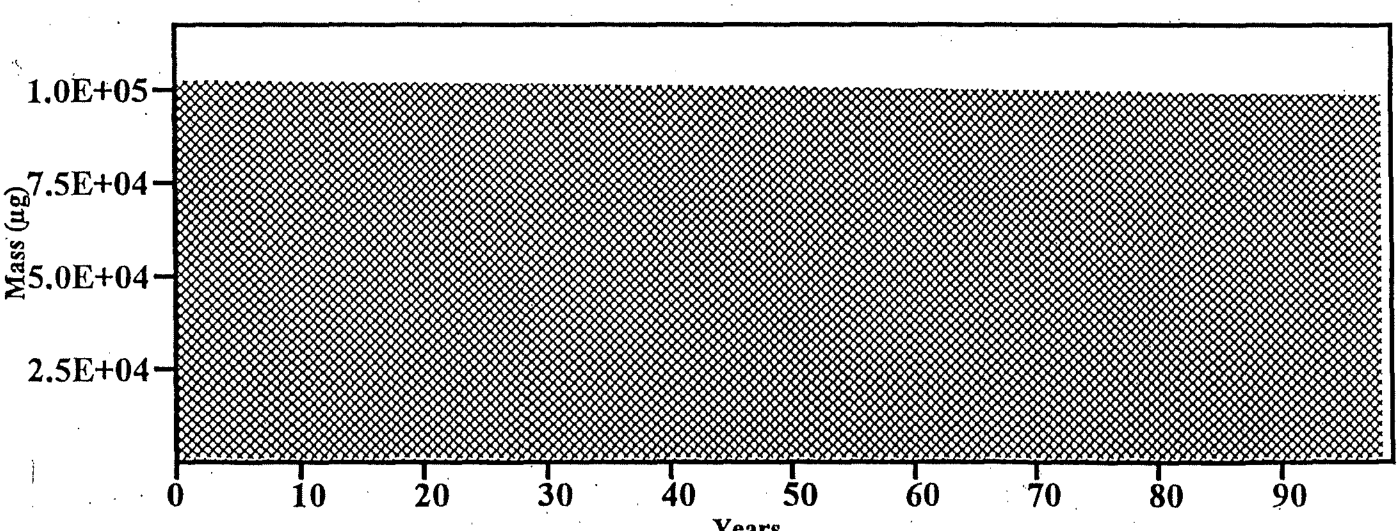
Hexane Koc=4100

Hexane Koc = 4100, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.431E+02	0.14	1.486E+02	0.15
Diffused Up	2.497E+01	0.02	2.593E+01	0.03
Soil Air	1.303E+01	0.01	1.353E+01	0.01
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	9.765E+04	95.74	1.014E+05	99.43
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	3.746E+02	0.37	3.890E+02	0.38
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.820E+04	96.28	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	3.794E+03			

Starting depth: 450.00 cm　**Ending depth:** 455.60 cm　**Total depth:** 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

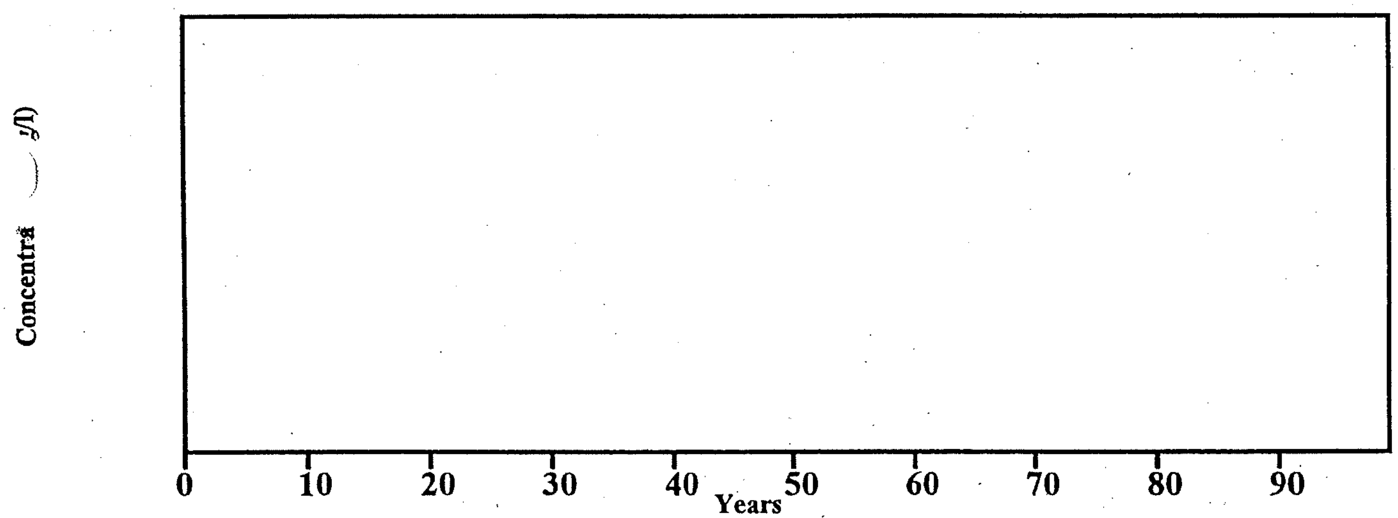
D:\PROJECTS\FINDLEY\HEXANE\HEXANE03.OUT

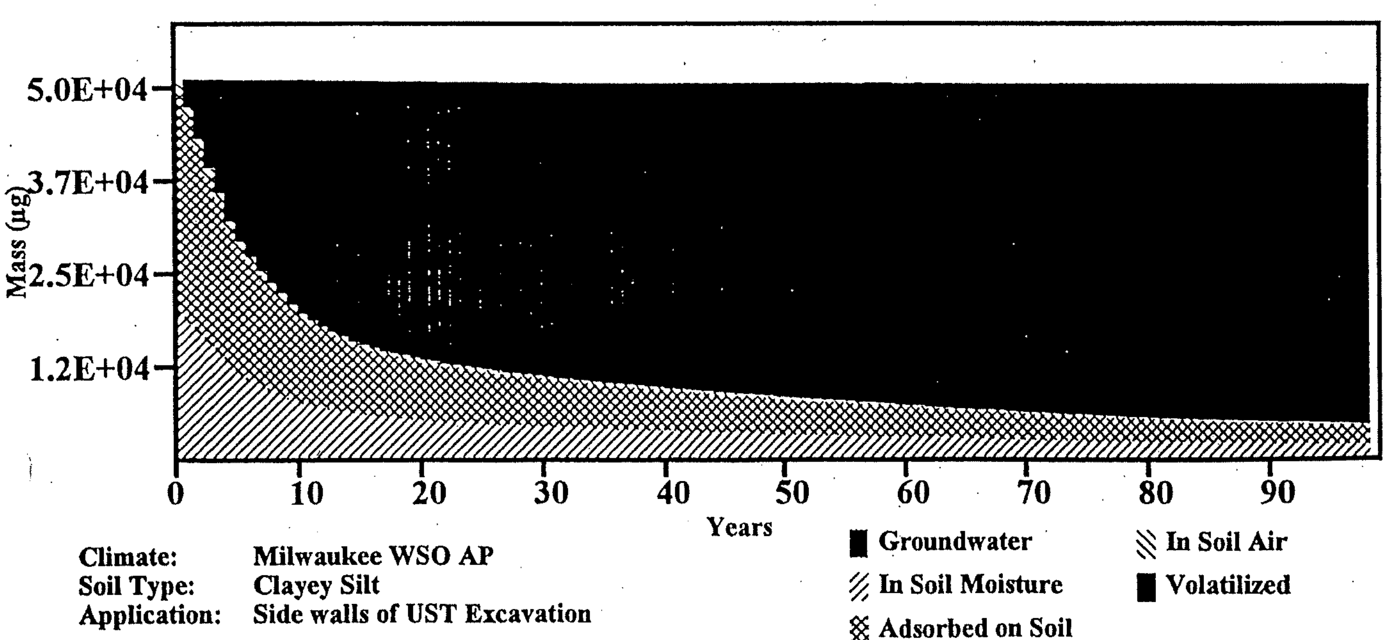
Methylene Chloride Baseline

Methylene Chloride baseline, Side walls 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	4.601E+04	90.23	4.668E+04	91.55
Diffused Up	8.560E+00	0.02	8.685E+00	0.02
Soil Air	1.067E+02	0.21	1.083E+02	0.21
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.537E+03	4.97	2.574E+03	5.05
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.596E+03	3.13	1.619E+03	3.18
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	5.026E+04	98.56	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	7.351E+02			

Starting depth: 165.70 cm   Ending depth: 644.40 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Side walls of UST Excavation

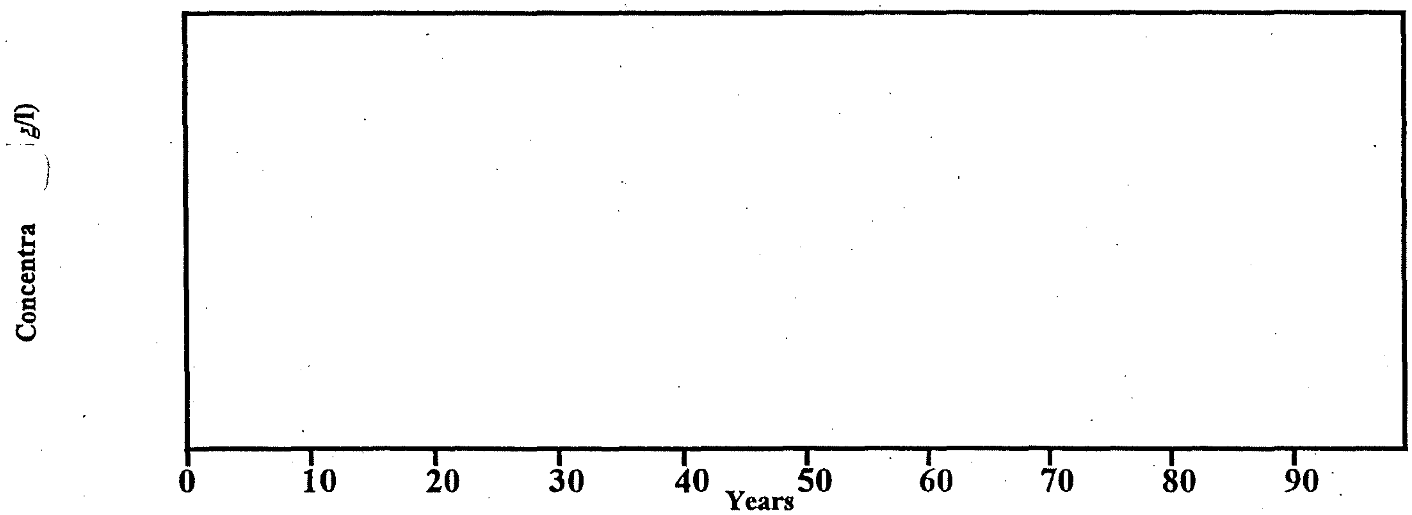
D:\PROJECTS\FINDLEY\METHCHLO\METH01.OUT

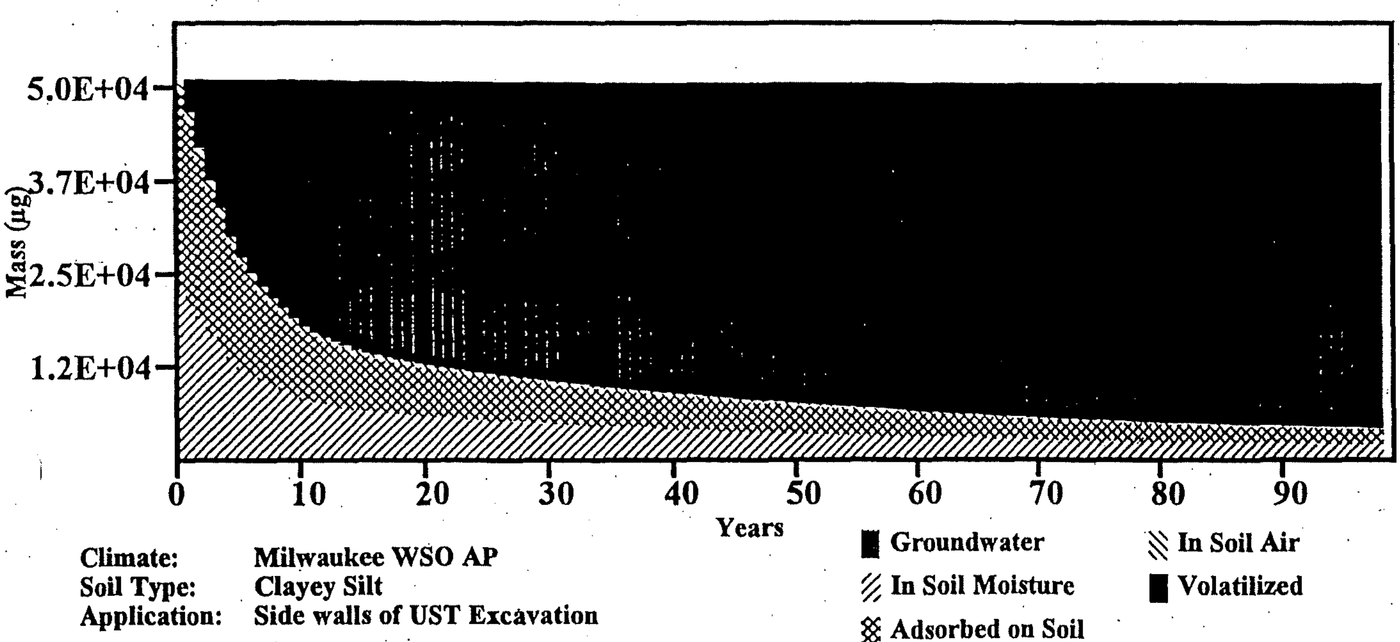
Methylene Chloride Koc=19.2

Methylene Chloride Koc = 19.2, Side walls 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	4.650E+04	91.20	4.718E+04	92.52
Diffused Up	8.715E+00	0.02	8.841E+00	0.02
Soil Air	1.096E+02	0.21	1.112E+02	0.22
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.001E+03	3.92	2.030E+03	3.98
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.638E+03	3.21	1.662E+03	3.26
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	5.026E+04	98.56	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	7.319E+02			

Starting depth: 165.80 cm **Ending depth: 681.90 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Side walls of UST Excavation

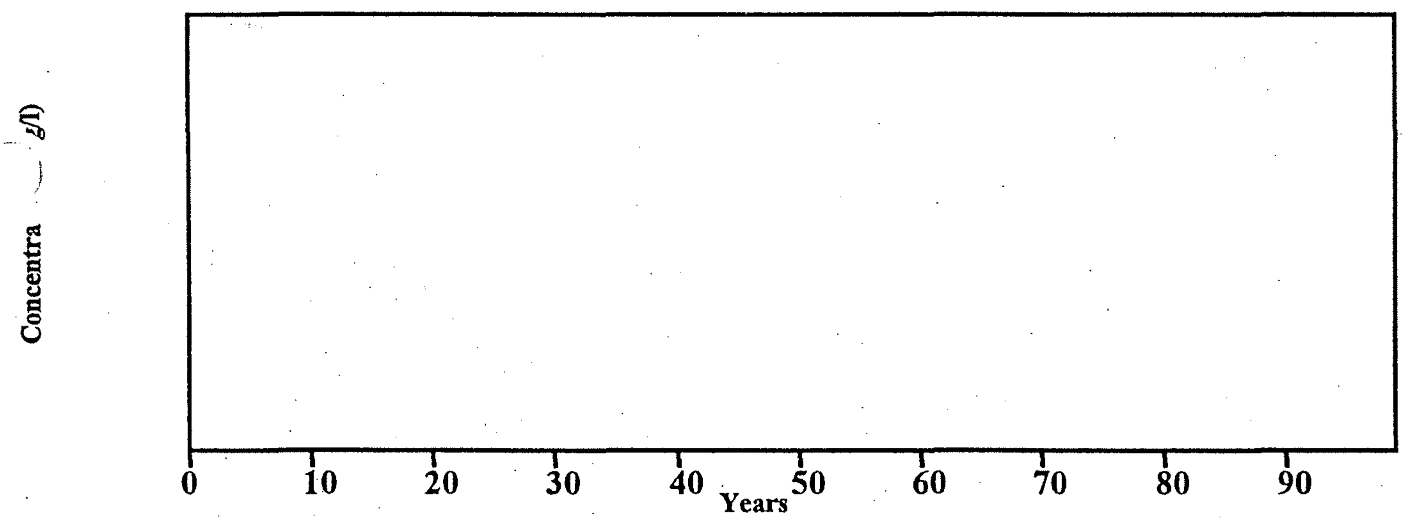
D:\PROJECTS\FINDLEY\METHCHLO\METH02.OUT

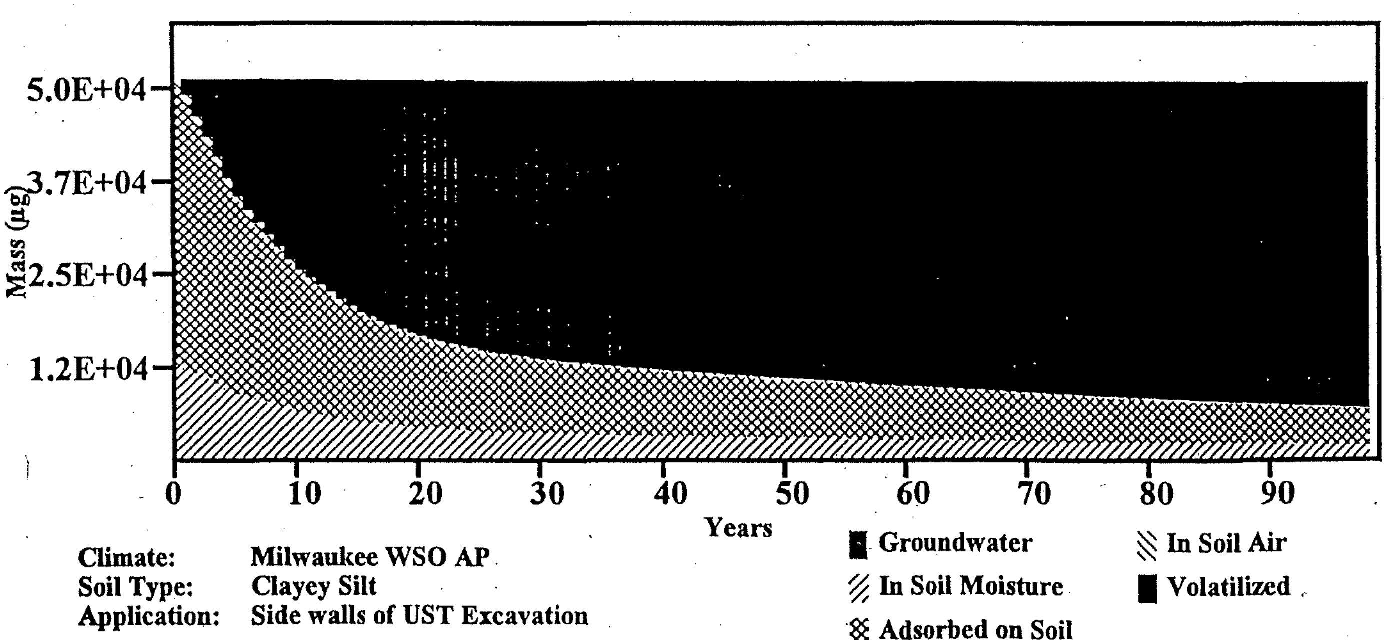
Methylene Chloride Koc=47.9

Methylene Chloride Koc = 47.9, Side walls 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	4.398E+04	86.24	4.439E+04	87.05
Diffused Up	1.388E+01	0.03	1.401E+01	0.03
Soil Air	1.061E+02	0.21	1.071E+02	0.21
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.836E+03	9.48	4.881E+03	9.57
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.587E+03	3.11	1.602E+03	3.14
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	5.052E+04	99.07	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	4.723E+02			

Starting depth: 165.50 cm Ending depth: 561.50 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Side walls of UST Excavation

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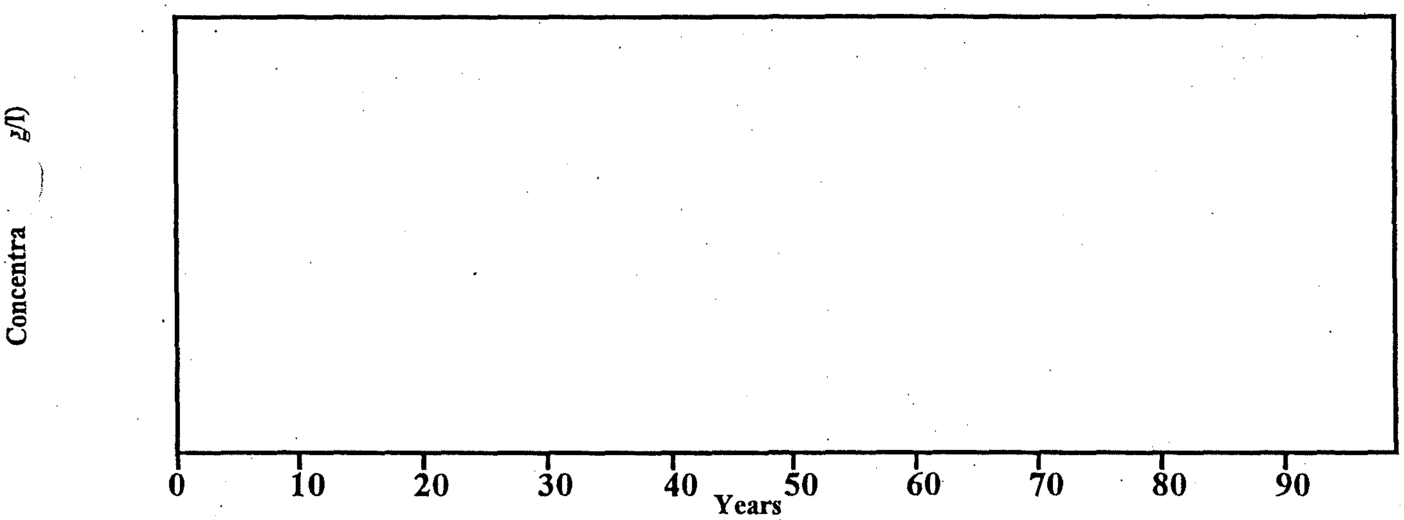
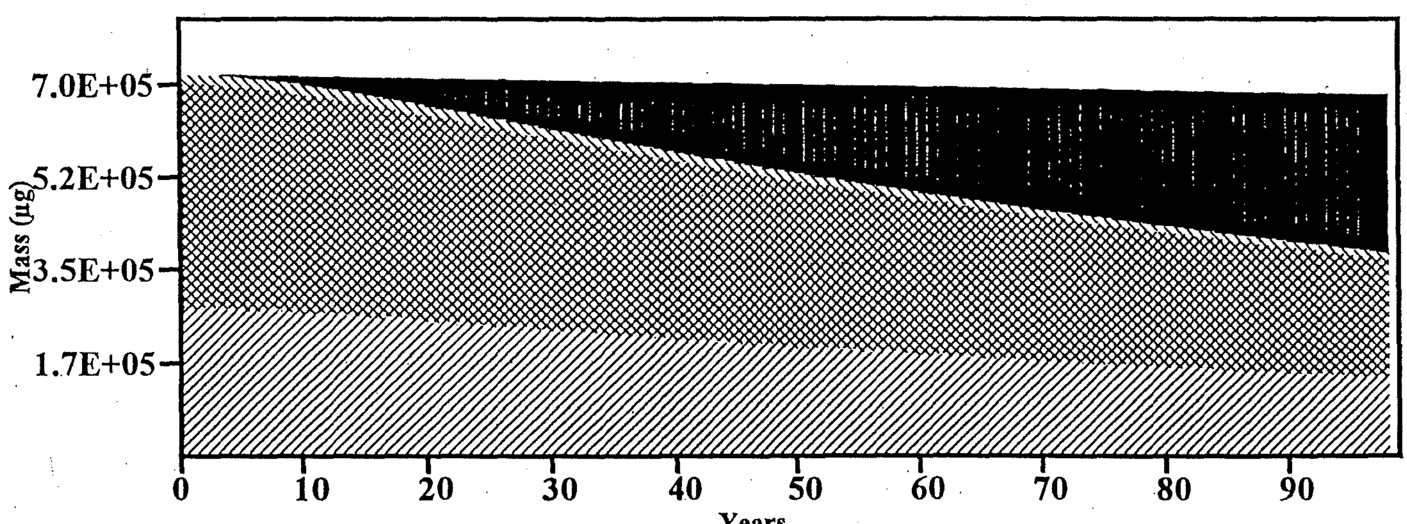
Methylene Chloride Baseline

Methylene Chloride baseline, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.036E+05	42.53	3.200E+05	44.83
Diffused Up	5.748E+02	0.08	6.058E+02	0.08
Soil Air	9.392E+03	1.32	9.900E+03	1.39
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.232E+05	31.27	2.353E+05	32.96
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.404E+05	19.67	1.480E+05	20.74
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	6.773E+05	94.87	7.140E+05	100.00
Total Input	7.140E+05		7.140E+05	
Input - Output	3.663E+04			

Starting depth: 760.20 cm **Ending depth: 880.00 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Methylene Chloride

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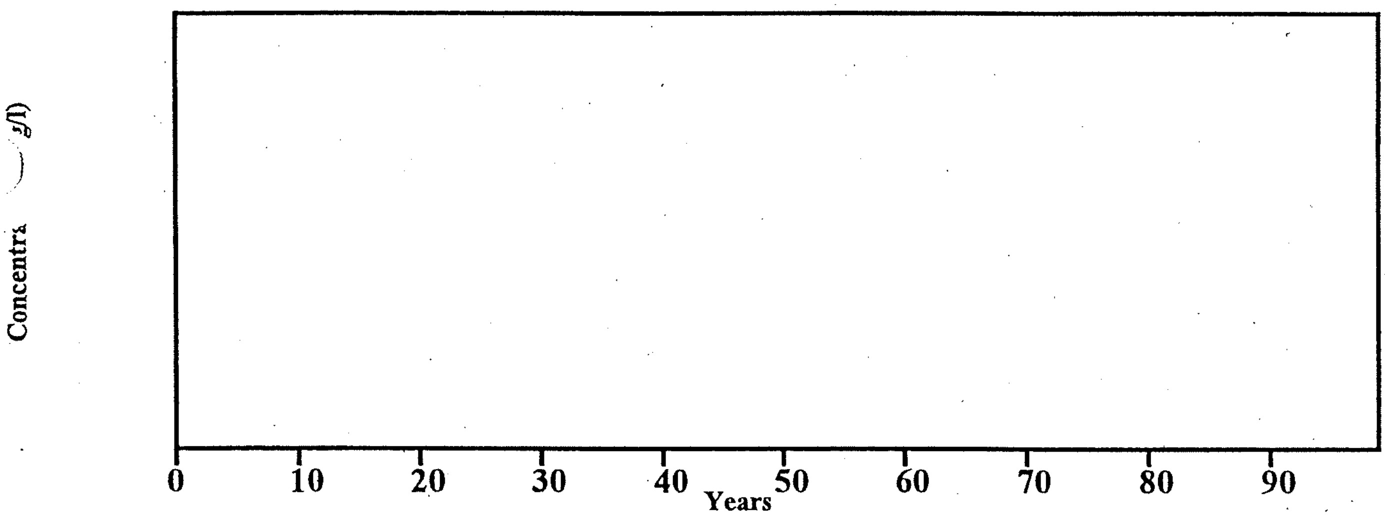
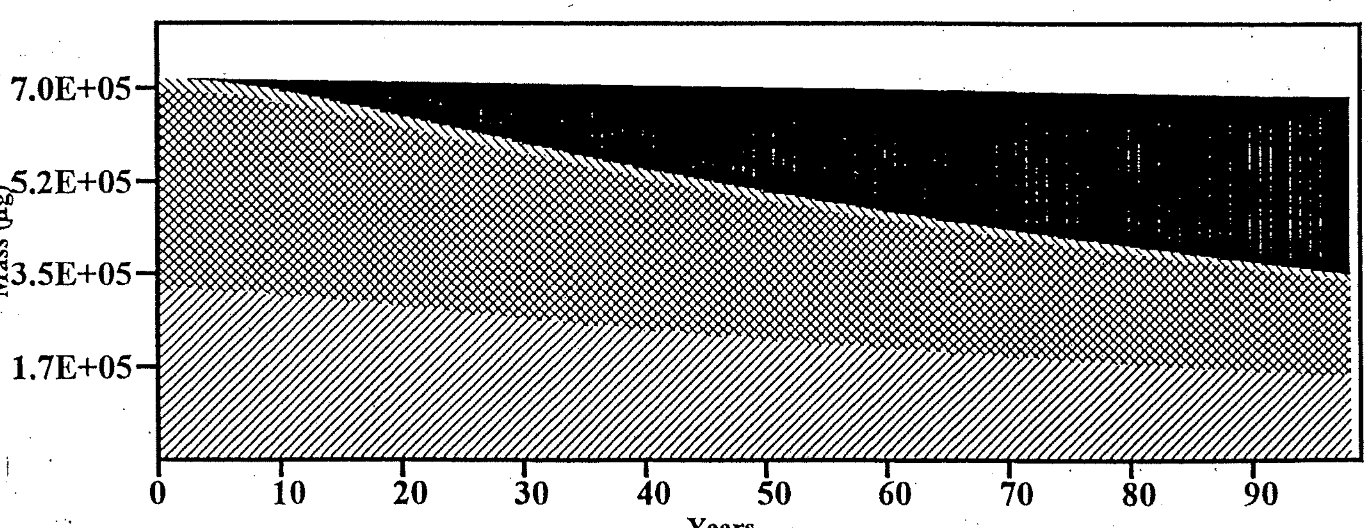
Methylene Chloride Koc=19.2

Methylene Chloride Koc = 19.2, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.390E+05	47.49	3.551E+05	49.74
Diffused Up	6.154E+02	0.09	6.445E+02	0.09
Soil Air	9.998E+03	1.40	1.047E+04	1.47
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.825E+05	25.56	1.911E+05	26.77
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.495E+05	20.94	1.565E+05	21.93
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	6.817E+05	95.48	7.140E+05	100.00
Total Input	7.140E+05		7.140E+05	
Input - Output	3.225E+04			

Starting depth: 760.20 cm   Ending depth: 897.70 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Methylene Chloride

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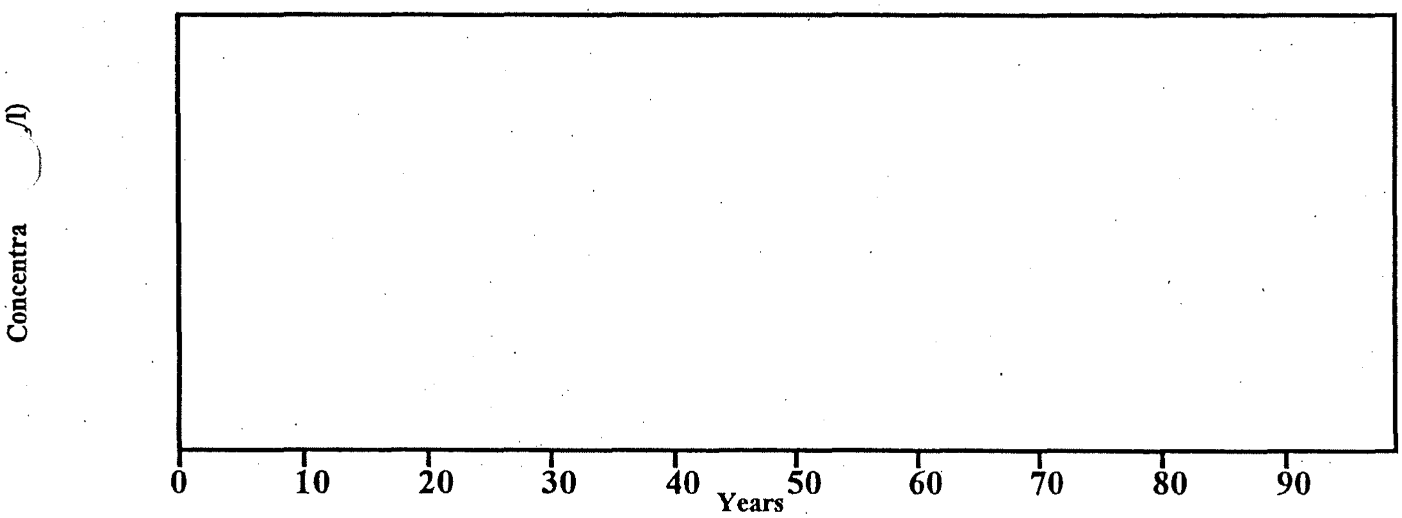
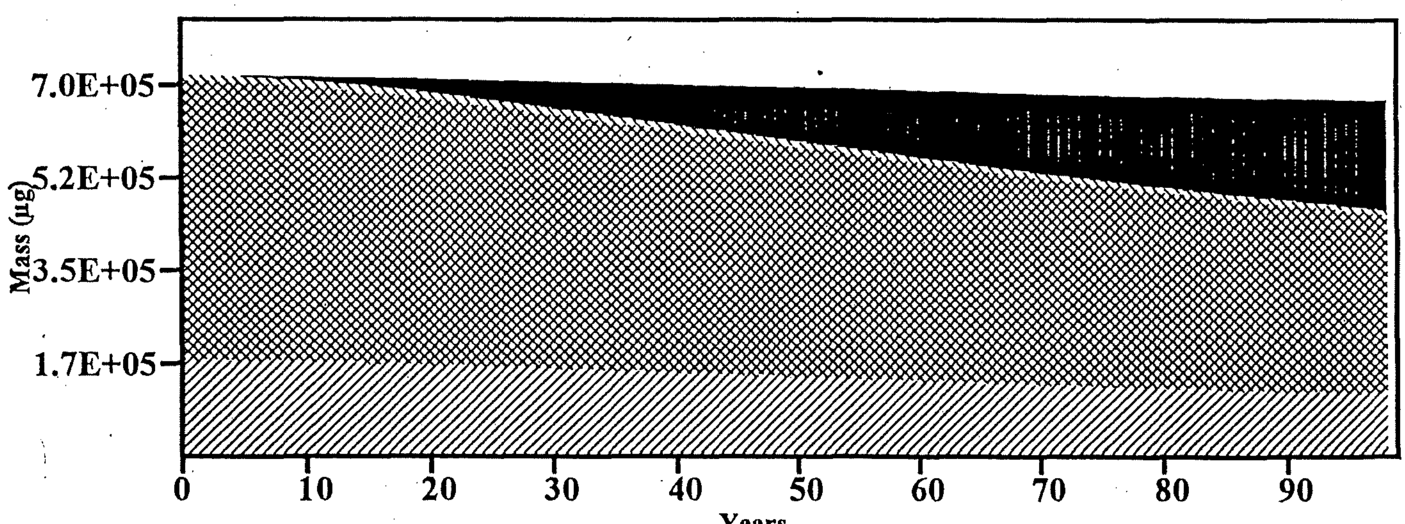
Methylene Chloride Koc=47.9

Methylene Chloride Koc = 47.9, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.119E+05	29.69	2.268E+05	31.77
Diffused Up	2.930E+02	0.04	3.136E+02	0.04
Soil Air	7.397E+03	1.04	7.916E+03	1.11
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.368E+05	47.18	3.605E+05	50.49
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.106E+05	15.49	1.183E+05	16.58
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	6.671E+05	93.44	7.140E+05	100.00
Total Input	7.140E+05		7.140E+05	
Input - Output	4.680E+04			

Starting depth: 760.10 cm **Ending depth: 841.30 cm** **Total depth: 920.00 cm**





Climate:	Milwaukee WSO AP
Soil Type:	Clayey Silt
Application:	GP-1 Methylene Chloride

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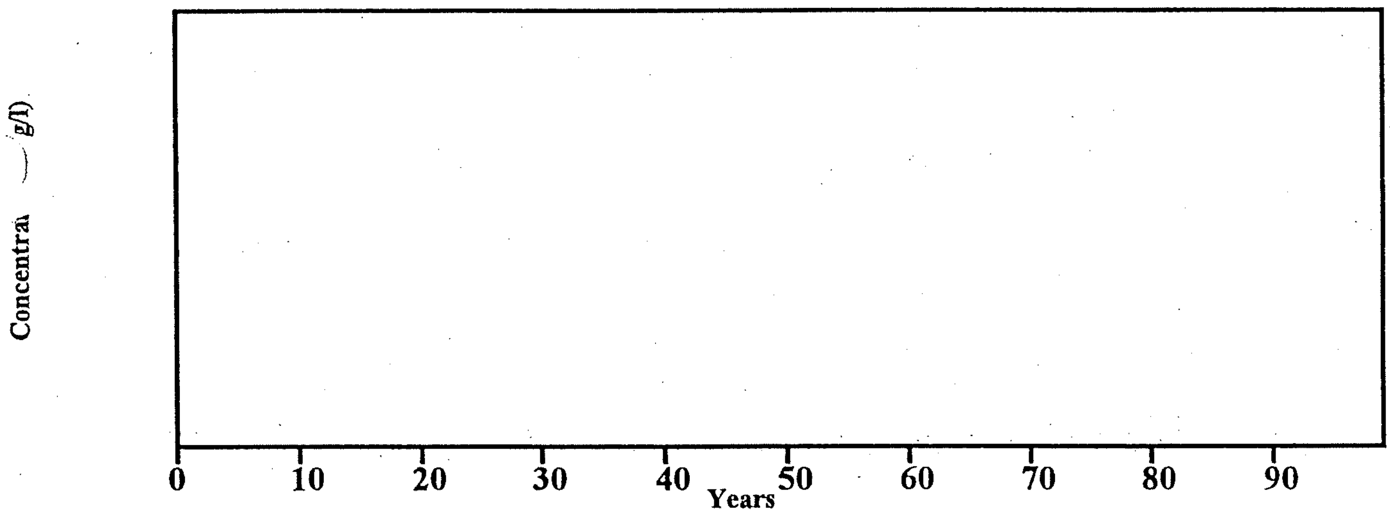
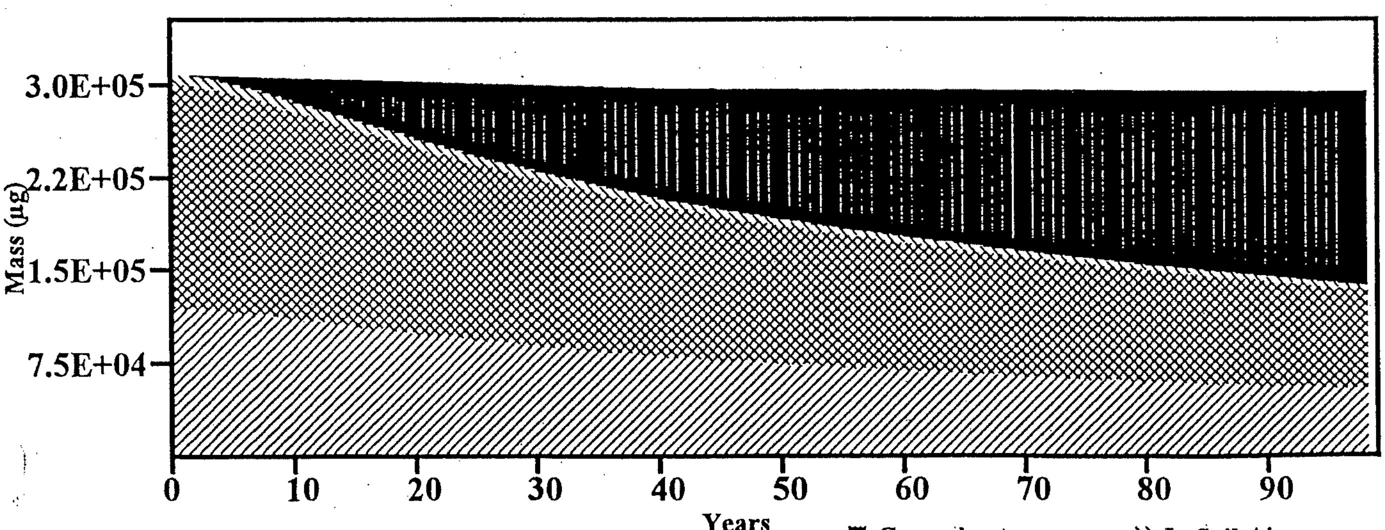
Methylene Chloride Baseline

Methylene Chloride baseline, B-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.589E+05	51.95	1.660E+05	54.27
Diffused Up	2.478E+02	0.08	2.589E+02	0.08
Soil Air	3.366E+03	1.10	3.517E+03	1.15
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	8.001E+04	26.15	8.358E+04	27.32
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.032E+04	16.45	5.257E+04	17.18
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	2.929E+05	95.72	3.060E+05	100.00
Total Input	3.060E+05		3.060E+05	
Input - Output	1.308E+04			

Starting depth: 610.30 cm **Ending depth: 811.60 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: B-1 Benzene & Methylene Chloride

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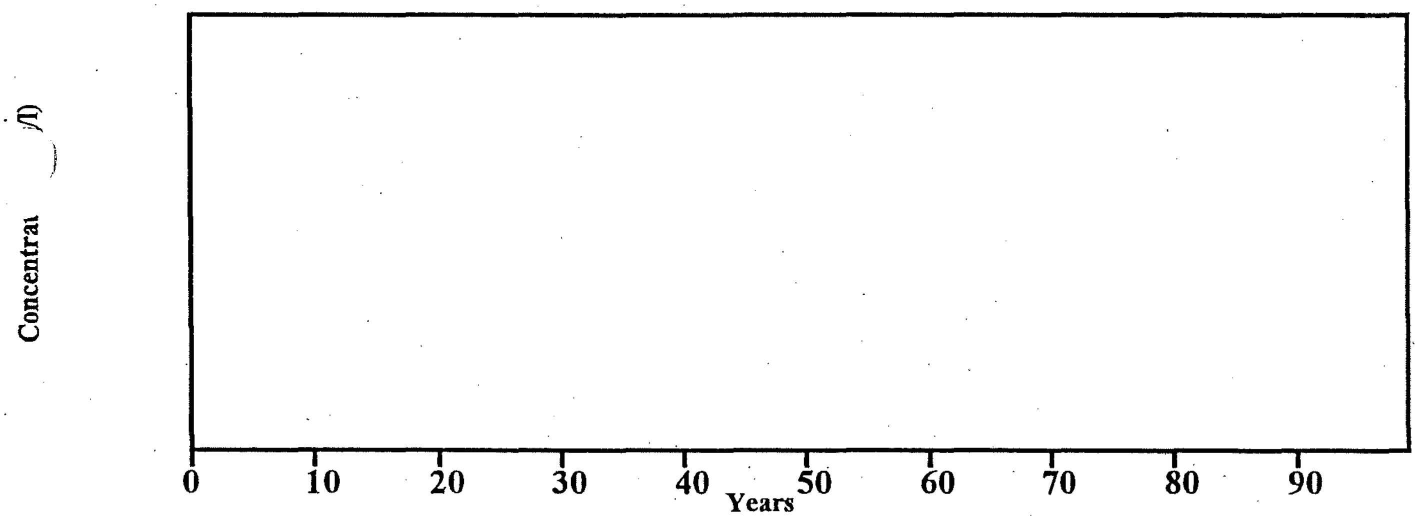
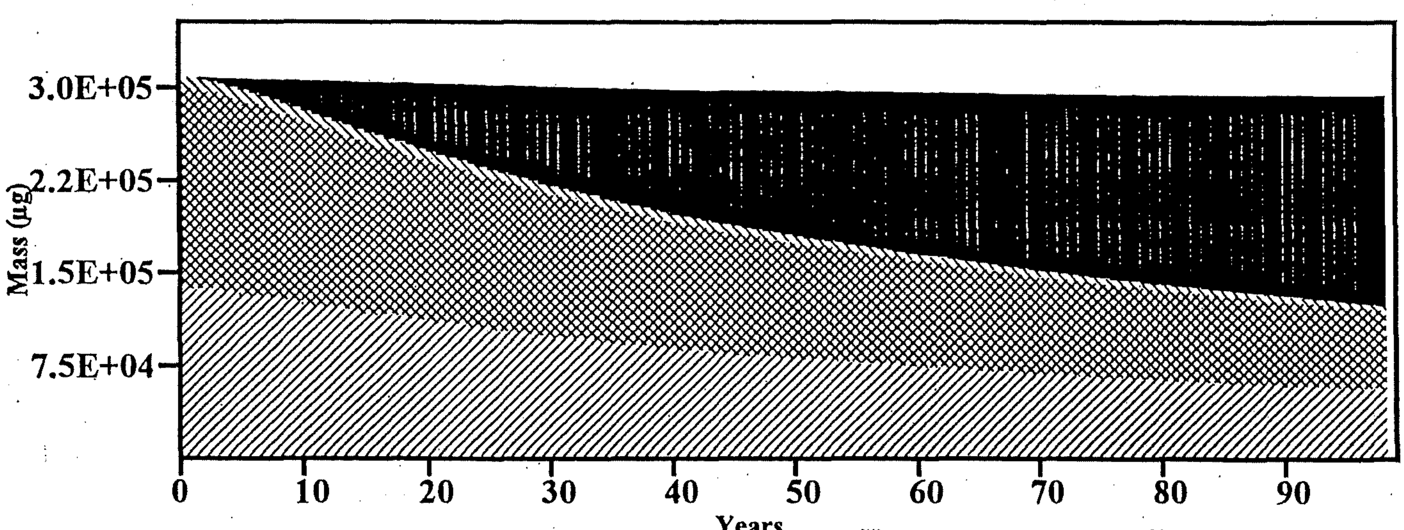
Methylene Chloride Koc=19.2

Methylene Chloride Koc = 19.2, B-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.716E+05	56.09	1.799E+05	58.80
Diffused Up	2.673E+02	0.09	2.802E+02	0.09
Soil Air	3.508E+03	1.15	3.677E+03	1.20
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	6.404E+04	20.93	6.714E+04	21.94
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.245E+04	17.14	5.498E+04	17.97
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	2.918E+05	95.39	3.060E+05	100.00
Total Input	3.060E+05		3.060E+05	
Input - Output	1.410E+04			

Starting depth: 610.40 cm **Ending depth: 841.20 cm** **Total depth: 920.00 cm**





Climate:	Milwaukee WSO AP
Soil Type:	Clayey Silt
Application:	B-1 Benzene & Methylene Chloride

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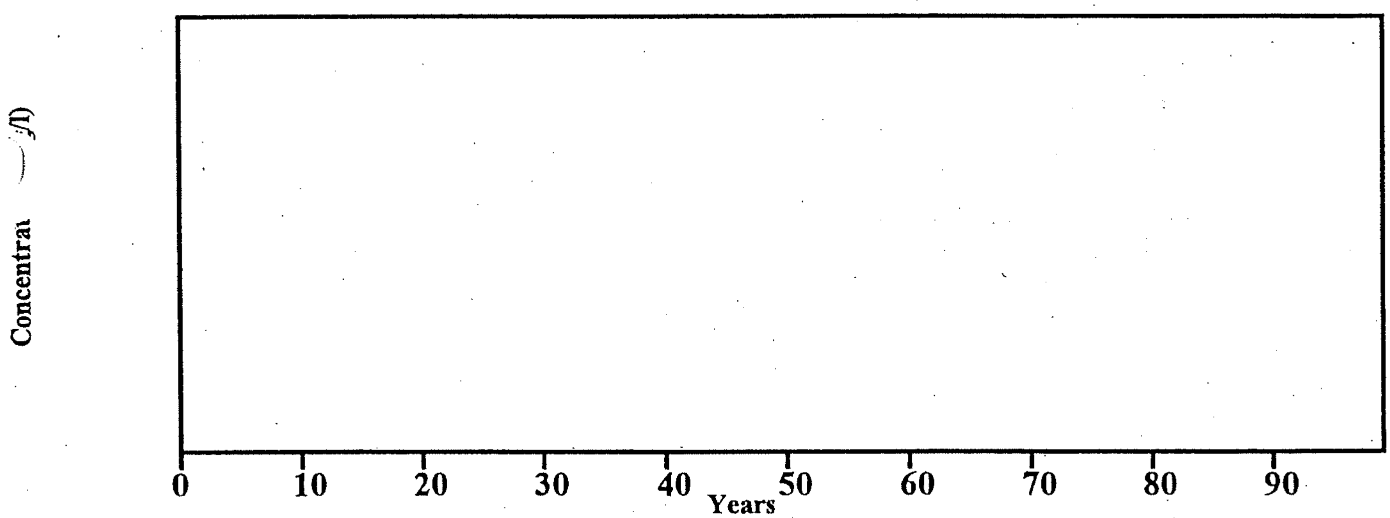
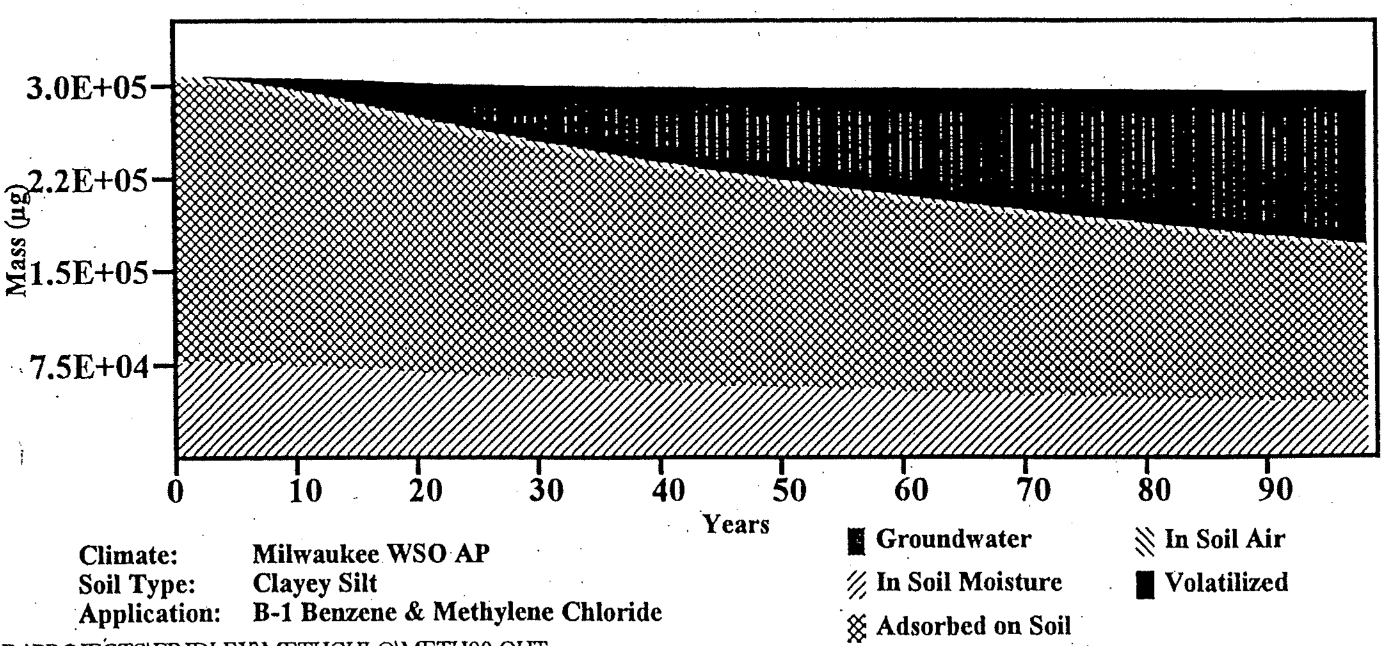
Methylene Chloride Koc=47.9

Methylene Chloride Koc = 47.9, B-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.255E+05	41.03	1.306E+05	42.71
Diffused Up	1.039E+02	0.03	1.081E+02	0.04
Soil Air	2.736E+03	0.89	2.848E+03	0.93
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.246E+05	40.74	1.297E+05	42.40
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	4.091E+04	13.37	4.259E+04	13.92
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	2.939E+05	96.07	3.060E+05	100.00
Total Input	3.060E+05		3.060E+05	
Input - Output	1.202E+04			

Starting depth: 610.20 cm   Ending depth: 746.00 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: B-1 Benzene & Methylene Chloride

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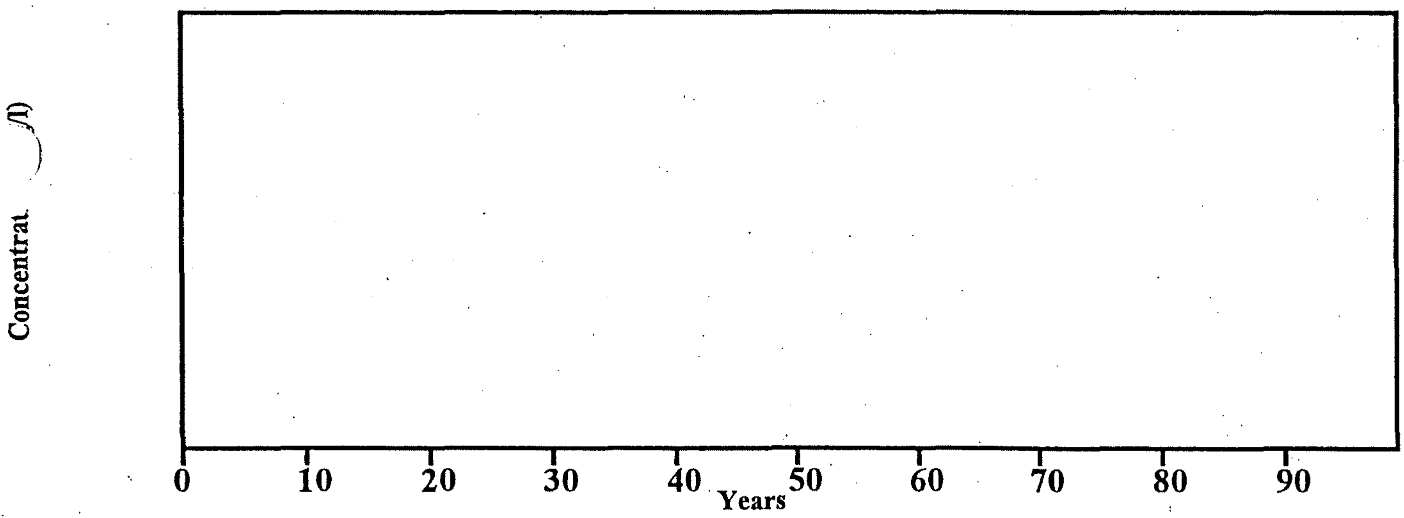
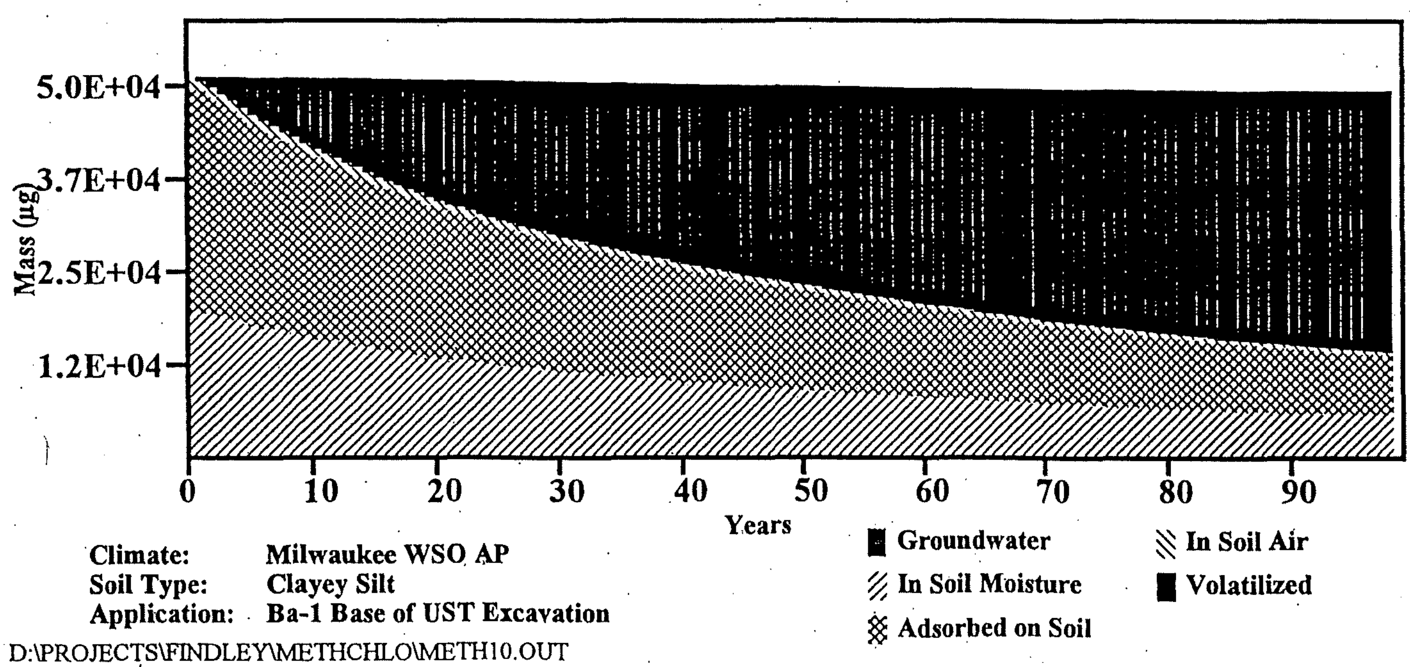
Methylene Chloride Baseline

Methylene Chloride baseline, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.557E+04	69.75	3.692E+04	72.41
Diffused Up	1.957E+01	0.04	2.032E+01	0.04
Soil Air	3.406E+02	0.67	3.536E+02	0.69
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	8.098E+03	15.88	8.407E+03	16.49
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.094E+03	9.99	5.288E+03	10.37
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.912E+04	96.33	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.873E+03			

Starting depth: 385.50 cm   Ending depth: 731.70 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

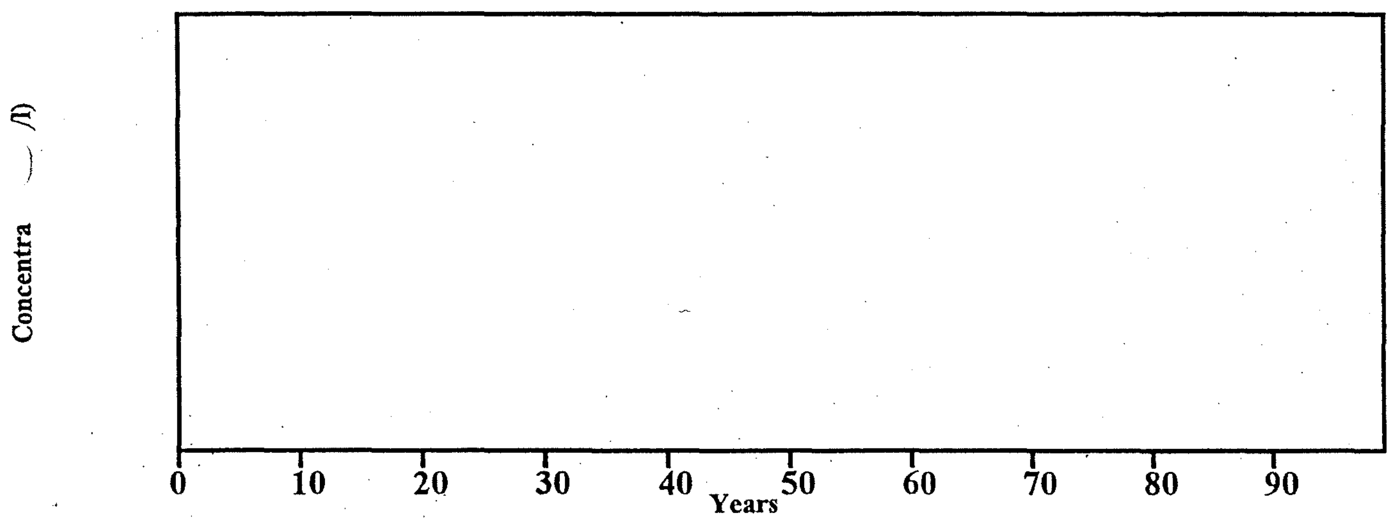
D:\PROJECTS\FINDLEY\METHCHLO\METH10.OUT

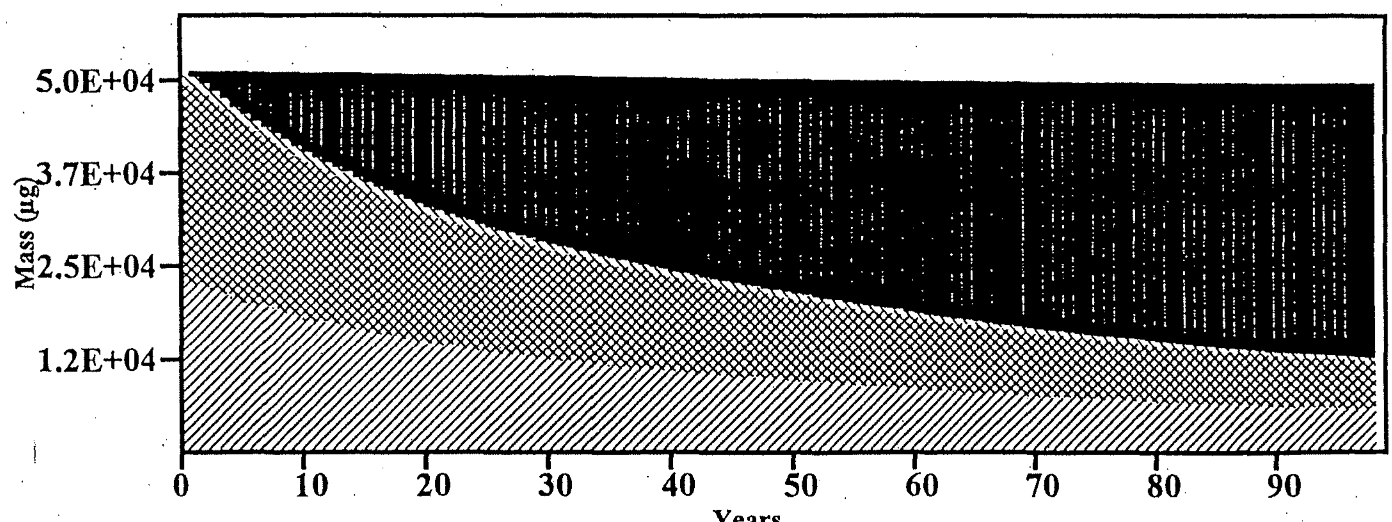
Methylene Chloride Koc=19.2

Methylene Chloride Koc = 19.2, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.729E+04	73.12	3.849E+04	75.47
Diffused Up	2.200E+01	0.04	2.271E+01	0.04
Soil Air	3.537E+02	0.69	3.650E+02	0.72
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	6.454E+03	12.66	6.662E+03	13.06
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.287E+03	10.37	5.457E+03	10.70
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.941E+04	96.88	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.588E+03			

Starting depth: 385.60 cm   Ending depth: 759.60 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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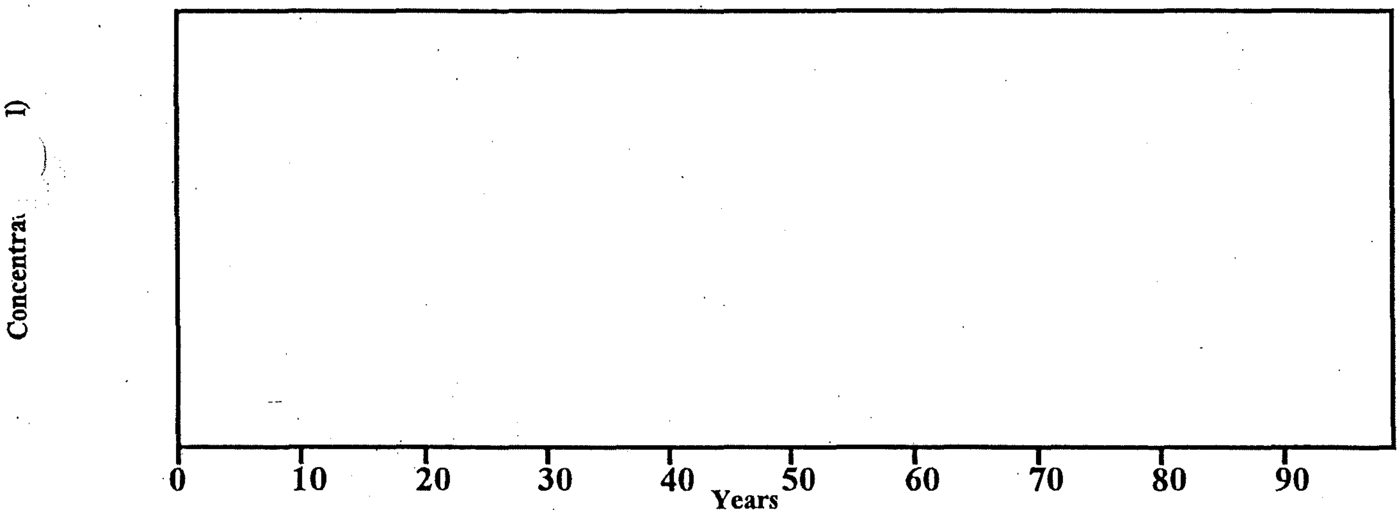
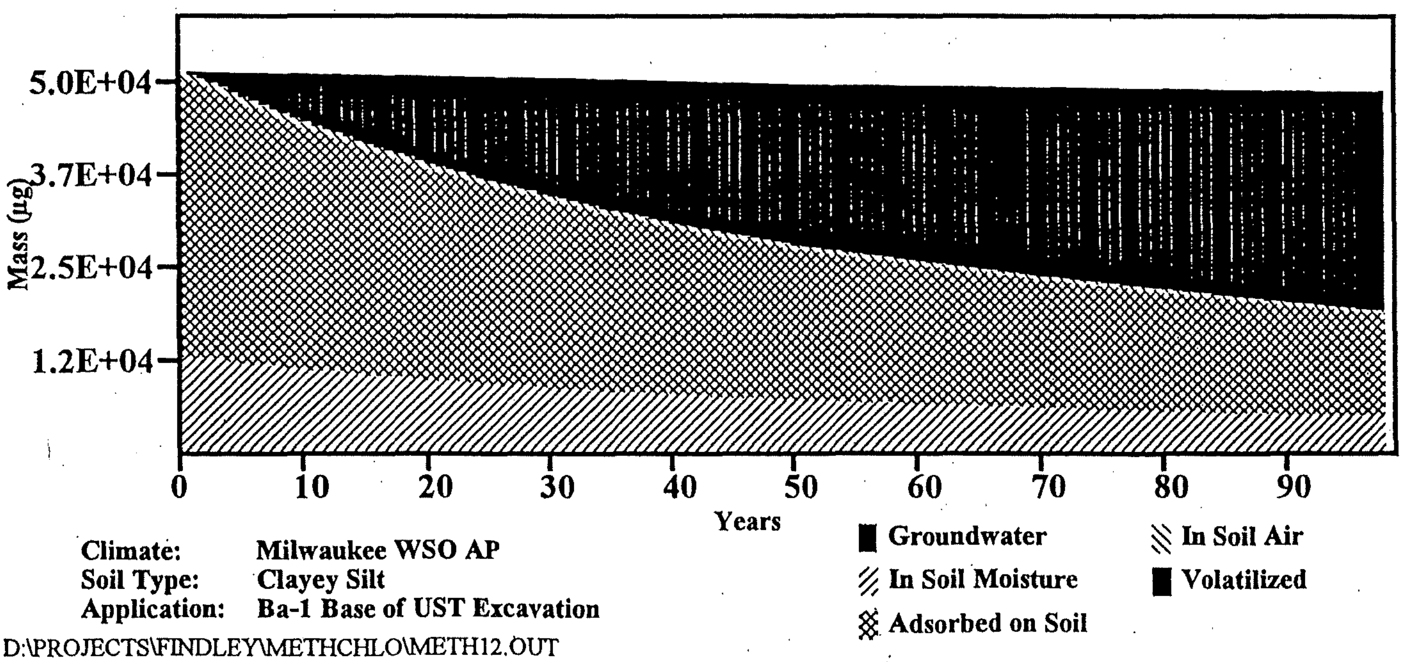
Methylene Chloride Koc=47.9

Methylene Chloride Koc = 47.9, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.984E+04	58.51	3.142E+04	61.62
Diffused Up	2.462E+01	0.05	2.592E+01	0.05
Soil Air	3.018E+02	0.59	3.178E+02	0.62
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.374E+04	26.96	1.447E+04	28.39
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	4.513E+03	8.85	4.752E+03	9.32
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.842E+04	94.96	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	2.571E+03			

Starting depth: 385.30 cm **Ending depth: 669.80 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

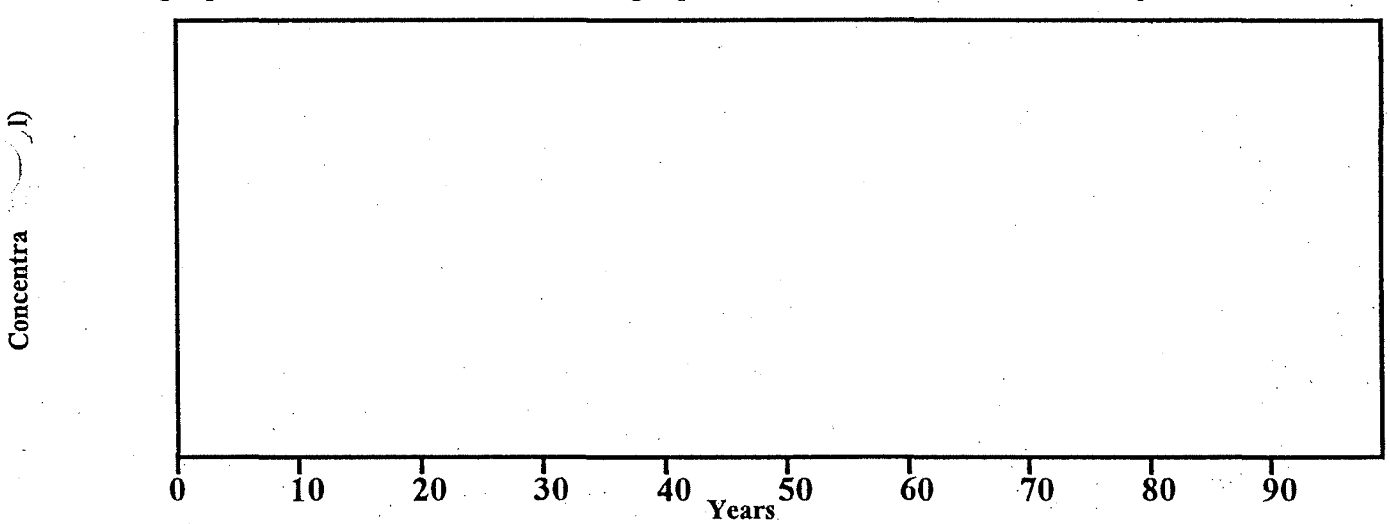
D:\PROJECTS\FINDLEY\METHCHLO\METH12.OUT

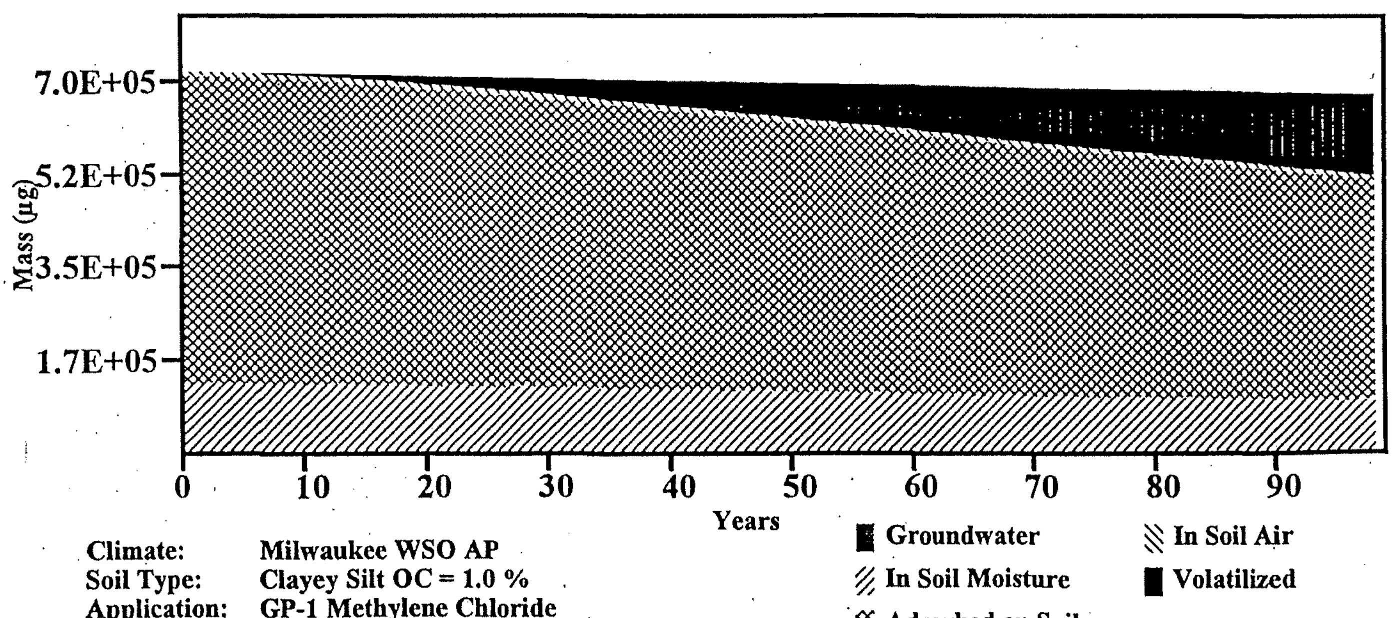
Methylene Chloride Baseline

Methylene Chloride baseline, GP-1 99 year run, OC = 1.0 %.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.555E+05	21.79	1.653E+05	23.16
Diffused Up	2.122E+02	0.03	2.256E+02	0.03
Soil Air	6.007E+03	0.84	6.386E+03	0.89
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.200E+05	58.83	4.465E+05	62.54
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	8.983E+04	12.58	9.549E+04	13.38
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	6.716E+05	94.07	7.140E+05	100.00
Total Input	7.140E+05		7.140E+05	
Input - Output	4.237E+04			

Starting depth: 760.10 cm **Ending depth: 820.50 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt OC = 1.0 %
Application: GP-1 Methylene Chloride

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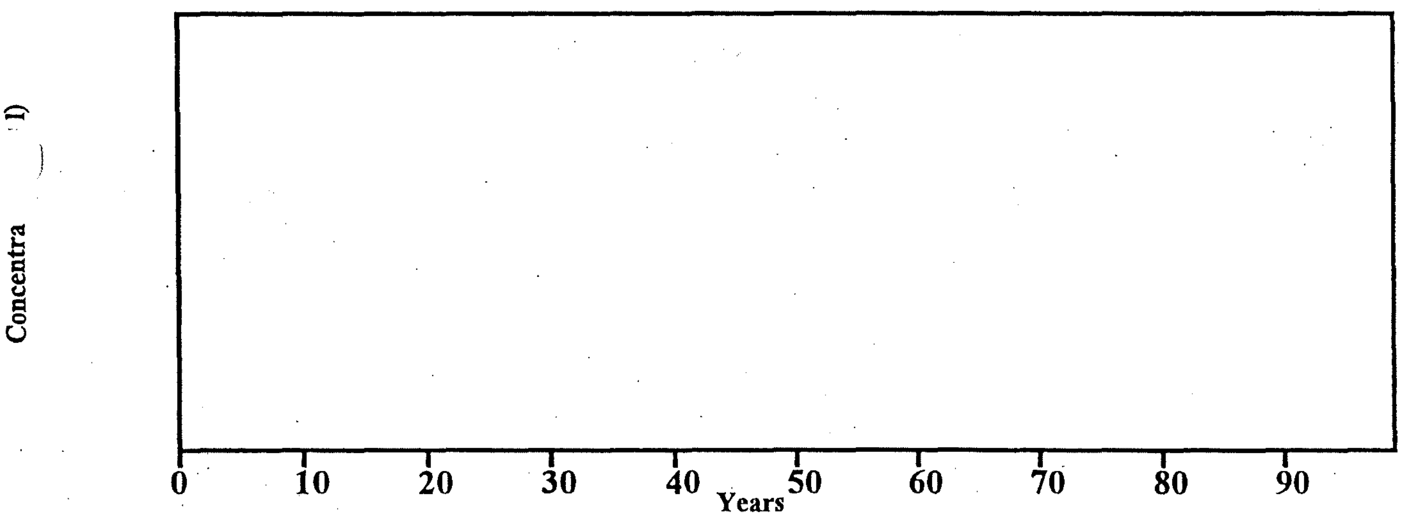
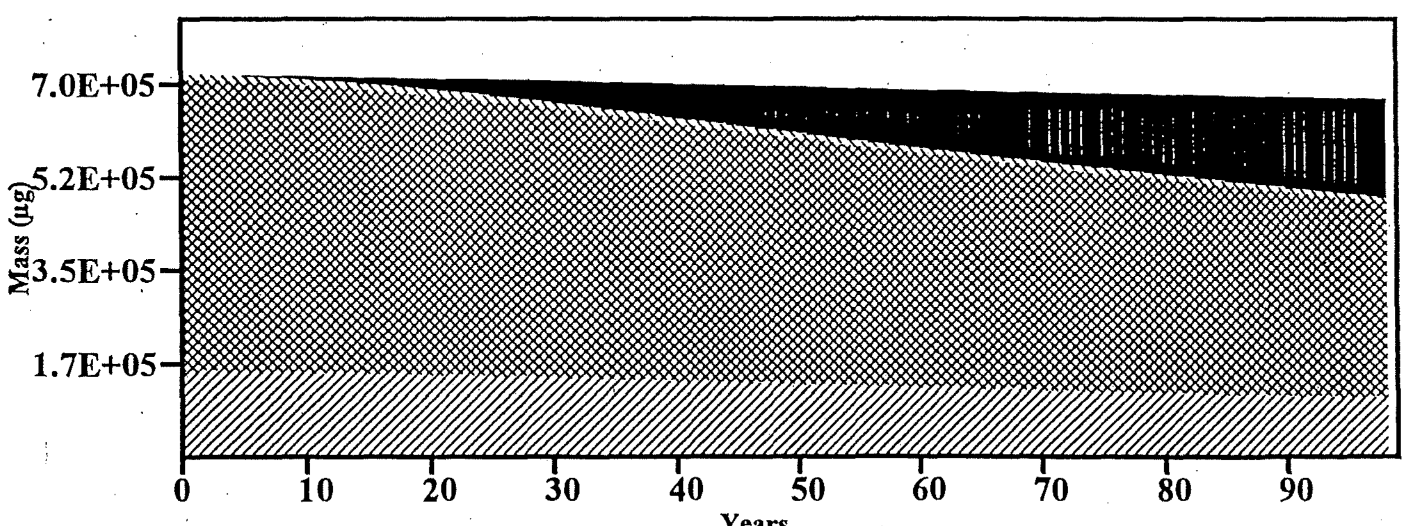
Methylene Chloride Koc=19.2

Methylene Chloride Koc = 19.2, GP-1 99 year run, OC = 1.0 %.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.898E+05	26.60	2.027E+05	28.40
Diffused Up	2.287E+02	0.03	2.442E+02	0.03
Soil Air	6.871E+03	0.96	7.336E+03	1.03
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.689E+05	51.68	3.939E+05	55.18
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.027E+05	14.39	1.096E+05	15.36
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	6.686E+05	93.66	7.140E+05	100.00
Total Input	7.140E+05		7.140E+05	
Input - Output	4.530E+04			

Starting depth: 760.10 cm **Ending depth: 832.70 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt OC = 1.0 %
Application: GP-1 Methylene Chloride

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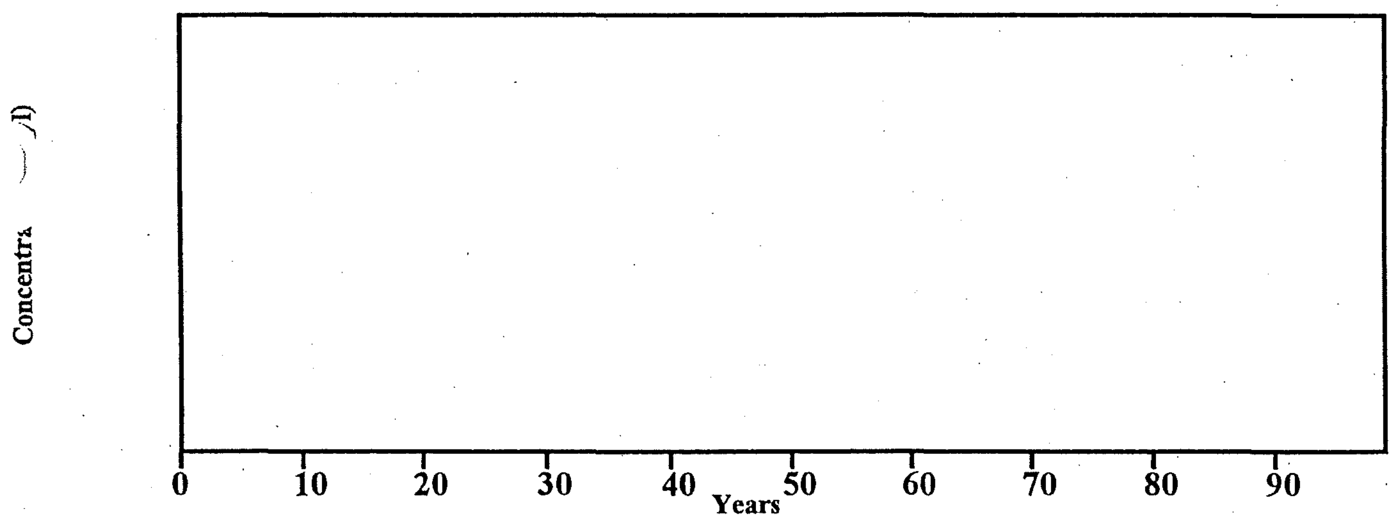
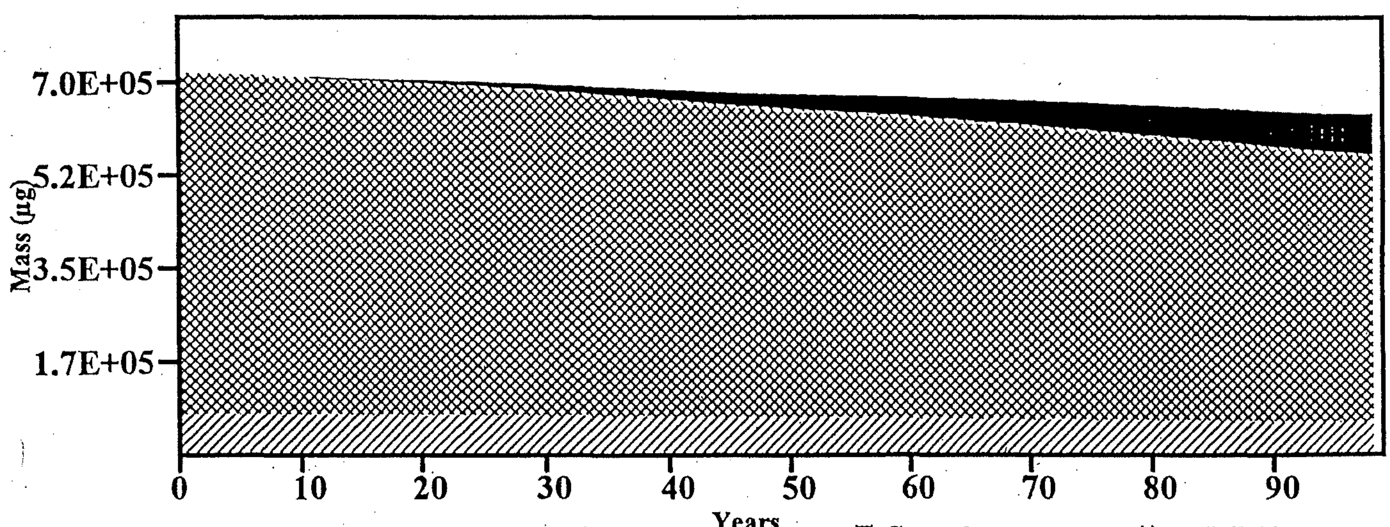
Methylene Chloride Koc=47.9

Methylene Chloride Koc = 47.9, GP-1 99 year run, OC = 1.0 %.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	7.814E+04	10.94	8.755E+04	12.26
Diffused Up	1.601E+02	0.02	1.793E+02	0.03
Soil Air	3.728E+03	0.52	4.177E+03	0.59
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.994E+05	69.95	5.596E+05	78.38
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.574E+04	7.81	6.246E+04	8.75
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	6.372E+05	89.25	7.140E+05	100.00
Total Input	7.140E+05		7.140E+05	
Input - Output	7.676E+04			

Starting depth: 760.00 cm **Ending depth: 799.00 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt OC = 1.0 %
Application: GP-1 Methylene Chloride

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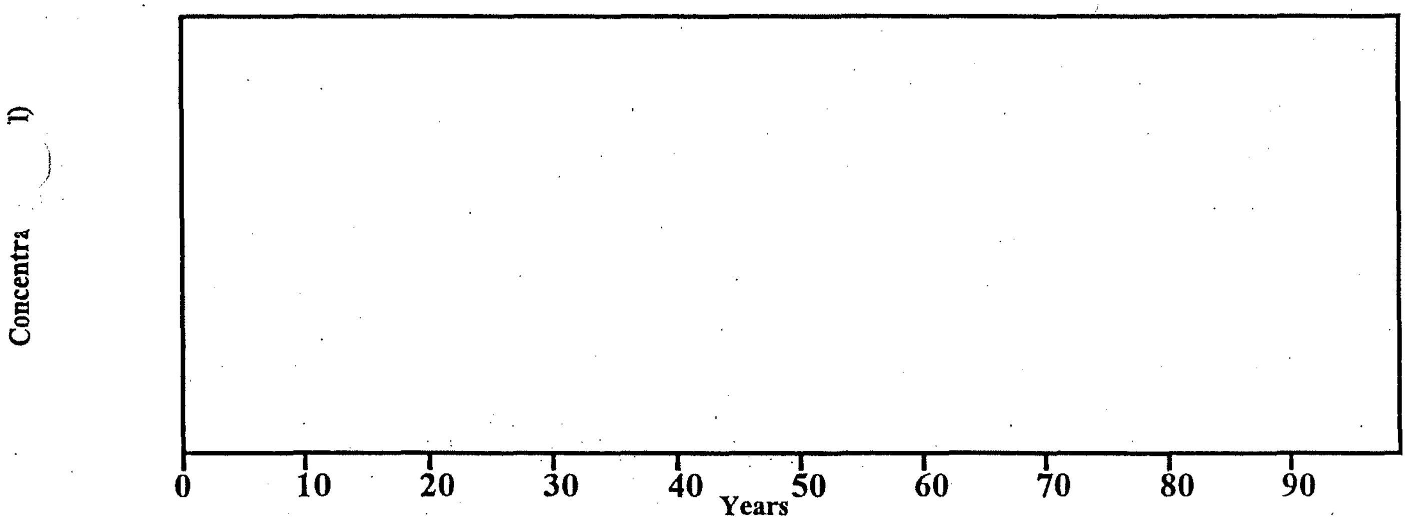
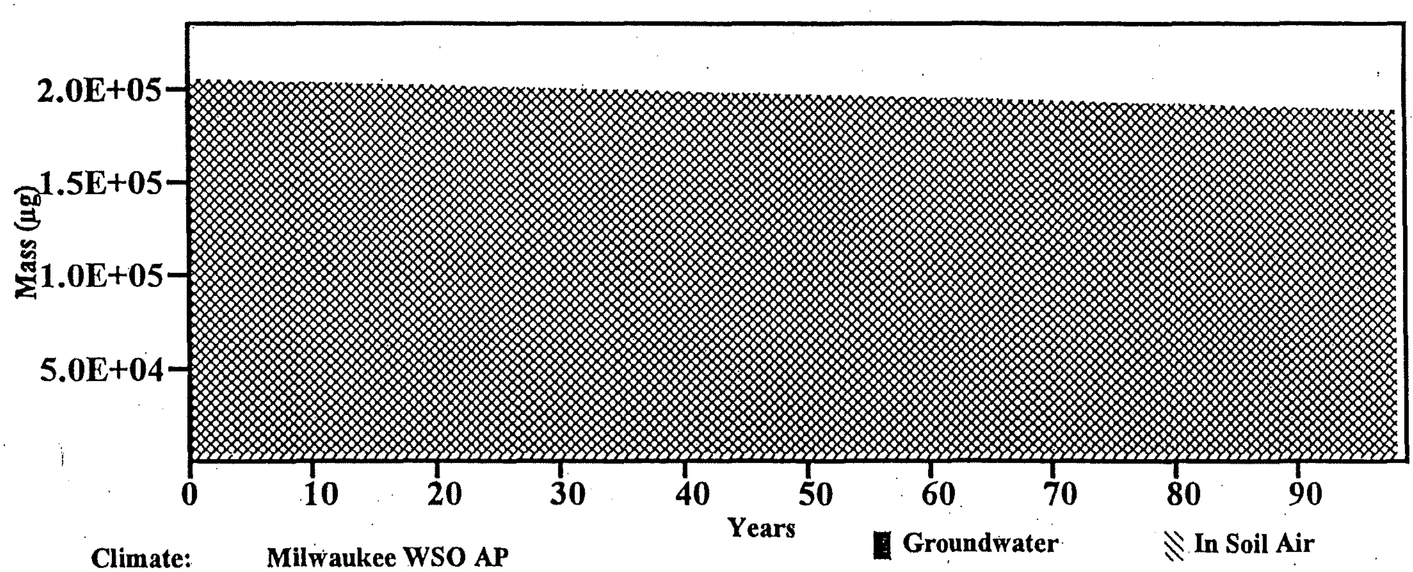
Naphthalene Baseline

Naphthalene baseline, GP-1 DRO 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.095E+02	0.05	1.193E+02	0.06
Diffused Up	3.449E+01	0.02	3.756E+01	0.02
Soil Air	2.894E+01	0.01	3.153E+01	0.02
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.848E+05	90.63	2.013E+05	98.71
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.236E+03	1.10	2.436E+03	1.19
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	1.872E+05	91.81	2.040E+05	100.00
Total Input	2.040E+05		2.040E+05	
Input - Output	1.671E+04			

Starting depth: 460.00 cm **Ending depth: 477.00 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 DRO & Benzene

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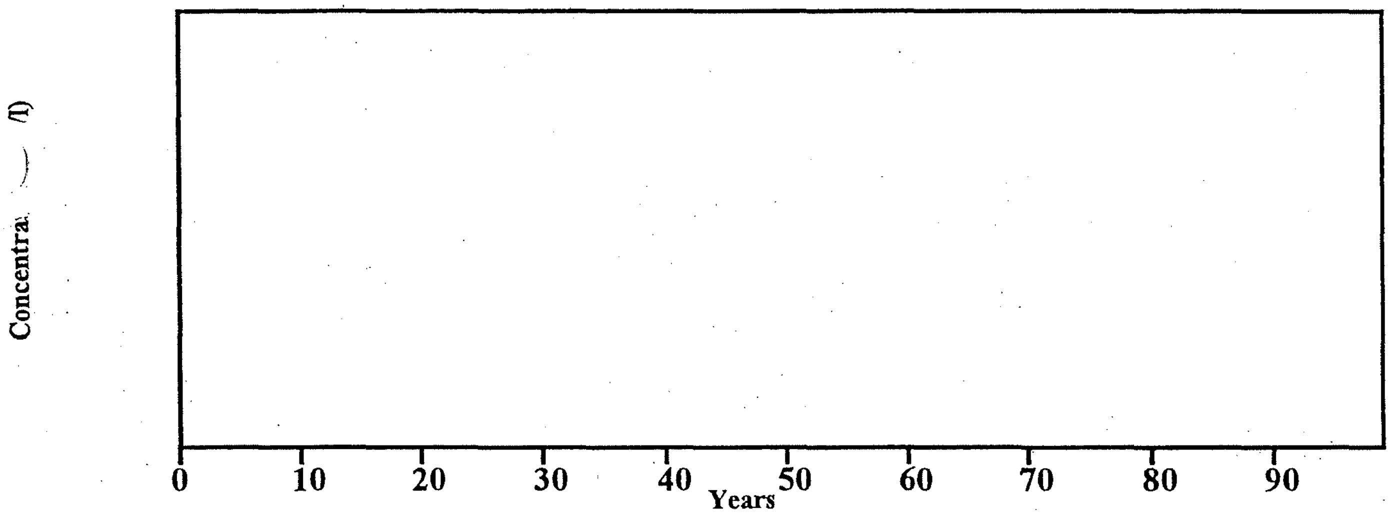
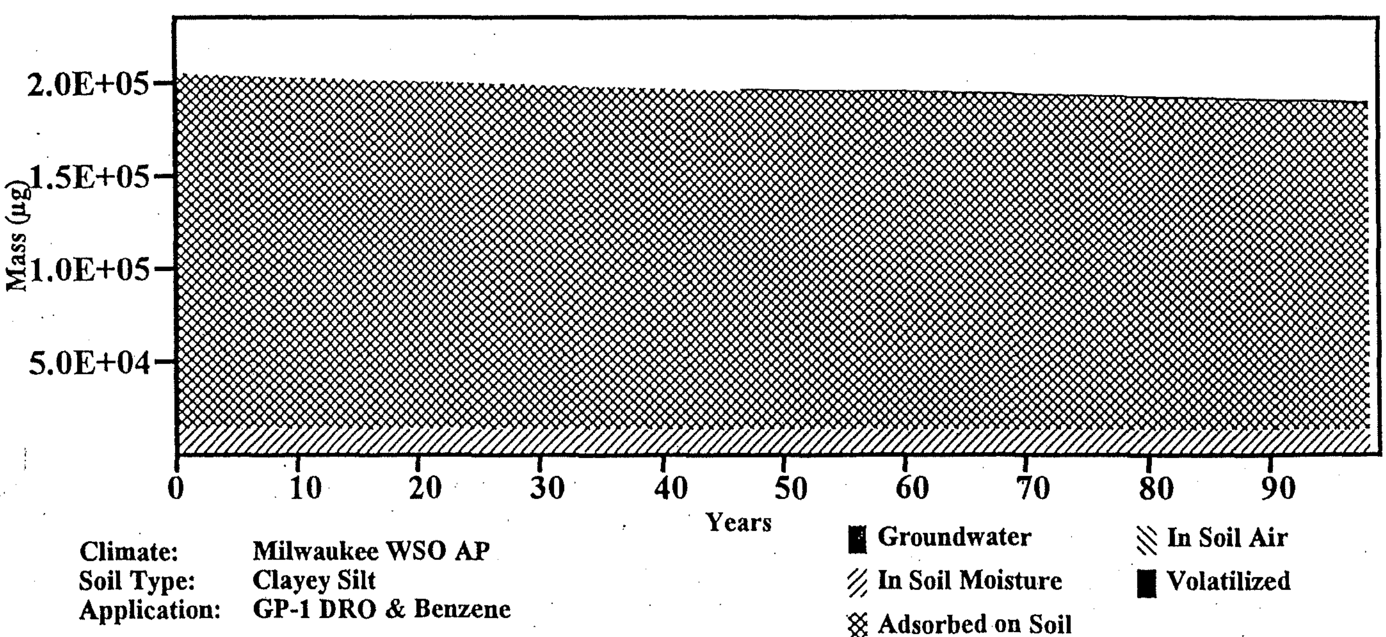
Naphthalene Koc=240

Naphthalene Koc = 240, GP-1 DRO 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.665E+03	0.82	1.796E+03	0.88
Diffused Up	5.632E+01	0.03	6.077E+01	0.03
Soil Air	1.490E+02	0.07	1.607E+02	0.08
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.756E+05	86.11	1.895E+05	92.92
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.151E+04	5.64	1.242E+04	6.09
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	1.890E+05	92.67	2.040E+05	100.00
Total Input	2.040E+05		2.040E+05	
Input - Output	1.494E+04			

Starting depth: 460.10 cm **Ending depth: 518.90 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 DRO & Benzene

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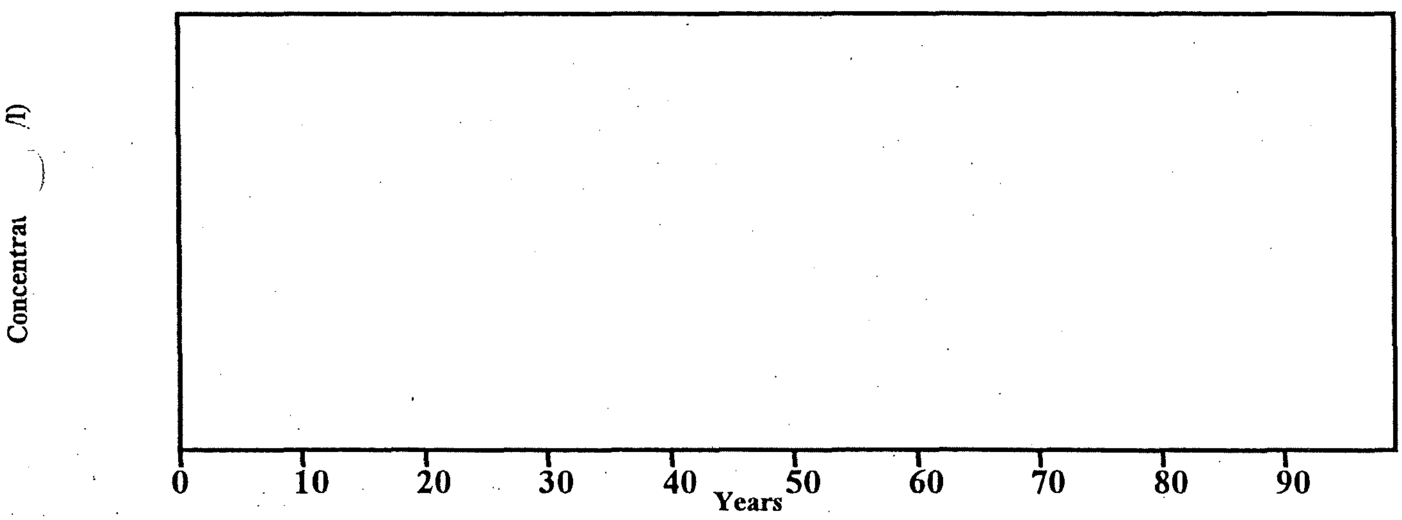
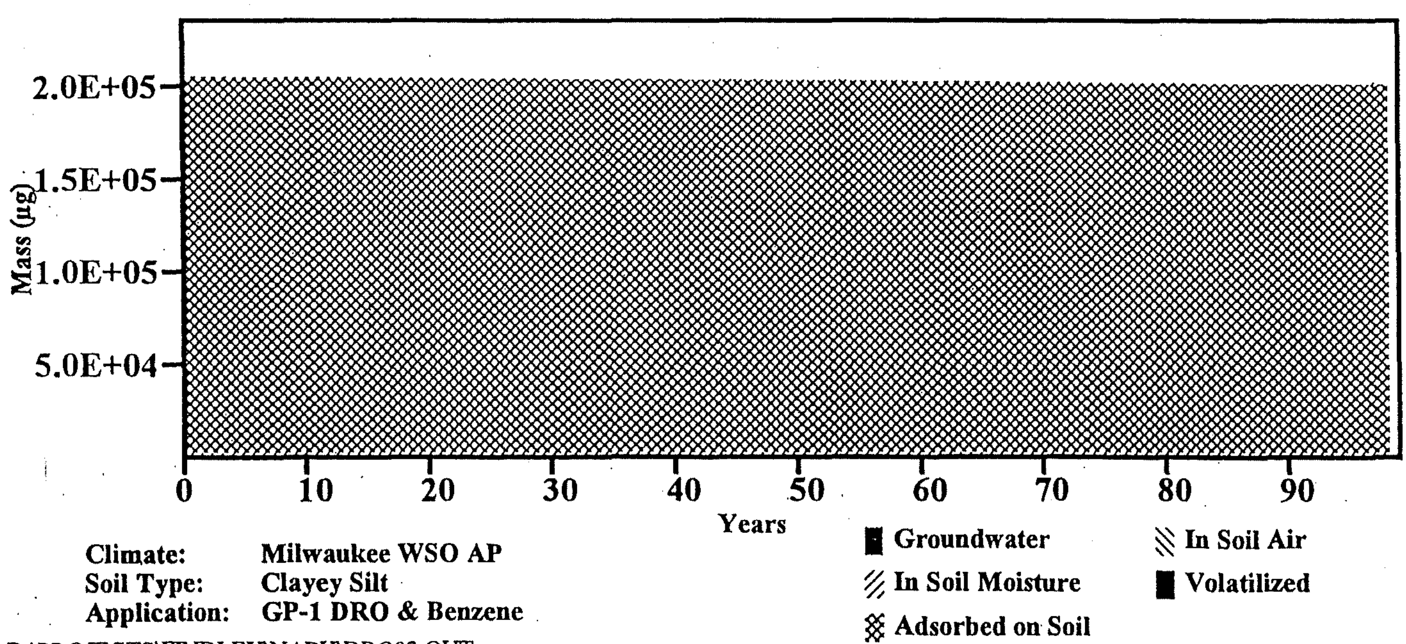
Naphthalene Koc=3160

Naphthalene Koc = 3160, GP-1 DRO 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.141E+01	0.01	2.190E+01	0.01
Diffused Up	1.513E+01	0.01	1.547E+01	0.01
Soil Air	1.278E+01	0.01	1.307E+01	0.01
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.984E+05	97.26	2.029E+05	99.48
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	9.872E+02	0.48	1.009E+03	0.50
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	1.994E+05	97.77	2.040E+05	100.00
Total Input	2.040E+05		2.040E+05	
Input - Output	4.553E+03			

Starting depth: 460.00 cm **Ending depth: 467.20 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 DRO & Benzene

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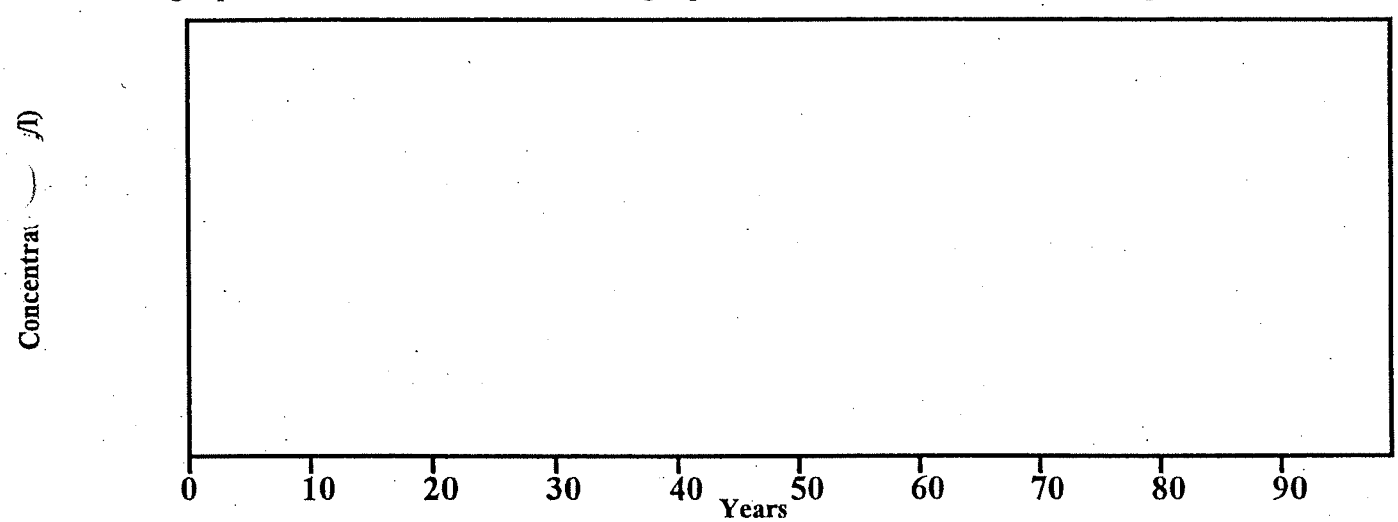
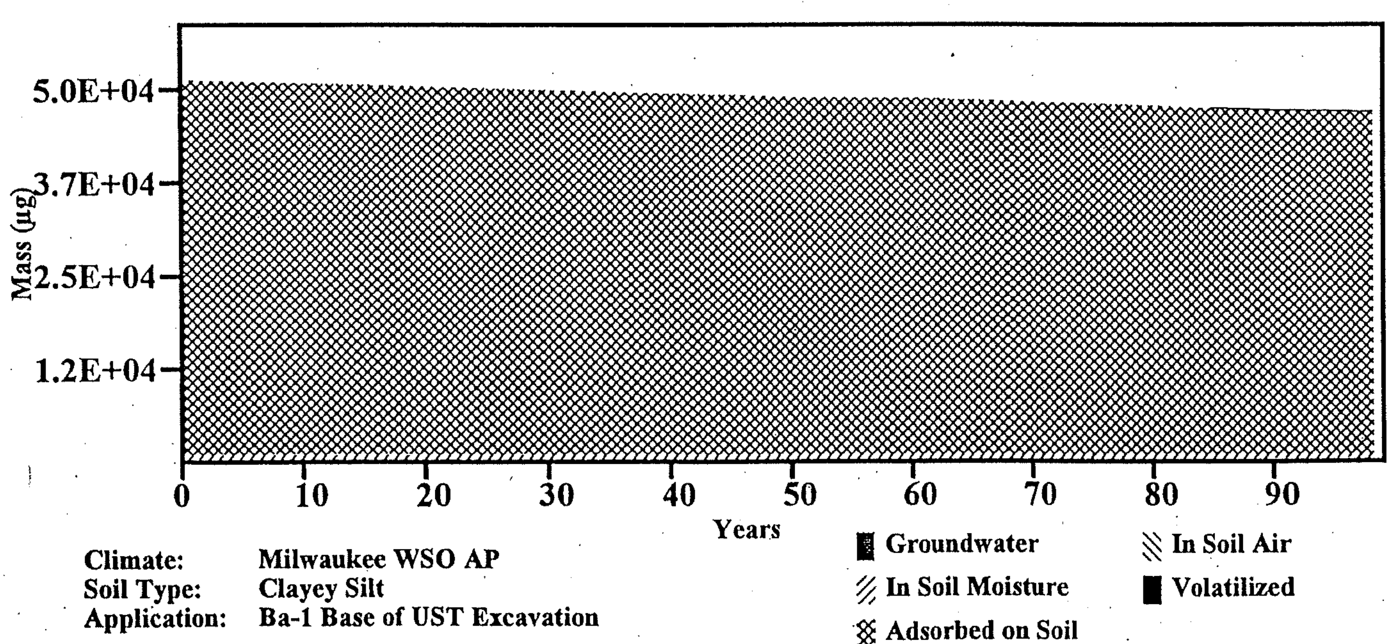
Naphthalene Baseline

Naphthalene Baseline, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.662E+02	0.33	1.817E+02	0.36
Diffused Up	1.146E+01	0.02	1.252E+01	0.02
Soil Air	7.190E+00	0.01	7.858E+00	0.02
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.592E+04	90.05	5.019E+04	98.41
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.555E+02	1.09	6.071E+02	1.19
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.666E+04	91.50	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	4.336E+03			

Starting depth: 385.00 cm Ending depth: 403.40 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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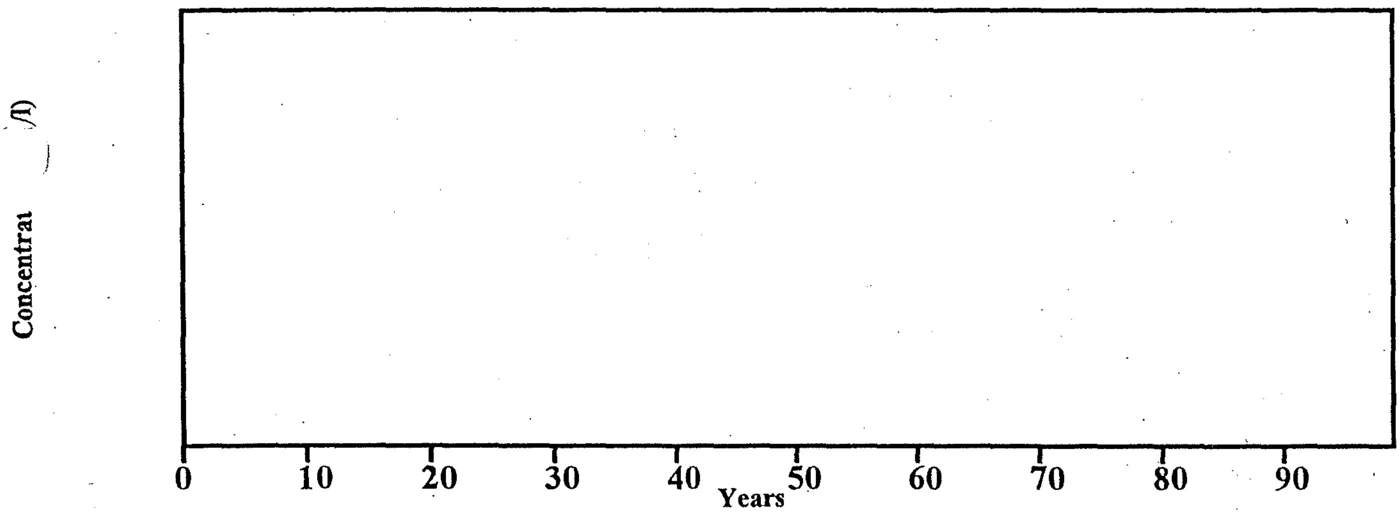
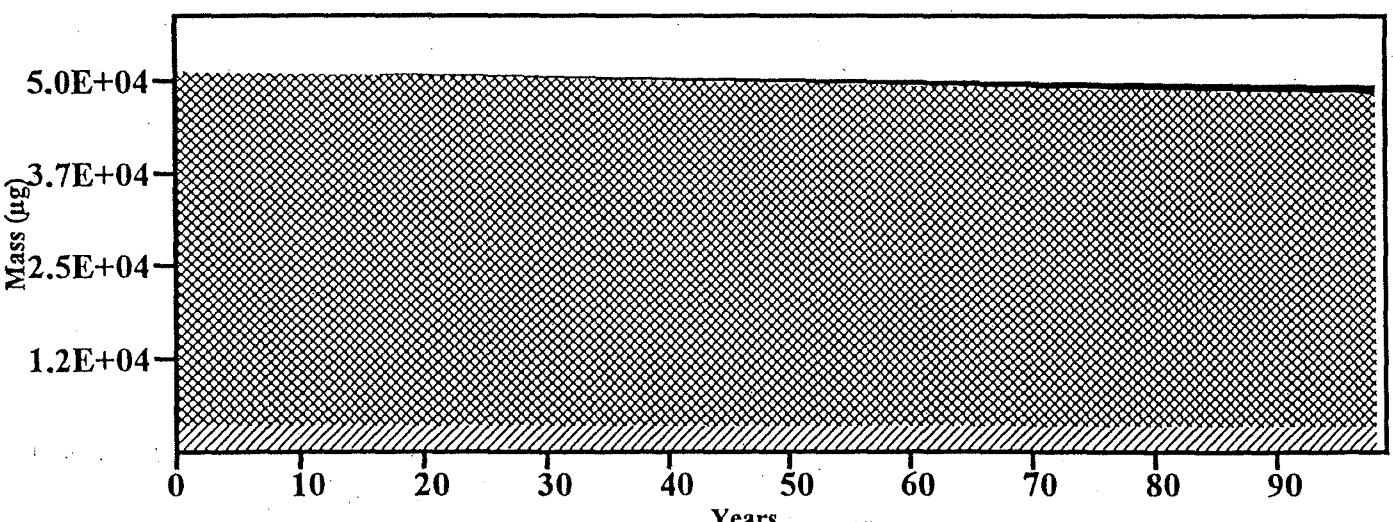
Naphthalene Koc=240

Naphthalene Koc = 240, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.298E+03	2.55	1.347E+03	2.64
Diffused Up	8.483E-01	0.00	8.800E-01	0.00
Soil Air	3.807E+01	0.07	3.949E+01	0.08
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.488E+04	88.01	4.656E+04	91.30
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.940E+03	5.77	3.050E+03	5.98
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.916E+04	96.39	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.838E+03			

Starting depth: 385.10 cm   Ending depth: 464.00 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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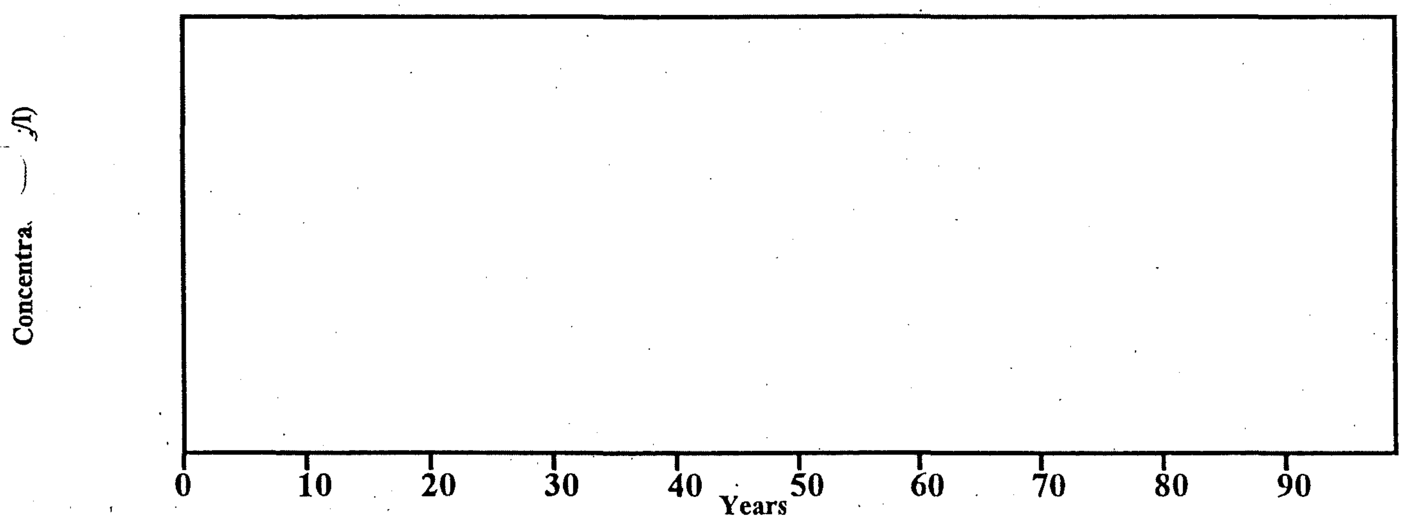
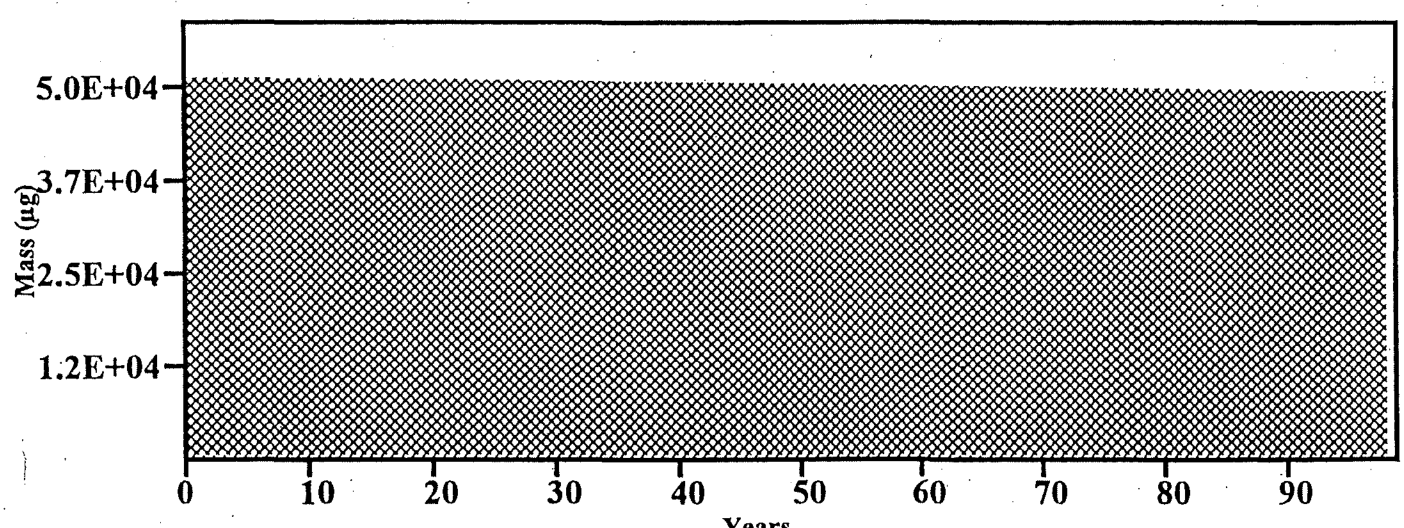
Naphthalene Koc=3160

Naphthalene Koc = 3160, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.811E+01	0.07	3.954E+01	0.08
Diffused Up	1.450E+01	0.03	1.504E+01	0.03
Soil Air	3.147E+00	0.01	3.264E+00	0.01
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.886E+04	95.80	5.068E+04	99.39
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.431E+02	0.48	2.522E+02	0.49
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.915E+04	96.39	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.841E+03			

Starting depth: 385.00 cm **Ending depth: 393.20 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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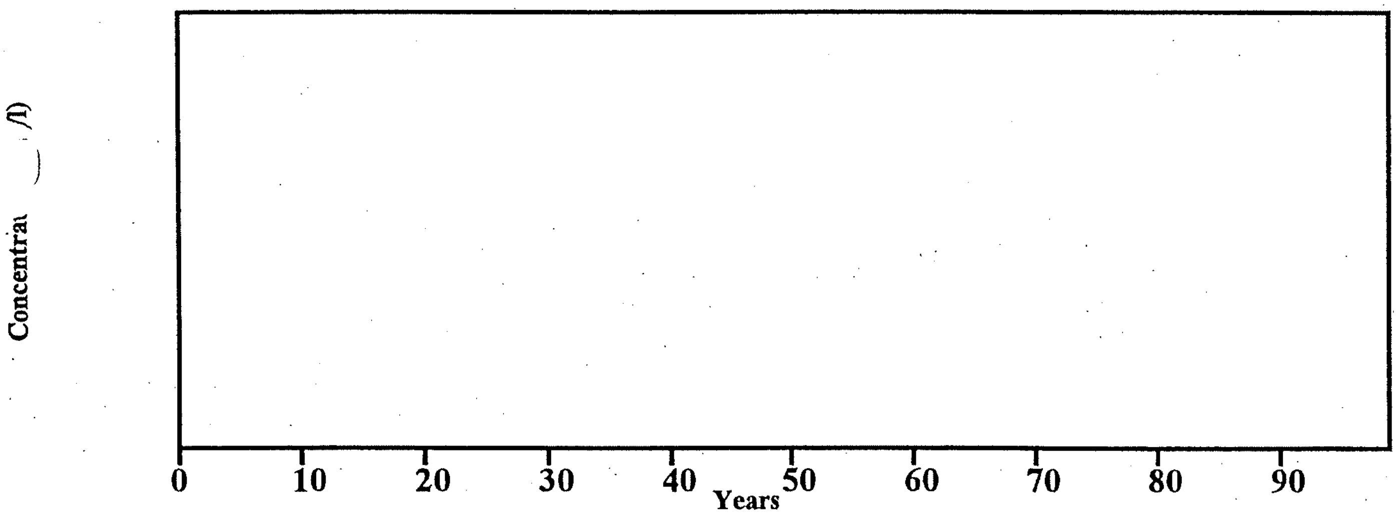
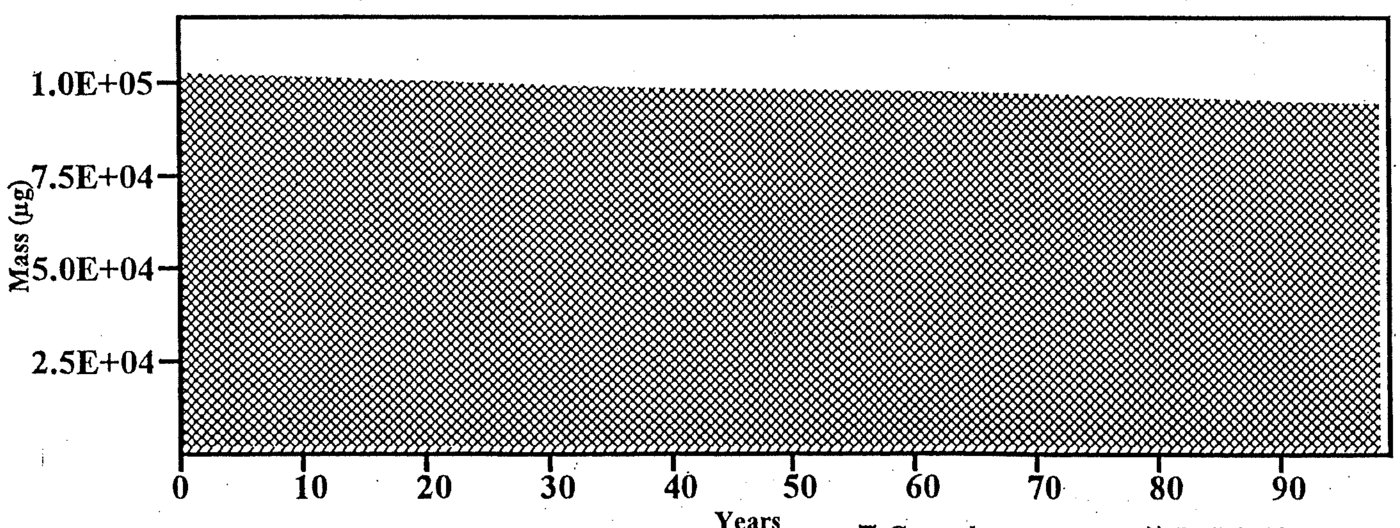
Naphthalene Baseline

Naphthalene Baseline, GP--1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	9.126E+01	0.09	9.938E+01	0.10
Diffused Up	2.080E+01	0.02	2.264E+01	0.02
Soil Air	1.447E+01	0.01	1.575E+01	0.02
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	9.243E+04	90.62	1.006E+05	98.67
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.118E+03	1.10	1.217E+03	1.19
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.367E+04	91.84	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	8.325E+03			

Starting depth: 450.00 cm **Ending depth:** 467.50 cm **Total depth:** 920.00 cm





Groundwater
In Soil Air
In Soil Moisture
Volatilized
Adsorbed on Soil

Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

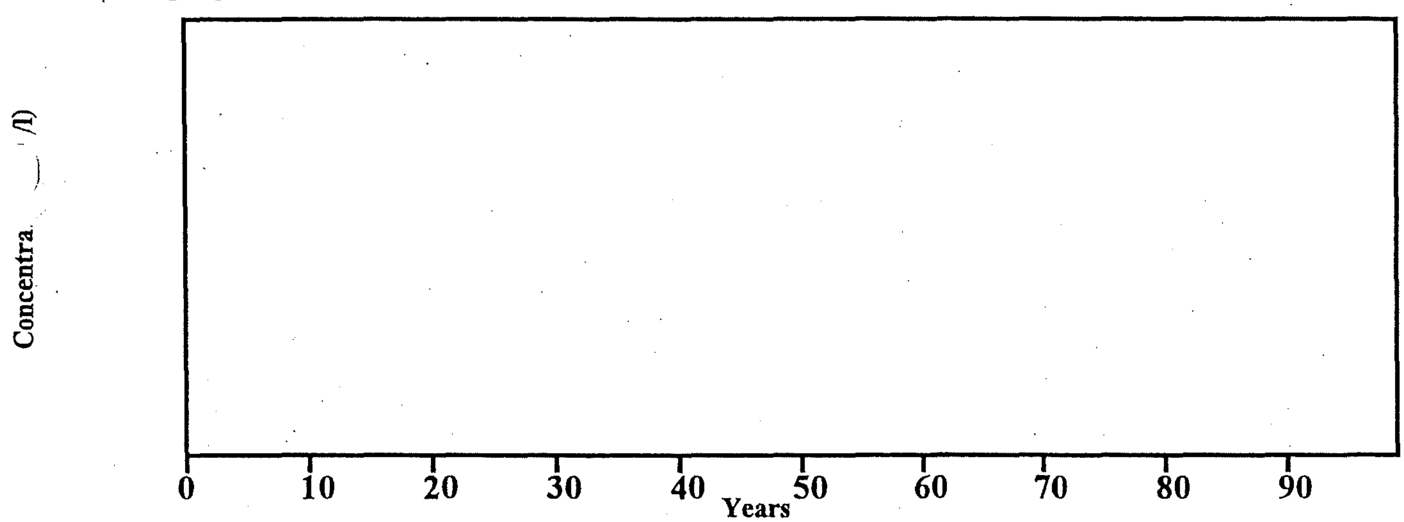
D:\PROJECTS\FINDLEY\NAPH\NAPH04.OUT

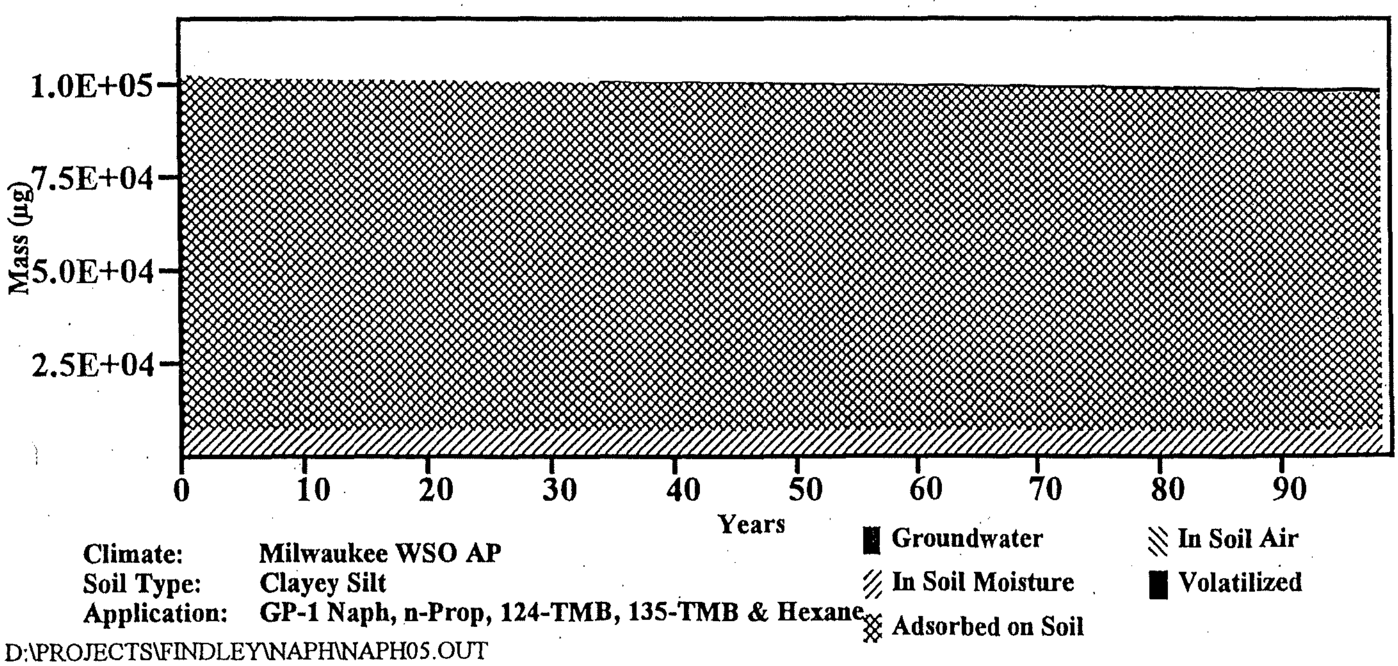
Naphthalene Koc=240

Naphthalene Koc = 240, GP--1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.351E+03	1.33	1.404E+03	1.38
Diffused Up	8.772E+00	0.01	9.115E+00	0.01
Soil Air	7.698E+01	0.08	7.999E+01	0.08
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	9.077E+04	88.99	9.432E+04	92.48
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.947E+03	5.83	6.180E+03	6.06
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.815E+04	96.23	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	3.844E+03			

Starting depth: 450.10 cm **Ending depth: 522.90 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

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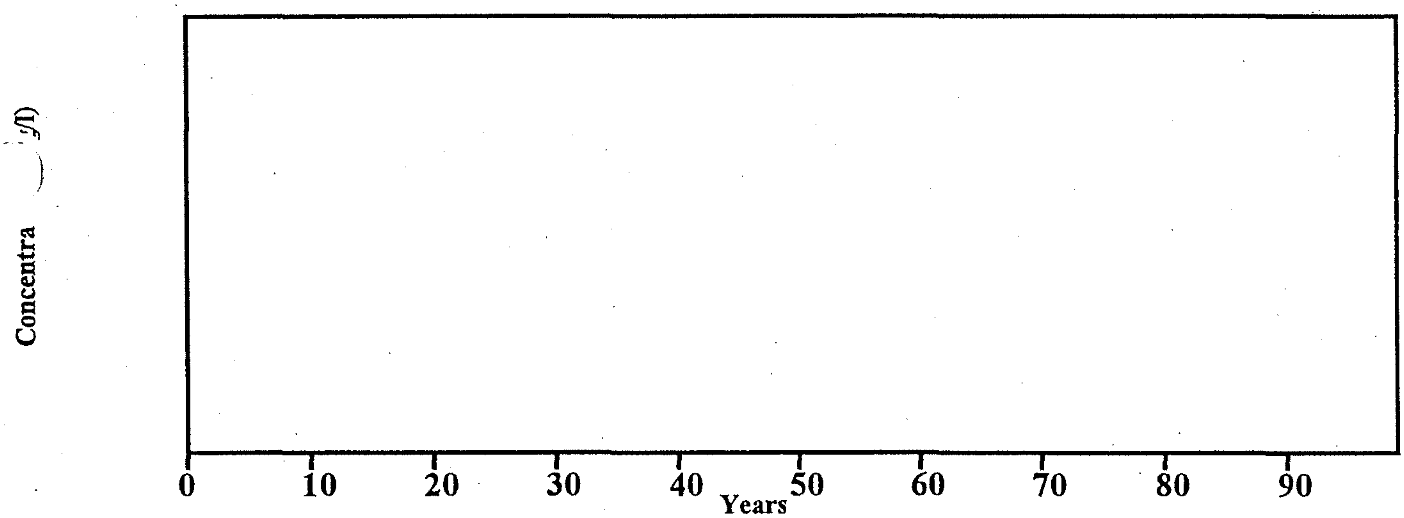
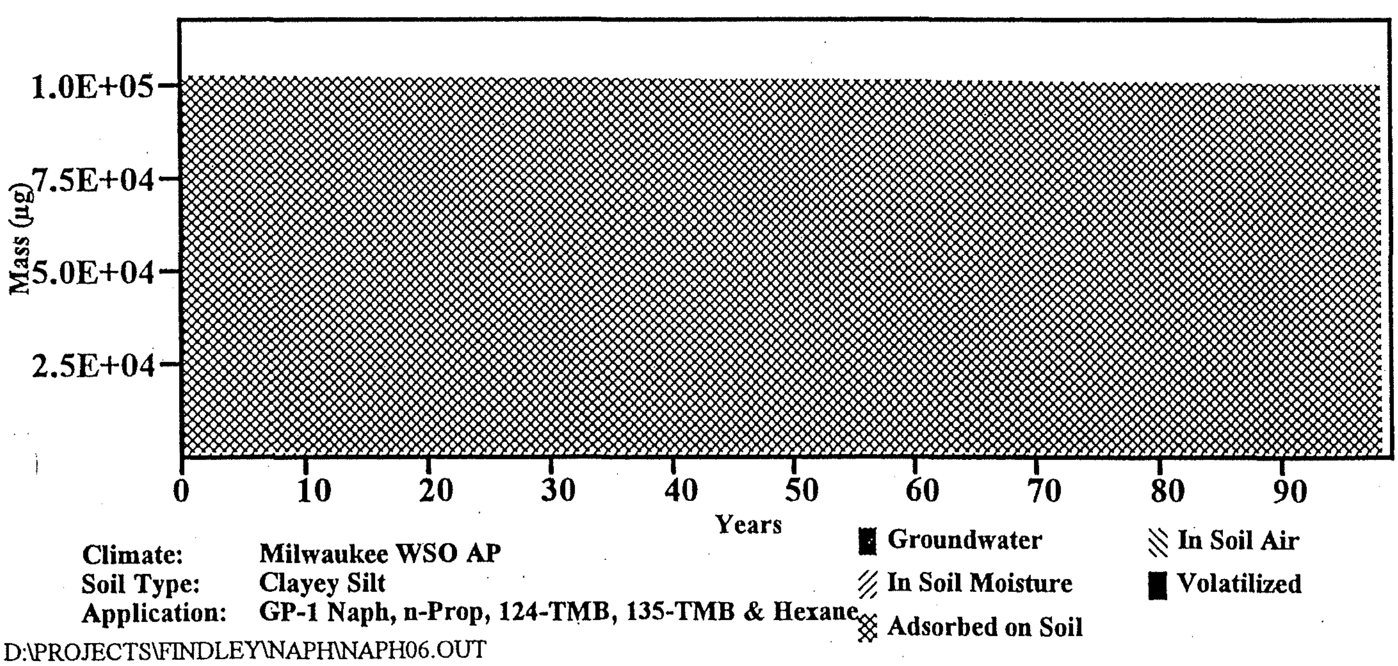
Naphthalene Koc=3160

Naphthalene Koc = 3160, GP--1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.740E+01	0.02	1.782E+01	0.02
Diffused Up	1.192E+01	0.01	1.221E+01	0.01
Soil Air	6.380E+00	0.01	6.536E+00	0.01
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	9.904E+04	97.10	1.014E+05	99.47
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	4.928E+02	0.48	5.049E+02	0.50
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.956E+04	97.62	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	2.431E+03			

Starting depth: 450.00 cm **Ending depth: 457.20 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

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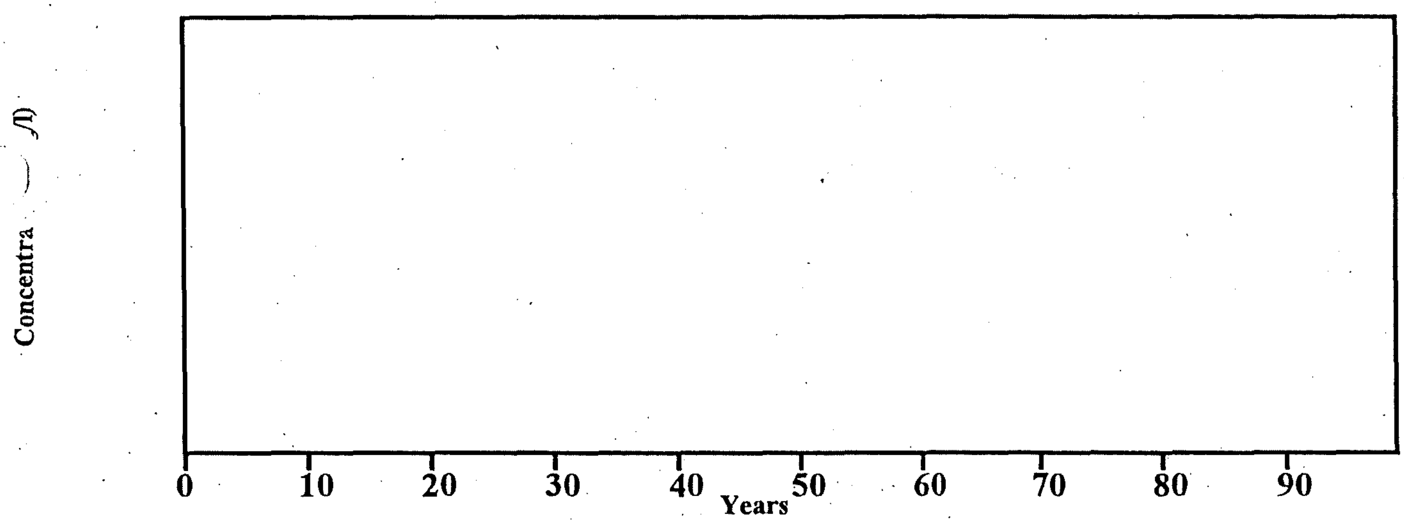
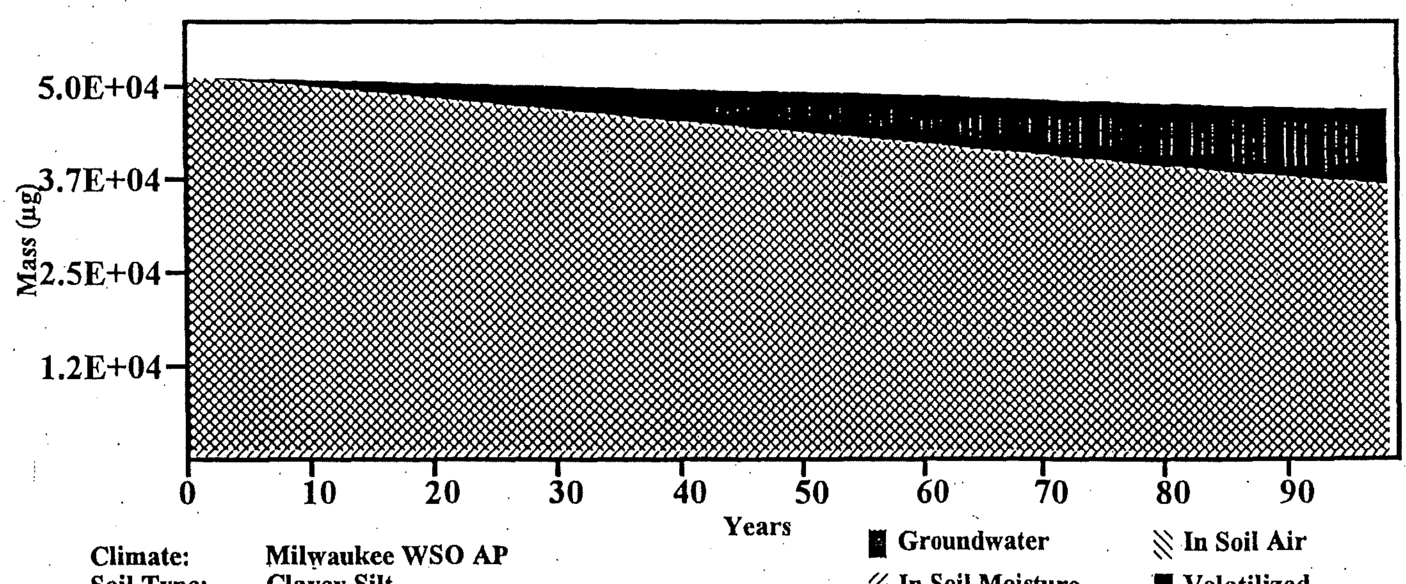
n-Propylbenzene Baseline

n-Propylbenzene baseline, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.034E+04	20.29	1.132E+04	22.21
Diffused Up	9.234E-01	0.00	1.010E+00	0.00
Soil Air	1.734E+02	0.34	1.898E+02	0.37
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.543E+04	69.48	3.878E+04	76.06
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	6.304E+02	1.24	6.900E+02	1.35
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.659E+04	91.35	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	4.409E+03			

Starting depth: 385.00 cm **Ending depth: 410.20 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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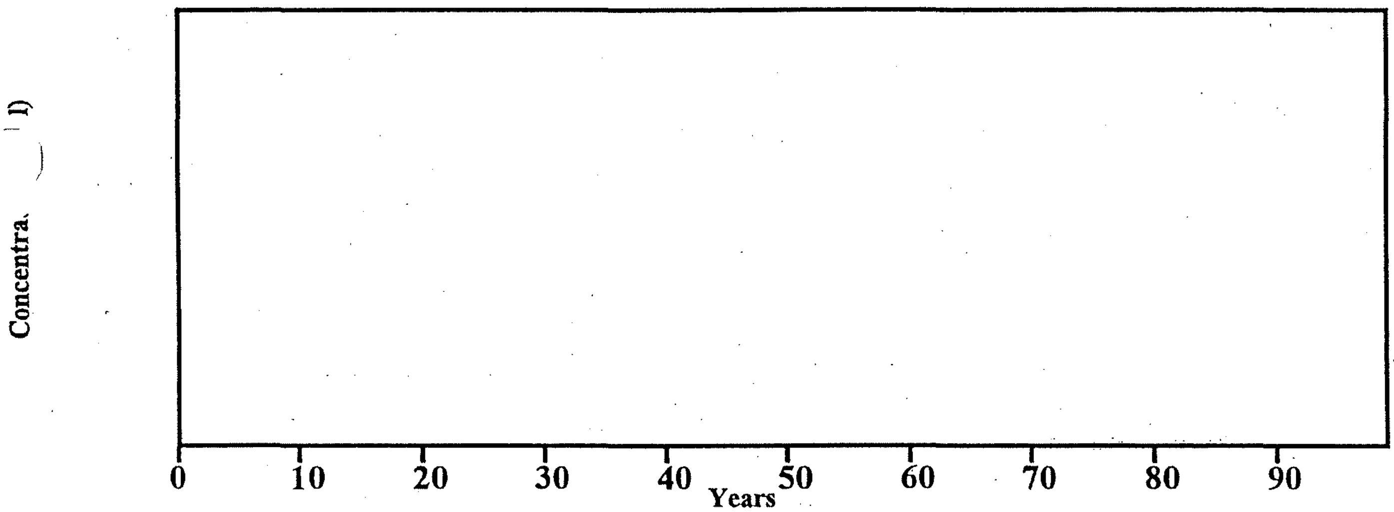
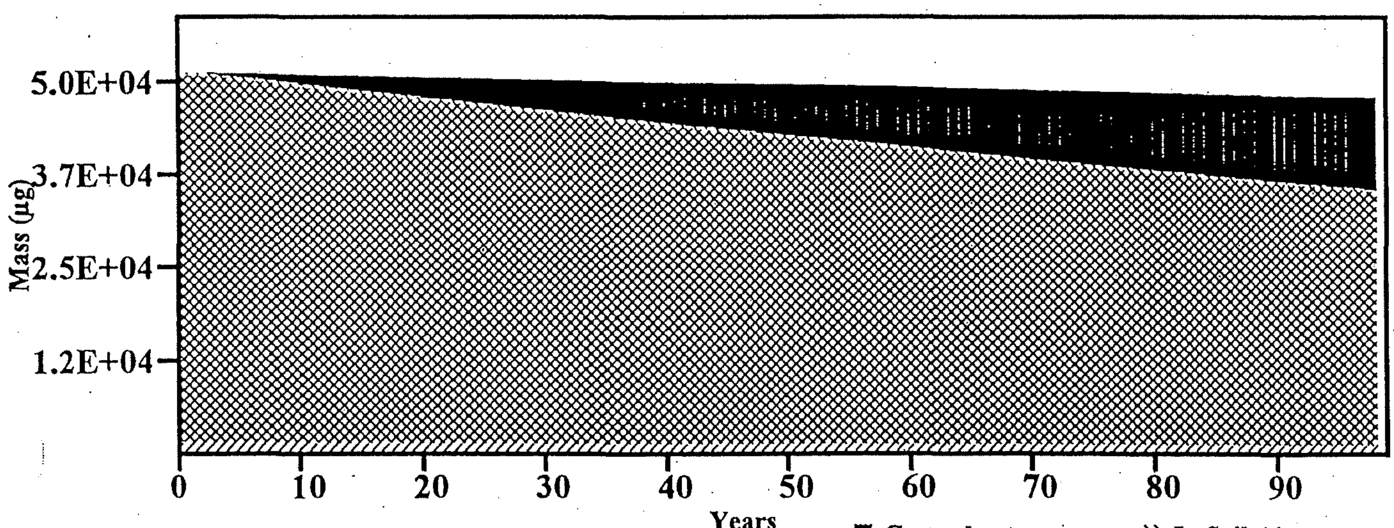
n-Propylbenzene Koc=704

n-Propylbenzene Koc = 704, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.265E+04	24.80	1.355E+04	26.57
Diffused Up	1.021E+00	0.00	1.093E+00	0.00
Soil Air	2.088E+02	0.41	2.237E+02	0.44
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.398E+04	66.64	3.641E+04	71.39
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	7.592E+02	1.49	8.133E+02	1.59
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.760E+04	93.35	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	3.392E+03			

Starting depth: 385.00 cm   Ending depth: 415.50 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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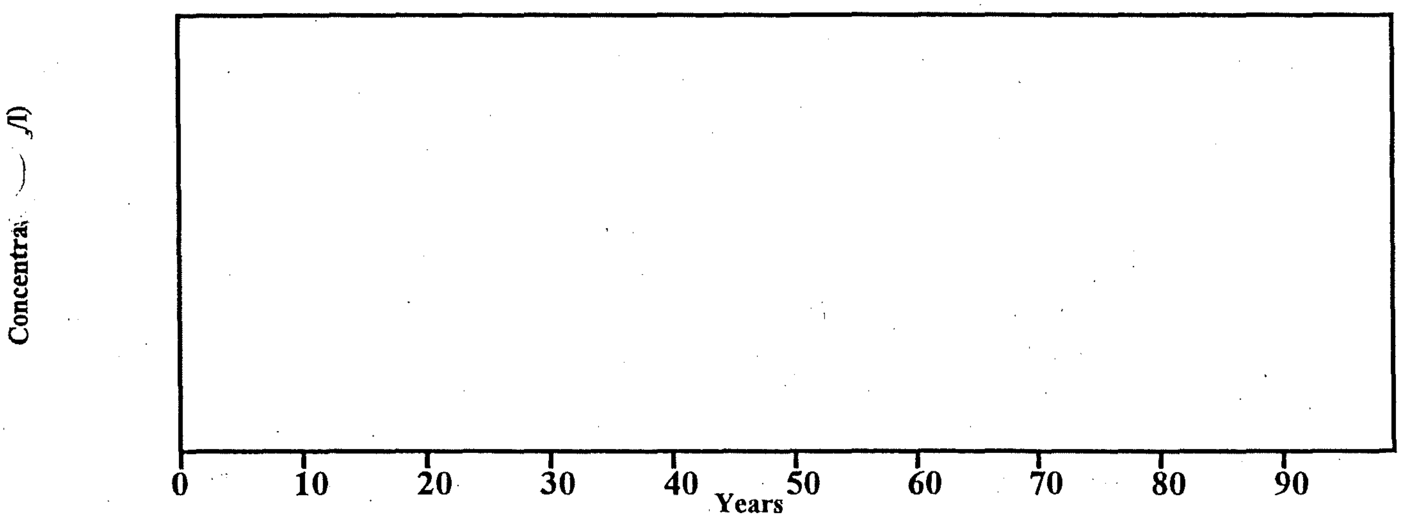
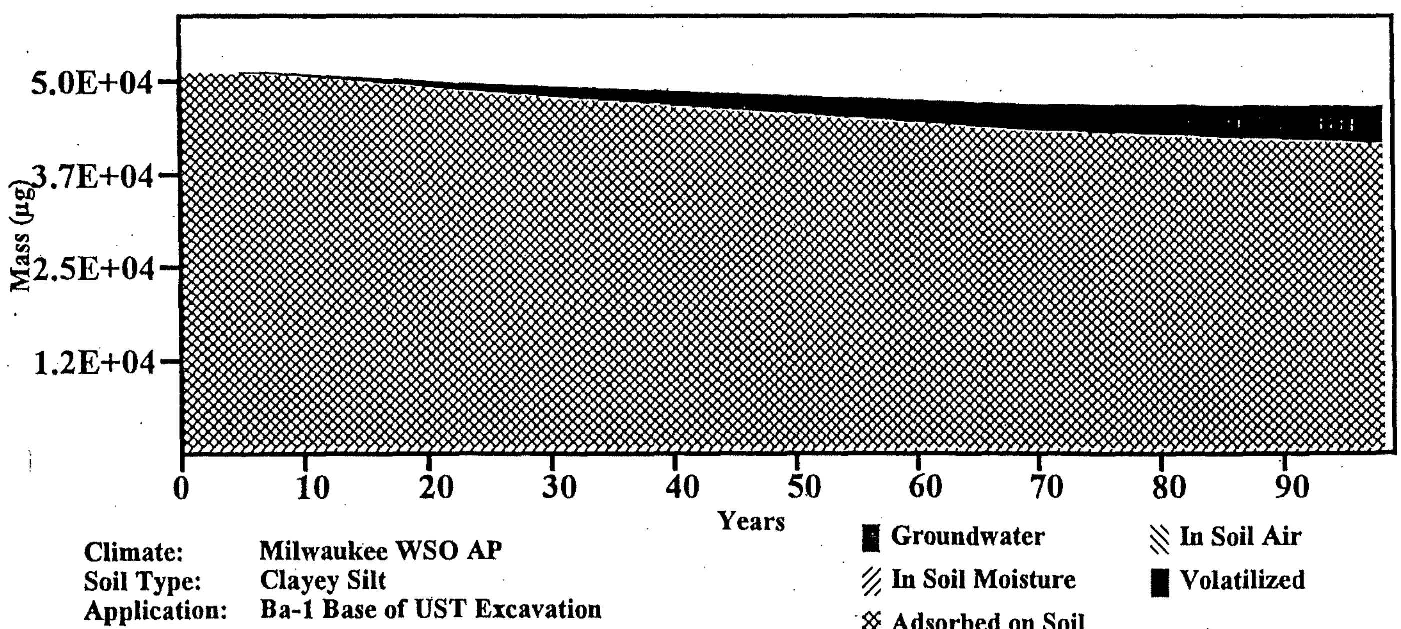
n-Propylbenzene Koc=1837

n-Propylbenzene Koc = 1837, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	5.207E+03	10.21	5.729E+03	11.23
Diffused Up	1.704E+00	0.00	1.874E+00	0.00
Soil Air	9.582E+01	0.19	1.054E+02	0.21
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.069E+04	79.80	4.477E+04	87.80
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	3.483E+02	0.68	3.833E+02	0.75
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.635E+04	90.88	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	4.649E+03			

Starting depth: 385.00 cm **Ending depth:** 398.90 cm **Total depth:** 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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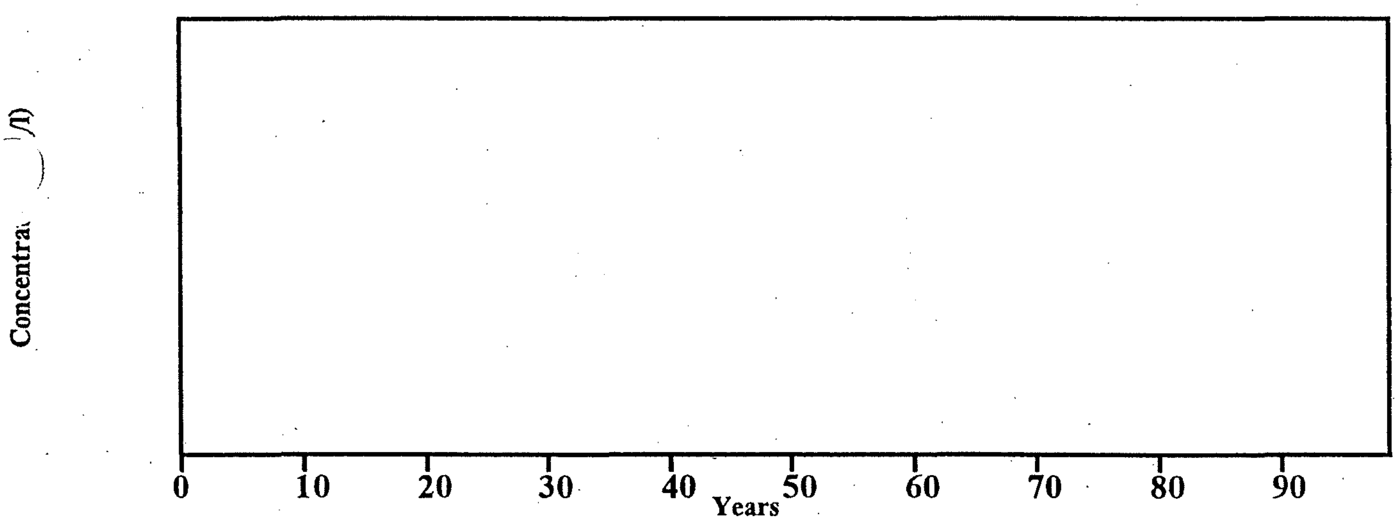
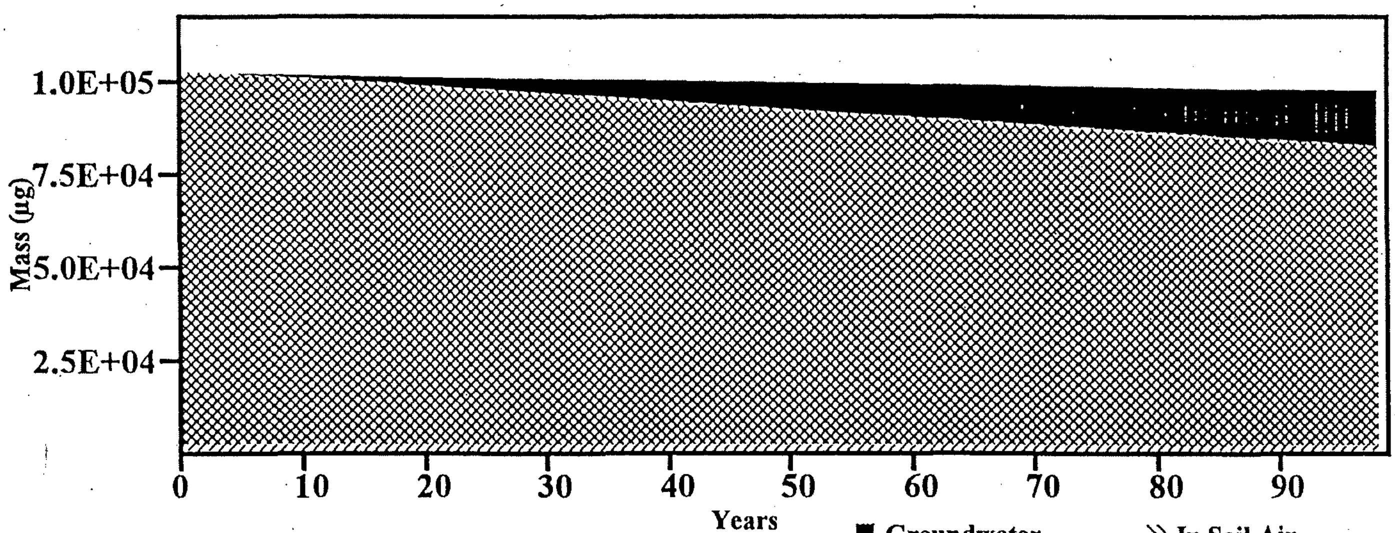
n-Propylbenzene Baseline

n-Propylbenzene baseline, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.527E+04	14.98	1.608E+04	15.77
Diffused Up	5.922E+00	0.01	6.232E+00	0.01
Soil Air	3.905E+02	0.38	4.110E+02	0.40
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	7.982E+04	78.25	8.400E+04	82.36
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.419E+03	1.39	1.494E+03	1.46
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.691E+04	95.02	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	5.084E+03			

Starting depth: 450.00 cm **Ending depth: 475.40 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

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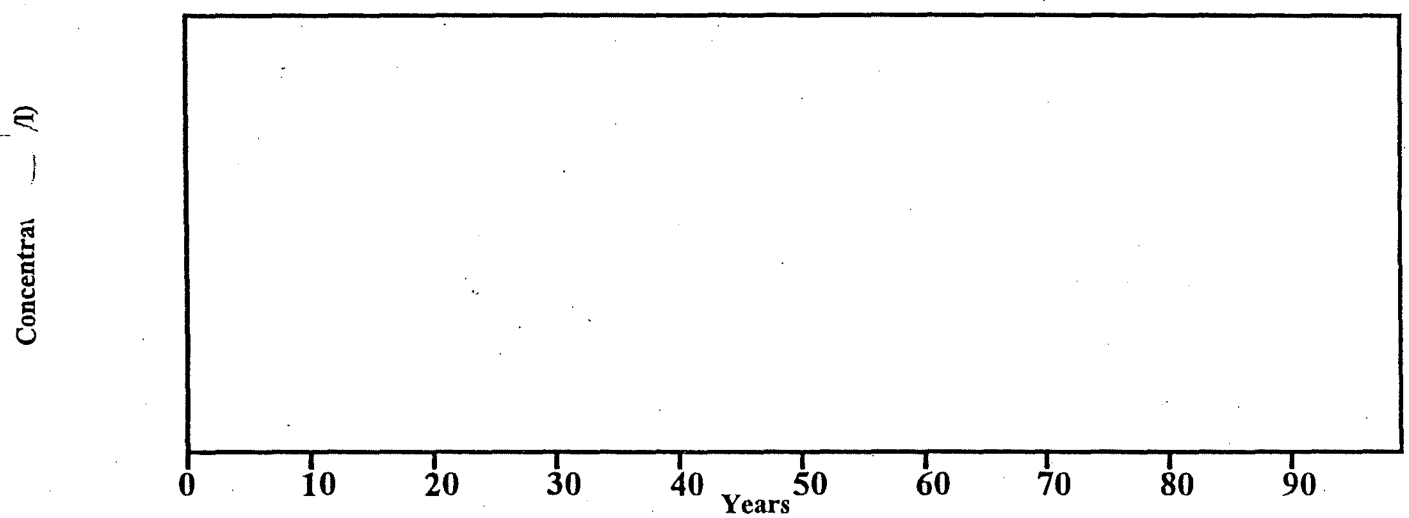
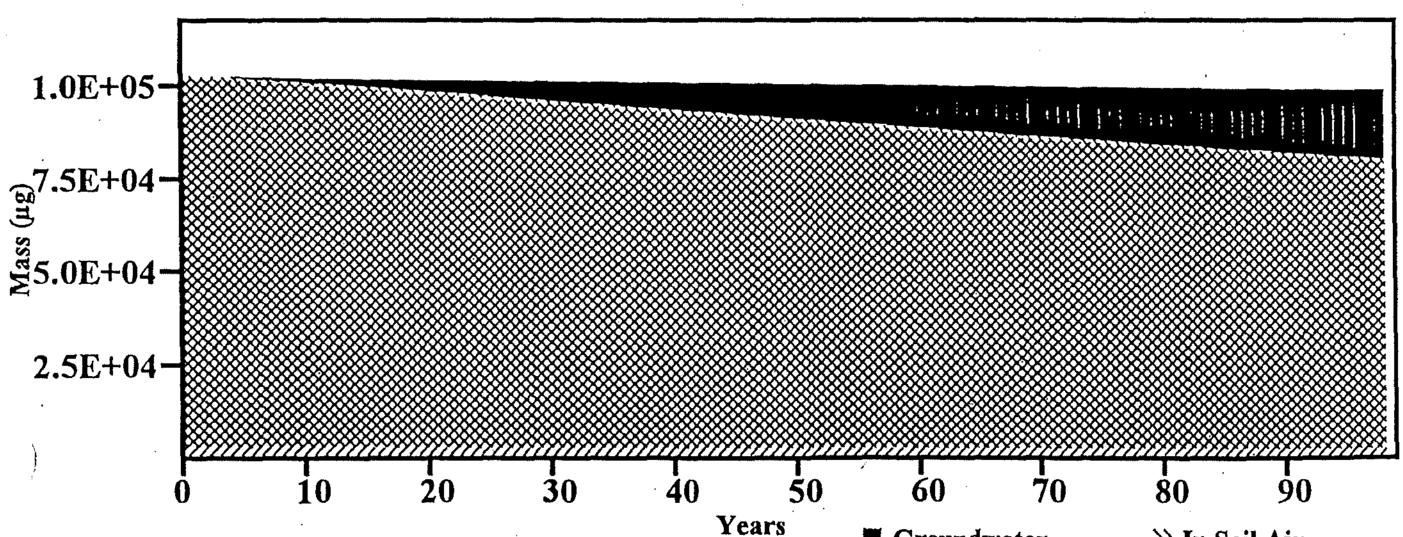
n-Propylbenzene Koc=704

n-Propylbenzene Koc = 704, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.904E+04	18.67	1.978E+04	19.39
Diffused Up	4.466E+00	0.00	4.639E+00	0.00
Soil Air	4.728E+02	0.46	4.912E+02	0.48
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	7.694E+04	75.44	7.993E+04	78.37
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.718E+03	1.68	1.785E+03	1.75
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.818E+04	96.26	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	3.811E+03			

Starting depth: 450.00 cm Ending depth: 481.20 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP

Soil Type: Clayey Silt

Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

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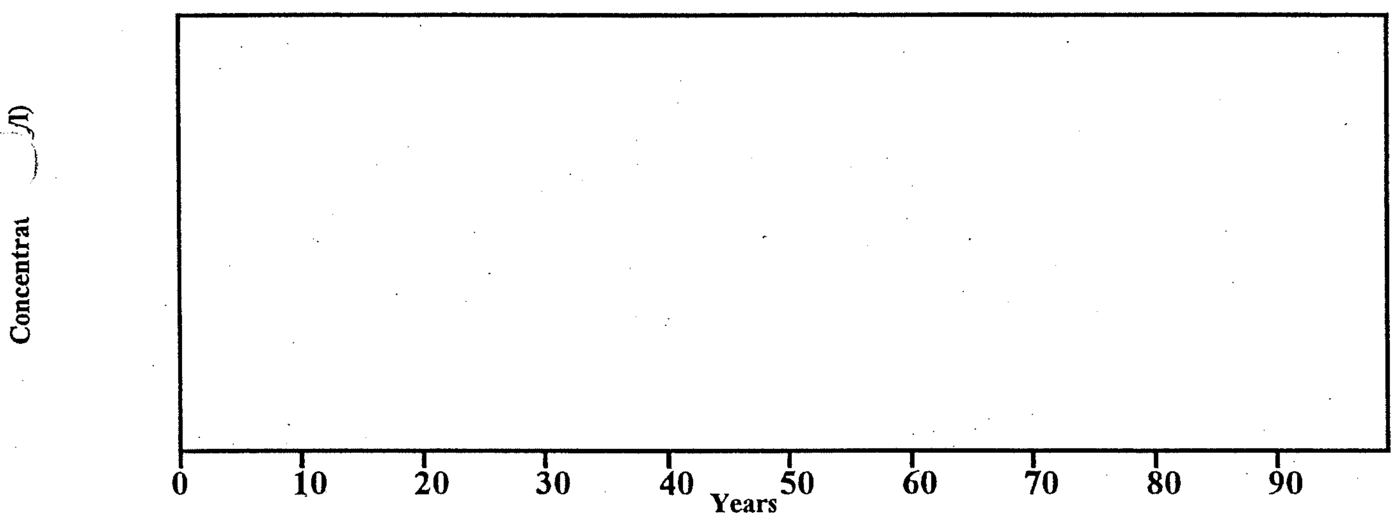
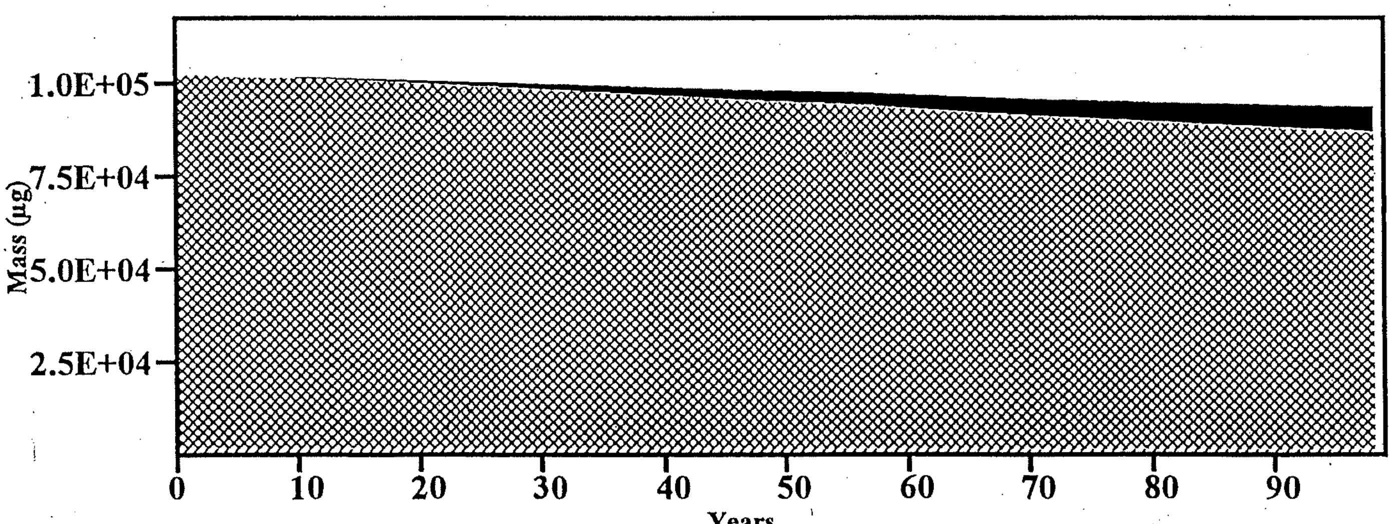
n-Propylbenzene Koc=1837

n-Propylbenzene Koc = 1837, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	7.037E+03	6.90	7.726E+03	7.58
Diffused Up	3.294E+00	0.00	3.616E+00	0.00
Soil Air	2.000E+02	0.20	2.196E+02	0.22
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	8.493E+04	83.26	9.325E+04	91.42
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	7.270E+02	0.71	7.983E+02	0.78
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.289E+04	91.08	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	9.102E+03			

Starting depth: 450.00 cm **Ending depth: 462.40 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

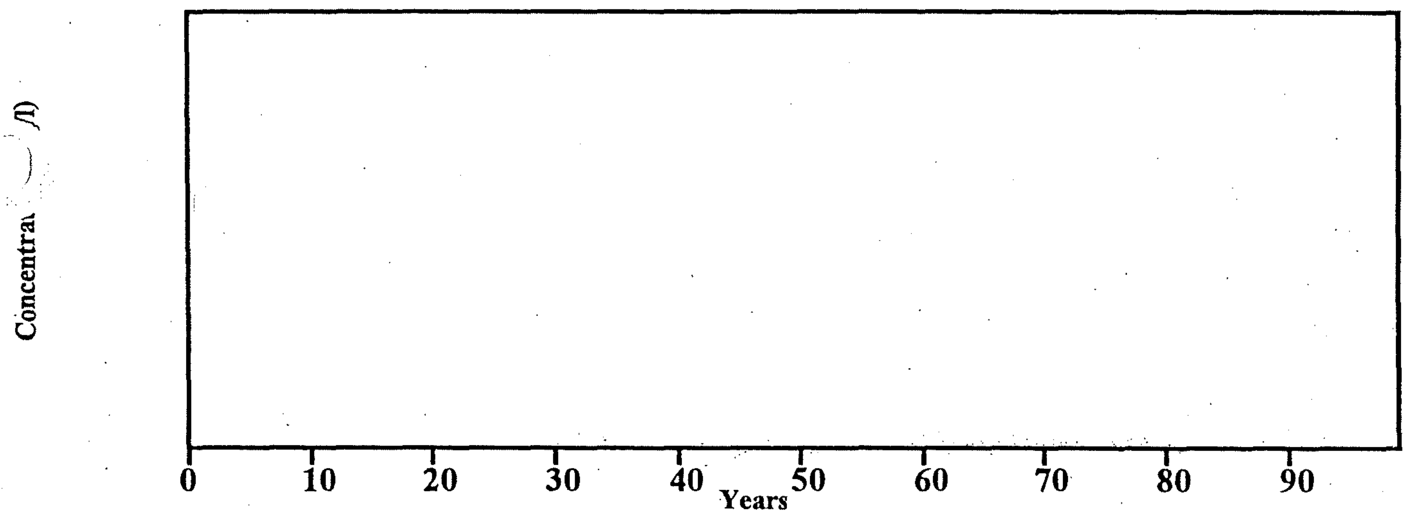
D:\PROJECTS\FINDLEY\NPROPBEN\NPROP06.OUT

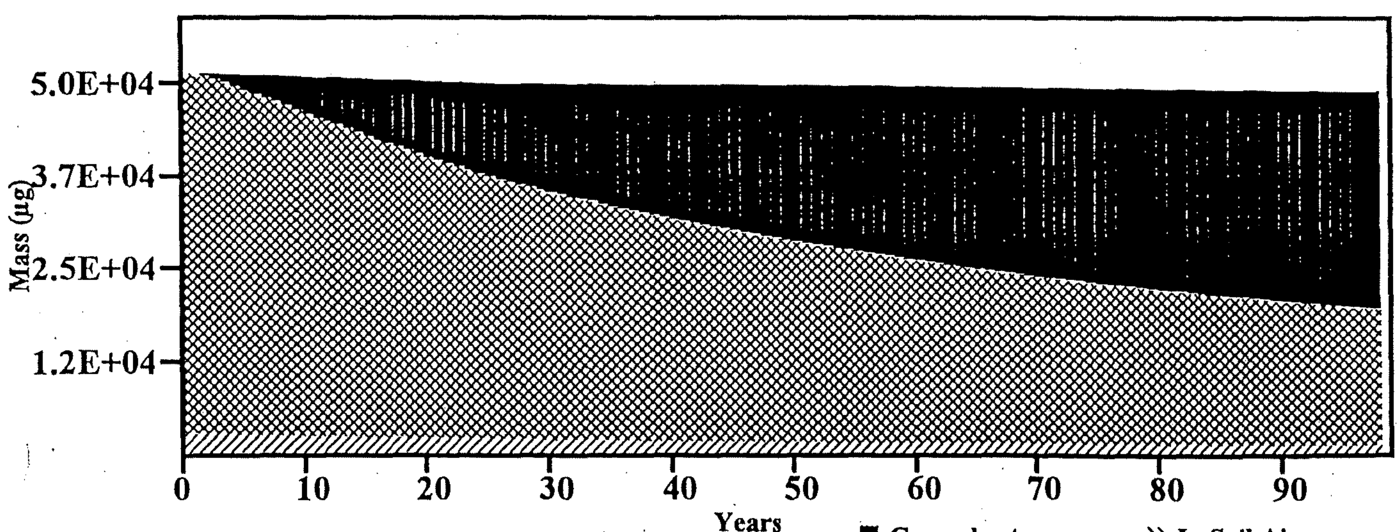
Tetrachloroethene Baseline

Tetrachloroethene baseline, Side wall 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.954E+04	57.93	3.104E+04	60.86
Diffused Up	2.472E+00	0.00	2.597E+00	0.01
Soil Air	6.796E+01	0.13	7.140E+01	0.14
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.798E+04	35.27	1.890E+04	37.06
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	9.369E+02	1.84	9.844E+02	1.93
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.853E+04	95.17	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	2.461E+03			

Starting depth: 165.10 cm **Ending depth: 252.80 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Side walls of UST Excavation

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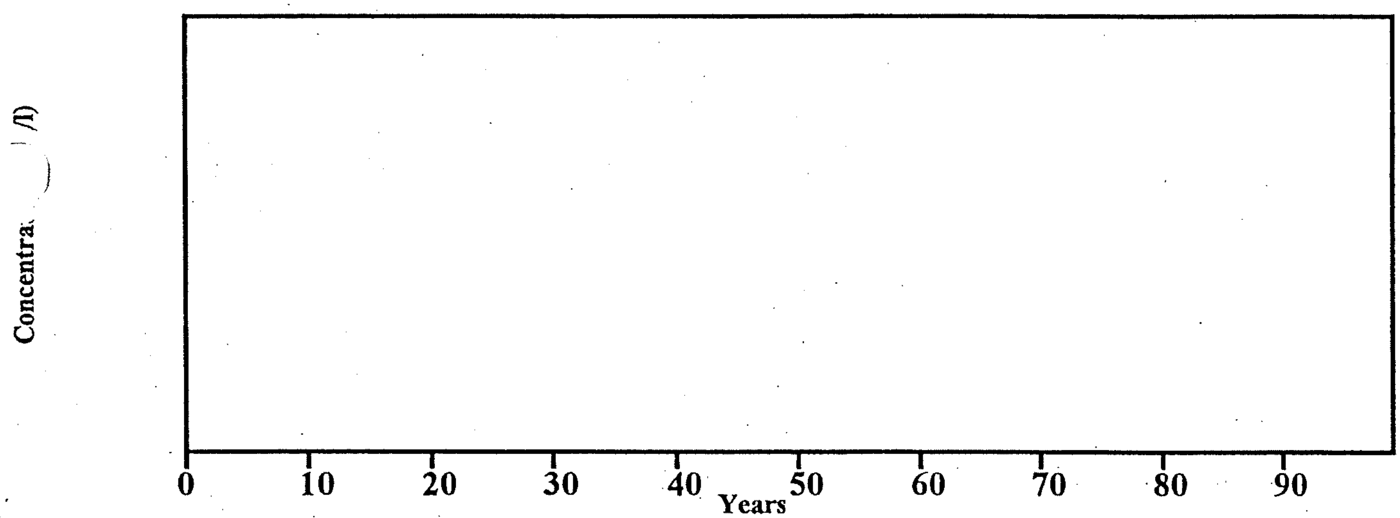
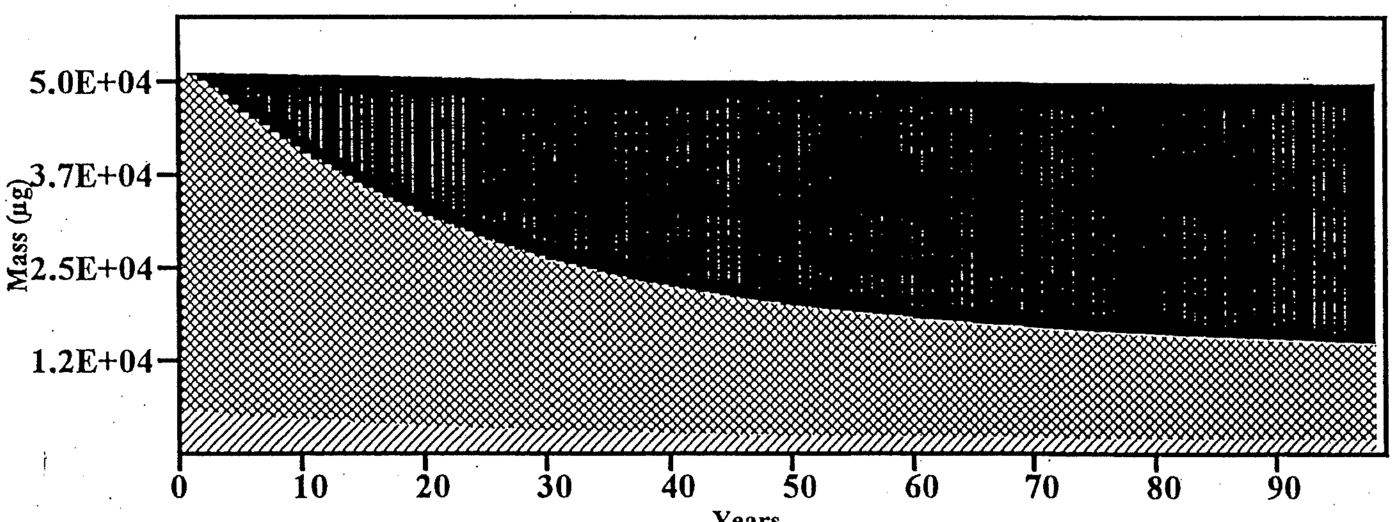
Tetrachloroethene Koc=137.3

Tetrachloroethene Koc = 137, Side wall 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.517E+04	68.96	3.622E+04	71.03
Diffused Up	9.938E+00	0.02	1.023E+01	0.02
Soil Air	1.060E+02	0.21	1.092E+02	0.21
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.276E+04	25.03	1.315E+04	25.78
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.462E+03	2.87	1.505E+03	2.95
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.951E+04	97.09	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.483E+03			

Starting depth: 165.20 cm **Ending depth: 342.40 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Side walls of UST Excavation

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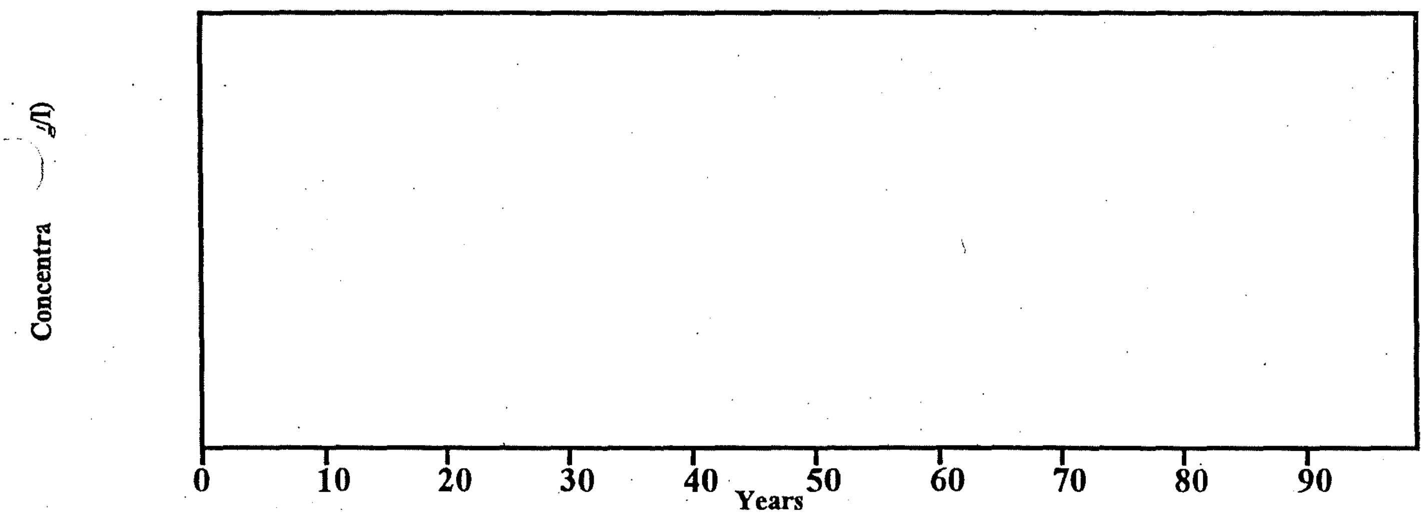
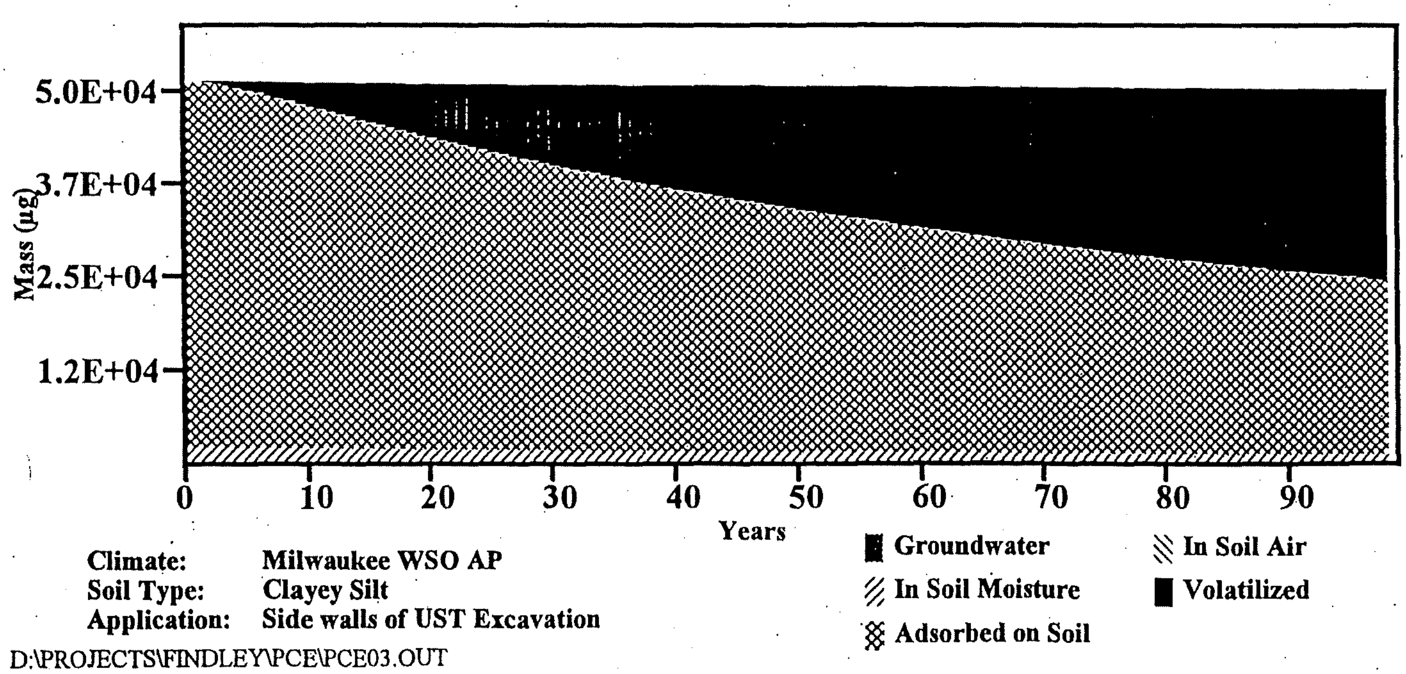
Tetrachloroethene Koc=433

Tetrachloroethene Koc = 433, Side wall 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.591E+04	50.82	2.648E+04	51.93
Diffused Up	3.085E+00	0.01	3.152E+00	0.01
Soil Air	6.083E+01	0.12	6.216E+01	0.12
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.308E+04	45.27	2.359E+04	46.26
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	8.386E+02	1.64	8.569E+02	1.68
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.990E+04	97.85	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.094E+03			

Starting depth: 165.10 cm **Ending depth: 228.30 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Side walls of UST Excavation

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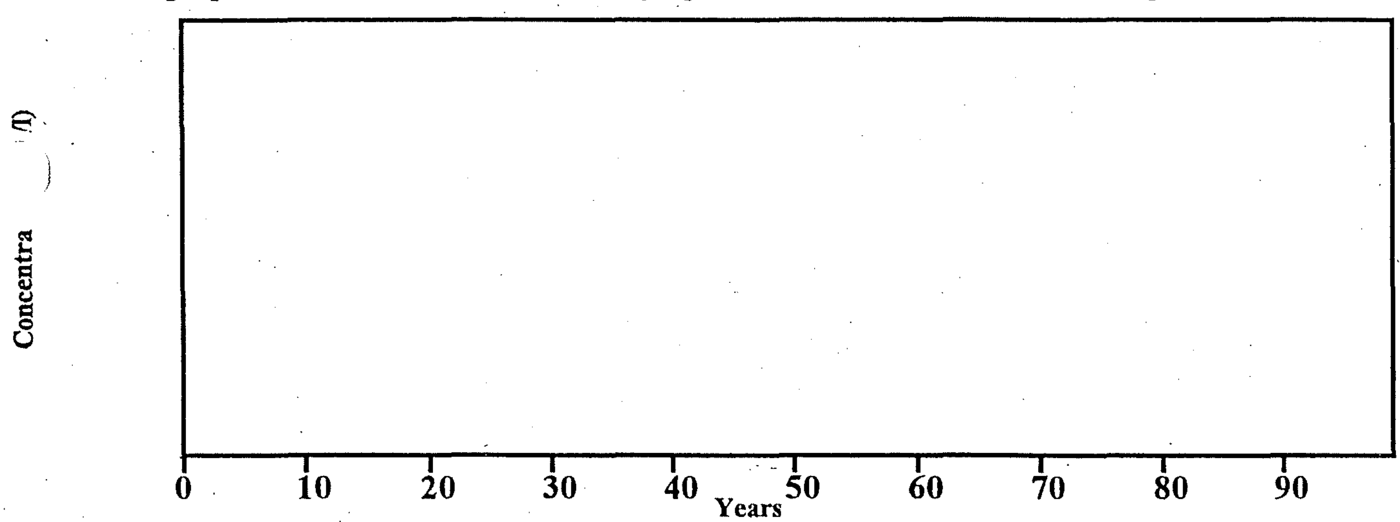
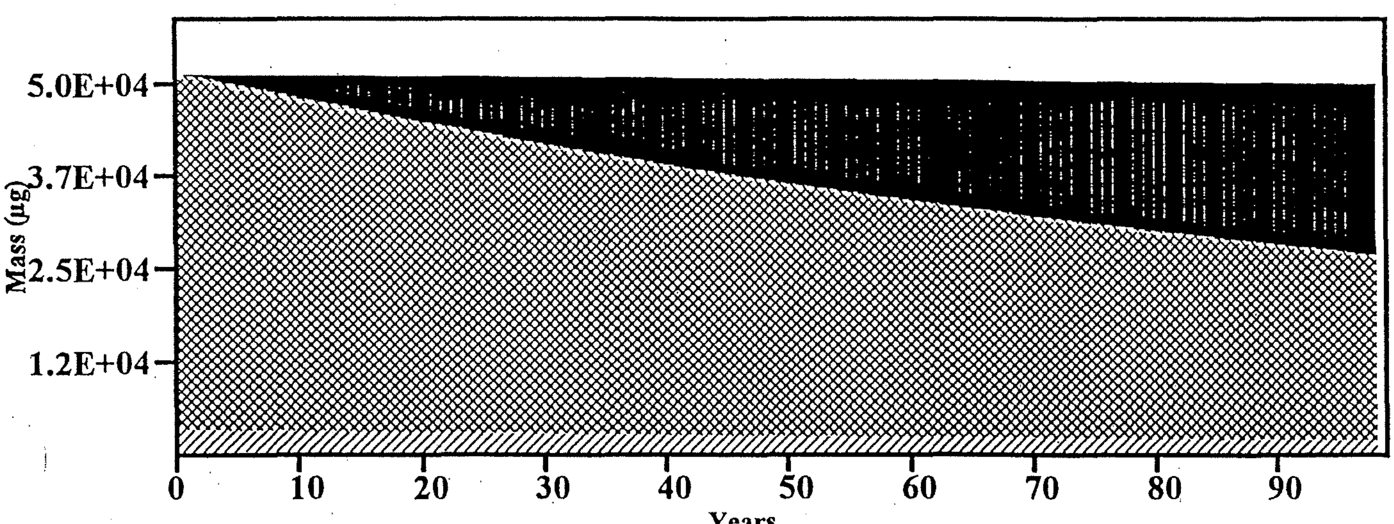
Toluene Baseline

Toluene Baseline, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.333E+04	45.76	2.393E+04	46.94
Diffused Up	1.626E+00	0.00	1.668E+00	0.00
Soil Air	2.472E+02	0.48	2.536E+02	0.50
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.458E+04	48.20	2.521E+04	49.45
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.546E+03	3.03	1.586E+03	3.11
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.971E+04	97.48	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.287E+03			

Starting depth: 385.10 cm **Ending depth: 460.60 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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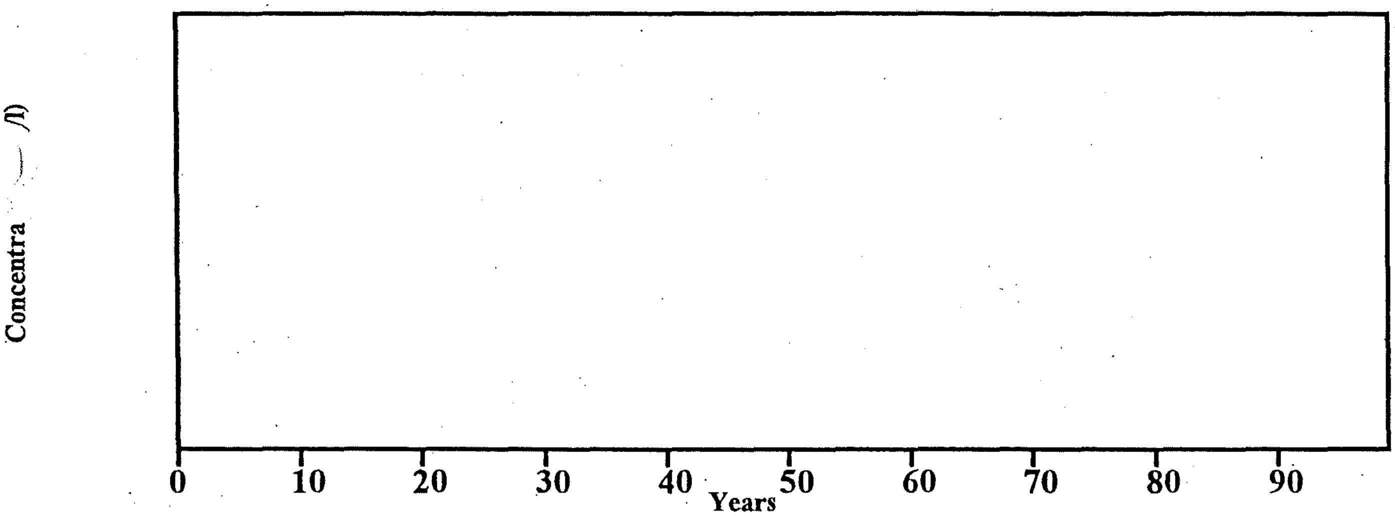
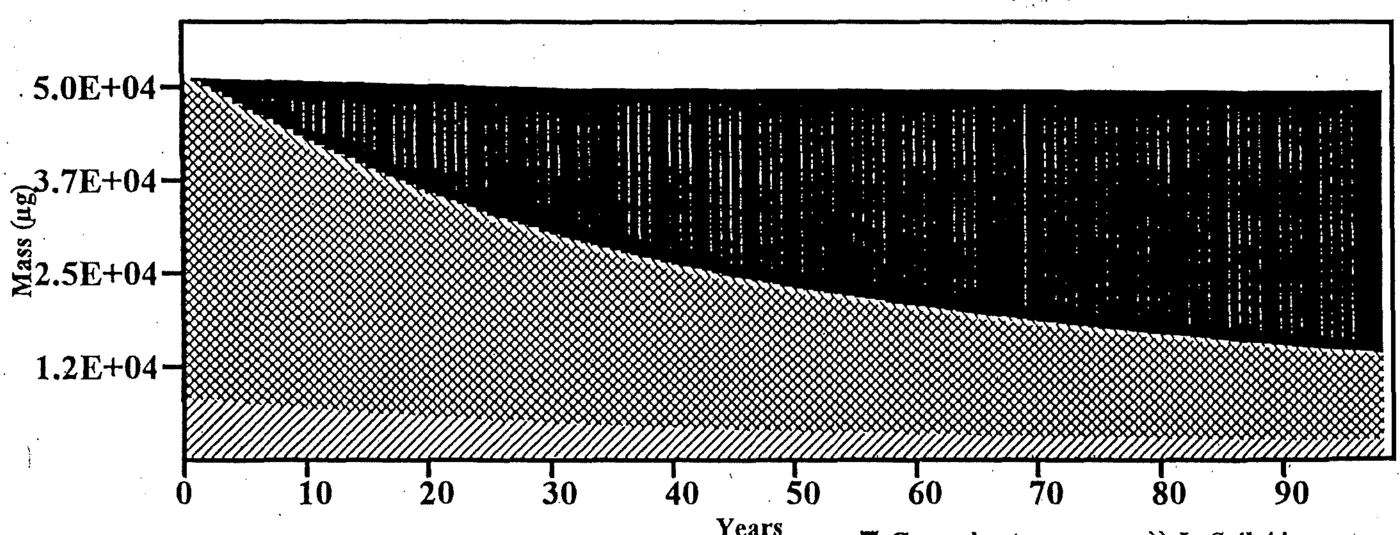
Toluene Koc=85

Toluene Koc = 85, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.562E+04	69.85	3.687E+04	72.31
Diffused Up	1.926E+01	0.04	1.994E+01	0.04
Soil Air	3.319E+02	0.65	3.435E+02	0.67
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	1.121E+04	21.99	1.161E+04	22.77
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.075E+03	4.07	2.148E+03	4.21
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.926E+04	96.60	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.732E+03			

Starting depth: 385.20 cm **Ending depth:** 574.90 cm **Total depth:** 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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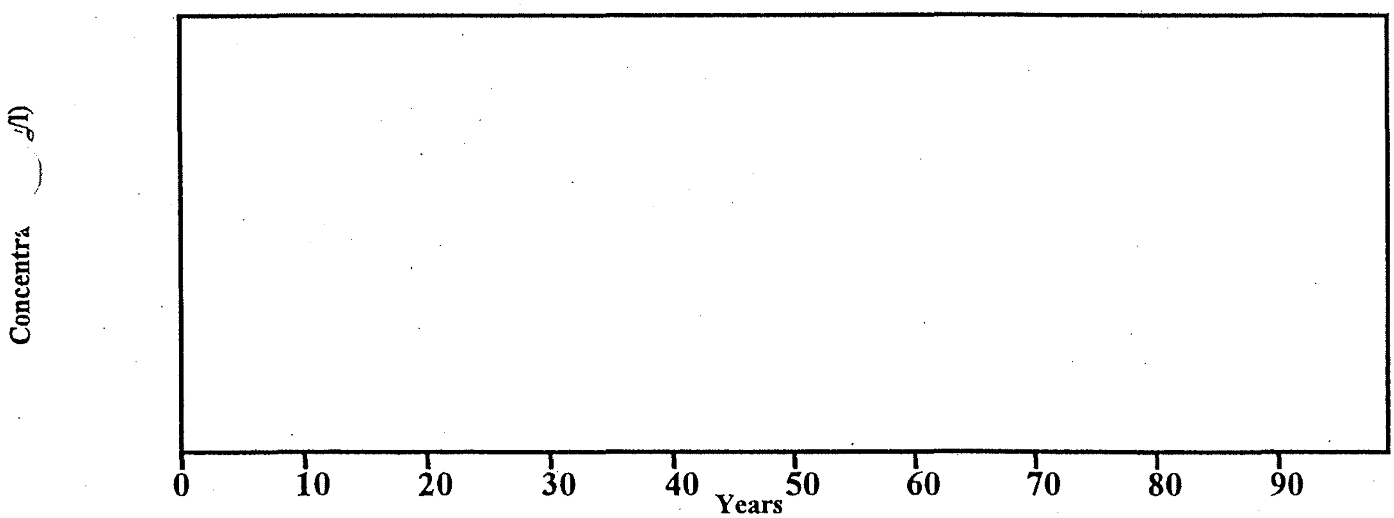
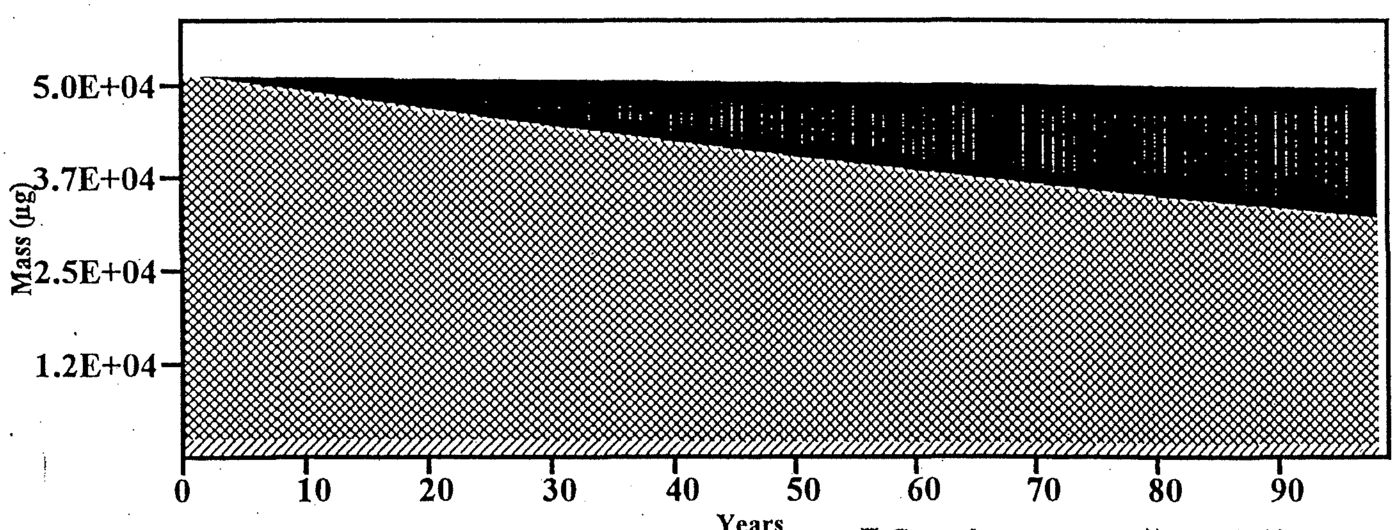
Toluene Koc=380

Toluene Koc = 380, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.776E+04	34.84	1.835E+04	36.00
Diffused Up	1.460E+00	0.00	1.508E+00	0.00
Soil Air	1.995E+02	0.39	2.061E+02	0.40
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.014E+04	59.10	3.114E+04	61.07
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.247E+03	2.45	1.288E+03	2.53
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.935E+04	96.78	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.640E+03			

Starting depth: 385.10 cm **Ending depth: 437.20 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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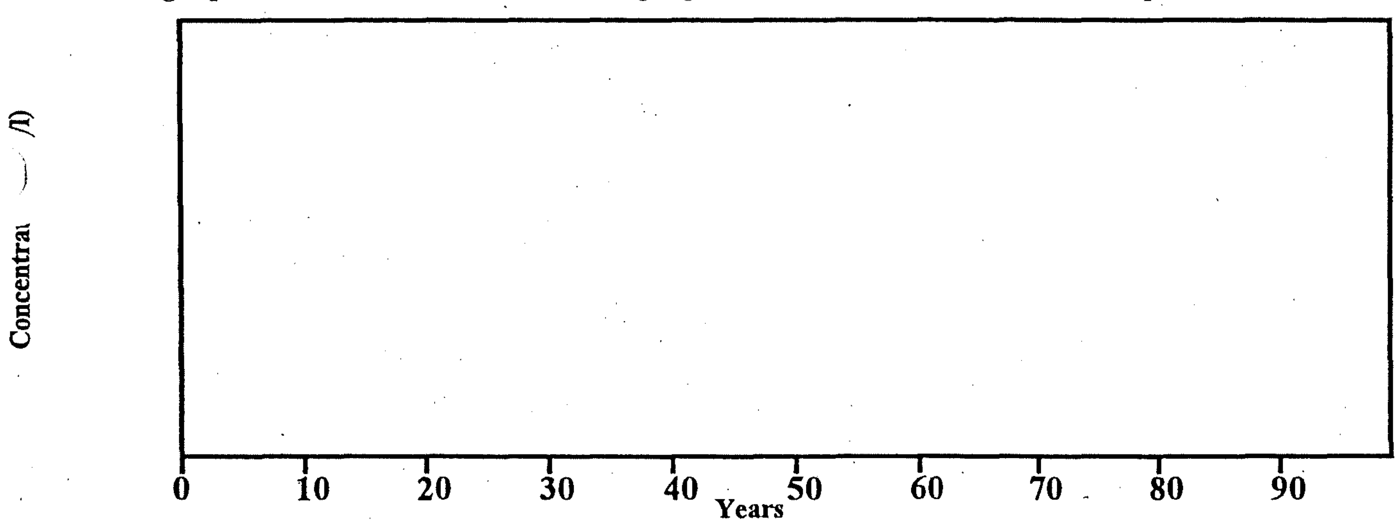
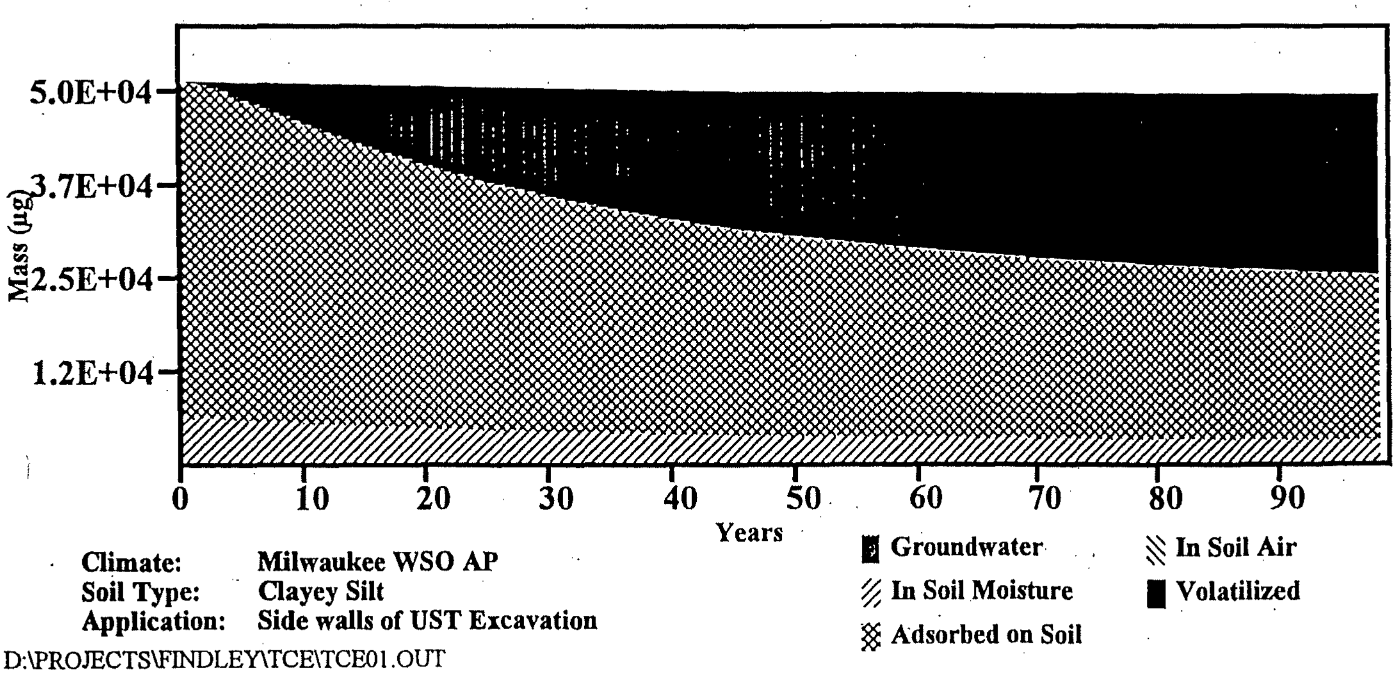
Trichloroethene Baseline

Trichloroethene baseline, Side wall 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.428E+04	47.62	2.514E+04	49.30
Diffused Up	9.007E+00	0.02	9.324E+00	0.02
Soil Air	8.908E+01	0.17	9.222E+01	0.18
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.205E+04	43.24	2.283E+04	44.77
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.823E+03	5.54	2.922E+03	5.73
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.926E+04	96.59	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.738E+03			

Starting depth: 165.20 cm **Ending depth: 361.20 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Side walls of UST Excavation

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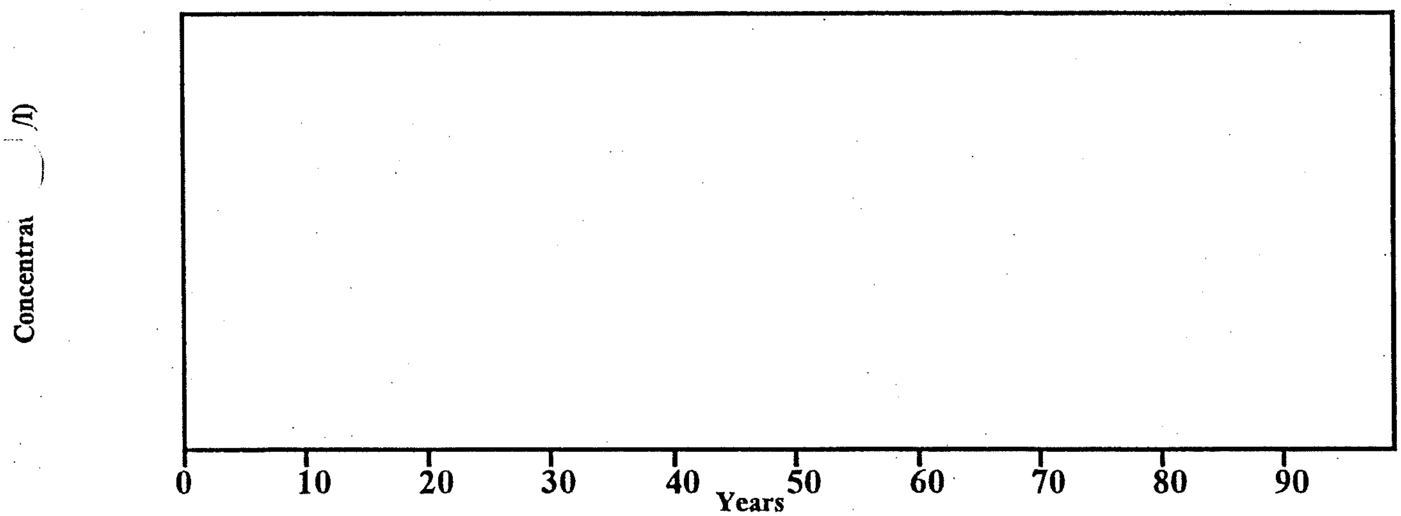
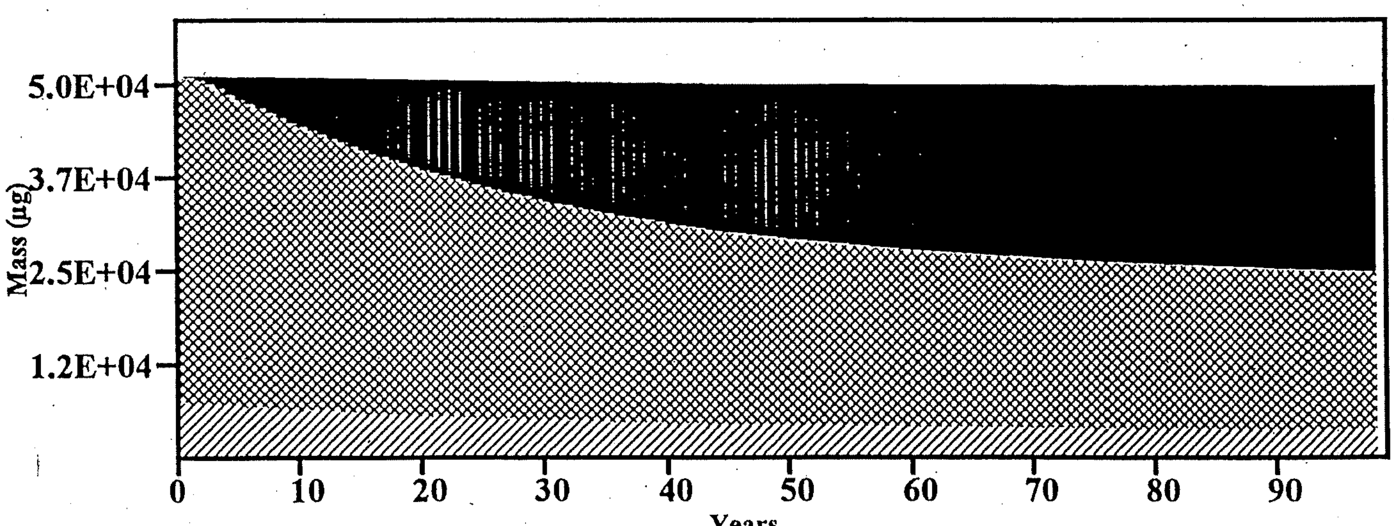
Trichloroethene Koc=100

Trichloroethene Koc=100, Side wall 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.529E+04	49.59	2.600E+04	50.98
Diffused Up	1.174E+01	0.02	1.207E+01	0.02
Soil Air	1.037E+02	0.20	1.066E+02	0.21
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.091E+04	41.00	2.149E+04	42.15
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	3.288E+03	6.45	3.380E+03	6.63
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	-0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.960E+04	97.27	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.393E+03			

Starting depth: 165.30 cm **Ending depth: 398.80 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Side walls of UST Excavation

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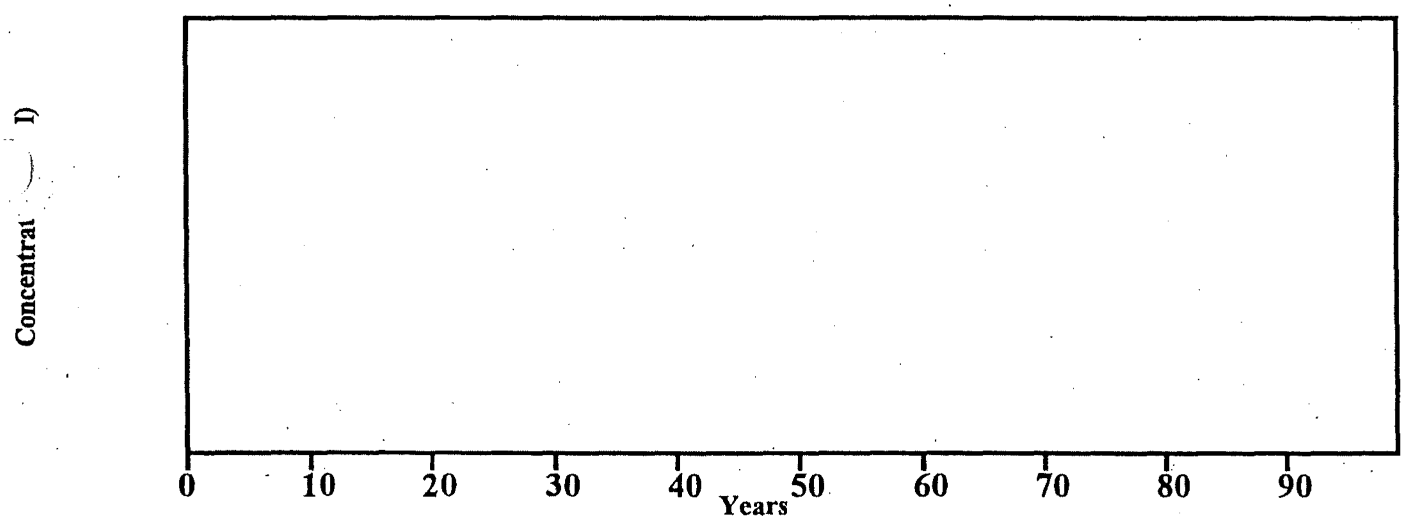
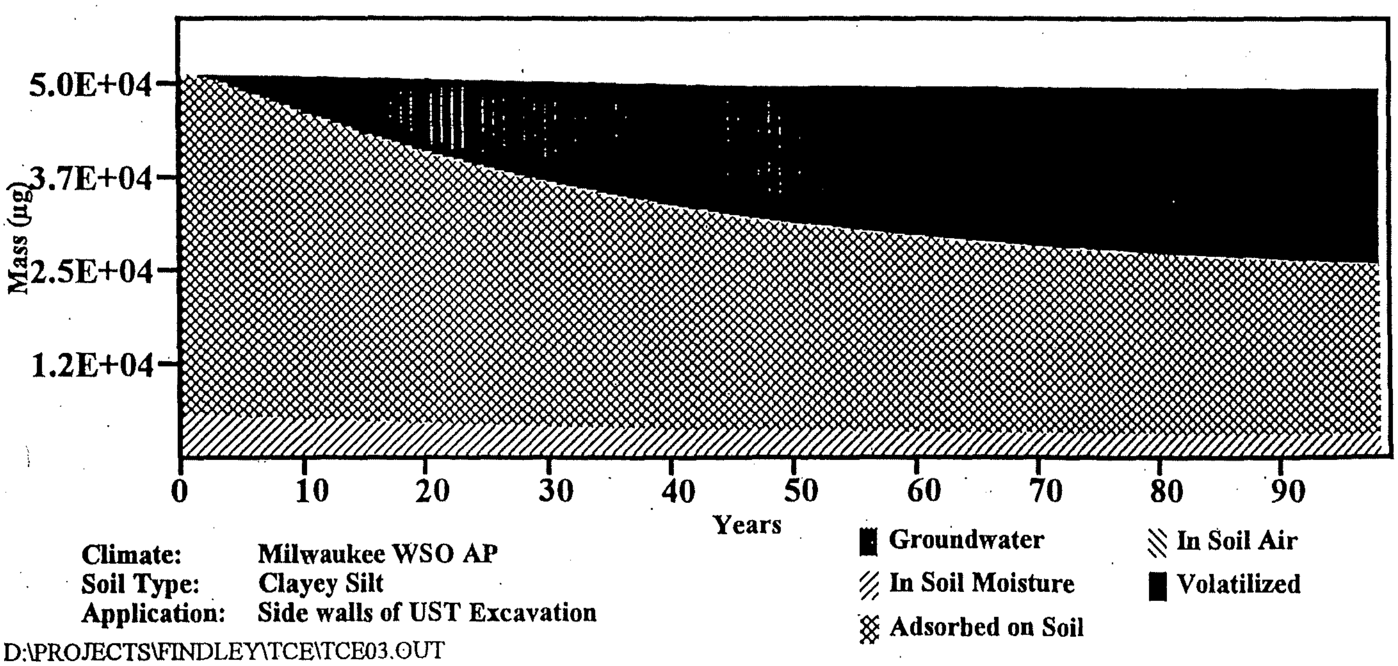
Trichloroethene Koc=137

Trichloroethene Koc=137, Side wall 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.370E+04	46.47	2.463E+04	48.31
Diffused Up	7.532E+00	0.01	7.828E+00	0.02
Soil Air	8.212E+01	0.16	8.536E+01	0.17
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.267E+04	44.45	2.356E+04	46.21
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.602E+03	5.10	2.705E+03	5.31
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.906E+04	96.21	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.934E+03			

Starting depth: 165.20 cm **Ending depth: 343.50 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Side walls of UST Excavation

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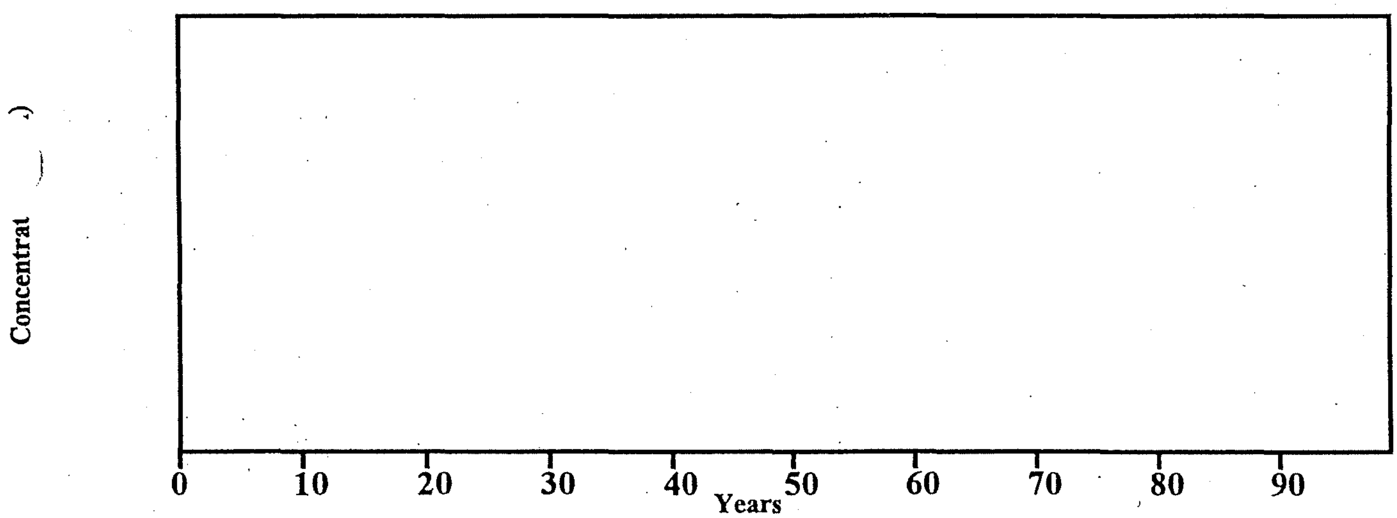
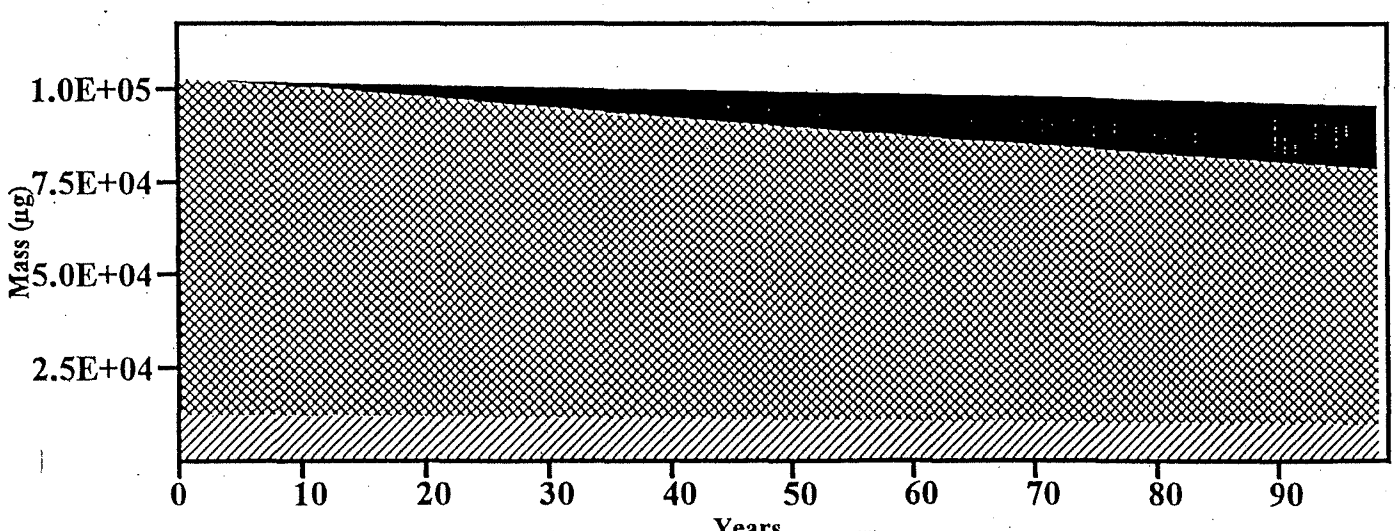
Trichloroethene Baseline

Trichloroethene baseline, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.750E+04	17.16	1.882E+04	18.45
Diffused Up	5.694E+00	0.01	6.122E+00	0.01
Soil Air	2.760E+02	0.27	2.968E+02	0.29
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	6.833E+04	66.99	7.346E+04	72.03
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	8.750E+03	8.58	9.408E+03	9.22
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.486E+04	93.01	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	7.131E+03			

Starting depth: 390.20 cm **Ending depth: 531.70 cm** **Total depth: 920.00 cm**





Climate:	**Milwaukee WSO AP**
Soil Type:	**Clayey Silt**
Application:	**GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE**

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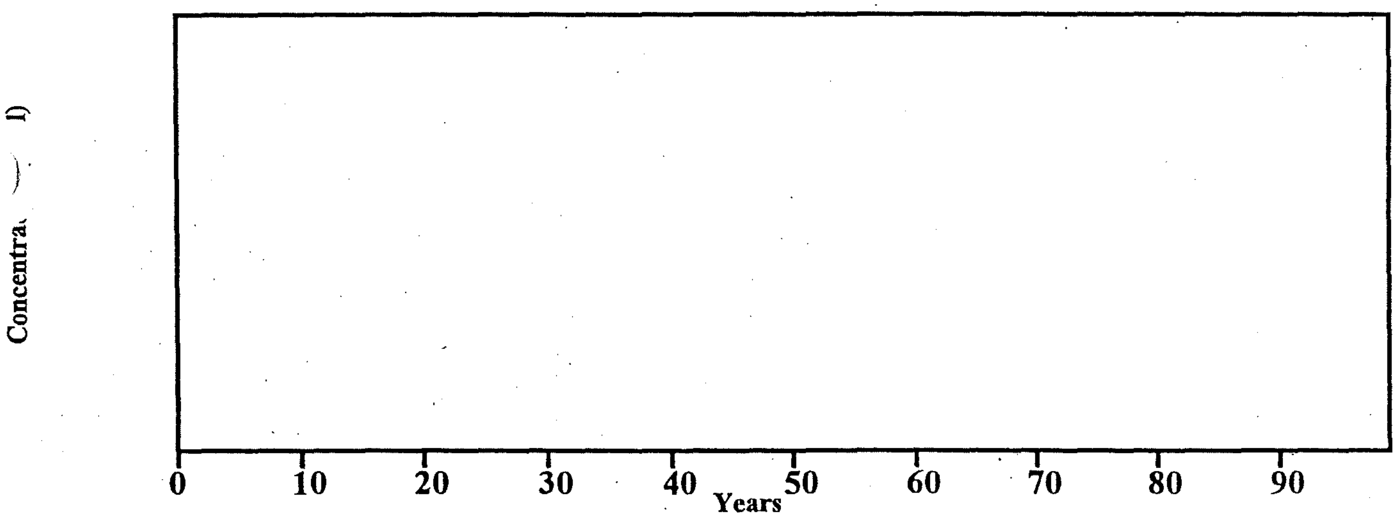
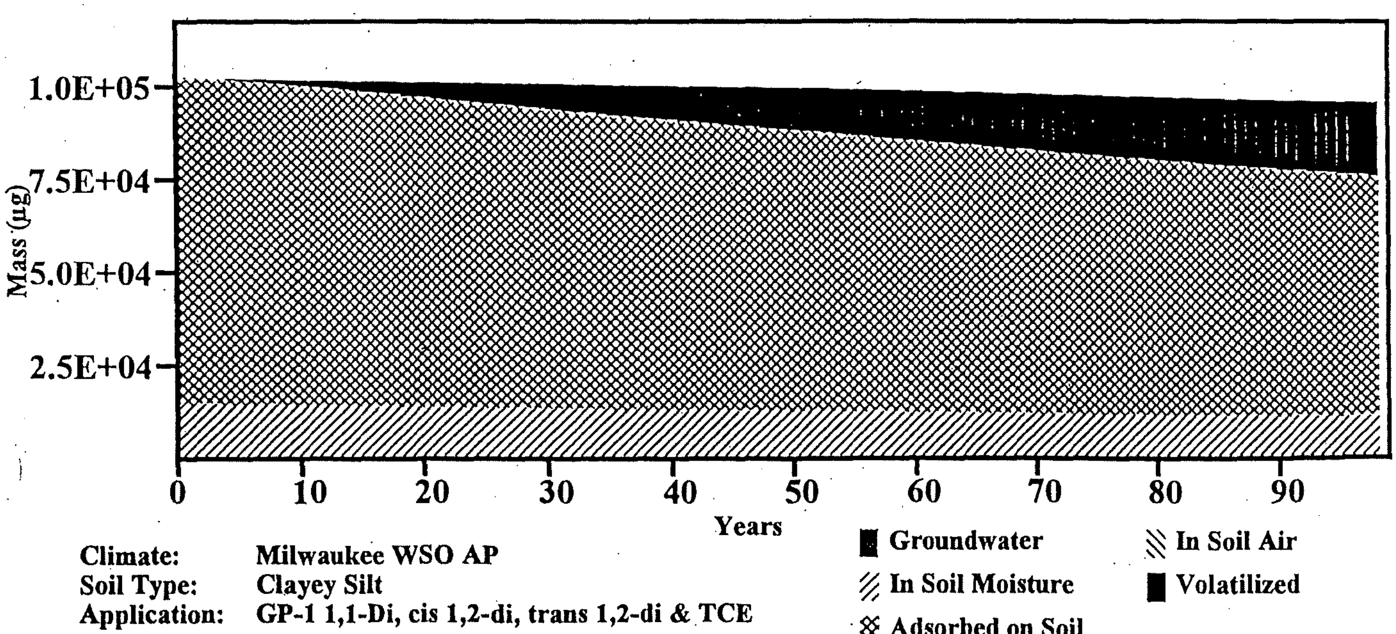
Trichloroethene Koc=100

Trichloroethene Koc = 100, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.001E+04	19.62	2.146E+04	21.05
Diffused Up	8.184E+00	0.01	8.777E+00	0.01
Soil Air	3.205E+02	0.31	3.437E+02	0.34
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	6.459E+04	63.33	6.928E+04	67.92
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.015E+04	9.96	1.089E+04	10.68
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.509E+04	93.23	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	6.901E+03			

Starting depth: 390.20 cm **Ending depth: 557.80 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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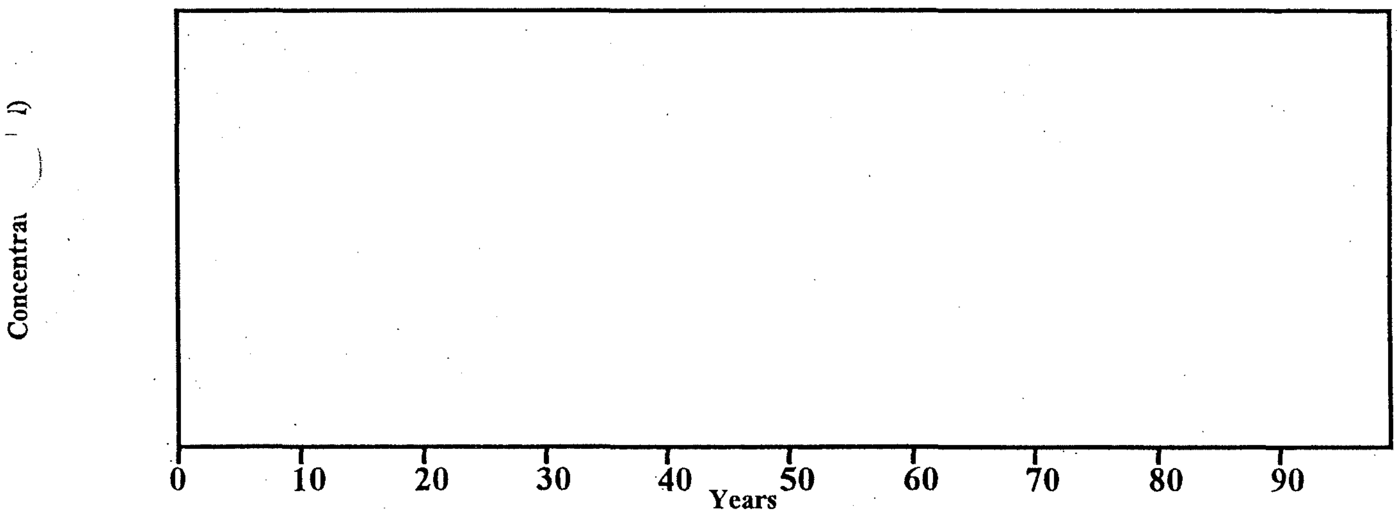
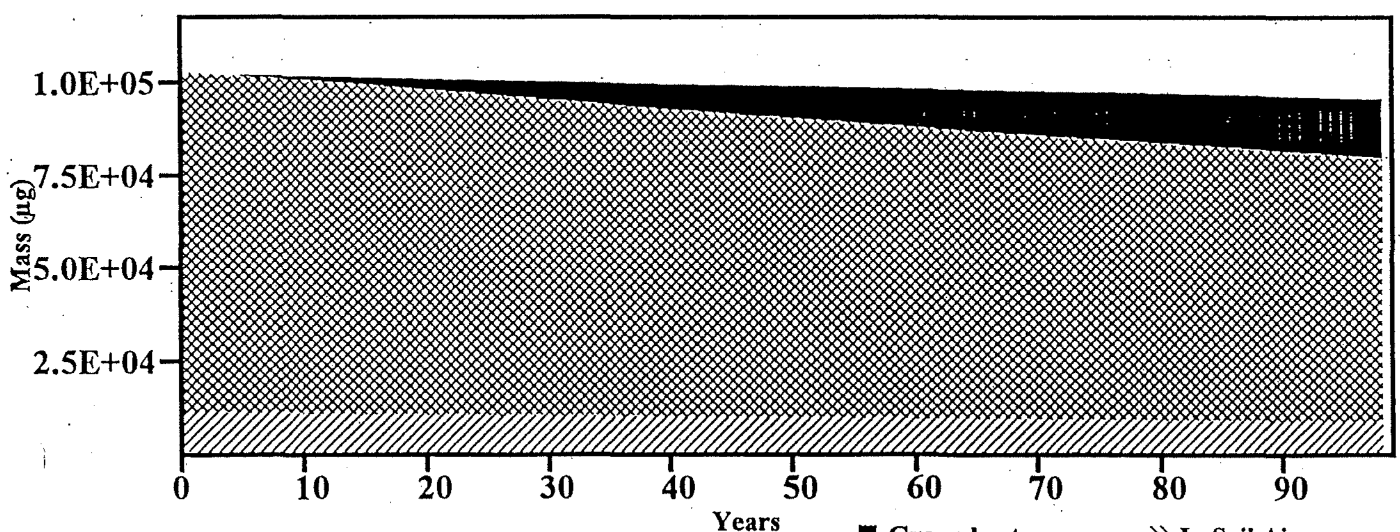
Trichloroethene Koc=137

Trichloroethene Koc = 137, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.619E+04	15.87	1.742E+04	17.08
Diffused Up	5.582E+00	0.01	6.005E+00	0.01
Soil Air	2.545E+02	0.25	2.738E+02	0.27
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	7.028E+04	68.91	7.561E+04	74.14
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	8.068E+03	7.91	8.680E+03	8.51
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.480E+04	92.95	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	7.195E+03			

Starting depth: 390.10 cm Ending depth: 519.40 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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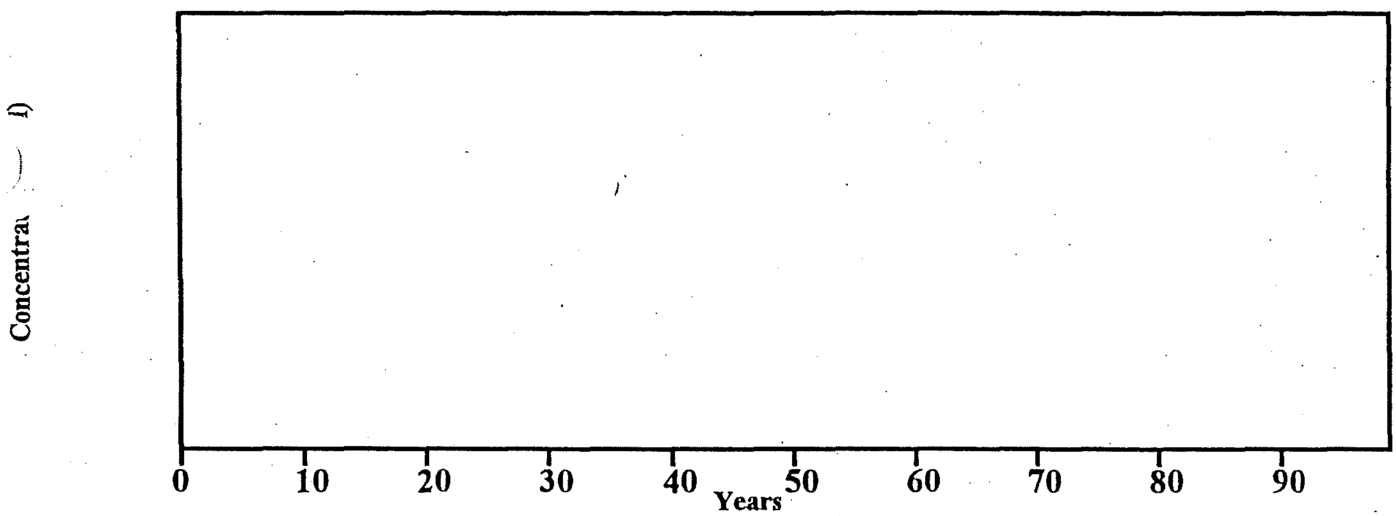
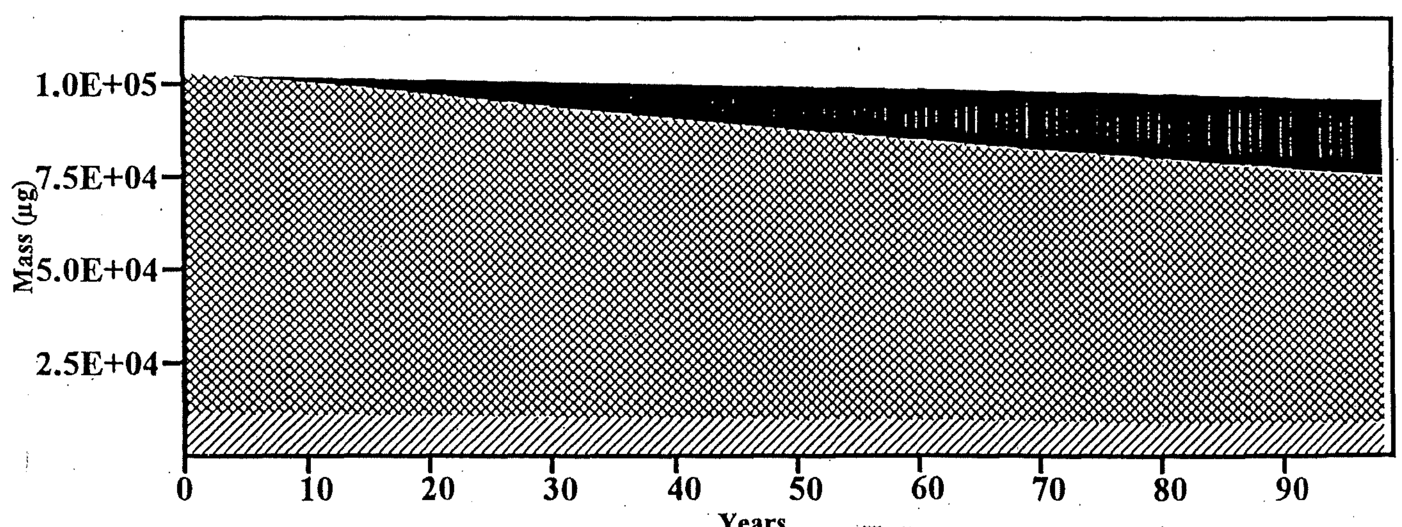
Trichloroethene Koc=137

Trichloroethene Koc = 137, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.082E+04	20.42	2.237E+04	21.93
Diffused Up	6.669E+00	0.01	7.164E+00	0.01
Soil Air	2.400E+02	0.24	2.578E+02	0.25
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	6.626E+04	64.97	7.119E+04	69.80
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	7.606E+03	7.46	8.171E+03	8.01
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.494E+04	93.08	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	7.053E+03			

Starting depth: 330.20 cm **Ending depth: 472.70 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 1,1-Di, cis 1,2-di, trans 1,2-di & TCE

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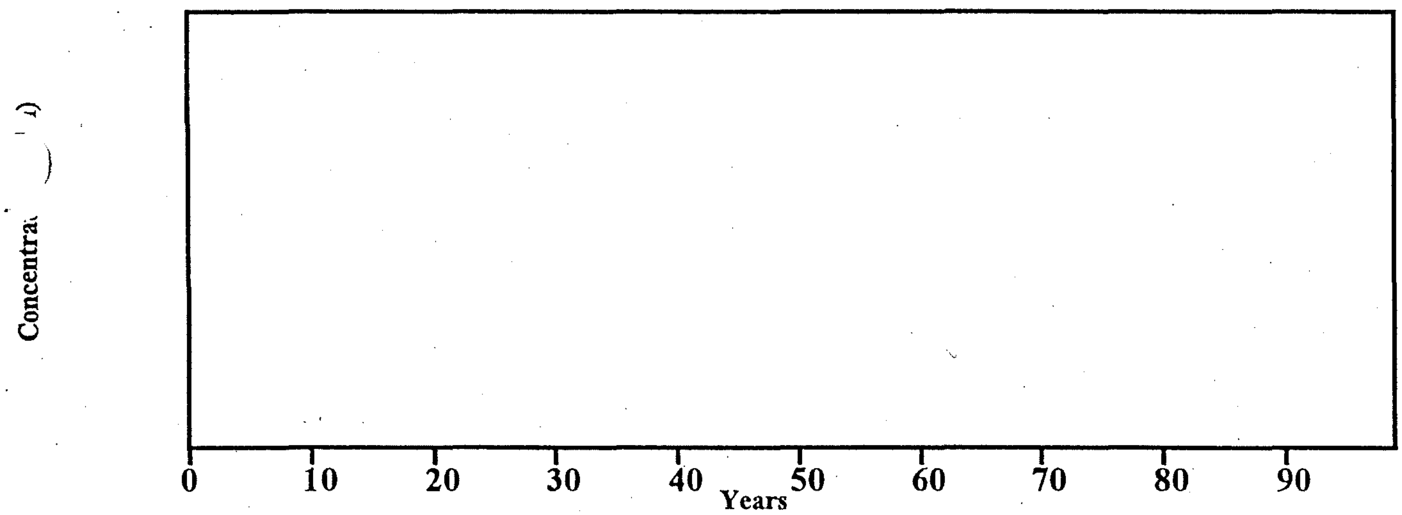
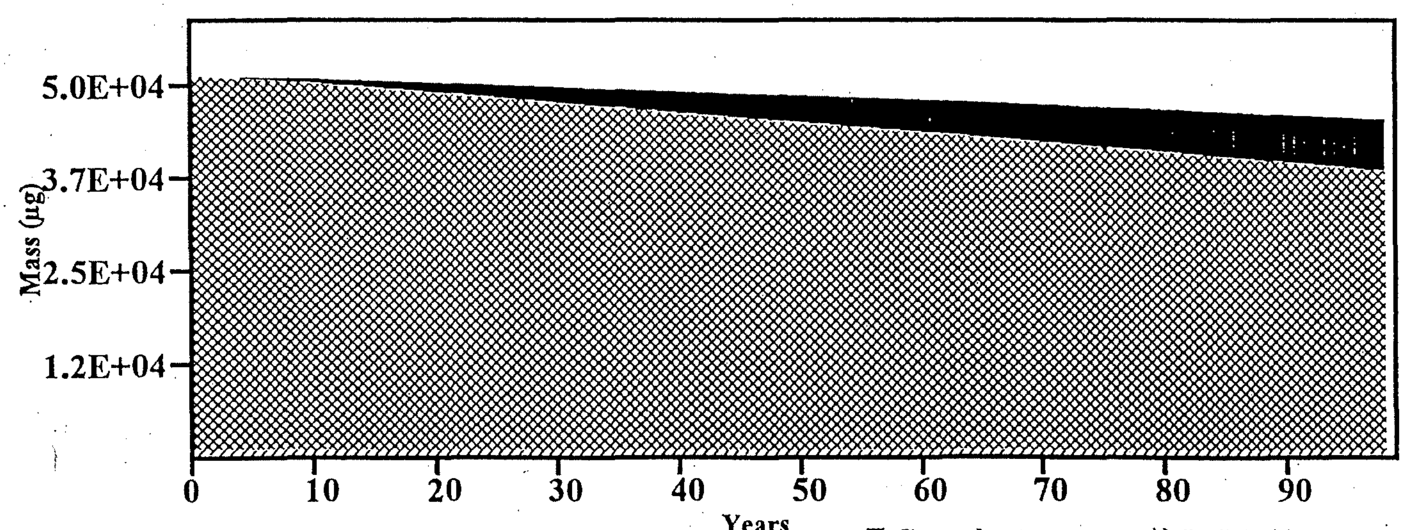
1,2,4-Trimethylbenzene Baseline

1,2,4-Trimethylbenzene baseline, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	7.069E+03	13.86	8.001E+03	15.69
Diffused Up	8.086E-01	0.00	9.152E-01	0.00
Soil Air	8.244E+01	0.16	9.331E+01	0.18
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.736E+04	73.26	4.228E+04	82.92
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.430E+02	1.06	6.146E+02	1.21
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.505E+04	88.35	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	5.942E+03			

Starting depth: 385.00 cm **Ending depth: 406.30 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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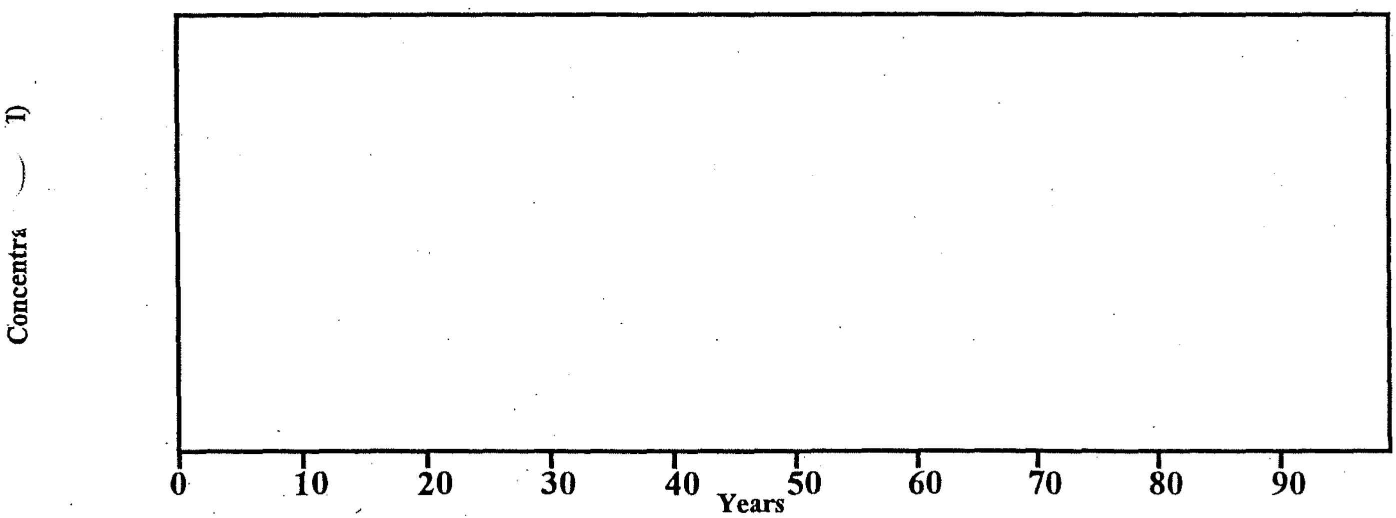
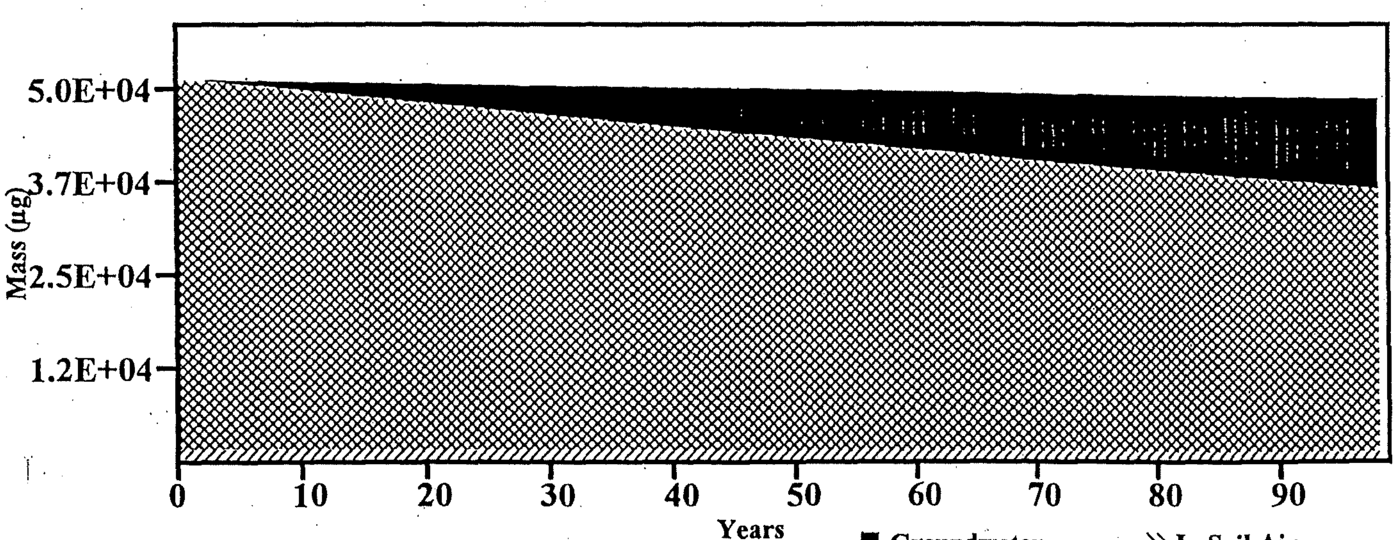
1,2,4-Trimethylbenzene Koc=592

1,2,4-Trimethylbenzene Koc = 592, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.227E+04	24.08	1.295E+04	25.40
Diffused Up	1.156E+00	0.00	1.219E+00	0.00
Soil Air	1.411E+02	0.28	1.488E+02	0.29
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.499E+04	68.63	3.691E+04	72.39
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	9.296E+02	1.82	9.806E+02	1.92
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.835E+04	94.81	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	2.649E+03			

Starting depth: 385.00 cm **Ending depth: 420.40 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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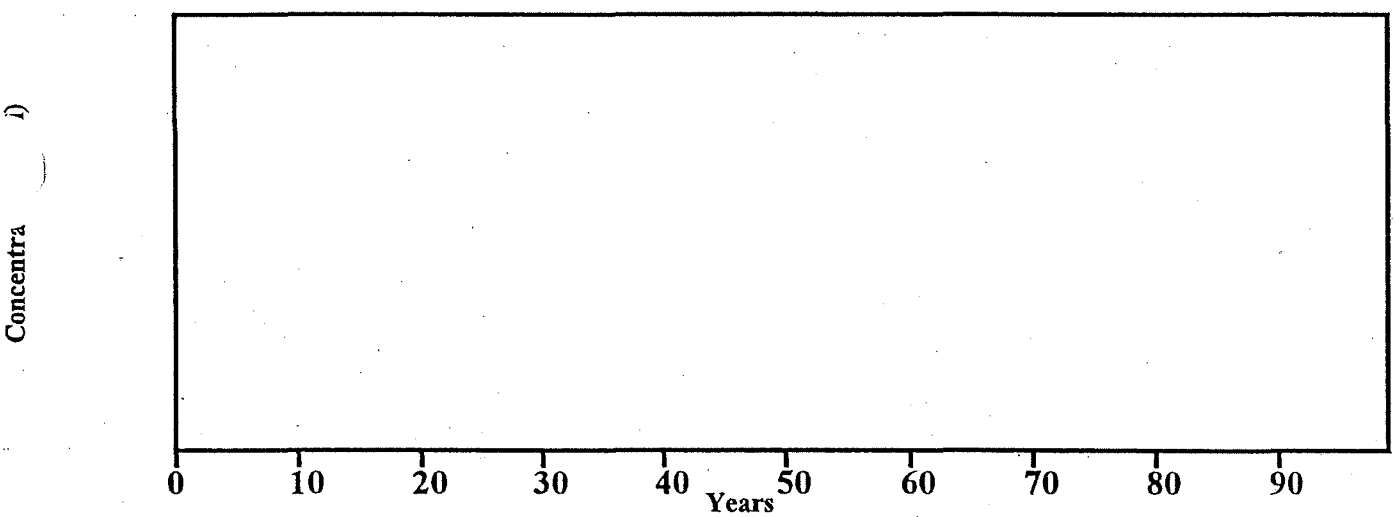
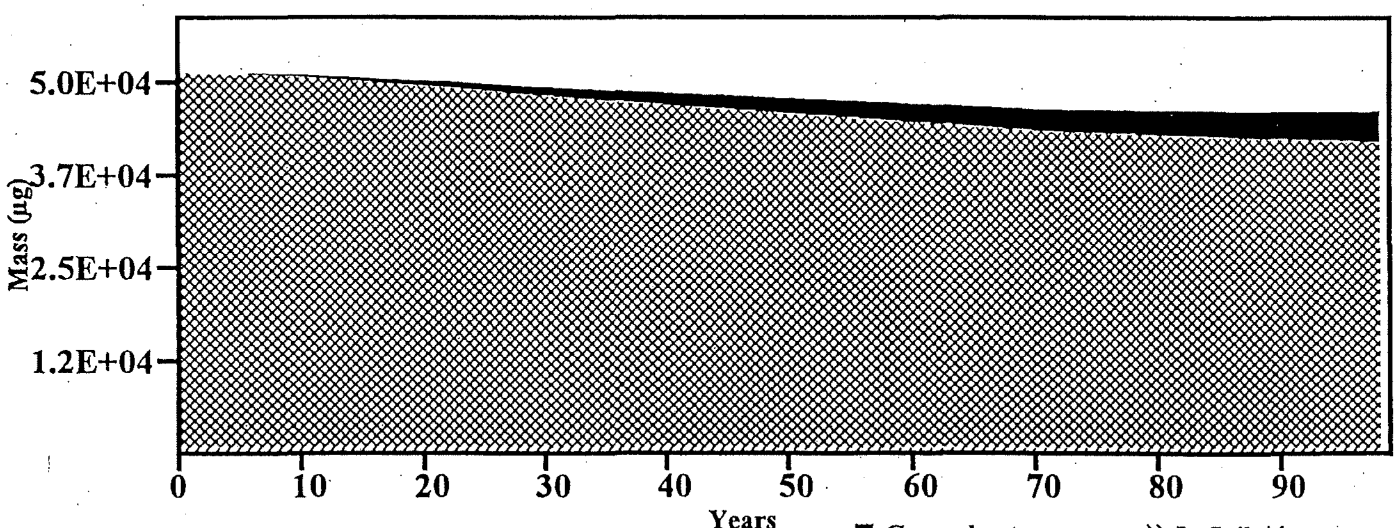
1,2,4-Trimethylbenzene Koc=1837

1,2,4-Trimethylbenzene Koc = 1837, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	4.229E+03	8.29	4.714E+03	9.24
Diffused Up	1.628E+00	0.00	1.814E+00	0.00
Soil Air	5.344E+01	0.10	5.957E+01	0.12
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.112E+04	80.63	4.583E+04	89.87
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	3.520E+02	0.69	3.923E+02	0.77
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.575E+04	89.72	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	5.243E+03			

Starting depth: 385.00 cm   Ending depth: 398.90 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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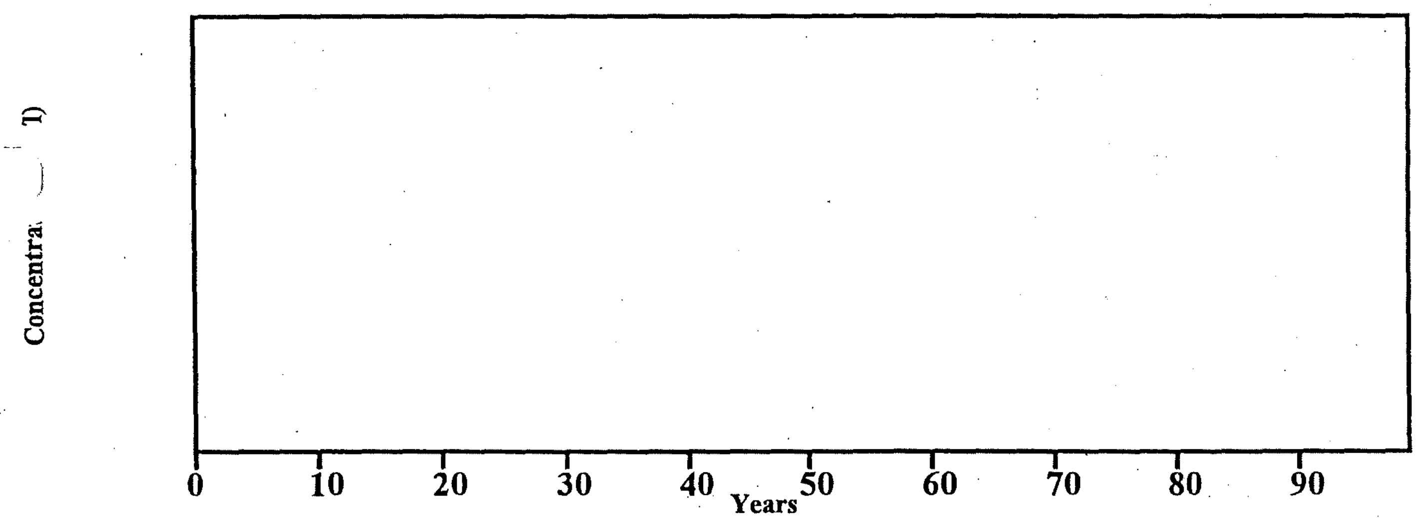
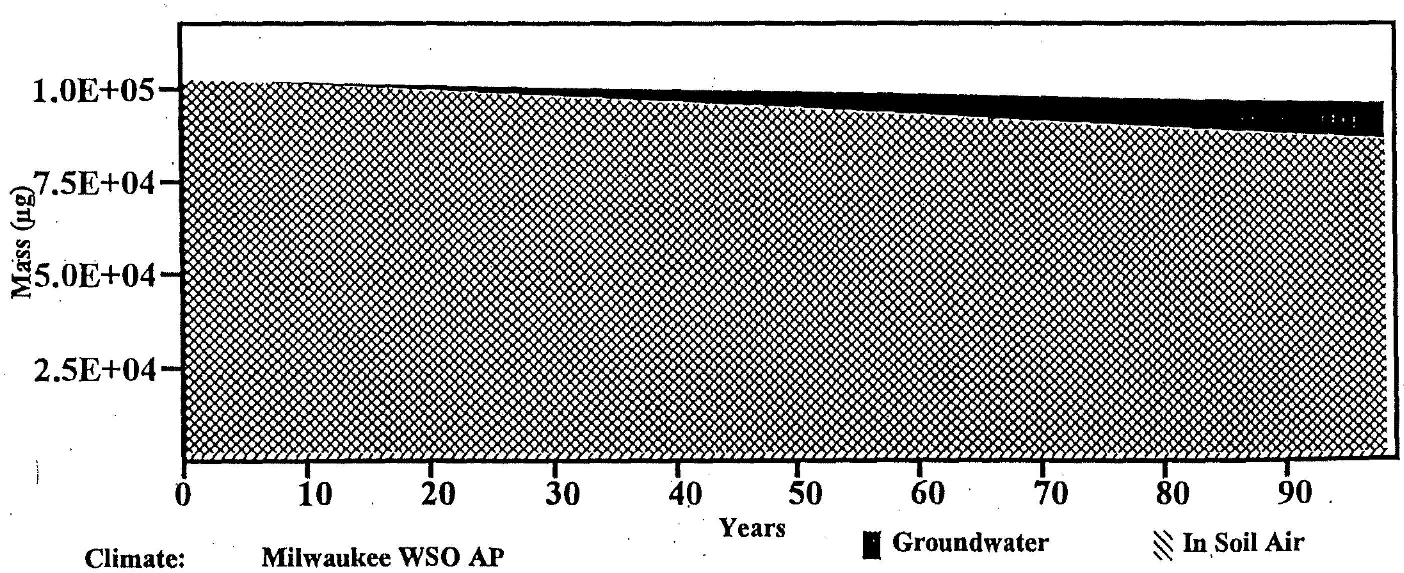
1,2,4-Trimethylbenzene Baseline

1,2,4-Trimethylbenzene baseline, GP--1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.006E+04	9.87	1.074E+04	10.53
Diffused Up	4.964E+00	0.00	5.298E+00	0.01
Soil Air	1.855E+02	0.18	1.980E+02	0.19
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	8.408E+04	82.43	8.974E+04	87.99
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.222E+03	1.20	1.304E+03	1.28
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.555E+04	93.69	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	6.440E+03			

Starting depth: 450.00 cm **Ending depth: 470.80 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

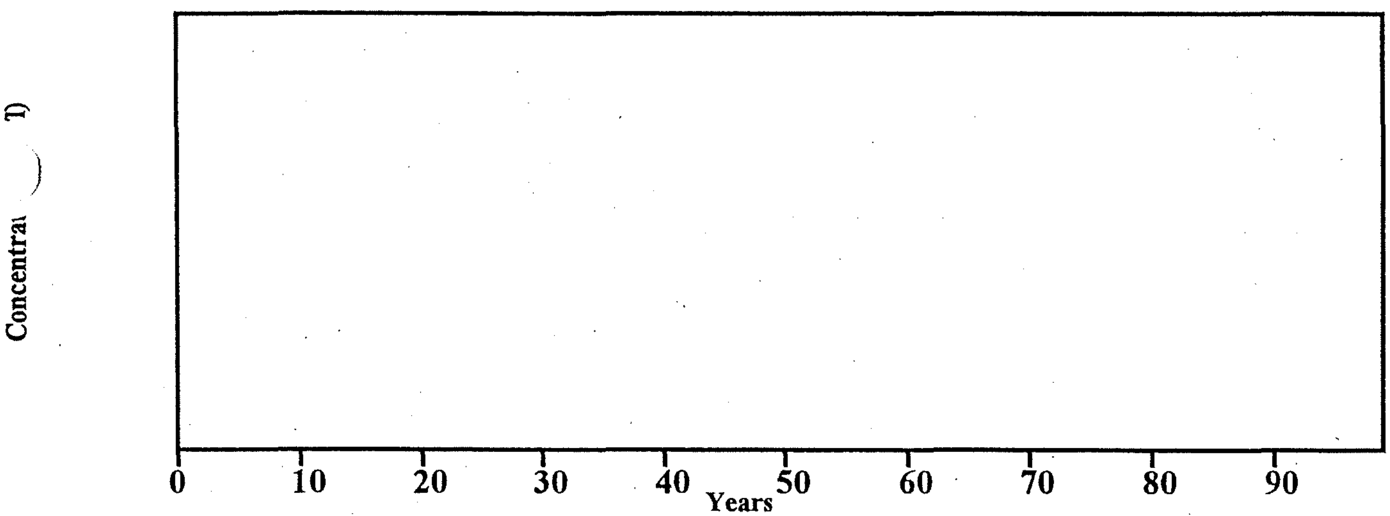
D:\PROJECTS\FINDLEY\124TMB\124TMB04.OUT

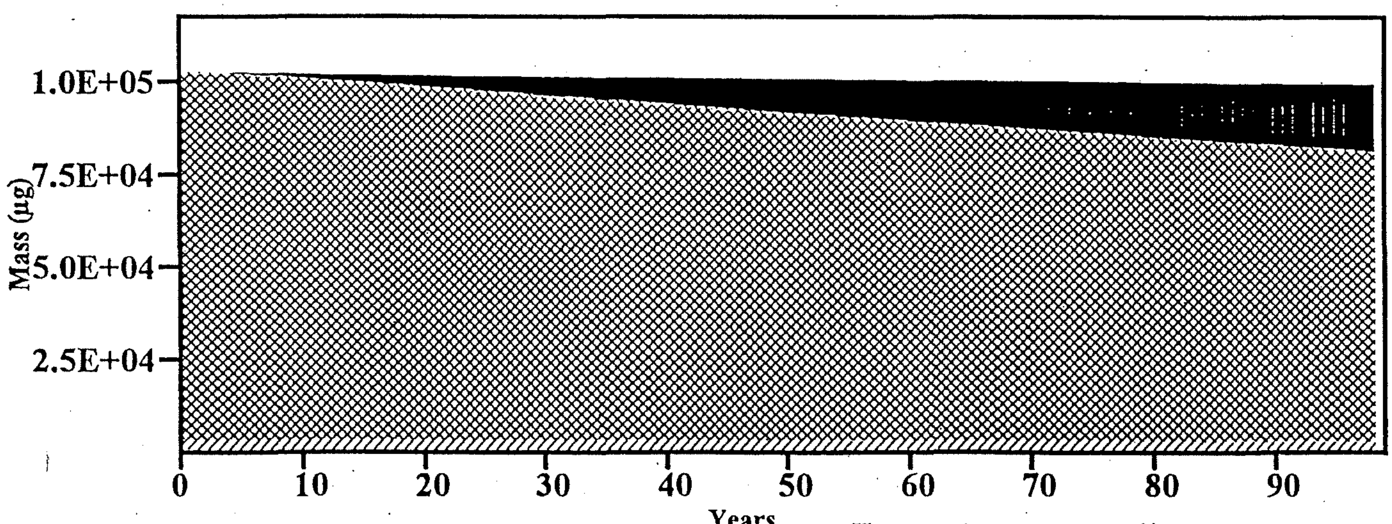
1,2,4-Trimethylbenzene Koc=592

1,2,4-Trimethylbenzene Koc = 592, GP--1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.845E+04	18.10	1.905E+04	18.68
Diffused Up	3.346E+00	0.00	3.454E+00	0.00
Soil Air	3.143E+02	0.31	3.245E+02	0.32
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	7.793E+04	76.41	8.047E+04	78.90
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.070E+03	2.03	2.138E+03	2.10
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.878E+04	96.85	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	3.215E+03			

Starting depth: 450.00 cm   Ending depth: 485.50 cm   Total depth: 920.00 cm





Groundwater
In Soil Air
In Soil Moisture
Volatilized
Adsorbed on Soil

Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

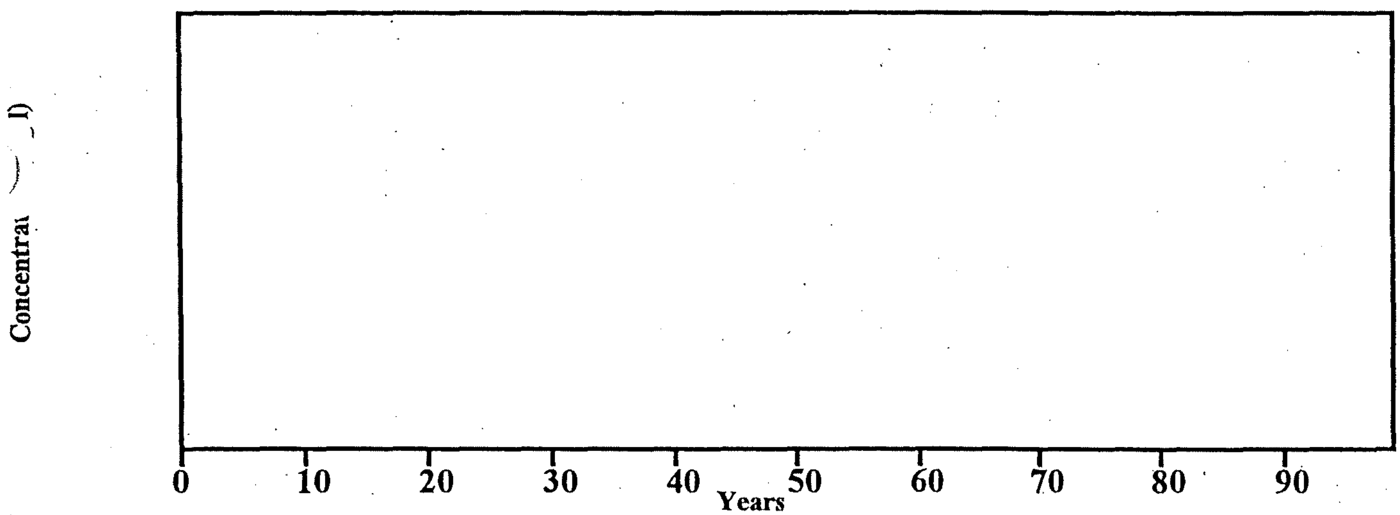
D:\PROJECTS\FINDLEY\124TMB\124TMB05.OUT

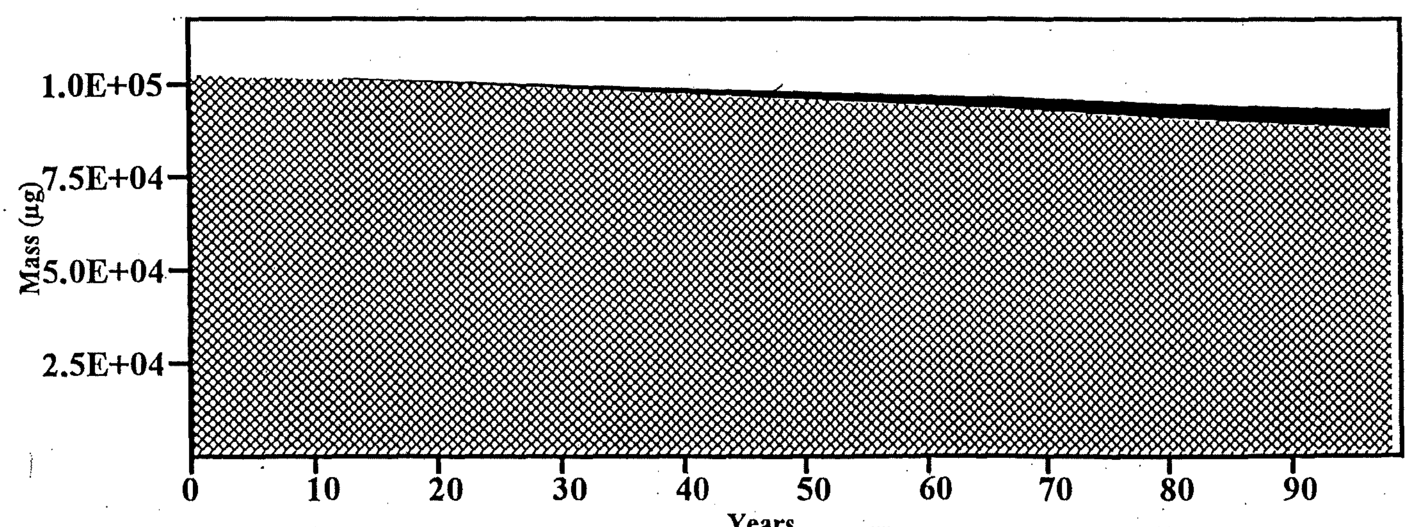
1,2,4-Trimethylbenzene Koc=1837

1,2,4-Trimethylbenzene Koc = 1837, GP--1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	5.578E+03	5.47	6.149E+03	6.03
Diffused Up	3.989E+00	0.00	4.397E+00	0.00
Soil Air	1.118E+02	0.11	1.233E+02	0.12
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	8.609E+04	84.40	9.490E+04	93.05
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	7.369E+02	0.72	8.124E+02	0.80
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.252E+04	90.71	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	9.478E+03			

Starting depth: 450.00 cm   Ending depth: 462.40 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

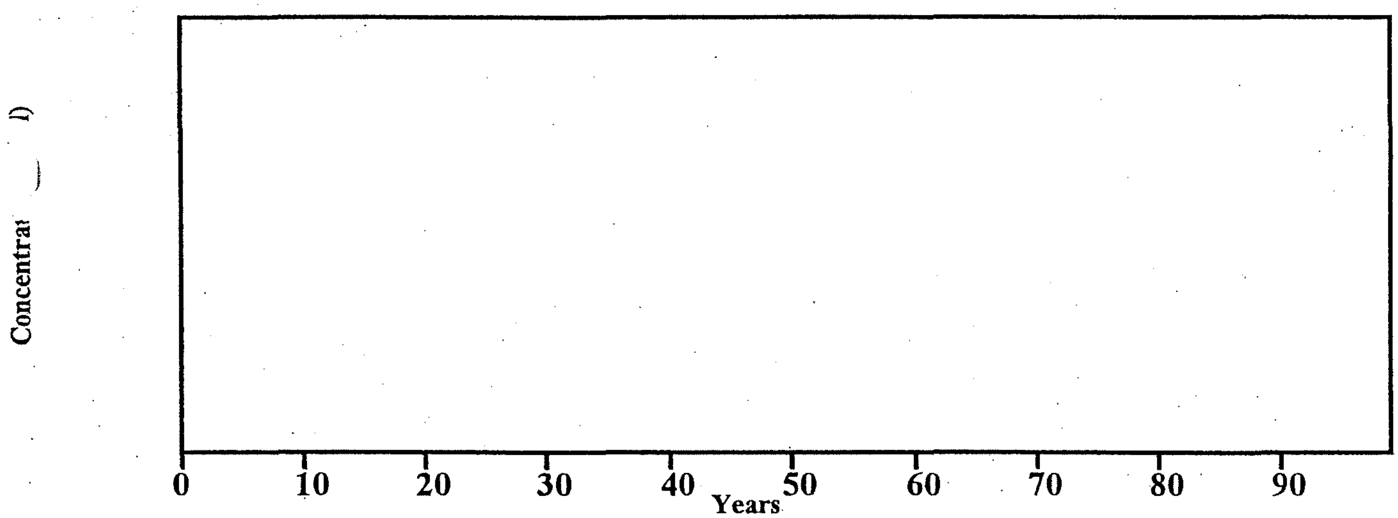
D:\PROJECTS\FINDLEY\124TMB\124TMB06.OUT

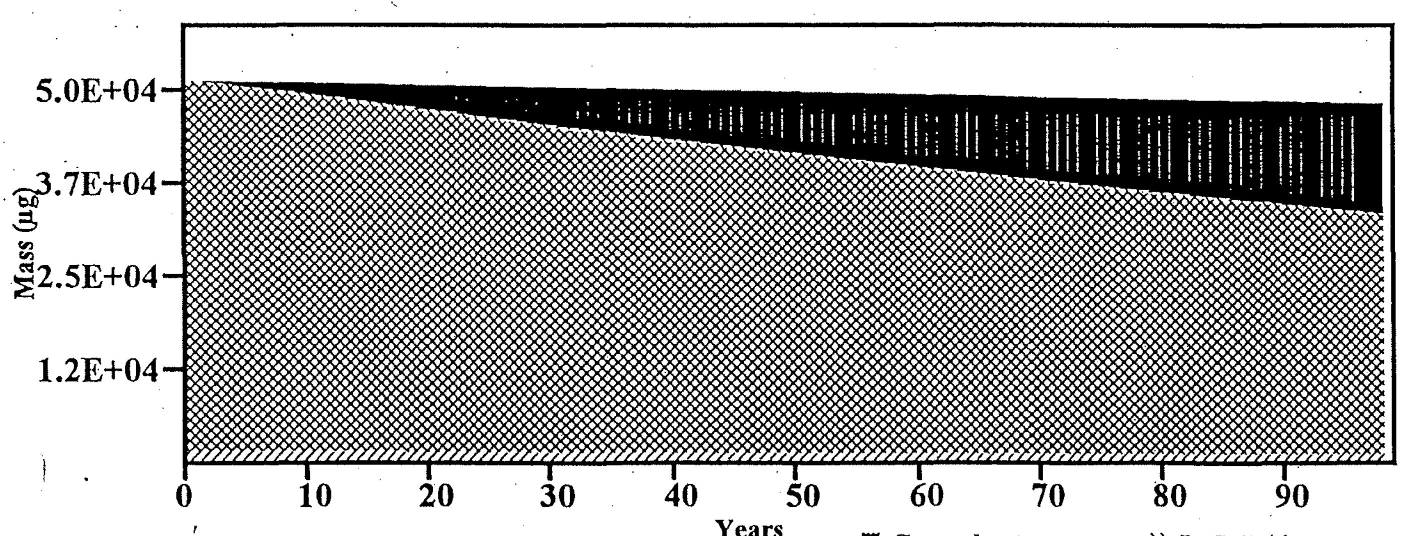
1,3,5-Trimethylbenzene Baseline

1,3,5-Trimethylbenzene baseline, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.502E+04	29.46	1.599E+04	31.37
Diffused Up	1.249E+00	0.00	1.329E+00	0.00
Soil Air	1.628E+02	0.32	1.734E+02	0.34
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.194E+04	62.64	3.401E+04	66.70
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	7.612E+02	1.49	8.105E+02	1.59
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.789E+04	93.91	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	3.104E+03			

Starting depth: 385.00 cm   Ending depth: 417.20 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

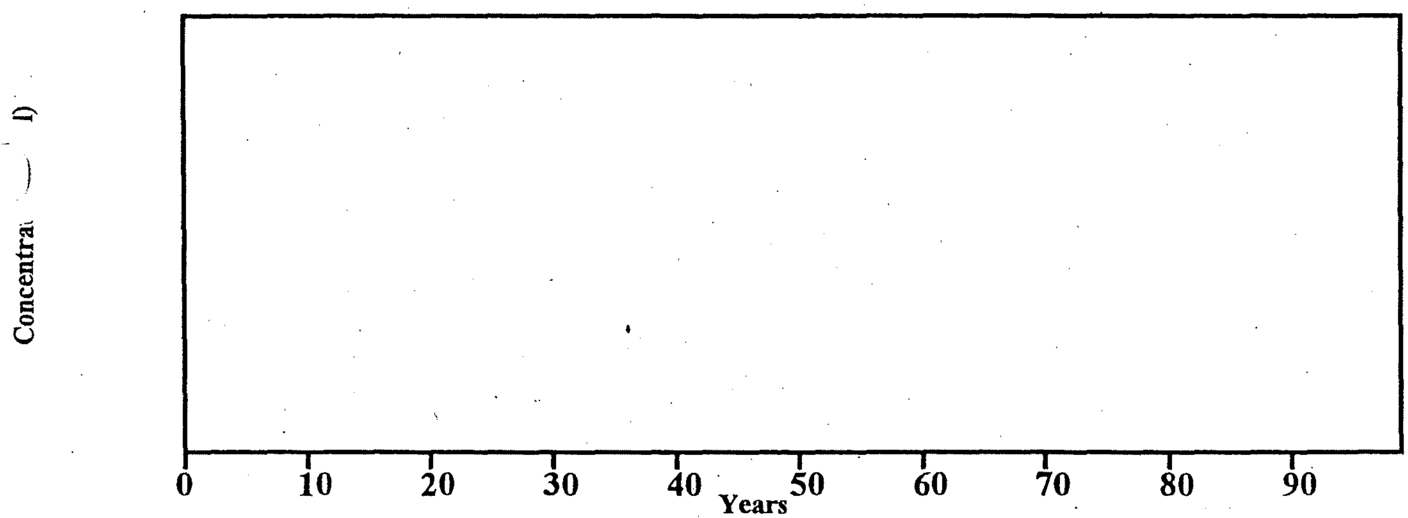
D:\PROJECTS\FINDLEY\135TMB\135TMB01.OUT

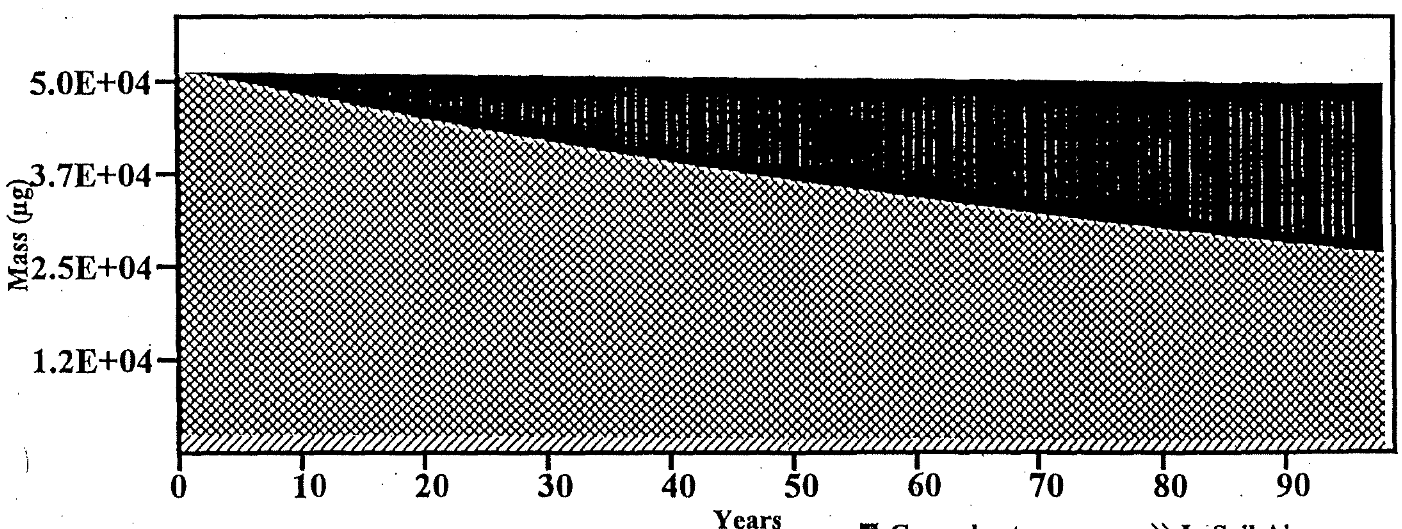
1,3,5-Trimethylbenzene Koc=365

1,3,5-Trimethylbenzene Koc = 365, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.315E+04	45.39	2.389E+04	46.85
Diffused Up	1.537E+00	0.00	1.586E+00	0.00
Soil Air	2.299E+02	0.45	2.372E+02	0.47
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	2.496E+04	48.94	2.575E+04	50.51
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.075E+03	2.11	1.109E+03	2.18
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.941E+04	96.90	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.581E+03			

Starting depth: 385.10 cm **Ending depth: 439.00 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

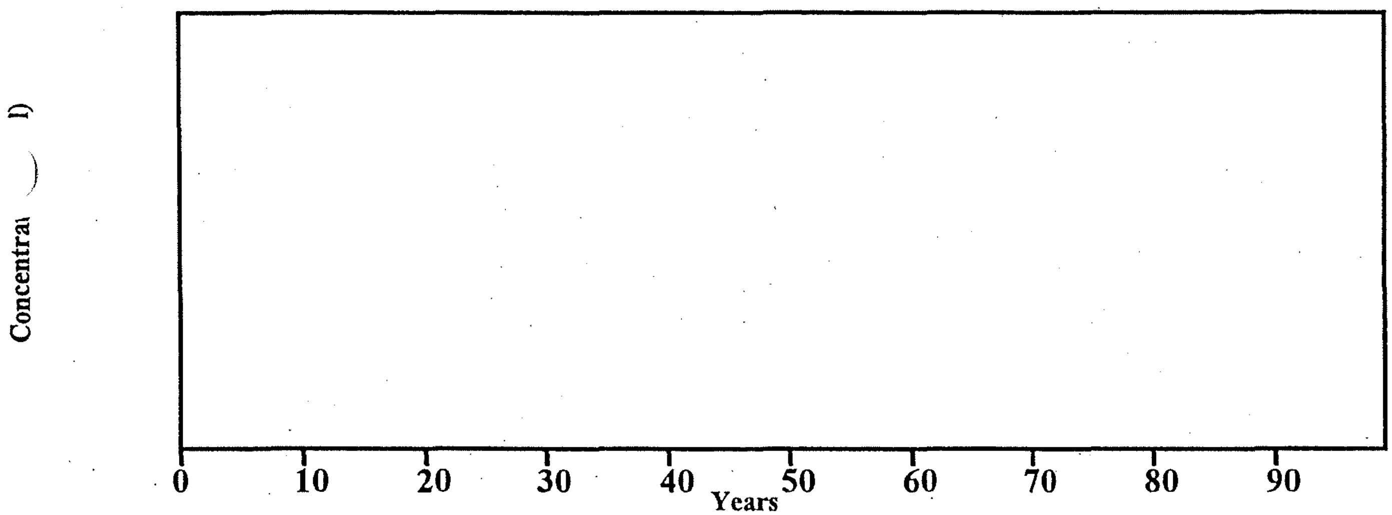
D:\PROJECTS\FINDLEY\135TMB\135TMB02.OUT

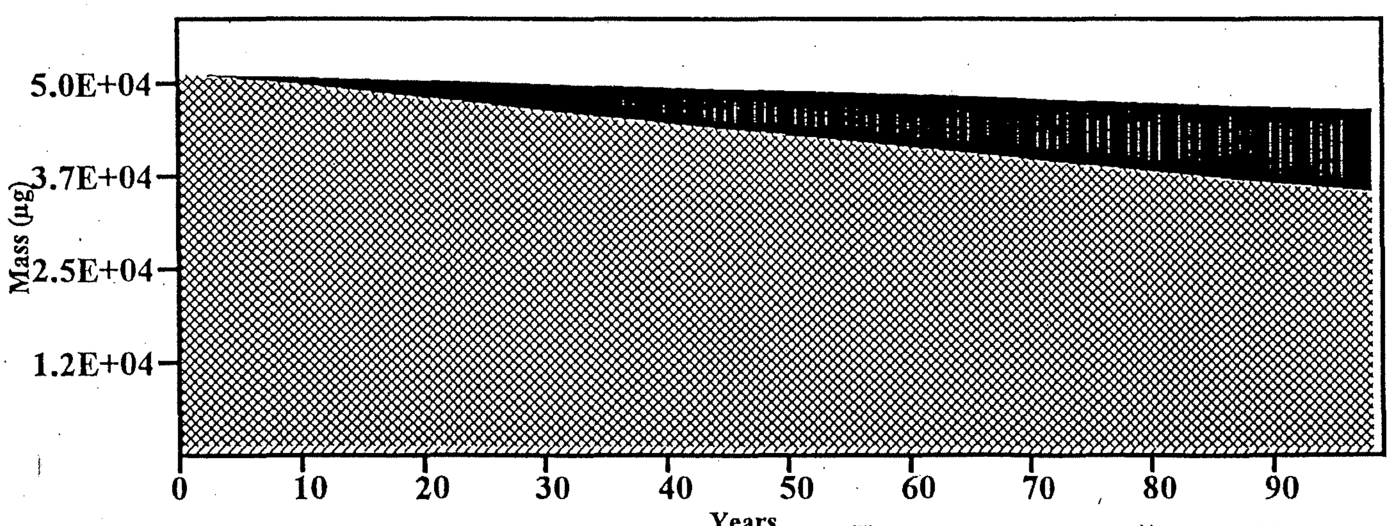
1,3,5-Trimethylbenzene Koc=914

1,3,5-Trimethylbenzene Koc = 914, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.133E+04	22.23	1.250E+04	24.52
Diffused Up	1.012E+00	0.00	1.116E+00	0.00
Soil Air	1.258E+02	0.25	1.387E+02	0.27
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.418E+04	67.03	3.770E+04	73.93
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	5.882E+02	1.15	6.488E+02	1.27
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.623E+04	90.66	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	4.763E+03			

Starting depth: 385.00 cm **Ending depth: 409.40 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

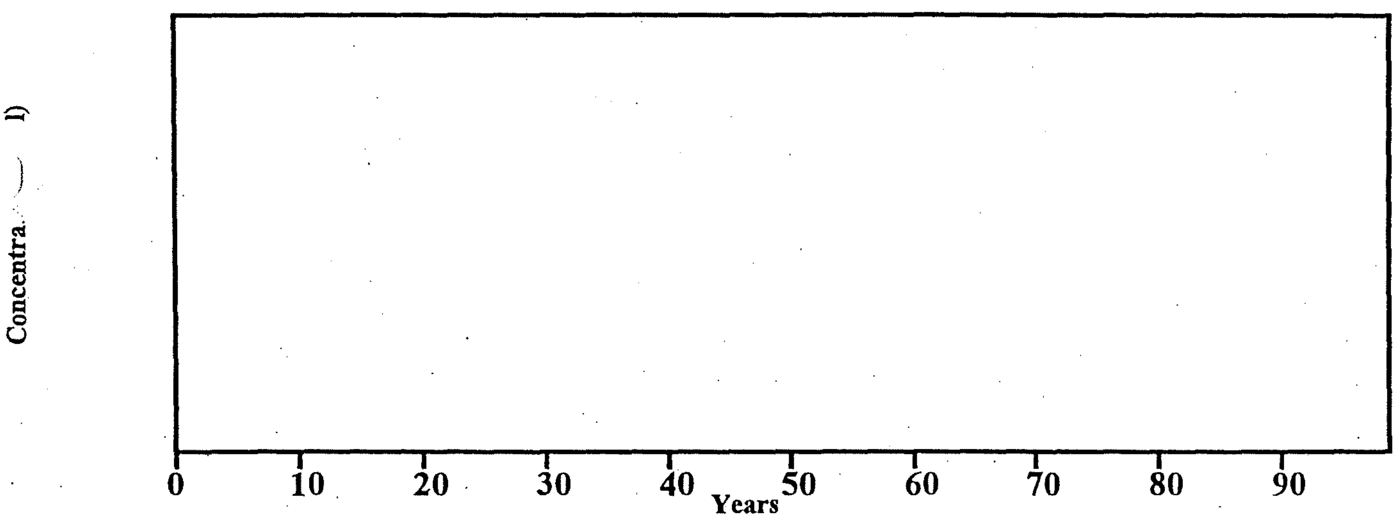
D:\PROJECTS\FINDLEY\135TMB\135TMB03.OUT

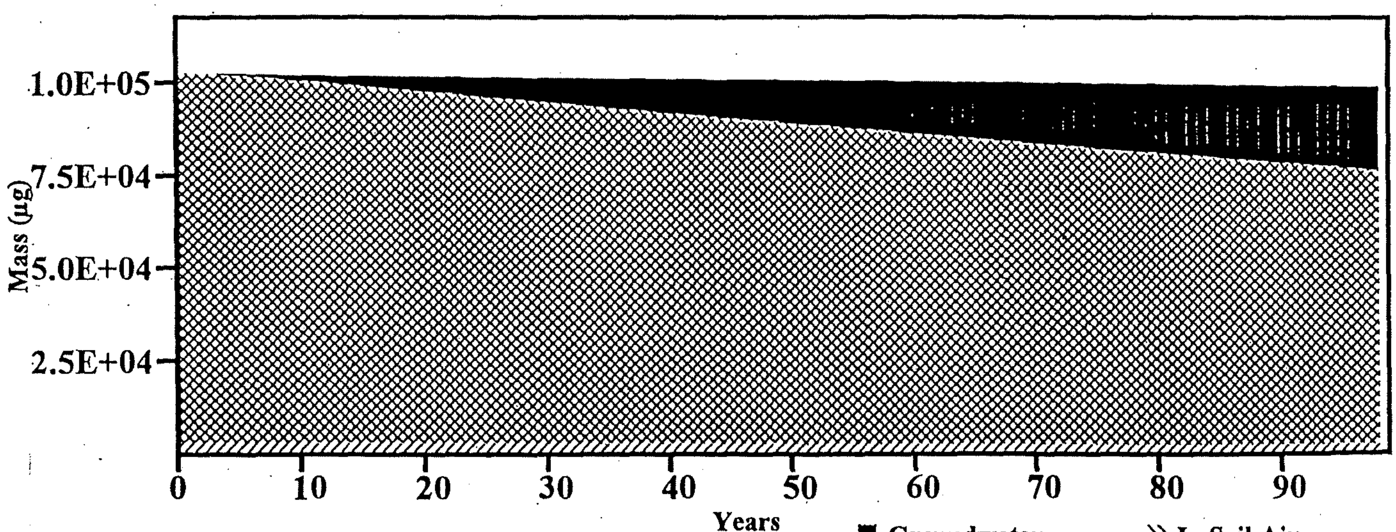
1,3,5-Trimethylbenzene Baseline

1,3,5-Trimethylbenzene baseline, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	2.299E+04	22.54	2.384E+04	23.37
Diffused Up	3.783E+00	0.00	3.922E+00	0.00
Soil Air	3.731E+02	0.37	3.869E+02	0.38
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	7.325E+04	71.82	7.595E+04	74.47
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.745E+03	1.71	1.810E+03	1.77
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.836E+04	96.44	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	3.632E+03			

Starting depth: 450.00 cm Ending depth: 482.70 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

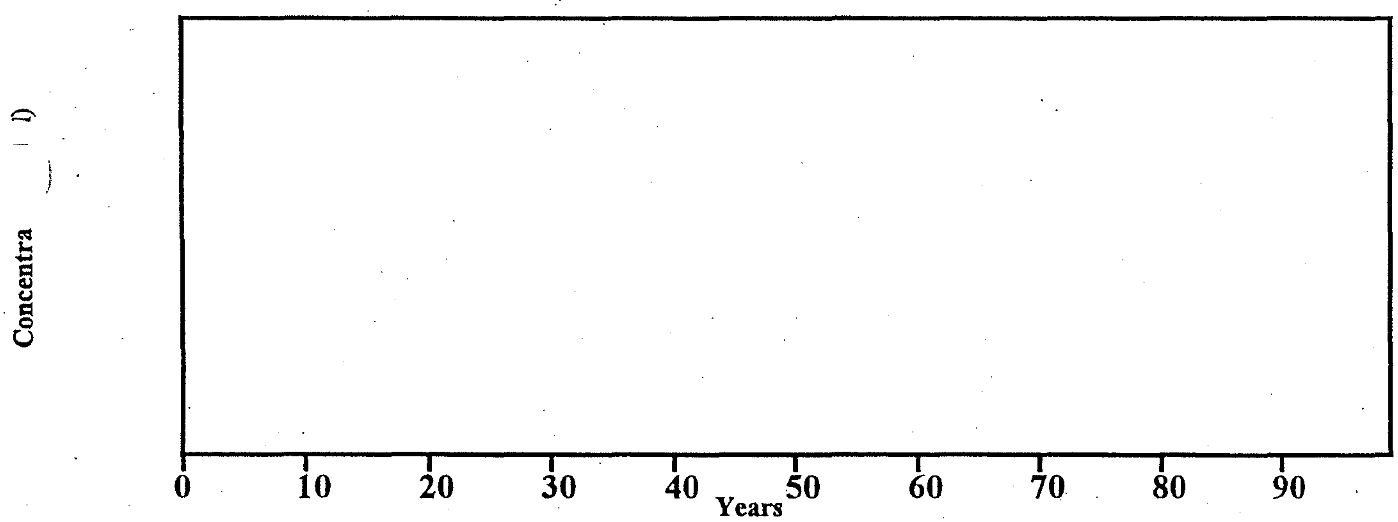
D:\PROJECTS\FINDLEY\135TMB\135TMB04.OUT

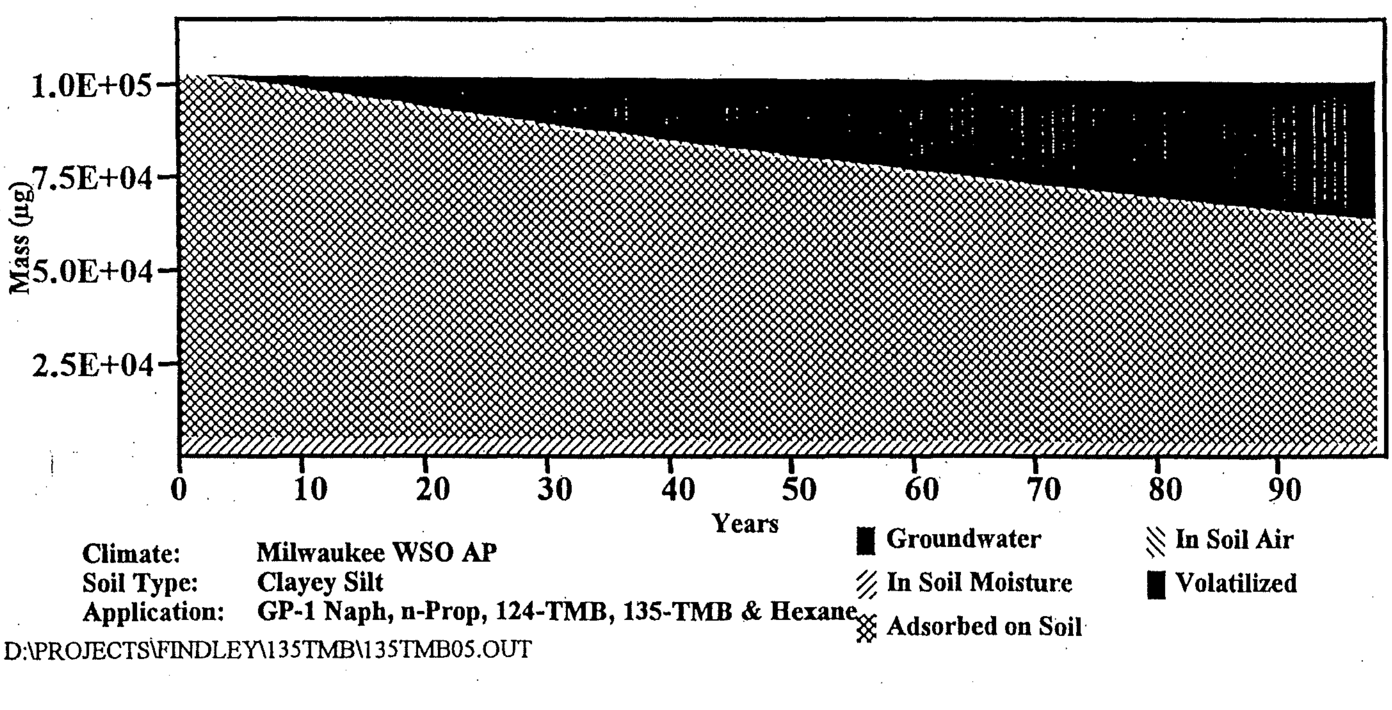
1,3,5-Trimethylbenzene Koc=365

1,3,5-Trimethylbenzene Koc = 365, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.745E+04	36.72	3.819E+04	37.44
Diffused Up	4.815E+00	0.00	4.909E+00	0.00
Soil Air	5.478E+02	0.54	5.586E+02	0.55
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	5.946E+04	58.30	6.063E+04	59.44
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.562E+03	2.51	2.612E+03	2.56
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	1.000E+05	98.07	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	1.963E+03			

Starting depth: 450.00 cm Ending depth: 501.30 cm Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

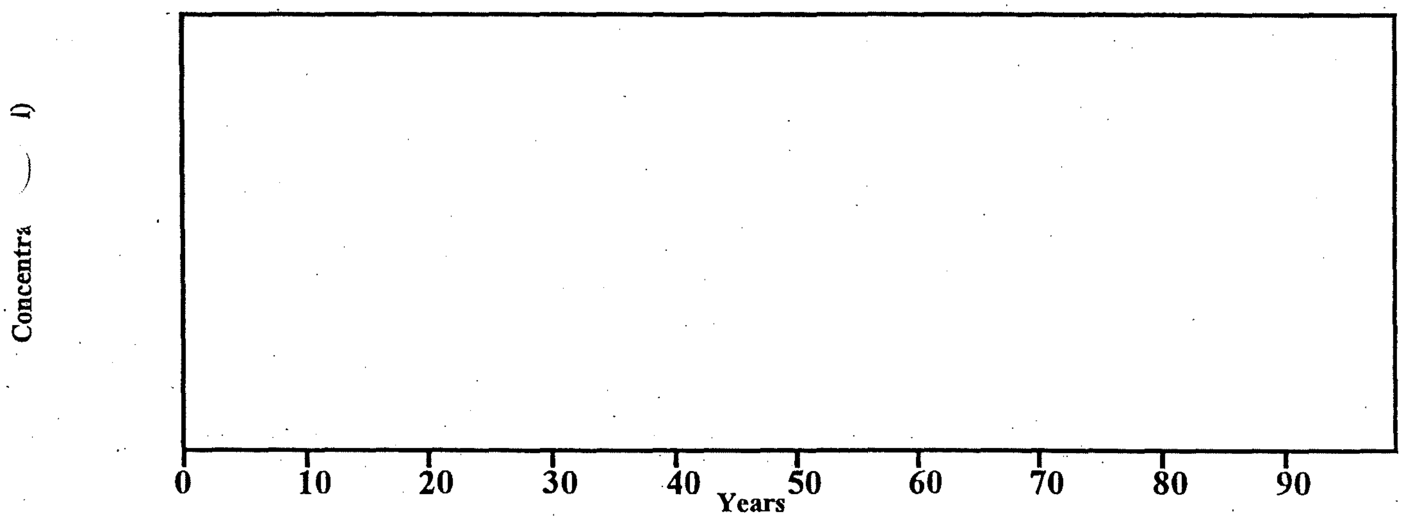
D:\PROJECTS\FINDLEY\135TMB\135TMB05.OUT

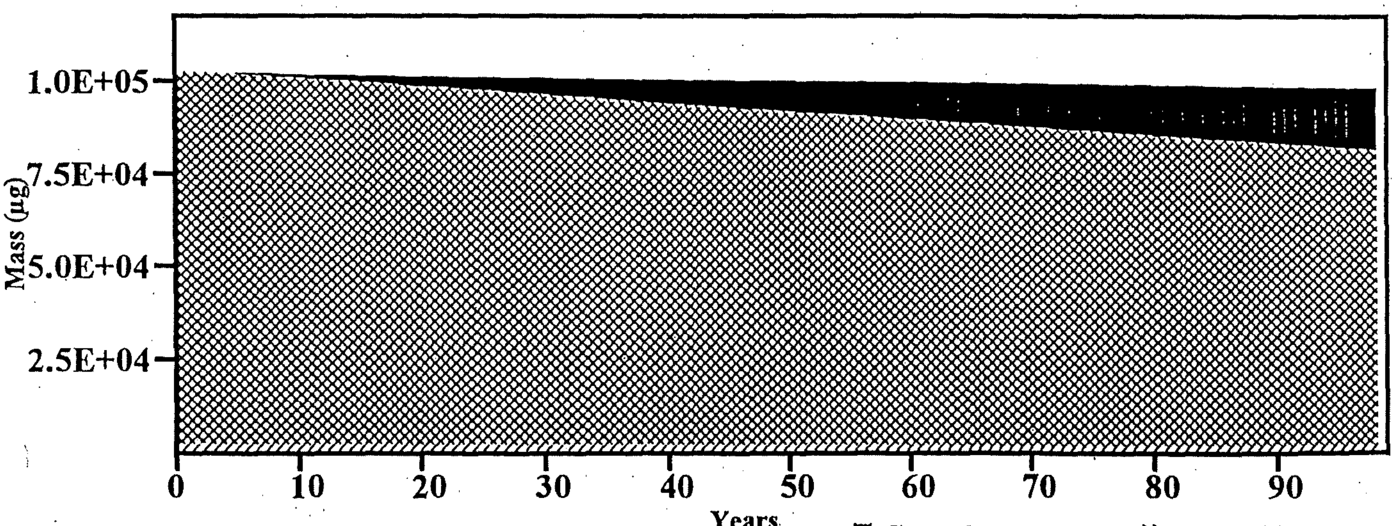
1,3,5-Trimethylbenzene Koc=914

1,3,5-Trimethylbenzene Koc = 914, GP-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.697E+04	16.64	1.775E+04	17.41
Diffused Up	5.792E+00	0.01	6.059E+00	0.01
Soil Air	2.902E+02	0.28	3.036E+02	0.30
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	7.887E+04	77.32	8.251E+04	80.90
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.356E+03	1.33	1.419E+03	1.39
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	9.749E+04	95.58	1.020E+05	100.00
Total Input	1.020E+05		1.020E+05	
Input - Output	4.506E+03			

Starting depth: 450.00 cm **Ending depth: 474.60 cm** **Total depth: 920.00 cm**





Groundwater
In Soil Moisture
Adsorbed on Soil
In Soil Air
Volatilized

Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: GP-1 Naph, n-Prop, 124-TMB, 135-TMB & Hexane

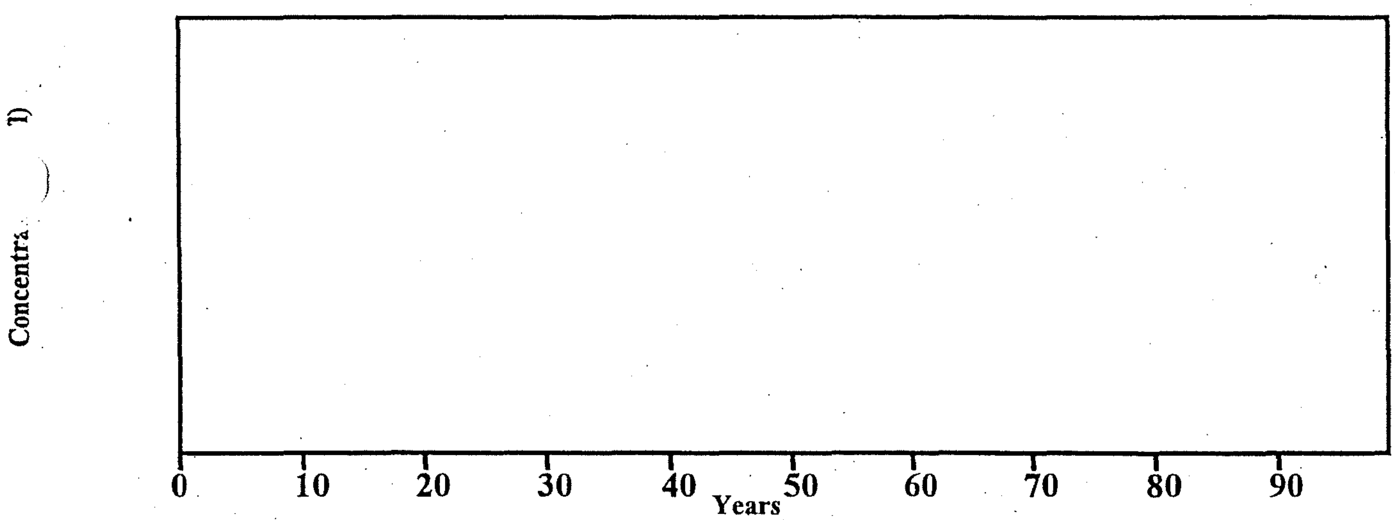
D:\PROJECTS\FINDLEY\135TMB\135TMB06.OUT

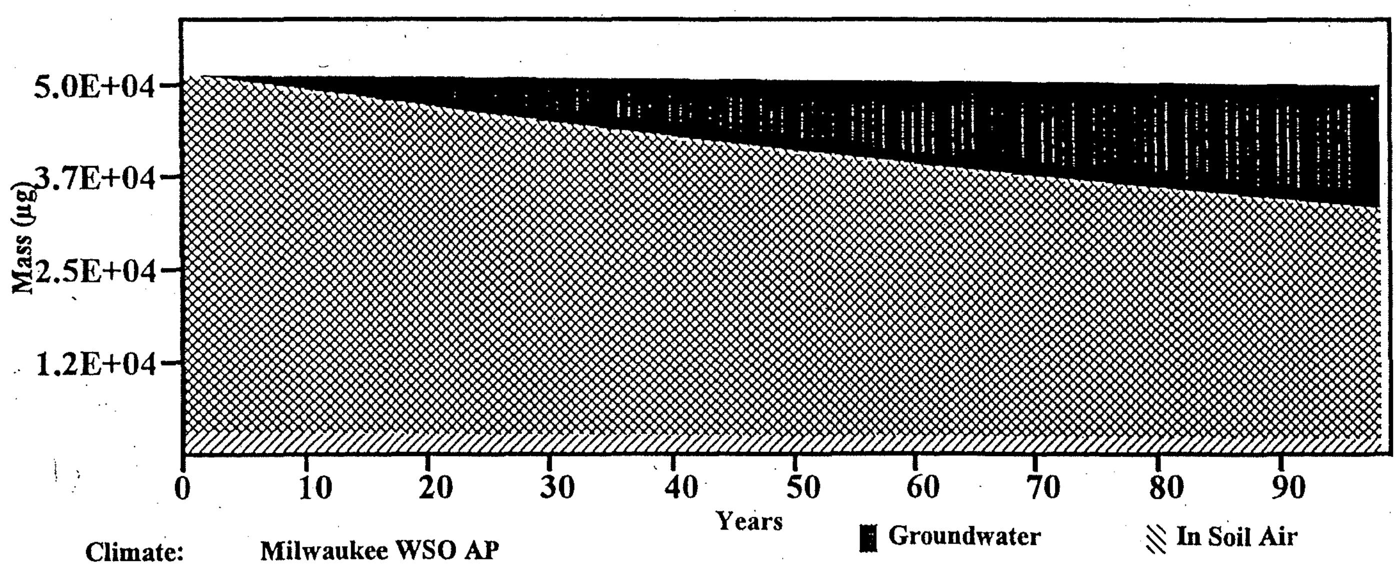
Xylene Baseline

Xylene baseline, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	1.691E+04	33.17	1.739E+04	34.10
Diffused Up	1.502E+00	0.00	1.544E+00	0.00
Soil Air	2.303E+02	0.45	2.368E+02	0.46
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	3.081E+04	60.42	3.168E+04	62.12
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	1.643E+03	3.22	1.689E+03	3.31
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.960E+04	97.27	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.392E+03			

Starting depth: 385.10 cm **Ending depth: 450.30 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

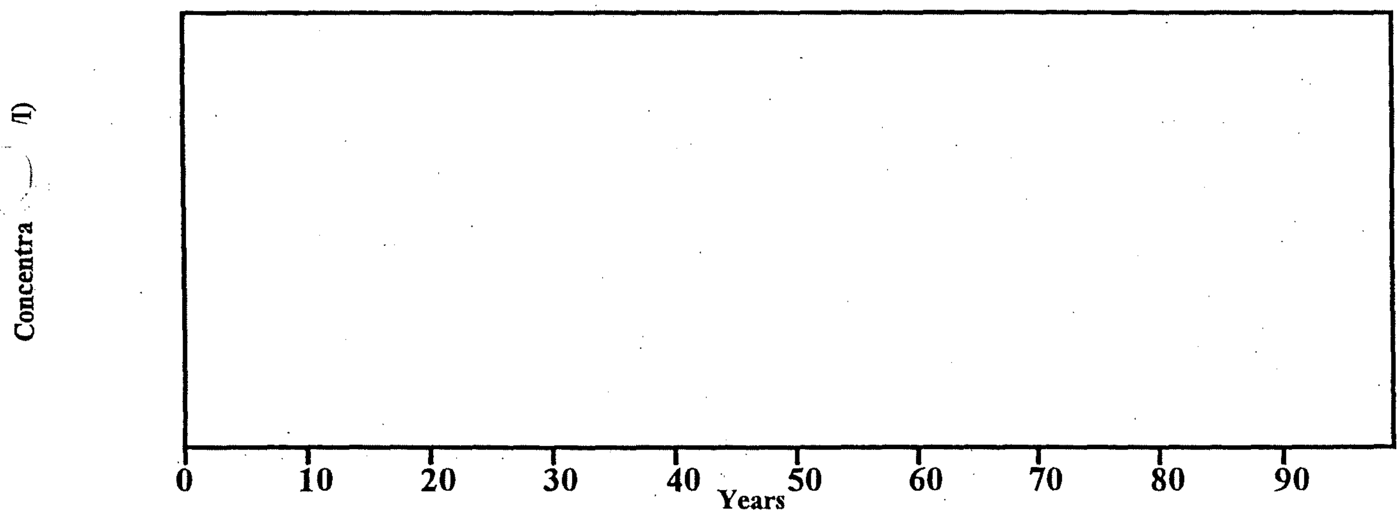
D:\PROJECTS\FINDLEY\XYLENE\XYLENE01.OUT

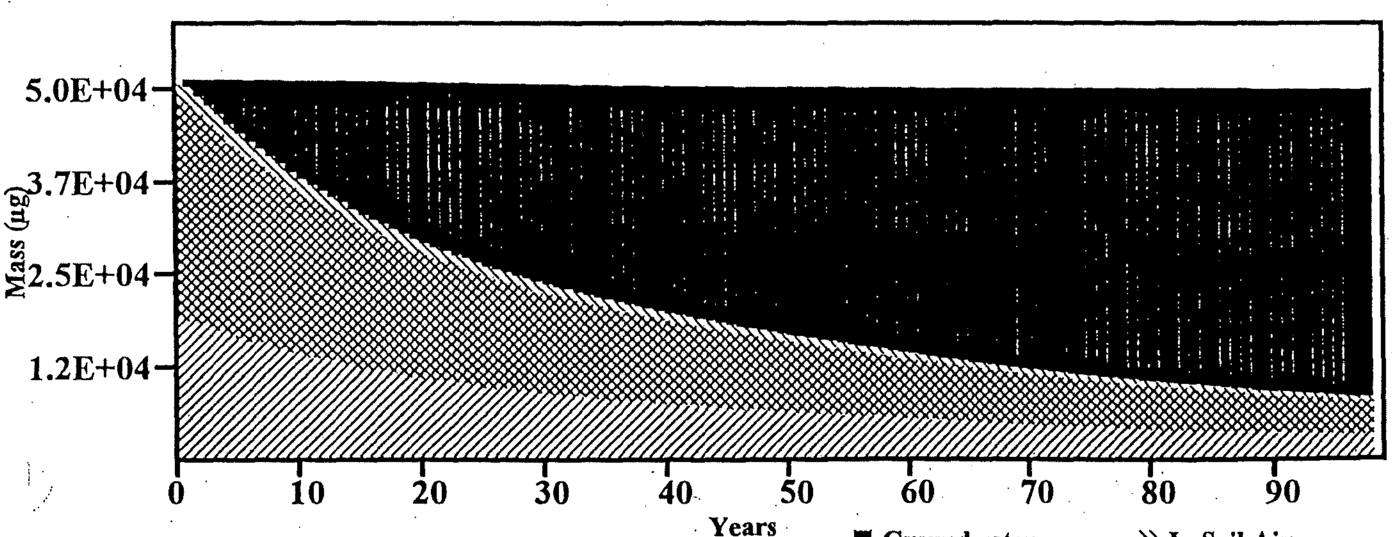
Xylene Koc=25.4

Xylene Koc = 25.4, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	4.192E+04	82.21	4.304E+04	84.41
Diffused Up	1.412E+01	0.03	1.450E+01	0.03
Soil Air	3.934E+02	0.77	4.039E+02	0.79
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.531E+03	8.89	4.652E+03	9.12
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	2.806E+03	5.50	2.881E+03	5.65
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.967E+04	97.40	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	1.325E+03			

Starting depth: 385.50 cm **Ending depth: 725.10 cm** **Total depth: 920.00 cm**





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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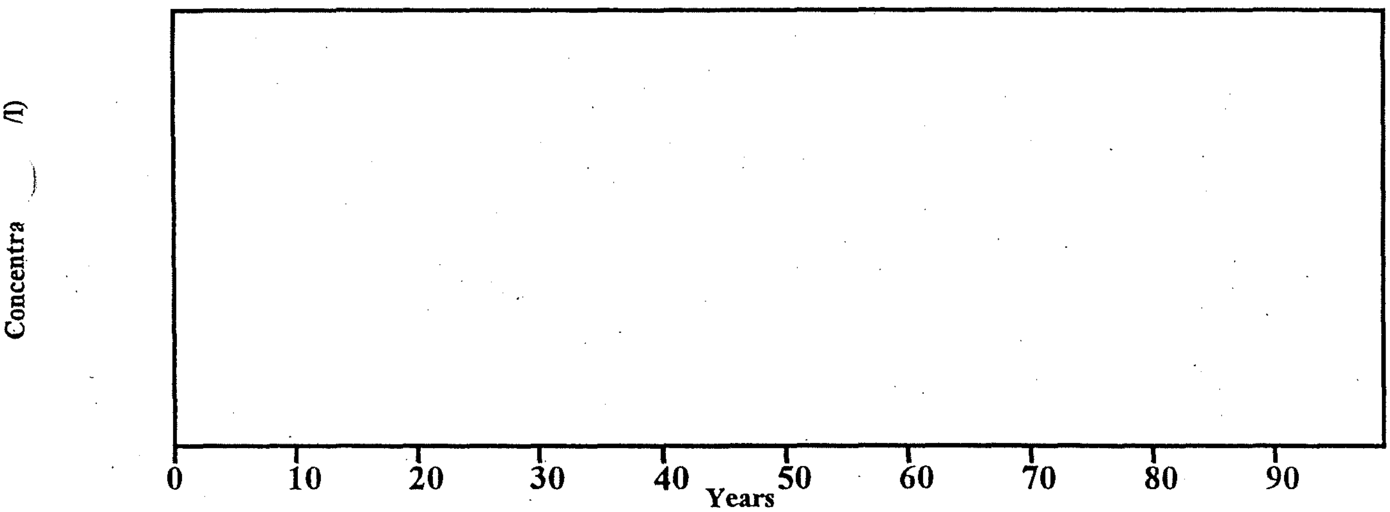
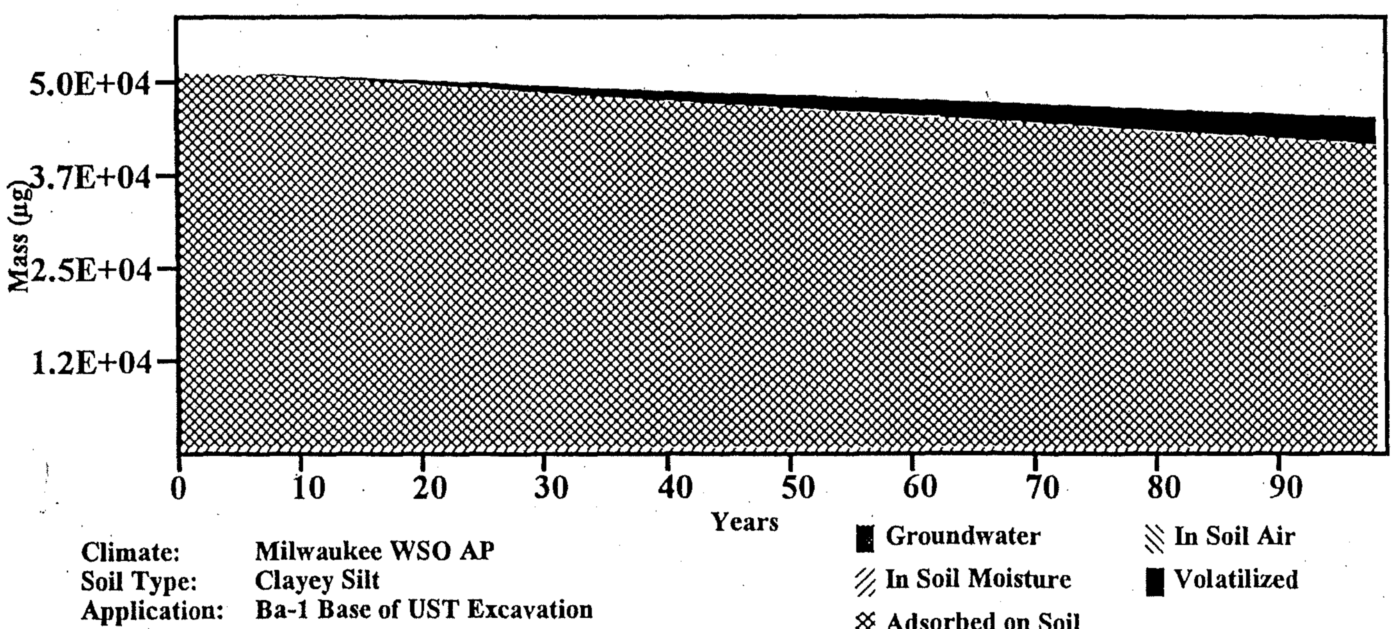
Xylene Koc=1585

Xylene Koc = 1585, Ba-1 99 year run.

Process	Pollutant Mass µg	Percent Input	Normalized Mass µg	Normalized Percent
Volatilized	3.798E+03	7.45	4.318E+03	8.47
Diffused Up	8.348E-01	0.00	9.490E-01	0.00
Soil Air	5.648E+01	0.11	6.421E+01	0.13
Sur. Runoff	0.000E-01	0.00	0.000E-01	0.00
In Washld	0.000E-01	0.00	0.000E-01	0.00
Ads On Soil	4.060E+04	79.61	4.615E+04	90.51
Hydrol Soil	0.000E-01	0.00	0.000E-01	0.00
Degrad Soil	0.000E-01	0.00	0.000E-01	0.00
Pure Phase	0.000E-01	0.00	0.000E-01	0.00
Complexed	0.000E-01	0.00	0.000E-01	0.00
Immobile CEC	0.000E-01	0.00	0.000E-01	0.00
Hydrol CEC	0.000E-01	0.00	0.000E-01	0.00
In Soil Moi	4.027E+02	0.79	4.578E+02	0.90
Hydrol Mois	0.000E-01	0.00	0.000E-01	0.00
Degrad Mois	0.000E-01	0.00	0.000E-01	0.00
Other Trans	0.000E-01	0.00	0.000E-01	0.00
Other Sinks	0.000E-01	0.00	0.000E-01	0.00
Gwr. Runoff	0.000E-01	0.00	0.000E-01	0.00
Total Output	4.486E+04	87.96	5.100E+04	100.00
Total Input	5.100E+04		5.100E+04	
Input - Output	6.138E+03			

Starting depth: 385.00 cm   Ending depth: 400.90 cm   Total depth: 920.00 cm





Climate: Milwaukee WSO AP
Soil Type: Clayey Silt
Application: Ba-1 Base of UST Excavation

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Calculation and results from EPA Soil Screening Level Model, EPA Soil Screening Level Web Site. RCL values were calculated per "Determining Residual Contaminant Levels Using EPA Soil Screening Level Web Site", WDNR Publication RR-682.

Soil Screening Guidance for Chemicals

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Equation Values for Ingestion

Noncarcinogenic Parameter	Value	Carcinogenic Age-adjusted Parameter	Value	Carcinogenic Nonadjusted Parameter	Value
Target Hazard Quotient (unitless)	1	Target Risk (unitless)	1.0E-6	Target Risk (unitless)	1.0E-6
Body Weight (kg)	70	Adult Body Weight (kg)	70	Body Weight (kg)	70
		Child Body Weight (kg)	15		
Exposure Duration (yr)	25	Adult Exposure Duration (yr)	24	Exposure Duration (yr)	25
		Child Exposure Duration (yr)	6		
Exposure Frequency (day/yr)	250	Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	250
Intake Rate (mg/day)	100	Adult Intake Rate (mg/day)	100	Intake Rate (mg/day)	100
		Child Intake Rate (mg/day)	200		
		Average Lifetime (yr)	70	Average Lifetime (yr)	70
		Age-adjusted Ingestion Factor (mg-yr/kg-day)	114.29		

Soil Screening Levels for Ingestion (mg/kg)

Analyte	Cas Number	Oral RfD	Oral Slope Factor	Noncarcinogenic	Carcinogenic (Age-adjusted)	Carcinogenic (Nonadjusted)
Benzene	71432	4.00E-03	5.50E-02 [a]	4.09E+03	1.16E+01	5.20E+01
Chloroform	67663	1.00E-02 [a]	6.10E-03 [a]	1.02E+04	1.05E+02	4.69E+02
Dichlorobenzene, 1,2-	95501	9.00E-02 [a]		9.20E+04		

Dichloroethane, 1,1-	75343	1.00E-01 [b]		1.02E+05		
Dichloroethane, 1,2-	107062		9.10E-02 [a]		7.02E+00	3.14E+01
Dichloroethylene, 1,2-cis-	156592	1.00E-02 [b]		1.02E+04		
Dichloroethylene, 1,2-trans-	156605	2.00E-02 [a]		2.04E+04		
Diisopropyl Ether	108203	4.00E-01		4.09E+05		
Ethylbenzene	100414	1.00E-01 [a]		1.02E+05		
Hexane, N-	110543	6.00E-02 [b]		6.13E+04		
Methylene Chloride	75092	6.00E-02 [a]	7.50E-03 [a]	6.13E+04	8.52E+01	3.82E+02
Tetrachloroethylene	127184	1.00E-02 [a]	5.20E-02 [v]	1.02E+04	1.23E+01	5.50E+01
Toluene	108883	2.00E-01 [a]		2.04E+05		
Trichloroethane, 1,1,1-	71556	2.00E-01 [v]		2.04E+05		
Trichloroethylene	79016	3.00E-04 [v]	4.00E-01 [v]	3.07E+02	1.60E+00	7.15E+00
Trimethylbenzene, 1,2,4-	95636	5.00E-02		5.11E+04		
Trimethylbenzene, 1,3,5-	108678	5.00E-02		5.11E+04		
Xylene, Mixture	1330207	2.00E-01 [a]		2.04E+05		

Equation Values for Inhalation of Fugitive Dust

Particulate Emission Factor Parameter	Value	Noncarcinogenic Parameter	Value	Carcinogenic Parameter	Value
Surface Area (acres)	0.5	Target Hazard Quotient (unitless)	1	Target Risk (unitless)	1.0E-6
City (climate zone)	Chicago(VII)	Exposure Duration (yr)	25	Exposure Duration (yr)	25
Q/C (g/m^2-s per kg/m^3)	97.78	Exposure Frequency (day/yr)	250	Exposure Frequency (day/yr)	250
Fraction of vegetative cover (unitless)	0.5			Average Lifetime (yr)	70
Mean annual windspeed (m/s)	5				
Equivalent threshold value of windspeed at 7m (m/s)	11				
Function dependent on U_m/U_t (unitless)	0.2707				

Soil Screening Levels for Inhalation of Fugitive Dust (mg/kg)

Analyte	Cas Number	Inhalation RfC	Inhalation Unit Risk	Particulate Emission Factor	Noncarcinogenic	Carcinogenic

Benzene	71432	3.00E-02 [a]	7.8E-06 [a]	7.69E+08	3.37E+07	4.03E+05
Chloroform	67663		2.3E-05 [a]	7.69E+08		1.37E+05
Dichlorobenzene, 1,2-	95501	2.00E-01 [b,c]		7.69E+08	2.25E+08	
Dichloroethane, 1,1-	75343	5.00E-01 [b,c]		7.69E+08	5.62E+08	
Dichloroethane, 1,2-	107062		2.6E-05 [a]	7.69E+08		1.21E+05
Dichloroethylene, 1,2-cis-	156592			7.69E+08		
Dichloroethylene, 1,2-trans-	156605			7.69E+08		
Diisopropyl Ether	108203			7.69E+08		
Ethylbenzene	100414	1.00E+00 [a]		7.69E+08	1.12E+09	
Hexane, N-	110543	2.00E-01 [a]		7.69E+08	2.25E+08	
Methylene Chloride	75092	3.00E+00 [b]	4.7E-07 [a]	7.69E+08	3.37E+09	6.69E+06
Tetrachloroethylene	127184	6.00E-01 [v]	5.8E-07 [v]	7.69E+08	6.74E+08	5.42E+06
Toluene	108883	4.00E-01 [a]		7.69E+08	4.49E+08	
Trichloroethane, 1,1,1-	71556	2.20E+00 [v]		7.69E+08	2.47E+09	
Trichloroethylene	79016	4.00E-02 [v]	1.1E-04 [v]	7.69E+08	4.49E+07	2.86E+04
Trimethylbenzene, 1,2,4-	95636	6.00E-03		7.69E+08	6.74E+06	
Trimethylbenzene, 1,3,5-	108678	6.00E-03		7.69E+08	6.74E+06	
Xylene, Mixture	1330207	1.00E-01 [a]		7.69E+08	1.12E+08	

Equation Values for Inhalation of Volatiles

Volatilization Factor Parameter	Value	Soil Saturation Concentration Parameter	Value	Noncarcinogenic Parameter	Value	Carcinogenic Parameter	Value
Surface Area (acres)	0.5			Target Hazard Quotient (unitless)	1	Target Risk (unitless)	1.0E-6
City (climate zone)	Chicago (VII)			Exposure Duration (yr)	25	Exposure Duration (yr)	25
Q/C (g/m^2-s per kg/m^3)	97.78			Exposure Frequency (day/yr)	250	Exposure Frequency (day/yr)	250
Fraction organic carbon (unitless)	0.006	Fraction organic carbon (unitless)	0.006			Average Lifetime (yr)	70
Dry soil bulk density (g/cm^3)	1.5	Dry soil bulk density (g/cm^3)	1.5				
Soil particle density		Soil particle density					

(g/cm^3)	2.65	(g/cm^3)	2.65
Water-filled soil porosity (L_{water}/L_{soil})	0.2	Water-filled soil porosity (L_{water}/L_{soil})	0.2
Exposure interval (s)	9.5e08		

Soil Screening Levels for Inhalation of Volatiles (mg/kg)

Analyte	Cas Number	Inhalation RfC	Inhalation Unit Risk	Volatilization Factor	Soil Saturation Concentration	Noncarcinogenic	Carcinogenic
Benzene	71432	3.0E-02 [a]	7.8E-06 [a]	5.4E+03	9.1E+02	2.4E+02	2.8E+00
Chloroform	67663		2.3E-05 [a]	5.4E+03	3.1E+03		9.5E-01
Dichlorobenzene, 1,2-	95501	2.0E-01 [b,c]		2.8E+04	6.0E+02	8.3E+03	
Dichloroethane, 1,1-	75343	5.0E-01 [b,c]		4.9E+03	1.8E+03	3.6E+03	
Dichloroethane, 1,2-	107062		2.6E-05 [a]	8.1E+03	2.1E+03		1.3E+00
Dichloroethylene, 1,2-cis-	156592			5.9E+03	1.3E+03		
Dichloroethylene, 1,2-trans-	156605			4.6E+03	3.2E+03		
Diisopropyl Ether	108203				1.9E+03		
Ethylbenzene	100414	1.0E+00 [a]		1.1E+04	4.0E+02	1.5E+04	
Hexane, N-	110543	2.0E-01 [a]		2.0E+03	2.7E+02	5.8E+02	
Methylene Chloride	75092	3.0E+00 [b]	4.7E-07 [a]	5.2E+03	2.8E+03	2.3E+04	4.5E+01
Tetrachloroethylene	127184	6.0E-01 [v]	5.8E-07 [v]	5.0E+03	2.4E+02	4.4E+03	3.5E+01
Toluene	108883	4.0E-01 [a]		7.8E+03	6.7E+02	4.6E+03	
Trichloroethane, 1,1,1-	71556	2.2E+00 [v]		4.3E+03	1.2E+03	1.4E+04	
Trichloroethylene	79016	4.0E-02 [v]	1.1E-04 [v]	6.4E+03	1.3E+03	3.7E+02	2.4E-01
Trimethylbenzene, 1,2,4-	95636	6.0E-03		4.0E+04	1.3E+03	3.5E+02	
Trimethylbenzene, 1,3,5-	108678	6.0E-03		2.3E+04	4.8E+02	2.0E+02	
Xylene, Mixture	1330207	1.0E-01 [a]		1.3E+04		1.9E+03	

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URL: http://risk.lsd.ornl.gov/cgi-bin/epa/ssl2.cgi

U.S. Environmental Protection Agency

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Soil Screening Guidance for Chemicals

Equation Values for Ingestion

Noncarcinogenic Parameter	Value	Carcinogenic Age-adjusted Parameter	Value	Carcinogenic Nonadjusted Parameter	Value
Target Hazard Quotient (unitless)	1	Target Risk (unitless)	1.0E-6	Target Risk (unitless)	1.0E-6
Body Weight (kg)	70	Adult Body Weight (kg)	70	Body Weight (kg)	70
		Child Body Weight (kg)	15		
Exposure Duration (yr)	25	Adult Exposure Duration (yr)	24	Exposure Duration (yr)	25
		Child Exposure Duration (yr)	6		
Exposure Frequency (day/yr)	250	Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	250
Intake Rate (mg/day)	100	Adult Intake Rate (mg/day)	100	Intake Rate (mg/day)	100
		Child Intake Rate (mg/day)	200		
		Average Lifetime (yr)	70	Average Lifetime (yr)	70
		Age-adjusted Ingestion Factor (mg-yr/kg-day)	114.29		

Soil Screening Levels for Ingestion (mg/kg)

Analyte	Cas Number	Oral RfD	Oral Slope Factor	Noncarcinogenic	Carcinogenic (Age-adjusted)	Carcinogenic (Nonadjusted)
Barium	7440393	7.00E-02 [a]		7.15E+04	71500,000	
Mercury (elemental)	7439976	s,aa				
Selenium	7782492	5.00E-03 [a]		5.11E+03	5,110,000	

Silver	7440224	5.00E-03 [a]	5.11E+03

Equation Values for Inhalation of Fugitive Dust

Particulate Emission Factor Parameter	Value	Noncarcinogenic Parameter	Value	Carcinogenic Parameter	Value
Surface Area (acres)	0.5	Target Hazard Quotient (unitless)	1	Target Risk (unitless)	1.0E-6
City (climate zone)	Chicago(VII)	Exposure Duration (yr)	25	Exposure Duration (yr)	25
Q/C (g/m^2-s per kg/m^3)	97.78	Exposure Frequency (day/yr)	250	Exposure Frequency (day/yr)	250
Fraction of vegetative cover (unitless)	0.5			Average Lifetime (yr)	70
Mean annual windspeed (m/s)	5				
Equivalent threshold value of windspeed at 7m (m/s)	11				
Function dependent on U_m/U_t (unitless)	0.2707				

Soil Screening Levels for Inhalation of Fugitive Dust (mg/kg)

Analyte	Cas Number	Inhalation RfC	Inhalation Unit Risk	Particulate Emission Factor	Noncarcinogenic	Carcinogenic
Barium	7440393	5.00E-04 [b,c]		~~7.69E+08~~	~~5.62E+05~~	
Mercury (elemental)	7439976	3.00E-04 [a,s]		~~7.69E+08~~	~~3.37E+05~~	
Selenium	7782492			~~7.69E+08~~		
Silver	7440224			~~7.69E+08~~		

Equation Values for Inhalation of Volatiles

Volatilization Factor Parameter	Value	Soil Saturation Concentration Parameter	Value	Noncarcinogenic Parameter	Value	Carcinogenic Parameter	Value
Surface Area (acres)	0.5			Target Hazard Quotient (unitless)	1	Target Risk (unitless)	1.0E-6

City (climate zone)	Chicago (VII)			Exposure Duration (yr)	25	Exposure Duration (yr)	25
Q/C (g/m^2-s per kg/m^3)	97.78			Exposure Frequency (day/yr)	250	Exposure Frequency (day/yr)	250
Fraction organic carbon (unitless)	0.006	Fraction organic carbon (unitless)	0.006			Average Lifetime (yr)	70
Dry soil bulk density (g/cm^3)	1.5	Dry soil bulk density (g/cm^3)	1.5				
Soil particle density (g/cm^3)	2.65	Soil particle density (g/cm^3)	2.65				
Water-filled soil porosity (L_{water}/L_{soil})	0.2	Water-filled soil porosity (L_{water}/L_{soil})	0.2				
Exposure interval (s)	9.5e08						

Soil Screening Levels for Inhalation of Volatiles (mg/kg)

Analyte	Cas Number	Inhalation RfC	Inhalation Unit Risk	Volatilization Factor	Soil Saturation Concentration	Noncarcinogenic	Carcinogenic
Barium	7440393	5.0E-04 b,c					
Mercury (elemental)	7439976	3.0E-04 a,s		6.4E+04	2.9E+00	2.8E+01	
Selenium	7782492						
Silver	7440224						

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Soil Screening Guidance for Chemicals

Equation Values for Ingestion

Noncarcinogenic Parameter	Value	Carcinogenic Age-adjusted Parameter	Value	Carcinogenic Nonadjusted Parameter	Value
Target Hazard Quotient (unitless)	0.2	Target Risk (unitless)	1.0E-7	Target Risk (unitless)	1.0E-6
Body Weight (kg)	15	Adult Body Weight (kg)	70	Body Weight (kg)	70
		Child Body Weight (kg)	15		
Exposure Duration (yr)	6	Adult Exposure Duration (yr)	24	Exposure Duration (yr)	25
		Child Exposure Duration (yr)	6		
Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	250
Intake Rate (mg/day)	200	Adult Intake Rate (mg/day)	100	Intake Rate (mg/day)	50
		Child Intake Rate (mg/day)	200		
		Average Lifetime (yr)	70	Average Lifetime (yr)	70
		Age-adjusted Ingestion Factor (mg-yr/kg-day)	114.29		

Soil Screening Levels for Ingestion (mg/kg)

Analyte	Cas Number	Oral RfD	Oral Slope Factor	Noncarcinogenic	Carcinogenic (Age-adjusted)	Carcinogenic (Nonadjusted)
Barium	7440393	7.00E-02 [a]		1.10E+03		
Benzene	71432	4.00E-03	5.50E-02 [a]	6.26E+01	1.16E+00	1.04E+02
Chloroform	67663	1.00E-02 [a]	6.10E-03 [a]	1.56E+02	1.05E+01	9.38E+02

Dichlorobenzene, 1,2-	95501	9.00E-02 [a]		1.41E+03		
Dichloroethane, 1,1-	75343	1.00E-01 [b]		1.56E+03		
Dichloroethane, 1,2-	107062		9.10E-02 [a]		7.02E-01	6.29E+01
Dichloroethylene, 1,2-cis-	156592	1.00E-02 [b]		1.56E+02		
Dichloroethylene, 1,2-trans-	156605	2.00E-02 [a]		3.13E+02		
Diisopropyl Ether	108203	4.00E-01		6.26E+03		
Ethylbenzene	100414	1.00E-01 [a]		1.56E+03		
Hexane, N-	110543	6.00E-02 [b]		9.39E+02		
Mercury (elemental)	7439976	[s,aa]				
Methylene Chloride	75092	6.00E-02 [a]	7.50E-03 [a]	9.39E+02	8.52E+00	7.63E+02
Selenium	7782492	5.00E-03 [a]		7.82E+01		
Silver	7440224	5.00E-03 [a]		7.82E+01		
Tetrachloroethylene	127184	1.00E-02 [a]	5.20E-02 [v]	1.56E+02	1.23E+00	1.10E+02
Toluene	108883	2.00E-01 [a]		3.13E+03		
Trichloroethane, 1,1,1-	71556	2.00E-01 [v]		3.13E+03		
Trichloroethylene	79016	3.00E-04 [v]	4.00E-01 [v]	4.69E+00	1.60E-01	1.43E+01
Trimethylbenzene, 1,2,4-	95636	5.00E-02		7.82E+02		
Trimethylbenzene, 1,3,5-	108678	5.00E-02		7.82E+02		
Xylene, Mixture	1330207	2.00E-01 [a]		3.13E+03		

Equation Values for Inhalation of Fugitive Dust

Particulate Emission Factor Parameter	Value	Noncarcinogenic Parameter	Value	Carcinogenic Parameter	Value
Surface Area (acres)	0.5	Target Hazard Quotient (unitless)	0.2	Target Risk (unitless)	1.0E-7
City (climate zone)	Chicago(VII)	Exposure Duration (yr)	30	Exposure Duration (yr)	30
Q/C (g/m^2-s per kg/m^3)	97.78	Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	350
Fraction of vegetative cover (unitless)	0.5			Average Lifetime (yr)	70
Mean annual windspeed (m/s)	5				
Equivalent threshold value of windspeed at 7m (m/s)	11				
Function dependent on U_m/U_t (unitless)	0.2707				

Soil Screening Levels for Inhalation of Fugitive Dust (mg/kg)

Analyte	Cas Number	Inhalation RfC	Inhalation Unit Risk	Particulate Emission Factor	Noncarcinogenic	Carcinogenic
Barium	7440393	5.00E-04 [b,c]		7.69E+08	8.02E+04	
Benzene	71432	3.00E-02 [a]	7.8E-06 [a]	7.69E+08	4.81E+06	2.40E+04
Chloroform	67663		2.3E-05 [a]	7.69E+08		8.14E+03
Dichlorobenzene, 1,2-	95501	2.00E-01 [b,c]		7.69E+08	3.21E+07	
Dichloroethane, 1,1-	75343	5.00E-01 [b,c]		7.69E+08	8.02E+07	
Dichloroethane, 1,2-	107062		2.6E-05 [a]	7.69E+08		7.20E+03
Dichloroethylene, 1,2-cis-	156592			7.69E+08		
Dichloroethylene, 1,2-trans-	156605			7.69E+08		
Diisopropyl Ether	108203			7.69E+08		
Ethylbenzene	100414	1.00E+00 [a]		7.69E+08	1.60E+08	
Hexane, N-	110543	2.00E-01 [a]		7.69E+08	3.21E+07	
Mercury (elemental)	7439976	3.00E-04 [a,s]		7.69E+08	4.81E+04	
Methylene Chloride	75092	3.00E+00 [b]	4.7E-07 [a]	7.69E+08	4.81E+08	3.98E+05
Selenium	7782492			7.69E+08		
Silver	7440224			7.69E+08		
Tetrachloroethylene	127184	6.00E-01 [v]	5.8E-07 [v]	7.69E+08	9.63E+07	3.23E+05
Toluene	108883	4.00E-01 [a]		7.69E+08	6.42E+07	
Trichloroethane, 1,1,1-	71556	2.20E+00 [v]		7.69E+08	3.53E+08	
Trichloroethylene	79016	4.00E-02 [v]	1.1E-04 [v]	7.69E+08	6.42E+06	1.70E+03
Trimethylbenzene, 1,2,4-	95636	6.00E-03		7.69E+08	9.63E+05	
Trimethylbenzene, 1,3,5-	108678	6.00E-03		7.69E+08	9.63E+05	
Xylene, Mixture	1330207	1.00E-01 [a]		7.69E+08	1.60E+07	

Equation Values for Inhalation of Volatiles

Volatilization Factor Parameter	Value	Soil Saturation Concentration Parameter	Value	Noncarcinogenic Parameter	Value	Carcinogenic Parameter	Value
Surface Area (acres)	0.5			Target Hazard Quotient (unitless)	0.2	Target Risk (unitless)	1.0E-7

City (climate zone)	Chicago (VII)			Exposure Duration (yr)	30	Exposure Duration (yr)	30
Q/C (g/m^2-s per kg/m^3)	97.78			Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	350
Fraction organic carbon (unitless)	0.006	Fraction organic carbon (unitless)	0.006			Average Lifetime (yr)	70
Dry soil bulk density (g/cm^3)	1.5	Dry soil bulk density (g/cm^3)	1.5				
Soil particle density (g/cm^3)	2.65	Soil particle density (g/cm^3)	2.65				
Water-filled soil porosity (L_{water}/L_{soil})	0.2	Water-filled soil porosity (L_{water}/L_{soil})	0.2				
Exposure interval (s)	9.5e08						

Soil Screening Levels for Inhalation of Volatiles (mg/kg)

Analyte	Cas Number	Inhalation RfC	Inhalation Unit Risk	Volatilization Factor	Soil Saturation Concentration	Noncarcinogenic	Carcinogenic
Barium	7440393	5.0E-04 b,c					
Benzene	71432	3.0E-02 a	7.8E-06 a	5.4E+03	~~9.1E+02~~	~~3.4E+01~~	1.7E-01
Chloroform	67663		2.3E-05 a	5.4E+03	~~3.1E+03~~		5.7E-02
Dichlorobenzene, 1,2-	95501	2.0E-01 b,c		2.8E+04	6.0E+02	~~1.2E+03~~	
Dichloroethane, 1,1-	75343	5.0E-01 b,c		4.9E+03	~~1.8E+03~~	5.1E+02	
Dichloroethane, 1,2-	107062		2.6E-05 a	8.1E+03	~~2.1E+03~~		7.6E-02
Dichloroethylene, 1,2-cis-	156592			5.9E+03	~~1.3E+03~~		
Dichloroethylene, 1,2-trans-	156605			4.6E+03	~~3.2E+03~~		
Diisopropyl Ether	108203				1.9E+03		
Ethylbenzene	100414	1.0E+00 a		1.1E+04	4.0E+02	~~2.2E+03~~	
Hexane, N-	110543	2.0E-01 a		2.0E+03	~~2.7E+02~~	8.2E+01	
Mercury (elemental)	7439976	3.0E-04 a,s		6.4E+04	2.9E+00	~~4.0E+00~~	

Methylene Chloride	75092	3.0E+00 [b]	4.7E-07 [a]	5.2E+03	~~2.8E+03~~	~~3.3E+03~~	2.7E+00
Selenium	7782492						
Silver	7440224						
Tetrachloroethylene	127184	6.0E-01 [v]	5.8E-07 [v]	5.0E+03	~~2.4E+02~~	~~6.2E+02~~	~~2.1E+00~~
Toluene	108883	4.0E-01 [a]		7.8E+03	~~6.7E+02~~	6.5E+02	
Trichloroethane, 1,1,1-	71556	2.2E+00 [v]		4.3E+03	1.2E+03	~~2.0E+03~~	
Trichloroethylene	79016	4.0E-02 [v]	1.1E-04 [v]	6.4E+03	~~1.3E+03~~	~~5.3E+01~~	1.4E-02
Trimethylbenzene, 1,2,4-	95636	6.0E-03		4.0E+04	~~1.3E+03~~	5.0E+01	
Trimethylbenzene, 1,3,5-	108678	6.0E-03		2.3E+04	~~4.8E+02~~	2.9E+01	
Xylene, Mixture	1330207	1.0E-01 [a]		1.3E+04		2.8E+02	

This site is maintained and operated through a cooperative agreement between the EPA Office of Superfund and Oak Ridge National Laboratory. For questions or comments please contact the Office of Superfund.

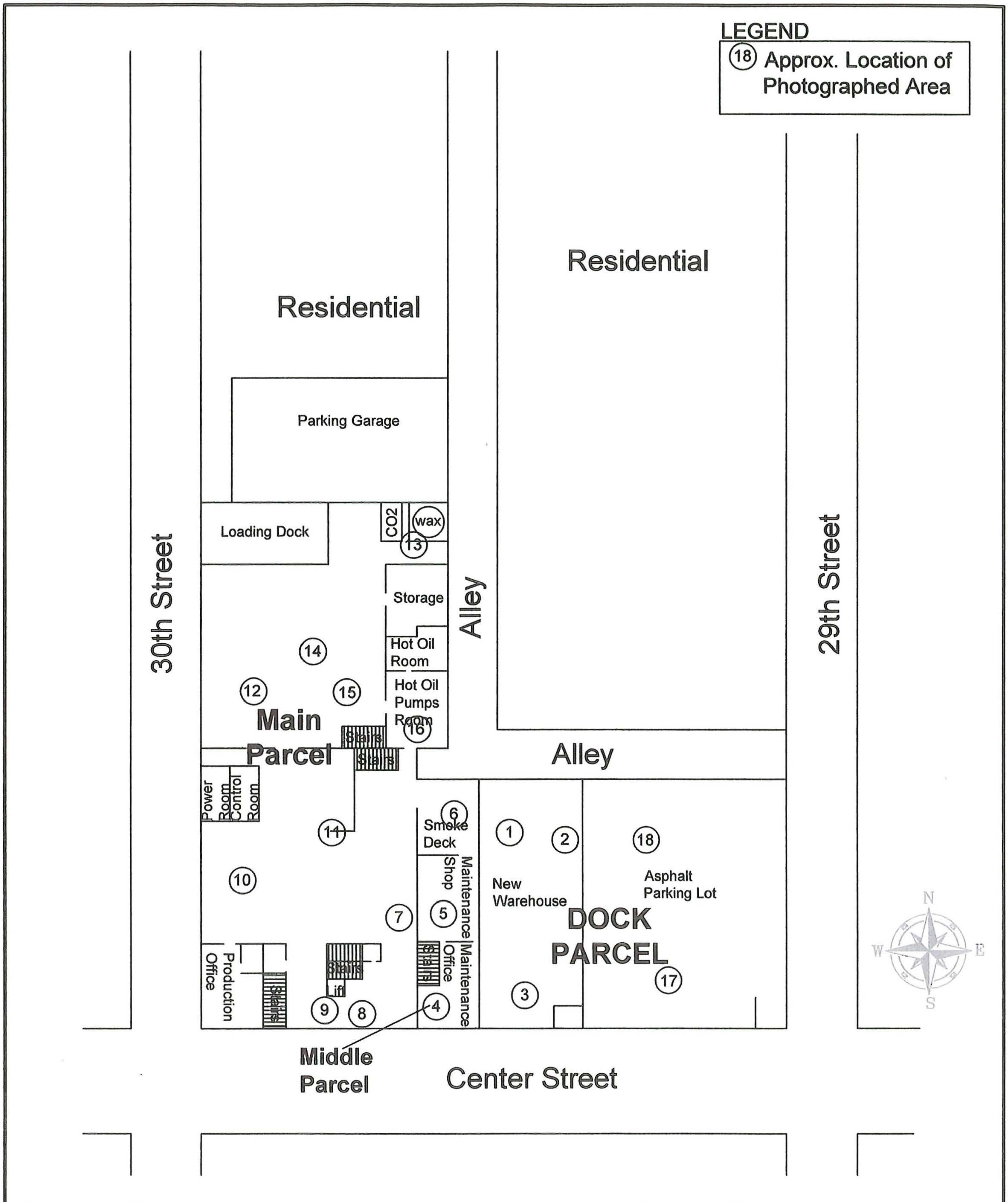
SECTION E
GROUNDWATER INFORMATION
(NOT APPLICABLE/NO ATTACHMENTS)

SECTION F
OTHER CONTAMINATED MEDIA INFORMATION
(NOT APPLICABLE/NO ATTACHMENTS)

SECTION G
ASSOCIATED SITE CLOSURE INFORMATION
ATTACHMENTS

- MAP AND PHOTOS OF EXISTING COVER
- DESCRIPTION OF SOIL PERFORMANCE COVER SYSTEM
- COVER MAINTENANCE PLAN

MAP AND PHOTOS OF EXISTING COVER



J: \COMMON\00963023 Bostik Center ST\figures\site layout map R-1.dwg

REV#	DESCRIPTION	APP'D

ENSR INTERNATIONAL

PHOTO LOCATION MAP

Bostik Findley
2930 West Center Street

DRWN: HEP	SCALE: 1"=59'
CHK'D:	DATE: 11-8-04
APP'D:	**FIGURE G-1**

PHOTO LOG

(All photographs obtained during site visit on November 4, 2004)

Photo 1 – Dock Parcel, New Warehouse, View from South to Northwest.

Photo 2 – Dock Parcel, New Warehouse, View from South to Northeast.

Photo 3 – Dock Parcel, New Warehouse, View from North to South.

Photo 4 – Middle Parcel, Maintenance Shop, View from North to South.

Photo 5 – Middle Parcel, Maintenance Shop, View from South to North.

Photo 6 – Middle Parcel, Smoke Deck, View from North to South.

Photo 7 – Main Parcel, South End, East Side, View from North to South.

Photo 8 – Main Parcel, South End, View from East to West.

Photo 9 – Main Parcel, South End, View of Crack in Concrete (typical, less than ½ - inch deep, no aggregate exposed).

Photo 10 – Main Parcel, South End, West Side, View from East to West.

Photo 11 – Main Parcel, South End, West Side, View from South to North.

Photo 12 – Main Parcel, North End, West Side, View from South to North.

Photo 13 – Main Parcel, North End, East Side, View from West to East.

Photo 14 – Main Parcel, North End, East Side, View from North to South.

Photo 15 – Main Parcel, North End, East Side, View in Basement.

Photo 16 – Main Parcel, North End, East Side, Basement.

Photo 17– Dock Parcel, Exterior Paved Area, View from West to Southeast.

Photo 18- Dock Parcel, Exterior Paved Area, View from West to Northeast.

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

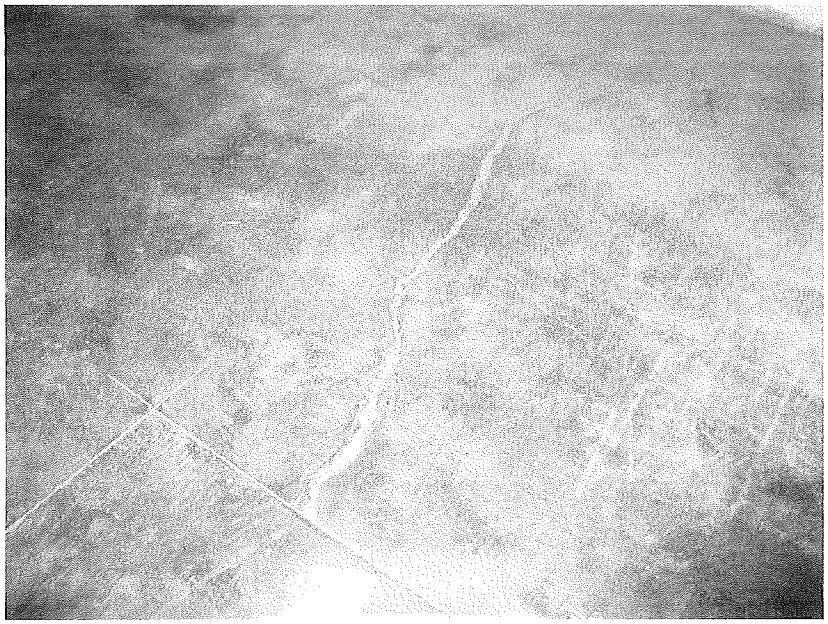


Photo 9

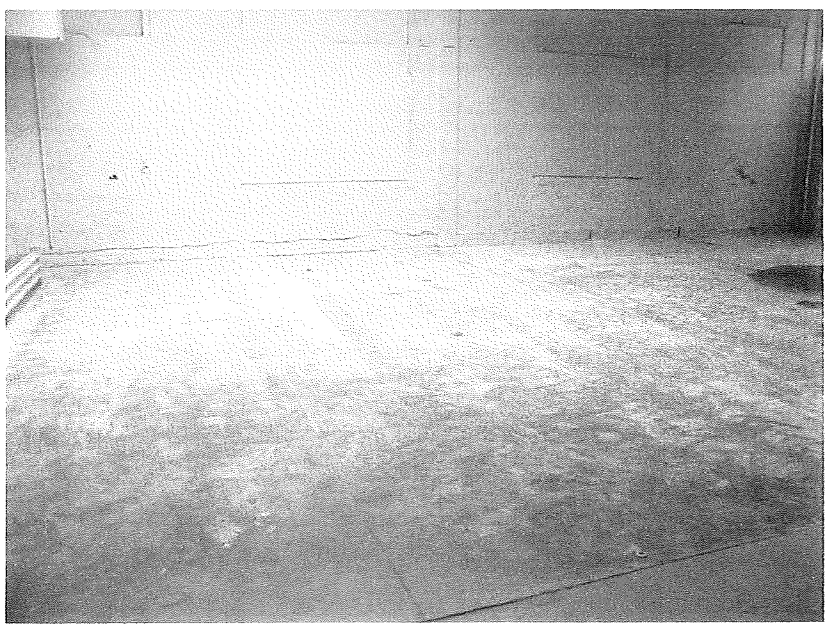


Photo 10

Photo 11

Photo 12

Photo 13

Photo 14

Photo 15

Photo 16

Photo 17

Photo 18

DESCRIPTION OF SOIL PERFORMANCE COVER SYSTEM

DESCRIPTION OF SOIL PERFORMANCE COVER SYSTEM

Potential exposure routes at the Site include direct contact with impacted soils, ingestion of impacted soils, inhalation of impacted fugitive dust and inhalation of volatilized contaminants from impacted soil. As the Site is almost entirely covered by either the building or an asphalt parking lot, access is restricted and there is no indication that groundwater is impacted, there are currently no completed pathways for direct contact.

Potable water is provided to the area by the City of Milwaukee and the groundwater yields from the shallow groundwater aquifer in the area of the Site are insufficient for domestic or industrial use. There are no indications that groundwater has been impacted and modeling indicates that contaminants in the soil are not expected to impact groundwater. Additionally, no surface-water features to which groundwater could discharge exist in the Site area. Thus, there are no complete pathways for exposure to groundwater. Therefore, current conditions at the Site are protective of human health and the environment.

The existing building and parking lot provides a physical barrier (cover system) to prevent direct contact and eliminates the key release pathways of migration to groundwater and wind dispersal from the Site. The existing building and parking lot will be maintained so that current protective conditions are preserved.

Long-term effectiveness and permanence is considered to be excellent for the cover system. Technical and administrative feasibility considerations are also excellent. There are no short-term effectiveness considerations as the building and paved area are in place and are in good condition.

Technical implementability considerations for the Site are excellent as the building and paved area have already been constructed. No problems are anticipated with regards to equipment, materials, and services. A long-term program to monitor and maintain the building, paved area and other physical controls (fences, drainage controls, etc.) will be implemented.

COVER MAINTENANCE PLAN

Cover System Maintenance Plan

November 11, 2004

Property Located at:
2930 West Center Street
City of Milwaukee, Milwaukee County, Wisconsin
WDNR FID # 241024740, WDNR BRRTS # 03-41-005301

Parcel I: Lots 19 to 22 inclusive, in Block 3, in Pauline's Subdivision, in the Northeast ¼ of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Parcel II: Lot 23 together with the South ½ of the vacated alley adjoining on the North, in Block 3, in Pauline's Subdivision in the Northeast ¼ of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Parcel III: Lots 24, 25, 26, 27, 28, 29, 30, 31, 32 and 33, Block 3, Pauline's Subdivision, in the Northeast ¼ of Section 13, Township 7 North, Range 21 East, together with the South ½ of the East-West vacant alley contiguous to the North line of Lots 24, 25 and 26 and the North ½ of vacated alley adjacent to Lot 27. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

(Tax Key Nos. 309-1133-110-8; 309-1134-X and 309-1135-110-9

Introduction

The purpose of this document is to present a Maintenance Plan for the existing cover system (building foundation and asphalt parking lot) for the above described properties, commonly known as 2930 West Center Street in the City of Milwaukee, Milwaukee County, Wisconsin (Site), per the requirements of NR 724.13(2) of the Wisconsin Administrative Code. The maintenance activities relate to an existing concrete building foundation and asphalt-paved parking lot over areas with residual contaminated soils. Concentrations of specific contaminants in the near-surface soil at the site are above direct-contact residual contaminant levels (RCLs).

The existing concrete building foundation and asphalt pavement at the Site, which is approximately three to six inches thick and underlain by four to nine inches of fill, provides a physical barrier (cover system) to prevent direct contact with contaminants and eliminate the key release pathways of migration to groundwater and wind dispersal from the Site. Therefore, current conditions at the Site are protective of human health and the environment. The existing building foundation and parking lot must be maintained so that current protective conditions are preserved. The location of the paved surfaces and building to be maintained in accordance with this Maintenance Plan, as well as the impacted soil are identified in the attached map (Exhibit A).

Cover System Purpose

The paved surfaces and the building foundation over the contaminated soil serve as a barrier to prevent direct human contact with residual soil contamination that might otherwise pose a threat to human health. These paved surfaces and building foundation also act as an infiltration barrier to inhibit and prevent future soil-to-groundwater contamination migration that would violate the standards of NR 140 of the Wisconsin Administrative Code. Based on the current and future use of the property, the barrier should function as intended unless disturbed.

Annual Inspection

The paved surfaces and building foundation overlying the contaminated soil and as depicted in Exhibit A will be inspected once a year for cracks and other potential exposures to underlying soils. The inspections will be performed to evaluate damage to the floor due to exposure to the weather, wear from traffic, increasing age and other factors. Any area where soils have become or are likely to become exposed will be documented. A log of the inspections will be maintained by the property owner and is included as Exhibit B, *Cover System Inspection Log*. The log will include recommendations for necessary repair of any areas where underlying soils are exposed. Once repairs are completed, they will be documented in the inspection log.

Maintenance Activities

If exposed soils are noted during the annual inspections or at any other time during the year, repairs will be scheduled as soon as practical. Maintenance activities can include patching and filling operations or they can include larger resurfacing or construction operations. In the event that necessary maintenance activities expose the underlying soil, the owner must inform maintenance workers of the direct contact exposure hazard and provide them with appropriate personal protection equipment ("PPE"). The owner must also sample any soil that is excavated from the site prior to disposal to ascertain if contamination remains. The soil must be treated, stored and disposed of by the owner in accordance with applicable local, state and federal law.

In the event the paved surfaces and/or the building foundation overlying the contaminated soil are removed or replaced, the replacement barrier must be equally impervious, with an infiltration rate equal to or less than 1×10^{-7} cm/s. Any replacement barrier will be subject to the same maintenance and inspection guidelines as outlined in this Maintenance Plan unless indicated otherwise by the Wisconsin Department of Natural Resources ("WDNR") or its successor.

To maintain the integrity of the building foundation and paved surfaces, The property owner will maintain a copy of this Maintenance Plan on-site and make it available to all interested parties (i.e. on-site employees, contractors, future property owners, etc.) for viewing.

Amendment or Withdrawal of Maintenance Plan

This Maintenance Plan can be amended or withdrawn by the property owner and its successors with the written approval of WDNR.

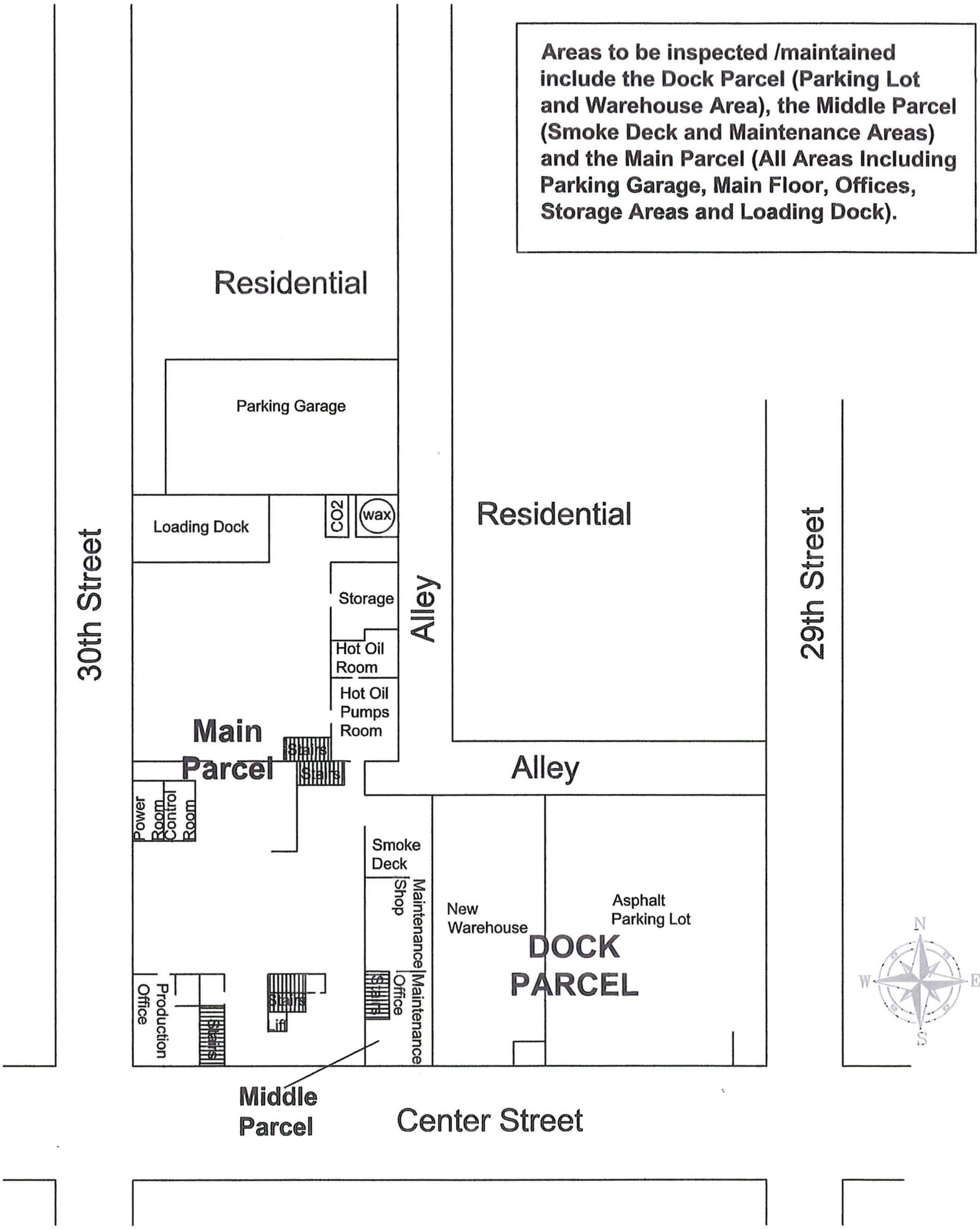
<u>Contact Information</u>
(as of November 2004)

<u>Site Owner and Operator</u>: Bostik Findley, Inc.
c/o Bruce A. Keyes
Foley & Lardner LLP
777 E. Wisconsin Ave.
Milwaukee, WI 53202-5306
Phone: (414) 297-5815
Fax: (414) 297-4900

<u>Consultant</u>: Bill Looney
ESNR Corporation
W239 N2890 Pewaukee Road, Unit D
Pewaukee, WI 53072
Phone: (262) 523-2040
Fax: (262) 523-2059

<u>WDNR</u>: Gina Keenan
WDNR – Southeast Region
2300 N. Martin Luther Kind Jr. Drive
Milwaukee, WI 53212-3196
Phone: (414) 263-8589
Fax: (414) 263-8606

Areas to be inspected /maintained include the Dock Parcel (Parking Lot and Warehouse Area), the Middle Parcel (Smoke Deck and Maintenance Areas) and the Main Parcel (All Areas Including Parking Garage, Main Floor, Offices, Storage Areas and Loading Dock).



J: \COMMON\00963023 Bostik Center ST\figures\site layout map R-1.dwg

REV#	DESCRIPTION	APP'D

ENSR INTERNATIONAL

EXHIBIT A

SITE LAYOUT MAP

Bostik Findley

2930 West Center Street
Milwaukee, Wisconsin

DRWN: HEP	SCALE: 1"=59'
CHK'D:	DATE: 06-21-04
APP'D:	

EXHIBIT B - COVER MAINTENANCE/INSPECTION FORM – 2930 WEST CENTER STREET, MILWAUKEE, WISCONSIN

Inspection Date	Inspector	Inspection Results/Condition of Cover[1]	Maintenance Recommendations[1]	Maintenance Actions Implemented[1]

[1] Provide supporting information as necessary to document inspection findings and maintenance actions (e.g., photographs, work orders, invoices etc.)

SECTION H
PROPOSED INSTITUTIONAL CONTROLS
ATTACHMENTS

- **GIS INFORMATION**
- **DEED RESTRICTION**

GIS INFORMATION

Information Required to List the Site on the GIS Registry (per Pub RR-606) is included in Section I

DEED RESTRICTION

Document Number	DEED RESTRICTION	
Please see legal description of below. Wisconsin Tranverse Mercator Coordinates: 686869, 290414 STATE OF WISCONSIN)) ss COUNTY OF MILWAUKEE		Recording Area Name and Return Address Bruce A. Keyes, Esq. Foley & Lardner LLP 777 E. Wisconsin Ave. Milwaukee, WI 530202-5306 ROD Box 286 309-1133-110-8; 309-1134-X 309-1135-110-9 Parcel Identification Numbers

Declaration of Restrictions

In Re: Land Situated in the County of Milwaukee, State of Wisconsin described as follows:

Parcel I: Lots 19 to 22 inclusive, in Block 3, in Pauline's Subdivision, in the Northeast ¼ of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Parcel II: Lot 23 together with the South ½ of the vacated alley adjoining on the North, in Block 3, in Pauline's Subdivision in the Northeast ¼ of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Parcel III: Lots 24, 25, 26, 27, 28, 29, 30, 31, 32 and 33, Block 3, Pauline's Subdivision, in the Northeast ¼ of Section 13, Township 7 North, Range 21 East, together with the South ½ of the East-West vacant alley contiguous to the North line of Lots 24, 25 and 26 and the North ½ of vacated alley adjacent to Lot 27. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

WHEREAS, Bostik Findley. Inc. is the owner of the above-described property.

WHEREAS, one or more chlorinated and non-chlorinated volatile and semi-volatile organic compound discharges have occurred on this property, and as of July 30, 2004 when soil samples were collected on this property, chlorinated and non-chlorinated volatile and semi-volatile organic compound contaminated soil remained on this property at the following location: beneath the building foundation in the area known as the Main Parcel (see attached figure, *"Historical Soil Analytical Results, Figure 1"*).

WHEREAS, it is the desire and intention of the property owner to impose on the property restrictions which will make it unnecessary to conduct further soil remediation activities on the property at the present time.

NOW THEREFORE, the owner hereby declares that all of the property described above is held and shall be held, conveyed or encumbered, leased, rented, used, occupied and improved subject to the following limitation and restrictions:

The paved surfaces and the building foundation that existed on the above-described property on the date that this restriction was signed form a barrier that must be maintained in order to prevent direct contact with residual soil contamination that might otherwise pose a threat to human health. These structures are also required in order to minimize the infiltration of water and prevent groundwater contamination that would violate the groundwater quality standards in ch. NR 140, Wis. Admin. Code. The paved surfaces and the building foundation shall be maintained on the above described property in the locations shown on the attached map, labeled "Historical Soil Analytical Results, Figure 1" unless another barrier, with an infiltration rate of 10^{-7} cm/sec or less, is installed and maintained in their place. The existing structures, and any replacement barrier with an infiltration rate of 10^{-7} cm/sec or less, shall be maintained on the above-described property in compliance with the "Cover System Maintenance Plan, 2930 West Center Street, Milwaukee. Wisconsin" dated November 11, 2004, that was submitted to the Wisconsin Department of Natural Resources by Bostik Findley, Inc., as required by s. NR 724.13(2), Wis. Admin. Code (1999).

In addition, the following activities are prohibited on any portion of the above described property unless prior written approval has been obtained from the Wisconsin Department of Natural Resources or its successor or assign: (1) excavating or grading of the land surface; (2) filling on capped areas and areas with impervious surfaces; (3) plowing for agricultural cultivation; and (4) construction or installation of a building or other structure with a foundation that would sit on or be placed within the cap or impervious surface.

This restriction is hereby declared to be a covenant running with the land and shall be fully binding upon all persons acquiring the above-described property whether by descent, devise, purchase or otherwise. This restriction inures to the benefit of and is enforceable by the Wisconsin Department of Natural Resources, its successors or assigns. The Department, its successors or assigns, may initiate proceedings at law or in equity against any person or persons who violate or are proposing to violate this covenant, to prevent the proposed violation or to recover damages for such violation.

Any person who is or becomes owner of the property described above may request that the Wisconsin Department of Natural Resources or its successor issue a determination that one or more of the restrictions set forth in this covenant is no longer required. Upon the receipt of such a request, the Wisconsin Department of Natural Resources shall determine whether or not the restrictions contained herein can be extinguished. If the Department determines that the restrictions can be extinguished, an affidavit, attached to a copy of the Department's written determination, may be recorded by the property owner or other interested party to give notice that this deed restriction, or portions of this deed restriction, are no longer binding.

By signing this document, ____________ asserts that he or she is duly authorized to sign this document on behalf of Bostik Findley, Inc..

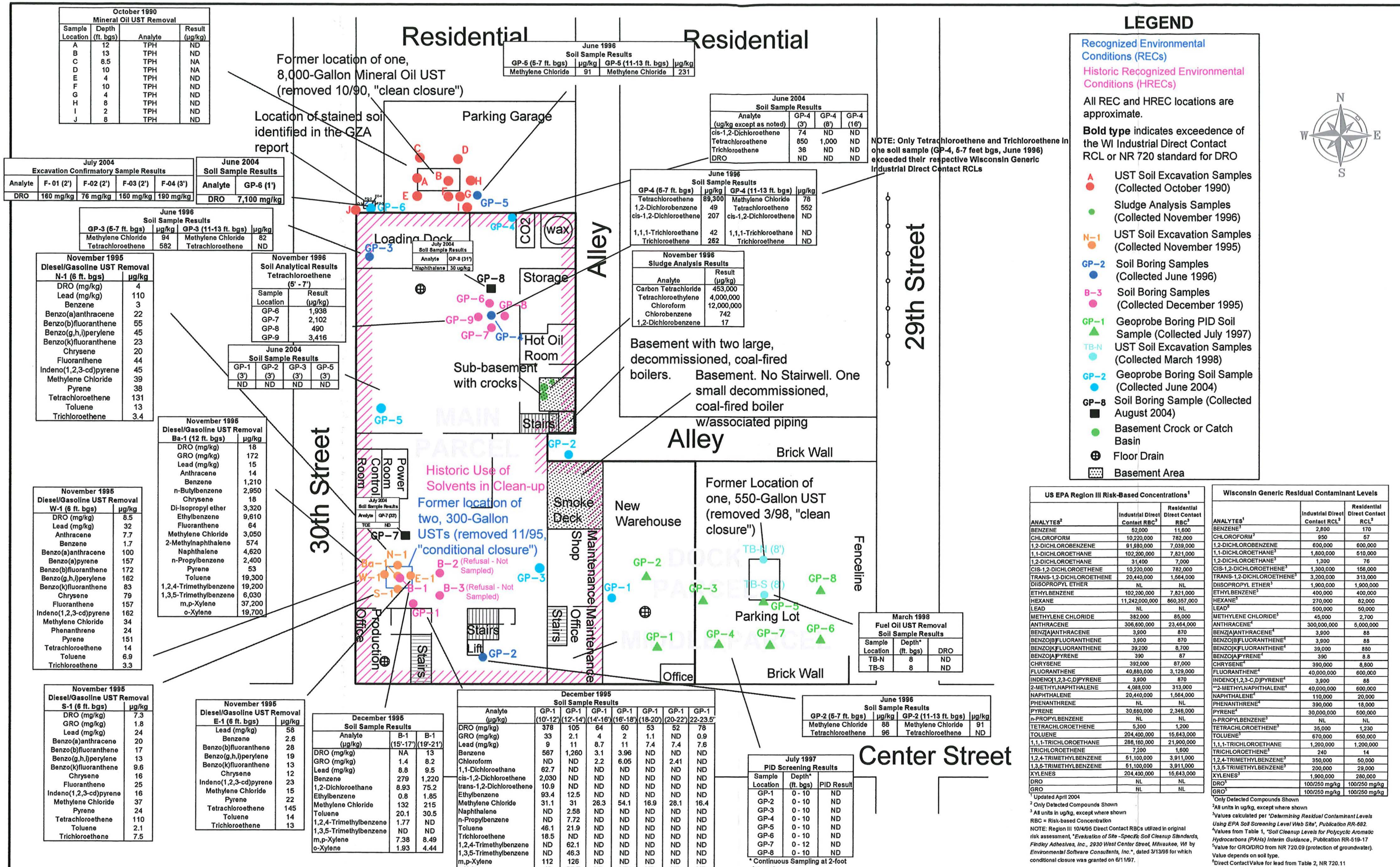
IN WITNESS WHEREOF, the owner of the property has executed this Declaration of Restrictions, this _______ day of _____________, 2004.

Signature: _________________________
Printed Name:________________________

Subscribed and sworn to before me
this _____ day of ___________ 2004.
____

Notary Public, State of __________
My commission ____________________

This document was drafted by ___________________________________Bruce A. Keyes, Foley & Lardner LLP.



October 1990 Mineral Oil UST Removal

Sample Location	Depth (ft. bgs)	Analyte	Result (µg/kg)
A	12	TPH	ND
B	13	TPH	ND
C	8.5	TPH	NA
D	10	TPH	NA
E	4	TPH	ND
F	10	TPH	ND
G	4	TPH	ND
H	8	TPH	ND
I	2	TPH	ND
J	8	TPH	ND

July 2004 Excavation Confirmatory Sample Results

Analyte	F- 01 (2')	F-02 (2')	F-03 (2')	F-04 (3')
DRO	160 mg/kg	76 mg/kg	150 mg/kg	190 mg/kg

June 2004 Soil Sample Results

Analyte	GP-6 (1')
DRO	7,100 mg/kg

June 1996 Soil Sample Results

GP-3 (5-7 ft. bgs)	µg/kg	GP-3 (11-13 ft. bgs)	µg/kg
Methylene Chloride	94	Methylene Chloride	82
Tetrachloroethene	582	Tetrachloroethene	ND

July 2004 Soil Sample Results

Analyte	GP-8 (31')
Naphthalene	30 ug/kg

November 1996 Soil Analytical Results Tetrachloroethene (5' - 7')

Sample Location	Result (µg/kg)
GP-6	1,938
GP-7	2,102
GP-8	490
GP-9	3,416

June 2004 Soil Sample Results

GP-1 (3')	GP-2 (3')	GP-3 (3')	GP-5 (3')
ND	ND	ND	ND

November 1995 Diesel/Gasoline UST Removal

N-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	4
Lead (mg/kg)	110
Benzene	3
Benzo(a)anthracene	22
Benzo(b)fluoranthene	55
Benzo(g,h,i)perylene	45
Benzo(k)fluoranthene	23
Chrysene	20
Fluoranthene	44
Indeno(1,2,3-cd)pyrene	45
Methylene Chloride	39
Pyrene	38
Tetrachloroethene	131
Toluene	13
Trichloroethene	3.4

November 1995 Diesel/Gasoline UST Removal

Ba-1 (12 ft. bgs)	µg/kg
DRO (mg/kg)	18
GRO (mg/kg)	172
Lead (mg/kg)	15
Anthracene	14
Benzene	1,210
n-Butylbenzene	2,950
Chrysene	18
Di-Isopropyl ether	3,320
Ethylbenzene	9,610
Fluoranthene	64
Methylene Chloride	3,050
2-Methylnaphthalene	574
Naphthalene	4,620
n-Propylbenzene	2,400
Pyrene	53
Toluene	19,300
1,2,4-Trimethylbenzene	19,200
1,3,5-Trimethylbenzene	6,030
m,p-Xylene	37,200
o-Xylene	19,700

November 1995 Diesel/Gasoline UST Removal

W-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	8.5
Lead (mg/kg)	32
Anthracene	7.7
Benzene	1.7
Benzo(a)anthracene	100
Benzo(a)pyrene	157
Benzo(b)fluoranthene	172
Benzo(g,h,i)perylene	162
Benzo(k)fluoranthene	83
Chrysene	79
Fluoranthene	157
Indeno(1,2,3-cd)pyrene	162
Methylene Chloride	34
Phenanthrene	24
Pyrene	151
Tetrachloroethene	14
Toluene	6.9
Trichloroethene	3.3

July 2004 Soil Sample Results

Analyte	GP-7 (33')
TCE	ND

November 1995 Diesel/Gasoline UST Removal

S-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	7.3
GRO (mg/kg)	1.8
Lead (mg/kg)	24
Benzo(a)anthracene	20
Benzo(b)fluoranthene	17
Benzo(g,h,i)perylene	13
Benzo(k)fluoranthene	9.6
Chrysene	16
Fluoranthene	25
Indeno(1,2,3-cd)pyrene	16
Methylene Chloride	37
Pyrene	24
Tetrachloroethene	110
Toluene	2.1
Trichloroethene	7.5

November 1995 Diesel/Gasoline UST Removal

E-1 (6 ft. bgs)	µg/kg
Lead (mg/kg)	58
Benzene	2.6
Benzo(b)fluoranthene	28
Benzo(g,h,i)perylene	19
Benzo(k)fluoranthene	13
Chrysene	12
Indeno(1,2,3-cd)pyrene	23
Methylene Chloride	15
Pyrene	22
Tetrachloroethene	145
Toluene	14
Trichloroethene	13

December 1995 Soil Sample Results

Analyte (µg/kg)	B-1 (15'-17')	B-1 (19'-21')
DRO (mg/kg)	NA	13
GRO (mg/kg)	1.4	8.2
Lead (mg/kg)	8.8	9.5
Benzene	279	1,220
1,2-Dichloroethane	8.93	75.2
Ethylbenzene	0.8	1.85
Methylene Chloride	132	215
Toluene	20.1	30.5
1,2,4-Trimethylbenzene	1.77	ND
1,3,5-Trimethylbenzene	ND	ND
m,p-Xylene	7.38	8.49
o-Xylene	1.93	4.44

December 1995 Soil Sample Results

Analyte (µg/kg)	GP-1 (10'-12')	GP-1 (12'-14')	GP-1 (14'-16')	GP-1 (16'-18')	GP-1 (18-20')	GP-1 (20-22')	GP-1 22-23.5'
DRO (mg/kg)	378	105	64	60	53	52	78
GRO (mg/kg)	33	2.1	4	2	1.1	ND	0.9
Lead (mg/kg)	9	11	8.7	11	7.4	7.4	7.6
Benzene	567	1,260	3.1	3.96	ND	ND	ND
Chloroform	ND	ND	2.2	6.05	ND	2.41	ND
1,1-Dichloroethane	62.7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	2,030	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	10.9	ND	ND	ND	ND	ND	ND
Ethylbenzene	93.4	12.5	ND	ND	ND	ND	ND
Methylene Chloride	31.1	31	26.3	54.1	16.9	28.1	16.4
Naphthalene	ND	2.58	ND	ND	ND	ND	ND
n-Propylbenzene	ND	7.72	ND	ND	ND	ND	ND
Toluene	46.1	21.9	ND	ND	ND	ND	ND
Trichloroethene	18.5	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	62.1	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	46.3	ND	ND	ND	ND	ND
m,p-Xylene	112	126	ND	ND	ND	ND	ND
o-Xylene	46	77.7	ND	ND	ND	ND	ND
Hexane	ND	55.4	ND	ND	ND	ND	ND

June 1996 Soil Sample Results

GP-5 (5-7 ft. bgs)	µg/kg	GP-5 (11-13 ft. bgs)	µg/kg
Methylene Chloride	91	Methylene Chloride	231

June 2004 Soil Sample Results

Analyte (ug/kg except as noted)	GP-4 (3')	GP-4 (8')	GP-4 (16')
cis-1,2-Dichloroethene	74	ND	ND
Tetrachloroethene	850	1,000	ND
Trichloroethene	36	ND	ND
DRO	ND	ND	ND

June 1996 Soil Sample Results

GP-4 (5-7 ft. bgs)	µg/kg	GP-4 (11-13 ft. bgs)	µg/kg
Tetrachloroethene	**89,300**	Methylene Chloride	78
1,2-Dichlorobenzene	49	Tetrachloroethene	552
cis-1,2-Dichloroethene	207	cis-1,2-Dichloroethene	ND
1,1,1-Trichloroethane	42	1,1,1-Trichloroethane	ND
Trichloroethene	**252**	Trichloroethene	ND

November 1996 Sludge Analysis Results

Analyte	Result (µg/kg)
Carbon Tetrachloride	453,000
Tetrachloroethylene	4,000,000
Chloroform	12,000,000
Chlorobenzene	742
1,2-Dichlorobenzene	17

March 1998 Fuel Oil UST Removal Soil Sample Results

Sample Location	Depth* (ft. bgs)	DRO
TB-N	8	ND
TB-S	8	ND

June 1996 Soil Sample Results

GP-2 (5-7 ft. bgs)	µg/kg	GP-2 (11-13 ft. bgs)	µg/kg
Methylene Chloride	88	Methylene Chloride	91
Tetrachloroethene	96	Tetrachloroethene	ND

July 1997 PID Screening Results

Sample Location	Depth* (ft. bgs)	PID Result
GP-1	0 - 10	ND
GP-2	0 - 10	ND
GP-3	0 - 10	ND
GP-4	0 - 10	ND
GP-5	0 - 10	ND
GP-6	0 - 10	ND
GP-7	0 - 12	ND
GP-8	0 - 10	ND

* Continuous Sampling at 2-foot intervals

LEGEND

Recognized Environmental Conditions (RECs)

Historic Recognized Environmental Conditions (HRECs)

All REC and HREC locations are approximate.

Bold type indicates exceedence of the WI Industrial Direct Contact RCL or NR 720 standard for DRO

- A — UST Soil Excavation Samples (Collected October 1990)
- Sludge Analysis Samples (Collected November 1996)
- N-1 — UST Soil Excavation Samples (Collected November 1995)
- GP-2 — Soil Boring Samples (Collected June 1996)
- B-3 — Soil Boring Samples (Collected December 1995)
- GP-1 — Geoprobe Boring PID Soil Sample (Collected July 1997)
- TB-N — UST Soil Excavation Samples (Collected March 1998)
- GP-2 — Geoprobe Boring Soil Sample (Collected June 2004)
- GP-8 — Soil Boring Sample (Collected August 2004)
- Basement Crock or Catch Basin
- Floor Drain
- Basement Area

US EPA Region III Risk-Based Concentrations[1]

ANALYTES[2]	Industrial Direct Contact RBC[3]	Residential Direct Contact RBC[3]
BENZENE	52,000	11,600
CHLOROFORM	10,220,000	782,000
1,2-DICHLOROBENZENE	91,980,000	7,039,000
1,1-DICHLOROETHANE	102,200,000	7,821,000
1,2-DICHLOROETHANE	31,400	7,000
CIS-1,2-DICHLOROETHENE	10,220,000	782,000
TRANS-1,2-DICHLOROETHENE	20,440,000	1,564,000
DIISOPROPYL ETHER	NL	NL
ETHYLBENZENE	102,200,000	7,821,000
HEXANE	11,242,000,000	860,357,000
LEAD	NL	NL
METHYLENE CHLORIDE	382,000	85,000
ANTHRACENE	306,600,000	23,464,000
BENZ[A]ANTHRACENE	3,900	870
BENZO[B]FLUORANTHENE	3,900	870
BENZO[K]FLUORANTHENE	39,200	8,700
BENZO[A]PYRENE	390	87
CHRYSENE	392,000	87,000
FLUORANTHENE	40,880,000	3,129,000
INDENO[1,2,3-C,D]PYRENE	3,900	870
2-METHYLNAPHTHALENE	4,088,000	313,000
NAPHTHALENE	20,440,000	1,564,000
PHENANTHRENE	NL	NL
PYRENE	30,660,000	2,346,000
n-PROPYLBENZENE	NL	NL
TETRACHLOROETHENE	5,300	1,200
TOLUENE	204,400,000	15,643,000
1,1,1-TRICHLOROETHANE	286,160,000	21,900,000
TRICHLOROETHENE	7,200	1,600
1,2,4-TRIMETHYLBENZENE	51,100,000	3,911,000
1,3,5-TRIMETHYLBENZENE	51,100,000	3,911,000
XYLENES	204,400,000	15,643,000
DRO	NL	NL
GRO	NL	NL

[1] Updated April 2004
[2] Only Detected Compounds Shown
[3] All units in ug/kg, except where shown
RBC = Risk-based Concentration
NOTE: Region III 10/4/95 Direct Contact RBCs utilized in original risk assessment, "*Evaluation of Site -Specific Soil Cleanup Standards, Findley Adhesives, Inc., 2930 West Center Street, Milwaukee, WI by Environmental Software Consultants, Inc.*", dated 3/13/96 for which conditional closure was granted on 6/11/97.

Wisconsin Generic Residual Contaminant Levels

ANALYTES[1]	Industrial Direct Contact RCL[2]	Residential Direct Contact RCL[2]
BENZENE[3]	2,800	170
CHLOROFORM[3]	950	57
1,2-DICHLOROBENZENE	600,000	600,000
1,1-DICHLOROETHANE[3]	1,800,000	510,000
1,2-DICHLOROETHANE[3]	1,300	76
CIS-1,2-DICHLOROETHENE[3]	1,300,000	156,000
TRANS-1,2-DICHLOROETHENE[3]	3,200,000	313,000
DIISOPROPYL ETHER[3]	1,900,000	1,900,000
ETHYLBENZENE[3]	400,000	400,000
HEXANE[3]	270,000	82,000
LEAD[6]	500,000	50,000
METHYLENE CHLORIDE[3]	45,000	2,700
ANTHRACENE[4]	300,000,000	5,000,000
BENZ[A]ANTHRACENE[4]	3,900	88
BENZO[B]FLUORANTHENE[4]	3,900	88
BENZO[K]FLUORANTHENE[4]	39,000	880
BENZO[A]PYRENE[4]	390	8.8
CHRYSENE[4]	390,000	8,800
FLUORANTHENE[4]	40,000,000	600,000
INDENO[1,2,3-C,D]PYRENE[4]	3,900	88
**2-METHYLNAPHTHALENE[4]	40,000,000	600,000
NAPHTHALENE[4]	110,000	20,000
PHENANTHRENE[4]	390,000	18,000
PYRENE[4]	30,000,000	500,000
n-PROPYLBENZENE[3]	NL	NL
TETRACHLOROETHENE[3]	35,000	1,230
TOLUENE[3]	670,000	650,000
1,1,1-TRICHLOROETHANE	1,200,000	1,200,000
TRICHLOROETHENE[3]	240	14
1,2,4-TRIMETHYLBENZENE[3]	350,000	50,000
1,3,5-TRIMETHYLBENZENE[3]	200,000	29,000
XYLENES[3]	1,900,000	280,000
DRO[5]	100/250 mg/kg	100/250 mg/kg
GRO[5]	100/250 mg/kg	100/250 mg/kg

[1]Only Detected Compounds Shown
[2]All units in ug/kg, except where shown
[3]Values calculated per "*Determining Residual Contaminant Levels Using EPA Soil Screening Level Web Site*", *Publication RR-682.*
[4]Values from Table 1, "*Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance*, Publication RR-519-17
[5]Value for GRO/DRO from NR 720.09 (protection of groundwater). Value depends on soil type.
[6]Direct Contact Value for lead from Table 2, NR 720.11
RCL = Residual Contaminant Levels

J:\COMMON\00963023 - Bostik Center ST\figures\REC and Boring Location Map.dwg

ENSR INTERNATIONAL

Historical Soil Analytical Results

Bostik Findley
2930 West Center Street
Milwaukee, Wisconsin

DRWN: HEP	SCALE: 1" = 25'
CHK'D: LG	DATE: 08-03-04
APP'D: BL	**FIGURE 1**

SECTION I
REQUIRED GIS REGISTRY INFORMATION
ATTACHMENTS

- COPY OF DEED
- PARCEL IDENTIFICATION NUMBER
- SITE LOCATION MAP
- MAP OF SITE IMPACTS
- TABLE OF MOST RECENT ANALYTICAL RESULTS
- SOIL IMPACT CONTOUR MAP
- RESPONSIBLE PARTY STATEMENT

COPY OF DEED

Document Number	State Bar of Wisconsin Form 6-2003 **SPECIAL WARRANTY DEED** Document Name

THIS DEED, made between Bostik Findley, Inc., a Delaware corporation ("Grantor," whether one or more), and the Redevelopment Authority of the City of Milwaukee, Wisconsin ("Grantee," whether one or more).

Grantor, for a valuable consideration, conveys to Grantee the following described real estate, together with the rents, profits, fixtures and other appurtenant interests, in Milwaukee County, State of Wisconsin ("Property") (if more space is needed, please attach addendum):

See **EXHIBIT A** attached hereto and made a part hereof.

Recording Area

Name and Return Address

309-1133-110-8, 309-1134-X and 309-1135-110-9
Parcel Identification Number (PIN)

This is not homestead property.
~~(is)~~ (is not)

Grantor warrants that the title to the Property is good, indefeasible in fee simple and free and clear of encumbrances arising by, through, or under Grantor, except those matters set forth on **EXHIBIT B** attached hereto and made a part hereof.

Dated November _____, 2004.

BOSTIK FINDLEY, INC.,
a Delaware corporation

By: ______________________
Name: ______________________
Title: ______________________

AUTHENTICATION

Signature(s) ______________________

authenticated on November , 2004.

* ______________________
TITLE: MEMBER STATE BAR OF WISCONSIN
(If not, ______________________
authorized by § 706.06, Wis. Stats.)

THIS INSTRUMENT DRAFTED BY:

Joseph S. Rupkey, Esq. of Foley & Lardner LLP - Milwaukee

ACKNOWLEDGMENT

STATE OF WISCONSIN)
) ss.
______________ COUNTY)

Personally came before me on November , 2004, the above-named ______________________

to me known to be the person who executed the foregoing instrument and acknowledged the same.

* ______________________
Notary Public, State of Wisconsin
My Commission (is permanent) (expires: ______________)

(Signatures may be authenticated or acknowledged. Both are not necessary.)

NOTE: THIS IS A STANDARD FORM. ANY MODIFICATIONS TO THIS FORM SHOULD BE CLEARLY IDENTIFIED.

* Type name below signatures.

EXHIBIT A

Legal Description of the Property

PARCEL I

Lots 19 to 22 inclusive, in Block 3, in Pauline's Subdivision, in the Northeast 1/4 of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Tax Key No. 309-1133-110-8
Address: 2900-2914 W. Center Street

PARCEL II

Lot 23 together with the South 1/2 of the vacated alley adjoining on the North, in Block 3, in Pauline's Subdivision, in the Northeast 1/4 of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Tax Key No. 309-1134-X
Address: 2918 W. Center Street

PARCEL III

Lots 24, 25, 26, 27, 28, 29, 30, 31, 32 and 33, in Block 3, in Pauline's Subdivision, in the Northeast 1/4 of Section 13, in Township 7 North, Range 21 East, together with the South 1/2 of the East-West vacant alley contiguous to the North line of Lots 24, 25 and 26 and the North 1/2 of the vacated alley adjacent to Lot 27. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Tax Key No. 309-1135-110-9
Address: 2930 W. Center Street

EXHIBIT B

Permitted Exceptions

1. General taxes for the year 2004, none now due and payable.
2. Municipal and zoning ordinances and agreements entered under them.
3. Matters that would be disclosed by an accurate survey of the Property.
4. Recorded easements for the distribution of utility and municipal services.
5. Recorded building and use restrictions and covenants.
6. Redevelopment Plan for the N. 30th Street – West Center Street Redevelopment Project Area recorded on June 19, 1979, as Document No. 5321017.

Document Number	State Bar of Wisconsin Form 1-2003 **WARRANTY DEED** Document Name

THIS DEED, made between Robert D. Zarne and Jeane K. Zarne, husband and wife

("Grantor," whether one or more),

and Bostik Findley, Inc., a Delaware corporation

("Grantee," whether one or more).

Grantor, for a valuable consideration, conveys to Grantee the following described real estate, together with the rents, profits, fixtures and other appurtenant interests, in Milwaukee County, State of Wisconsin ("Property") (if more space is needed, please attach addendum):

Lot 23 together with the South 1/2 of the vacated alley adjoining on the North, in Block 3, in Pauline's Subdivision in the Northeast 1/4 of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Recording Area

Name and Return Address

Joseph S. Rupkey, Esq.
Foley & Lardner LLP **Box 286**
777 E. Wisconsin Avenue
Milwaukee, Wisconsin 53202-5306

309-1134-X
Parcel Identification Number (PIN)

This is not homestead property.
(~~is~~) (is not)

Grantor warrants that the title to the Property is good, indefeasible in fee simple and free and clear of encumbrances except municipal and zoning ordinances, recorded easements for public utilities located adjacent to side and rear lot lines, recorded building and use restrictions and covenants and liens or encumbrances caused by the act of Grantee.

Dated November _____, 2004.

_______________________(SEAL)
* Robert D. Zarne

_______________________(SEAL)
* Jeane K. Zarne

AUTHENTICATION

Signature(s) of Robert D. Zarne and Jeane K. Zarne

authenticated on November , 2004.

*

TITLE: MEMBER STATE BAR OF WISCONSIN
(If not, ______________
authorized by § 706.06, Wis. Stats.)

THIS INSTRUMENT DRAFTED BY:

Joseph S. Rupkey, Esq. of Foley & Lardner LLP - Milwaukee

ACKNOWLEDGMENT

STATE OF WISCONSIN)
) ss.
_____________ COUNTY)

Personally came before me on November , 2004,
the above-named Robert D. Zarne and Jeane K. Zarne

to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

*

Notary Public, State of Wisconsin
My Commission (is permanent) (expires: ______________)

(Signatures may be authenticated or acknowledged. Both are not necessary.)

NOTE: THIS IS A STANDARD FORM. ANY MODIFICATIONS TO THIS FORM SHOULD BE CLEARLY IDENTIFIED.

* Type name below signatures.

Prepared For: Attorney Charles Benner
Foley & Lardner
First Wisconsin Center
777 East Wisconsin Avenue
Milwaukee, WI 53202-5367

Revised November 9, 2004
Commitment Number: M-143277
Refer inquiries to: Ann E. Mattes
(262)754-8899

SCHEDULE A

Effective Date: July 21, 2004 at 08:00 AM.

1. Policy (or Policies) to be issued:

(a) Owner's Policy (Form B Amended 10/17/92) Proposed Insured: Policy Amount $To be determined

"A Legally Qualified Grantee to be Named"

(b) Loan Policy (ALTA Loan Policy (10/17/92)) Proposed Insured: Not to Exceed: Policy Amount $None

None

2. Title to the fee simple estate or interest in the land described or referred to in this Commitment is at the Effective Date of record in:

Ato Findley, Inc. as to Parcel I and Robert D. Zarne and Jeane K. Zarne, husband and wife as to Parcel II and Findley Adhesives, Inc. as to Parcel III

3. The land referred to in the Commitment is described as follows:

Parcel I: Lots 19 to 22 inclusive, in Block 3, in Pauline's Subdivision, in the Northeast 1/4 of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Tax Key No.: 309-1133-110-8
Property Address: 2900-2914 W. Center Street

Parcel II: Lot 23 together with the South 1/2 of the vacated alley adjoining on the North, in Block 3, in Pauline's Subdivision in the Northeast 1/4 of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Tax Key No.: 309-1134-X
Property Address: 2918 W. Center Street

Parcel III: Lots 24, 25, 26, 27, 28, 29, 30, 31, 32 and 33, Block 3, Pauline's Subdivision, in the Northeast ¼ of Section 13, Township 7 North, Range 21 East, together with the South ½ of the East-West vacant alley contiguous to the North line of Lots 24, 25 and 26 and the North ½ of vacated alley adjacent to Lot 27. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

Tax Key No.: 309-1135-110-9
Property Address: 2930 W. Center Street

Commitment Number: M-143277

SCHEDULE B - SECTION I
REQUIREMENTS

The following are the requirements to be complied with:

a. Payment to or for the account of the grantors or mortgagors of the full consideration for the estate or interest to be insured.

b. Payment to the Company of the premiums, fees and charges for the policy:

c. Proper instrument(s) creating the estate or interest to be insured must be executed and duly filed for record, to wit:

Deed from Ato Findley, Inc. as to Parcel I and Robert D. Zarne and Jeane K. Zarne, husband and wife as to Parcel II and Findley Adhesives, Inc. as to Parcel III to "A Legally Qualified Grantee to be Named"

We should be furnished with a certified copy of the resolution adopted by the Board of Directors of Ato Findley, Inc. authorizing the execution of the proposed deed.

We should be furnished with a certified copy of the resolution adopted by the Board of Directors of Findley Adhesives, Inc. authorizing the execution of the proposed deed.

835 Wisconsin Avenue	14640 W. Greenfield Ave	7991 Sheridan Road	125 W. Grand Avenue	123 S. 6th Ave
Racine, WI 53403	Brookfield, WI 53005	Kenosha, WI 53143	Port Washington, WI 53074	West Bend, WI 53095
(262) 633-2479	(262) 754-8899	(262) 657-2599	(262) 284-2630	(262) 335-2999
Fax: (262) 633-4928	Fax: (262) 754-8890	Fax: (262) 657-2580	Fax: (262) 284-3535	Fax: (262) 335-3966

Commitment Number: M-143277

SCHEDULE B - SECTION II
EXCEPTIONS

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the company:

1. **Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in public records or attaching subsequent to the effective date hereof but prior to the date the proposed insured acquires for value of record the estate or interest or mortgage thereon covered by this Commitment.** *(This exception can be removed only if a GAP Endorsement is attached to this commitment and the requirements for the issuance of "gap" coverage as described in the endorsement are met, including the payment of the premium)*

2. **Special taxes or assessments, if any, payable with the taxes levied or to be levied for the current and subsequent years.** *(This exception can be removed only if the Company receives written evidence from the municipality that there are no special assessments against the Land, or that all such items have been paid in full.)*

3. **Liens, hook-up charges or fees, deferred charges, reserve capacity assessments, impact fees, or other charges or fees due payable on the development or improvement of the Land, whether assessed or charged before or after the date of the policy.** *(This exception can be removed only if the Company receives (1) written evidence from the municipality that there are no deferred charges, hook-up fees, or other fees or charges attaching to the property; (2) evidence that the Land contains a completed building; and (3) a statement showing that the land has a water and sewer use account. If the land is vacant, this exception will not be removed.)*

4. **Any lien, or right to a lien, for services, labor, or material heretofore or hereafter furnished, imposed by law and not shown by the public records.** *(This exception will be removed only if the company receives a Construction Work and Tenant Affidavit on a form prepared by the Company and the following is true:*
   NO WORK DONE: the affidavit must establish that there has been no lienable construction work in the previous six months.
   REPAIR WORK DONE: if repair work has been done on an existing structure in the last six months, the Affidavit must accurately disclose all parties who have done lienable work in the last six months, and have attached to it original waivers of lien from each person or company.
   NEW CONSTRUCTION: if the property contains a newly-built structure, the Affidavit must incorporate a complete list of parties who have done lienable work in the last six months, and have attached to it original full waivers of lien from each person or company. If Exception 4 is removed, it may be replaced by the following exception: "Any construction lien claim by a party not shown on the Construction Work and Tenants Affidavit supplied to the Company."

5. **Rights or claims of parties in possession not shown by the public records.** *(This exception will be removed only if the company receives a Construction Work and Tenants Affidavit on a form prepared by the Company. If the Affidavit shows that there are tenants, Exception 5 will be replaced by an exception for the rights of the tenants disclosed by the Affidavit.)*

6. **Encroachments, overlaps, boundary line disputes, and any other matters which would be disclosed by an accurate survey and inspection of the premises.** *(This exception will be removed only if the company receives an original survey which (i) has a current date, (ii) is satisfactory to the company, and (iii) complies with the current ALTA.ACSM Minimum Survey Standards or Wisconsin Administrative Code AE-7. If the survey shows matters which effect title to the property, this exception will be replaced by an exception describing those matters.)*

7. **Easements or claims of easements not shown by the public records.** *(This exception will be removed only if the*

835 Wisconsin Avenue	14640 W. Greenfield Ave	7991 Sheridan Road	125 W. Grand Avenue	123 S. 6^{th} Ave
Racine, WI 53403	Brookfield, WI 53005	Kenosha, WI 53143	Port Washington, WI 53074	West Bend, WI 53095
(262) 633-2479	(262) 754-8899	(262) 657-2599	(262) 284-2630	(262) 335-2999
Fax: (262) 633-4928	Fax: (262) 754-8890	Fax: (262) 657-2580	Fax: (262) 284-3535	Fax: (262) 335-3966

company receives an original survey which (i) has a current date, (ii) is satisfactory to the company, and (iii) complies with the current ALTA.ACSM Minimum Survey Standards or Wisconsin Administrative Code AE-7. If the survey shows matters which effect title to the property, this exception will be replaced by an exception describing those matters.)

8. **Any claim of adverse possession or prescriptive easement.** *(This exception will be removed only if the company receives an original survey which (i) has a current date, (ii) is satisfactory to the company, and (iii) complies with the current ALTA.ACSM Minimum Survey Standards or Wisconsin Administrative Code AE-7. If the survey shows matters which effect title to the property, this exception will be replaced by an exception describing those matters.)*

9. General taxes for the year 2004.

10. Redevelopment Plan for the N. 30th Street – West Center Street Redevelopment Project Area recorded on June 19, 1979, as Document No. 5321017.

11. Memorandum of Lease between Robert D. Zarne and Jeane K. Zarne and Ato Findley, Inc. recorded on March 25, 1996, as Document No. 7196123. (Affects Parcel II)

12. Mortgage, according to the terms and provisions thereof, from Stanley Morrow and Cora Morrow, to First Savings Association to secure the originally stated indebtedness of $9,812.40, and any other amount payable under the terms thereof, recorded on September 19, 1978, as Document No. 5252245. (Parcel III)

    Stanley Morrow and Cora Morrow listed above were former owners of record.

13. Mortgage, Assignment of Leases and Rents and Security Agreement according to the terms and provisions thereof, from Findley Adhesives, Inc., to Bankers Trust Company to secure the originally stated indebtedness of $43,000,000.00, and any other amount payable under the terms thereof, recorded on March 9, 1988, as Document No. 6152210. (Parcel III)

    Mortgage Modification Agreement recorded in the office of the Register of Deeds for Milwaukee County, Wisconsin on February 15, 1991, as Document No. 6458137.

    Mortgage Modification Agreement recorded in the office of the Register of Deeds for Milwaukee County, Wisconsin on January 12, 1993, as Document No. 6713858.

14. Assignment of Rents and Leases, with Power of Attorney, given as additional security for the payment of the above mortgage executed by Findley Adhesives, Inc. to Bankers Trust Company, dated February 8, 1988 and recorded in the office of the Register of Deeds for Milwaukee County, Wisconsin on March 9, 1988, as Document No. 6152211. (Parcel III)

    Assignment of Rents and Leases Modification Agreement recorded in the office of the Register of Deeds for Milwaukee County, Wisconsin on February 15, 1991, as Document No. 6458138.

    Assignment of Rents and Leases Modification Agreement recorded in the office of the Register of Deeds for Milwaukee County, Wisconsin on January 12, 1993, as Document No. 6713859.

If applicable, copies of this commitment have been sent to:

835 Wisconsin Avenue, Racine, WI 53403, (262) 633-2479, Fax: (262) 633-4928
14640 W. Greenfield Ave, Brookfield, WI 53005, (262) 754-8899, Fax: (262) 754-8890
7991 Sheridan Road, Kenosha, WI 53143, (262) 657-2599, Fax: (262) 657-2580
125 W. Grand Avenue, Port Washington, WI 53074, (262) 284-2630, Fax: (262) 284-3535
123 S. 6th Ave, West Bend, WI 53095, (262) 335-2999, Fax: (262) 335-3966

DOCUMENT NO REEL 1278 IMAGE 756

a-41904T

STATE BAR OF WISCONSIN — FORM 1
WARRANTY DEED
THIS SPACE RESERVED FOR RECORDING DATA

5382954
REGISTER'S OFFICE } SS
Milwaukee County, WI
RECORDED AT 9 35 PM
FEB 15 1980
REEL 1278 IMAGE 756
REGISTER OF DEEDS

This Deed, made between Howard A. Knauber and Ida May Knauber, Grantor and Findley Adhesives, Inc., a Delaware corporation, Grantee,

Witnesseth, That the said Grantor, for a valuable consideration in hand paid hereby conveys to Grantee the following described real estate in Milwaukee County, State of Wisconsin:

RETURN TO Richard J. Bliss
Godfrey & Kahn, S.C.
780 N. Water St.
Milwaukee, WI 53202

Tax Key No. 309-1136-0

Lot Thirty-one (31) in Block Three (3) in Pauline's Subdivision, in the North East One-quarter (1/4) of Section Thirteen (13), Township Seven (7) North, Range Twenty-one (21) East, in the City of Milwaukee, Milwaukee County, Wisconsin.

PAULIN 130

DOC # 5382954 #
RECORD 2.00
RTX 5.50
F CASH F 7.50
#75118 C001 R01 13.44
FEB 15 80

TRANSFER
$ 5.50
FEE

This is not homestead property.
(is) (is not)

Together with all and singular the hereditaments and appurtenances thereunto belonging;

And Grantors, jointly and severally, warrants that the title is good, indefeasible in fee simple and free and clear of encumbrances except municipal and zoning ordinances, recorded easements for public utilities located adjacent to side and rear lot lines, recorded building and use restrictions and covenants and general taxes levied in 1980 and will warrant and defend the same.

Dated this 12 day of February, 19 80.

.... (SEAL) Howard Knauber (SEAL)
* .... Howard A. Knauber
.... (SEAL) Ida May Knauber (SEAL)
* .... Ida May Knauber

AUTHENTICATION

Signatures authenticated this 12 day of February, 19 80.

Richard J. Bliss
Richard J. Bliss
TITLE: MEMBER STATE BAR OF WISCONSIN
(If not, ... authorized by § 706.06, Wis. Stats.)

THIS INSTRUMENT WAS DRAFTED BY

Richard J. Bliss

(Signatures may be authenticated or acknowledged. Both are not necessary.)

ACKNOWLEDGMENT

STATE OF WISCONSIN } ss.
.... County.

Personally came before me, this .... day of ...., 19...., the above named .... to me known to be the person .... who executed the foregoing instrument and acknowledge the same.

* ....
Notary Public .... County, Wis.
My Commission is permanent. (If not, state expiration date: ...., 19.......)

*Names of persons signing in any capacity should be typed or printed below their signatures.

DOCUMENT NO. STATE BAR OF WISCONSIN FORM 1—1982 THIS SPACE RESERVED FOR RECORDING DATA

WARRANTY DEED

REEL 1613 IMAGE 1683

5694317

REGISTER'S OFFICE
Milwaukee County, WI } SS
RECORDED AT 3:30 PM
FEB 17 1984
REEL 1613 IMAGE 1683
REGISTER OF DEEDS

This Deed, made between Johnnie Morrow, also known as John Morrow Grantor,

and Findley Adhesives, Inc. Grantee,

Witnesseth, That the said Grantor, for a valuable consideration One Dollar and other good and valuable consideration conveys to Grantee the following described real estate in Milwaukee County, State of Wisconsin:

RETURN TO grantee. 2133 W 30th St. Milwaukee, WI 53210

Tax Parcel No: 309-1137-6

Lot 32 in Block 3 in Pauline's Subdivision, in the Northeast 1/4 of Section 13, in Township 7 North, Range 21 East, in the City and County of Milwaukee, State of Wisconsin.

TRANSFER
$ 64.80
FEE

DOC # 5694317 #
RECORD 4.00
RTX 64.80

This is not homestead property.
(is) (is not)

Together with all and singular the hereditaments and appurtenances thereunto belonging;

And Johnnie Morrow

warrants that the title is good, indefeasible in fee simple and free and clear of encumbrances except ing: Municipal and zoning ordinances, recorded easements for public utilities located adjacent to side and rear lot lines, recorded building and use restrictions and covenants, and general taxes levied in the current year and will warrant and defend the same.

Dated this 10th day of February, 19 84.

(SEAL) (SEAL)

• Johnnie Morrow, a/k/a John Morrow

(SEAL) (SEAL)

AUTHENTICATION

Signature(s)

authenticated this ...day of..., 19...

TITLE: MEMBER STATE BAR OF WISCONSIN

(If not, authorized by § 706.06, Wis. Stats.)

THIS INSTRUMENT WAS DRAFTED BY

Title Corp. of Wisconsin, Inc.

John K. Persak

(Signatures may be authenticated or acknowledged. Both are not necessary.)

ACKNOWLEDGMENT

STATE OF WISCONSIN } ss.

Waukesha County.

Personally came before me this 10th day of February, 19 84, the above named Johnnie Morrow, a/k/a John Morrow

to me known to be the person ... who executed the foregoing instrument and acknowledge the same.

Shirley A. Underberg

Notary Public Milwaukee County, Wis.

My Commission is permanent. (If not, state expiration date: September 23, 19 84.)

11900E

400

*Names of persons signing in any capacity should be typed or printed below their signatures.

Mer-M-22547 A

DOCUMENT NO.

REEL 1624 IMAGE 382

STATE BAR OF WISCONSIN — FORM 2
WARRANTY DEED
THIS SPACE RESERVED FOR RECORDING DATA

5703608
REGISTER'S OFFICE
Milwaukee County, WI } SS
RECORED AT 2 45 PM
MAR 28 1984
REEL 1624 IMAGE 382
REGISTER OF DEEDS

Mighty Company, Inc.

conveys and warrants to

Findley Adhesives, Inc.

the following described real estate in Milwaukee County, State of Wisconsin:

RETURN TO
FINDLEY ADHESIVES, INC
333 BISHOPS WAY
BROOKFIELD, WI 53005 ATTN RALPH WARD

Tax Key No. 309-1138-1

Lot Thirty-three (33) in Block Three (3), in Pauline's Subdivision in the Northeast One-quarter (1/4) of Section Thirteen (13), in Township Seven (7) North, Range Twenty-one (21) East, in the City of Milwaukee, Milwaukee County, Wisconsin. pc

DOC # 5703608
RECORD 4.00
RTX 45.00

TRANSFER
$45.00
FEE

This is not homestead property.
(is) (is not)

Exception to warranties: easements, restrictions and zoning ordinances

Dated this 27th day of March, 19 84.

Mighty Company, Inc.

BY (SEAL)
Tom Frenkel, President

(SEAL)
(SEAL)

AUTHENTICATION

Signatures authenticated this .... day of ...., 19....

TITLE: MEMBER STATE BAR OF WISCONSIN
(If not, authorized by § 706.06, Wis. Stats.)

THIS INSTRUMENT WAS DRAFTED BY

James R. Hanley

(Signatures may be authenticated or acknowledged. Both are not necessary.)

ACKNOWLEDGEMENT

STATE OF WISCONSIN } ss.
Milwaukee County.

Personally came before me, this 27th day of March, 1984 the above named Tom Frenkel

to me known to be the person .... who executed the foregoing instrument and acknowledged the same.

Roger K. Knoll
Notary Public Milwaukee County, Wis.
My Commission is permanent. (If not, state expiration date: 6-14, 19 87.)

*Names of persons signing in any capacity should be typed or printed below their signatures.

WARRANTY DEED

STATE BAR OF WISCONSIN FORM No. 2 — 1977

5703608

7460157
DOCUMENT NO.

STATE BAR OF WISCONSIN FORM 1 – 1982
WARRANTY DEED

REEL 4199 IMAG 1364

REGISTER'S OFFICE
Milwaukee County, WI } SS
RECORDED AT 2:20 PM
DEC 1 0 1997
REEL 4199 IMAGE 1364
REGISTER OF DEEDS

This Deed, made between ELIJAH TONEY and BERNICE TONEY, Grantor,
and ATO FINDLEY INC., Grantee.

Witnesseth, That the said Grantor, for a valuable consideration of one dollar and other good and valuable consideration conveys to Grantee the following described real estate in MILWAUKEE County, State of Wisconsin:

THIS SPACE RESERVED FOR RECORDING DATA

NAME AND RETURN ADDRESS
ATO FINDLEY INC.
c/o Chuck Renner
F&X Corp.
777 E. Wisconsin Ave.
Milwaukee, WI 53202

TRANSFER
$ 57.00
FEE

309-1129-2
PARCEL IDENTIFICATION NUMBER

The South 30 feet of the North 60 feet of Lot 19 and 20 in Block 3, in Paulines Subdivision in the Northeast 1/4 of Section 13, in Township 7 North, Range 21 East, in the City of Milwaukee, Milwaukee County, Wisconsin.

7460157
RECORD 10.00
RTX 57.00

This is not homestead property.
(is) (is not)

Together with all and singular the hereditaments and appurtenances thereunto belonging;
And Grantor warrants that the title is good, indefeasible in fee simple and free and clear of encumbrances except municipal and zoning ordinances and agreements entered under them, recorded easements for the distribution of utility and municipal services, recorded building and use restrictions and covenants, general taxes levied in the year of closing;
and will warrant and defend the same.

Dated this 1st day of December, 19 97

[signature] (SEAL)
• ELIJAH TONEY

[signature] Bernice Toney (SEAL)
• BERNICE TONEY

(SEAL)
•

(SEAL)
•

AUTHENTICATION

Signature(s) ____________________

authenticated this ____ day of ____, 19 ____

•

TITLE: MEMBER STATE BAR OF WISCONSIN
(If not, authorized by §706.06, Wis. Stats.)

THIS INSTRUMENT WAS DRAFTED BY
Under the Supervision of
Attorney Ellen Pokrass McCarty

(Signatures may be authenticated or acknowledged. Both are not necessary.)

ACKNOWLEDGMENT

State of Wisconsin, } ss
Waukesha County.

Personally came before me this 1st day of December, 19 97, the above named ELIJAH TONEY and BERNICE TONEY

to me known to be the person s who executed the foregoing instrument and acknowledged the same.

[signature]
Debora A. Smith
Notary Public, Milwaukee County, Wis.
My commission is permanent. (If not, state expiration date: 7-22, 2001)

NOTARY PUBLIC

100

* Names of persons signing in any capacity should be typed or printed below their signatures.

WARRANTY DEED — STATE BAR OF WISCONSIN Form No. 1 – 1982

9710406 ??

7460155
DOCUMENT NO.

STATE BAR OF WISCONSIN FORM 1 – 1982
WARRANTY DEED
REEL 4199 IMAG 1362

REGISTER'S OFFICE
Milwaukee County, WI } SS
RECORDED AT 2 10 PM
DEC 1 0 1997
REEL 4199 IMAGE 1362
REGISTER OF DEEDS

This Deed, made between CARRIE L. STRAYHORN, a single individual, Grantor, and AIO FINDLEY, INC., Grantee.

Witnesseth, That the said Grantor, for a valuable consideration of one dollar and other good and valuable consideration conveys to Grantee the following described real estate in MILWAUKEE County, State of Wisconsin:

THIS SPACE RESERVED FOR RECORDING DATA

NAME AND RETURN ADDRESS CHUCK BENNETZ
Foley & Lardner
777 E. Wisconsin Ave.
Milwaukee, WI 53202-5367

309-1128-7
PARCEL IDENTIFICATION NUMBER

TRANSFER
$ 60.00
FEE

The North 30 feet of Lots 19 and 20, in Block 3, in Pauline's Subdivision, in the Northeast 1/4 of Section 13, in Township 7 North, Range 21 East, in the City of Milwaukee, Milwaukee County, Wisconsin.

7460155
RECORD 10.00
RTX 60.00

This is homestead property.
(is) (is not)

Together with all and singular the hereditaments and appurtenances thereunto belonging;
And Grantor

warrants that the title is good, indefeasible in fee simple and free and clear of encumbrances except municipal and zoning ordinances, recorded easements for public utilities serving the property, recorded building and use restrictions and covenants, general taxes levied in the year of closing;

and will warrant and defend the same.

Dated this ~~8th~~ 15th day of ~~November~~ December, 19 97.

_______________ (SEAL)
*
_______________ (SEAL)
*

Carrie L. Strayhorn (SEAL)
* CARRIE L. STRAYHORN
_______________ (SEAL)
*

AUTHENTICATION

Signature(s) _______________

authenticated this ____ day of ____, 19__

* _______________

TITLE: MEMBER STATE BAR OF WISCONSIN
(If not, _______________
authorized by §706.06, Wis. Stats.)

THIS INSTRUMENT WAS DRAFTED BY
Under the Supervision of
Attorney Ellen Pokrass McCarty

(Signatures may be authenticated or acknowledged. Both are not necessary.)

ACKNOWLEDGMENT

State of Wisconsin,
Waukesha County } ss

Personally came before me this ~~8th~~ 15th day of ~~November~~ December, 1997, the above named CARRIE L. STRAYHORN, a single individual

to me known to be the person who executed the foregoing instrument and acknowledged the same.

Debora A. Smith
Notary Public, Milwaukee County, Wis.
My commission is permanent. (If not, state expiration date: 7-22, 2001.)

* Names of persons signing in any capacity should be typed or printed below their signatures.

WARRANTY DEED
STATE BAR OF WISCONSIN Form No. 1 – 1982
Wisconsin Legal Blank Co., Inc. Milwaukee, Wis.

97600591

7442108

Document Number

REEL 4171 IMAGE 1113

QUIT CLAIM DEED

Name and Return Address:
ATO Findley Inc.
11320 Watertown Plank Road
Wauwatosa , WI 53226

REGISTER'S OFFICE } SS -2 30 PM
Milwaukee County, WI }
RECORDED AT ______ 2 30 PM

OCT 30 1997
REEL 4171 IMAGE 1113-1114
REGISTER OF DEEDS

Recording Area

Tax Key No.: 309-1132-9, 309-1133-4, 309-1131-3, 309-1130-8

THIS INDENTURE, Made this 17th day of February, A.D. 19 97 between City of Milwaukee, a municipal corporation duly organized and existing under and by virtue of the laws of the State of Wisconsin, located at Milwaukee, Wisconsin, party of the first part, and ATO Findley Inc. herein referred to as "Buyer", party of the second part.

WITNESSETH, That the said party of the first part, for and in consideration of the sum of Two Thousand and No/100ths ($2,000.00) Dollars to it paid by the said party of the second part, the receipt whereof is hereby confessed and acknowledged, has given, granted, bargained, sold, remised, released and quitclaimed, and by these presents does give grant and assigns forever, the following described real estate, situated in the City of Milwaukee and County of Milwaukee, State of Wisconsin, to-wit:

Lots 21 and 22 and the South 60 feet of Lots 19 & 20 in Block 3, in Pauline's Subdivision in the Northeast 1/4 of Section 13, Township 7 North, Range 21 East.

Address: 2910 West Center Street, 2914 West Center Street, 2701 North 29th Street, 2705-07 North 29th Street

CREO No.: 309-106, 107, 108, 111

7442108 #
RECORD 12.00

TO HAVE AND TO HOLD the same, together with all and singular the appurtenances and privileges thereunto belonging or in any wise thereunto appertaining, and all the estate, right, title, interest and claim whatsoever of the said party of the first part, either in law or equity, either in possession or expectancy of, to the only proper use, benefit and behoof of the said party of the second part, his/her/their heirs and assigns forever.

IN WITNESS WHEREOF, the said City of Milwaukee, party of the first part, has caused these presents to be signed by John O. Norquist, its Mayor, and by Ronald D. Leonhardt, its City Clerk, and countersigned by Anita W. Paretti, its Deputy City Comptroller, at Milwaukee, Wisconsin, and its corporate seal to be hereunto affixed, this 17th day of February, A.D. 19 97.

Signed and sealed in presence of

FEE
77.25 (2)
EXEMPT

CITY OF MILWAUKEE

Ruth E. Wyttenbach

By ______ John O. Norquist, Mayor

Ronald D. Leonhardt, City Clerk

COUNTERSIGNED:

Carolyn A. Crebb

Anita W. Paretti DEPUTY City Comptroller

1700

8411974

REEL 4171 IMAGE 1114

STATE OF WISCONSIN)
) ss.
MILWAUKEE COUNTY)

Personally came before me this 14th day of February, A.D. 1997 Mayor of the above named municipal corporation, to me known to be the person who executed the foregoing instrument and to me known to be such mayor of said municipal corporation, and acknowledged that he executed the foregoing instrument as such officer as the deed of said municipal corporation, by its authority, and pursuant to resolution file No. 961381 adopted by its Common Council on January 17, 1997.

(Notarial Seal)

Notary Public, Milwaukee County, Wisconsin
My commission expires 3-2, A.D. 1997

STATE OF WISCONSIN)
) ss.
MILWAUKEE COUNTY)

Personally came before me this [illegible] day of February, A.D. 19[illegible], City Clerk of the above named municipal corporation, to me known to be the person who executed the foregoing instrument and to me known to be such city clerk of said municipal corporation, and acknowledged that he/she executed the foregoing instrument as such officer as the deed of said municipal corporation, by its authority, and pursuant to resolution file No. 961381 adopted by its Common Council on January 17, 1997.

(Notarial Seal)

Notary Public, Milwaukee County, Wisconsin
My commission expires [illegible], A.D. 19[illegible]

STATE OF WISCONSIN)
) ss.
MILWAUKEE COUNTY)

Personally came before me this 24th day of February, A.D. 1997, DEPUTY City Comptroller of the above named municipal corporation, to me known to be the person who executed the foregoing instrument and to me known to be such DEPUTY City Comptroller of said municipal corporation, and acknowledged that he/she executed the foregoing instrument as such officer as the deed of said municipal corporation, by its authority, and pursuant to resolution file No. 961381 adopted by its Common Council on January 17, 1997.

(Notarial Seal)

NOTARY PUBLIC STATE OF WISCONSIN

Notary Public, Milwaukee County, Wisconsin
My commission expires 10-24, A.D. 1999

This transaction is exempt from the Wisconsin Real Estate Transfer Fee and Transfer Return pursuant to Sec. 77.25 (2) of the Wisconsin Statutes.

This document drafted by the City of Milwaukee

DOCUMENT NO.

REEL 2001 IMAGE 1693

WARRANTY DEED

STATE BAR OF WISCONSIN FORM 2—1982

THIS SPACE RESERVED FOR RECORDING DATA

5993558

REGISTER'S OFFICE
Milwaukee County, WI } SS
RECORDED AT 2 05 PM
DEC - 8 1986
REEL 2001 IMAGE 1693
REGISTER OF DEEDS

8CC669

RETURN TO Robert Zarne
7420 - No Longacre Rd.
Milw, Wis 53217

Tax Parcel No: 309-1134-X

Claire Krom

conveys and warrants to Robert D. Zarne and Jeane K. Zarne, his wife, as survivorship marital property

the following described real estate in Milwaukee County, State of Wisconsin:

Lot 23 together with the South 1/2 of the vacated alley adjoining on the North, in Block 3, in Pauline's Subdivision in the North East 1/4 of Section 13, in Township 7 North, Range 21 East, in the City of Milwaukee, County of Milwaukee, State of Wisconsin.

TRANSFER $45.00 FEE

5993558
RECORD 4.00
RTX 45.00

This is not homestead property.
(is) (is not)

Exception to warranties: Excepting Municipal and Zoning Ordinances, easements and restrictions of record general and special taxes and assessments levied for the current and subsequent years.

Dated this 24th day of November, 19 86.

(SEAL) X Claire Krom (SEAL)
Claire Krom

(SEAL) (SEAL)

AUTHENTICATION

Signature(S) Claire Krom

authenticated this 24 day of November, 19 86

Raymond L. Urban
RAYMOND L. URBAN

TITLE: MEMBER STATE BAR OF WISCONSIN
(If not, authorized by § 706.06, Wis. Stats.)

THIS INSTRUMENT WAS DRAFTED BY
John T. Pryor
Attorney at Law

(Signatures may be authenticated or acknowledged. Both are not necessary.)

ACKNOWLEDGMENT

STATE OF WISCONSIN } ss.
County.

Personally came before me this .... day of ...., 19.... the above named .... to me known to be the person .... who executed the foregoing instrument and acknowledge the same.

Notary Public .... County, Wis.
My Commission is permanent. (If not, state expiration date: ...., 19........)

400

Names of persons signing in any capacity should be typed or printed below their signatures.

WARRANTY DEED STATE BAR OF WISCONSIN FORM No. 2—1982 Wisconsin Legal Blank Co. Inc. Milwaukee, Wis.

PARCEL IDENTIFICATION NUMBER

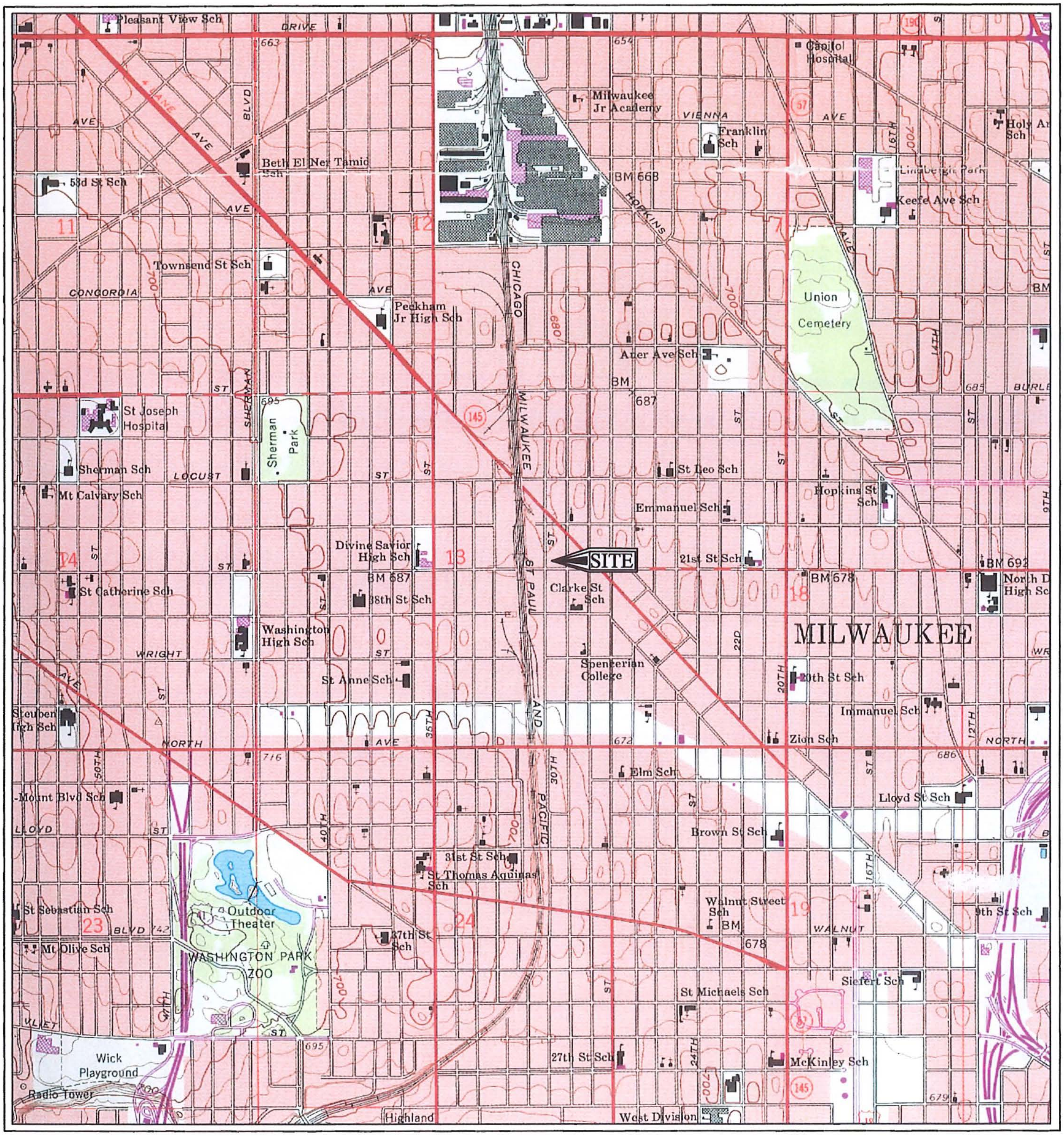
Parcel Identification Information:

Parcel I: Lots 19 to 22 inclusive, in Block 3, in Pauline's Subdivision, in the Northeast ¼ of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.
Address: 2914 W CENTER ST. Tax Key No. 309-1133-110-8

Parcel II: Lot 23 together with the South ½ of the vacated alley adjoining on the North, in Block 3, in Pauline's Subdivision in the Northeast ¼ of Section 13, in Township 7 North, Range 21 East. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.
Address: 2918 W CENTER ST. Tax Key No. 309-1134-X

Parcel III: Lots 24, 25, 26, 27, 28, 29, 30, 31, 32 and 33, Block 3, Pauline's Subdivision, in the Northeast ¼ of Section 13, Township 7 North, Range 21 East, together with the South ½ of the East-West vacant alley contiguous to the North line of Lots 24, 25 and 26 and the North ½ of vacated alley adjacent to Lot 27. Said land being in the City of Milwaukee, County of Milwaukee, State of Wisconsin.
Address: 2930 W CENTER ST. Tax Key No. 309-1135-110-9

SITE LOCATION MAP



Adapted from: USGS 7.5 minute series Milwaukee, Wisconsin topographic quadrangle dated 1958, Photorevised 1971.

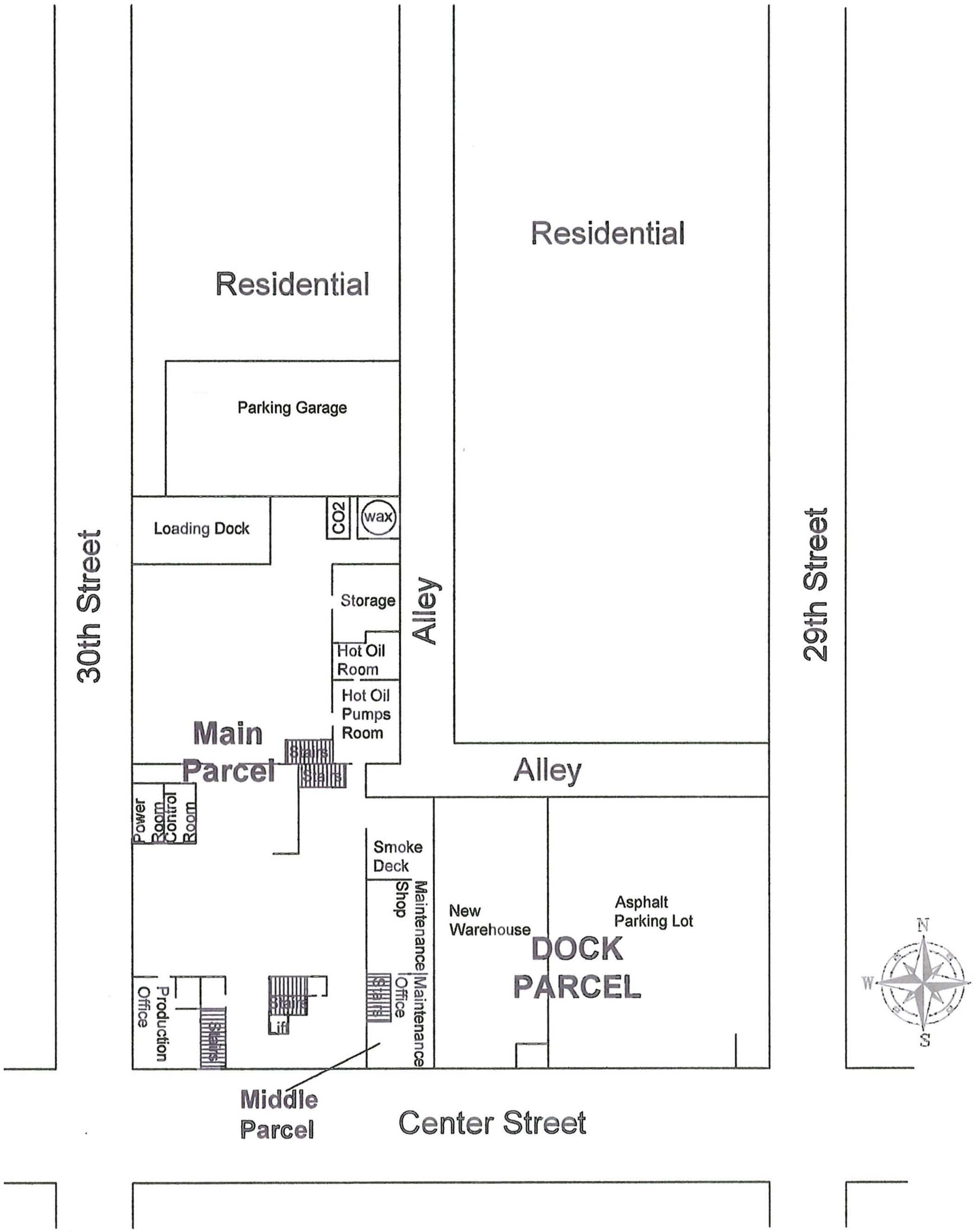
SCALE 1:24,000

Figure 1

Site Location Map

Bostik Findley
2930 West Center Street, Milwaukee, Wisconsin

ENSR INTERNATIONAL



J:\COMMON\00963023 Bostik Center ST\figures\site layout map R-1.dwg

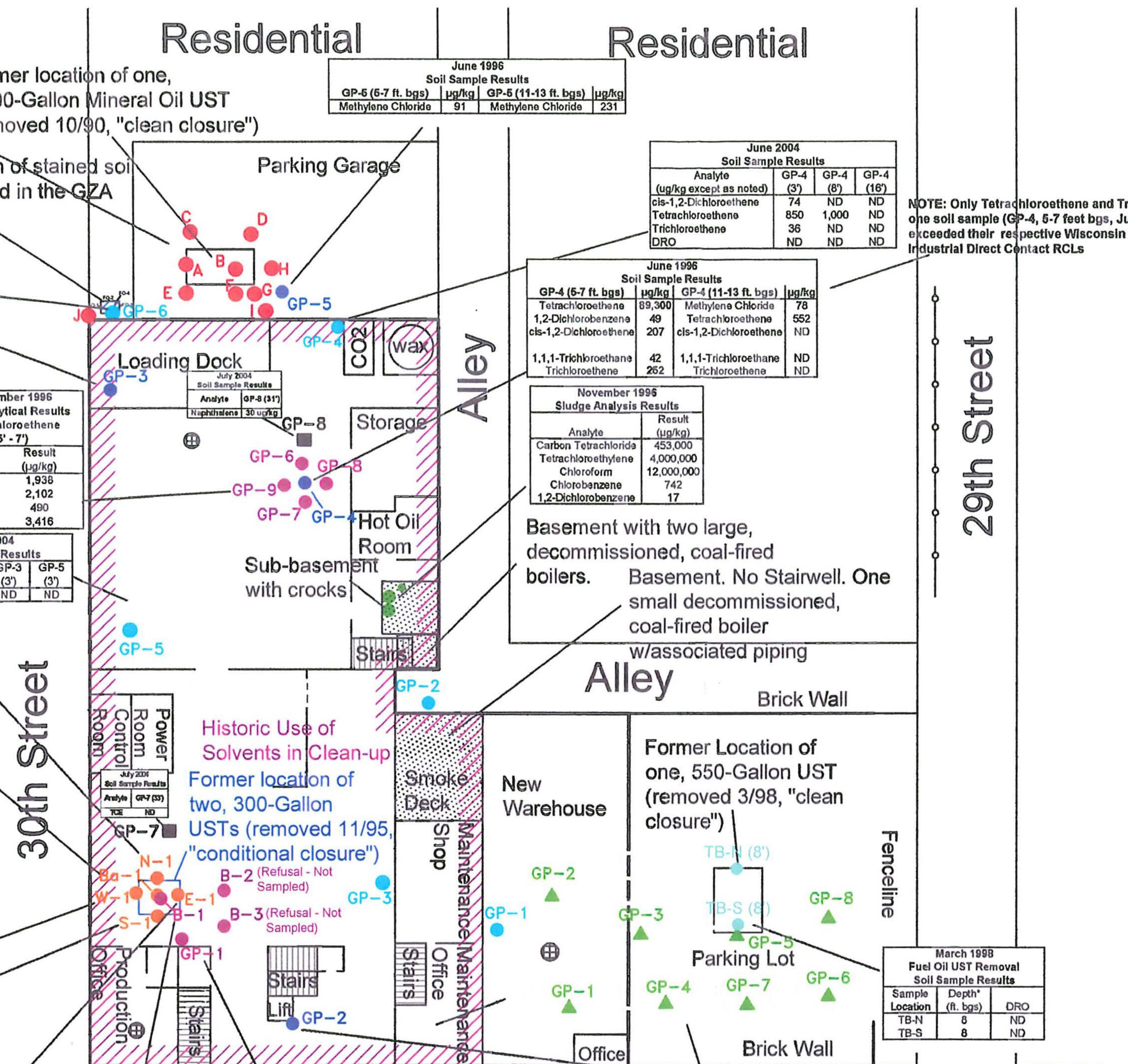
REV#	DESCRIPTION	APP'D

ENSR INTERNATIONAL

FIGURE I-1
SITE LAYOUT MAP
Bostik Findley
2930 West Center Street
Milwaukee, Wisconsin

DRWN: HEP	SCALE: 1"=59'
CHK'D:	DATE: 06-21-04
APP'D:	

MAP OF SITE IMPACTS



October 1990 Mineral Oil UST Removal			
Sample Location	Depth (ft. bgs)	Analyte	Result (µg/kg)
A	12	TPH	ND
B	13	TPH	ND
C	8.5	TPH	NA
D	10	TPH	NA
E	4	TPH	ND
F	10	TPH	ND
G	4	TPH	ND
H	8	TPH	ND
I	2	TPH	ND
J	8	TPH	ND

July 2004 Excavation Confirmatory Sample Results				
Analyte	F-01 (2')	F-02 (2')	F-03 (2')	F-04 (3')
DRO	160 mg/kg	76 mg/kg	150 mg/kg	190 mg/kg

June 2004 Soil Sample Results	
Analyte	GP-6 (1')
DRO	7,100 mg/kg

June 1996 Soil Sample Results			
GP-3 (5-7 ft. bgs)	µg/kg	GP-3 (11-13 ft. bgs)	µg/kg
Methylene Chloride	94	Methylene Chloride	82
Tetrachloroethene	582	Tetrachloroethene	ND

November 1995 Diesel/Gasoline UST Removal	
N-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	4
Lead (mg/kg)	110
Benzene	3
Benzo(a)anthracene	22
Benzo(b)fluoranthene	55
Benzo(g,h,i)perylene	45
Benzo(k)fluoranthene	23
Chrysene	20
Fluoranthene	44
Indeno(1,2,3-cd)pyrene	45
Methylene Chloride	39
Pyrene	38
Tetrachloroethene	131
Toluene	13
Trichloroethene	3.4

November 1996 Soil Analytical Results Tetrachloroethene (5' - 7')	
Sample Location	Result (µg/kg)
GP-6	1,938
GP-7	2,102
GP-8	490
GP-9	3,416

June 2004 Soil Sample Results			
GP-1 (3')	GP-2 (3')	GP-3 (3')	GP-5 (3')
ND	ND	ND	ND

July 2004 Soil Sample Results	
Analyte	GP-8 (31')
Naphthalene	30 ug/kg

July 2004 Soil Sample Results	
Analyte	GP-7 (33')
TCE	ND

November 1995 Diesel/Gasoline UST Removal	
Ba-1 (12 ft. bgs)	µg/kg
DRO (mg/kg)	18
GRO (mg/kg)	172
Lead (mg/kg)	15
Anthracene	14
Benzene	1,210
n-Butylbenzene	2,950
Chrysene	18
Di-Isopropyl ether	3,320
Ethylbenzene	9,610
Fluoranthene	64
Methylene Chloride	3,050
2-Methylnaphthalene	574
Naphthalene	4,620
n-Propylbenzene	2,400
Pyrene	53
Toluene	19,300
1,2,4-Trimethylbenzene	19,200
1,3,5-Trimethylbenzene	6,030
m,p-Xylene	37,200
o-Xylene	19,700

November 1995 Diesel/Gasoline UST Removal	
W-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	8.5
Lead (mg/kg)	32
Anthracene	7.7
Benzene	1.7
Benzo(a)anthracene	100
Benzo(a)pyrene	157
Benzo(b)fluoranthene	172
Benzo(g,h,i)perylene	162
Benzo(k)fluoranthene	83
Chrysene	79
Fluoranthene	157
Indeno(1,2,3-cd)pyrene	162
Methylene Chloride	34
Phenanthrene	24
Pyrene	151
Tetrachloroethene	14
Toluene	6.9
Trichloroethene	3.3

November 1995 Diesel/Gasoline UST Removal	
S-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	7.3
GRO (mg/kg)	1.8
Lead (mg/kg)	24
Benzo(a)anthracene	20
Benzo(b)fluoranthene	17
Benzo(g,h,i)perylene	13
Benzo(k)fluoranthene	9.6
Chrysene	16
Fluoranthene	25
Indeno(1,2,3-cd)pyrene	16
Methylene Chloride	37
Pyrene	24
Tetrachloroethene	110
Toluene	2.1
Trichloroethene	7.5

November 1995 Diesel/Gasoline UST Removal	
E-1 (6 ft. bgs)	µg/kg
Lead (mg/kg)	58
Benzene	2.6
Benzo(b)fluoranthene	28
Benzo(g,h,i)perylene	19
Benzo(k)fluoranthene	13
Chrysene	12
Indeno(1,2,3-cd)pyrene	23
Methylene Chloride	15
Pyrene	22
Tetrachloroethene	145
Toluene	14
Trichloroethene	13

December 1995 Soil Sample Results		
Analyte (µg/kg)	B-1 (15'-17')	B-1 (19'-21')
DRO (mg/kg)	NA	13
GRO (mg/kg)	1.4	8.2
Lead (mg/kg)	8.8	9.5
Benzene	279	1,220
1,2-Dichloroethane	8.93	75.2
Ethylbenzene	0.8	1.85
Methylene Chloride	132	215
Toluene	20.1	30.5
1,2,4-Trimethylbenzene	1.77	ND
1,3,5-Trimethylbenzene	ND	ND
m,p-Xylene	7.38	8.49
o-Xylene	1.93	4.44

December 1995 Soil Sample Results							
Analyte (µg/kg)	GP-1 (10'-12')	GP-1 (12'-14')	GP-1 (14'-16')	GP-1 (16'-18')	GP-1 (18-20')	GP-1 (20-22')	GP-1 22-23.5'
DRO (mg/kg)	378	105	64	60	53	52	78
GRO (mg/kg)	33	2.1	4	2	1.1	ND	0.9
Lead (mg/kg)	9	11	8.7	11	7.4	7.4	7.6
Benzene	567	1,260	3.1	3.96	ND	ND	ND
Chloroform	ND	ND	2.2	6.05	ND	2.41	ND
1,1-Dichloroethane	62.7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	2,030	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	10.9	ND	ND	ND	ND	ND	ND
Ethylbenzene	93.4	12.5	ND	ND	ND	ND	ND
Methylene Chloride	31.1	31	26.3	54.1	16.9	28.1	16.4
Naphthalene	ND	2.58	ND	ND	ND	ND	ND
n-Propylbenzene	ND	7.72	ND	ND	ND	ND	ND
Toluene	46.1	21.9	ND	ND	ND	ND	ND
Trichloroethene	18.5	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	62.1	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	46.3	ND	ND	ND	ND	ND
m,p-Xylene	112	126	ND	ND	ND	ND	ND
o-Xylene	46	77.7	ND	ND	ND	ND	ND
Hexane	ND	55.4	ND	ND	ND	ND	ND

June 1996 Soil Sample Results			
GP-5 (5-7 ft. bgs)	µg/kg	GP-5 (11-13 ft. bgs)	µg/kg
Methylene Chloride	91	Methylene Chloride	231

June 2004 Soil Sample Results			
Analyte (ug/kg except as noted)	GP-4 (3')	GP-4 (8')	GP-4 (16')
cis-1,2-Dichloroethene	74	ND	ND
Tetrachloroethene	850	1,000	ND
Trichloroethene	36	ND	ND
DRO	ND	ND	ND

NOTE: Only Tetrachloroethene and Trichloroethene in one soil sample (GP-4, 5-7 feet bgs, June 1996) exceeded their respective Wisconsin Generic Industrial Direct Contact RCLs

June 1996 Soil Sample Results			
GP-4 (5-7 ft. bgs)	µg/kg	GP-4 (11-13 ft. bgs)	µg/kg
Tetrachloroethene	89,300	Methylene Chloride	78
1,2-Dichlorobenzene	49	Tetrachloroethene	552
cis-1,2-Dichloroethene	207	cis-1,2-Dichloroethene	ND
1,1,1-Trichloroethane	42	1,1,1-Trichloroethane	ND
Trichloroethene	262	Trichloroethene	ND

November 1996 Sludge Analysis Results	
Analyte	Result (µg/kg)
Carbon Tetrachloride	453,000
Tetrachloroethylene	4,000,000
Chloroform	12,000,000
Chlorobenzene	742
1,2-Dichlorobenzene	17

March 1998 Fuel Oil UST Removal Soil Sample Results		
Sample Location	Depth* (ft. bgs)	DRO
TB-N	8	ND
TB-S	8	ND

June 1996 Soil Sample Results			
GP-2 (5-7 ft. bgs)	µg/kg	GP-2 (11-13 ft. bgs)	µg/kg
Methylene Chloride	88	Methylene Chloride	91
Tetrachloroethene	96	Tetrachloroethene	ND

July 1997 PID Screening Results		
Sample Location	Depth* (ft. bgs)	PID Result
GP-1	0 - 10	ND
GP-2	0 - 10	ND
GP-3	0 - 10	ND
GP-4	0 - 10	ND
GP-5	0 - 10	ND
GP-6	0 - 10	ND
GP-7	0 - 12	ND
GP-8	0 - 10	ND

* Continuous Sampling at 2-foot intervals

LEGEND

Recognized Environmental Conditions (RECs)

Historic Recognized Environmental Conditions (HRECs)

All REC and HREC locations are approximate.

Bold type indicates exceedence of the WI Industrial Direct Contact RCL or NR 720 standard for DRO

- A — UST Soil Excavation Samples (Collected October 1990)
- Sludge Analysis Samples (Collected November 1996)
- N-1 — UST Soil Excavation Samples (Collected November 1995)
- GP-2 — Soil Boring Samples (Collected June 1996)
- B-3 — Soil Boring Samples (Collected December 1995)
- GP-1 — Geoprobe Boring PID Soil Sample (Collected July 1997)
- TB-N — UST Soil Excavation Samples (Collected March 1998)
- GP-2 — Geoprobe Boring Soil Sample (Collected June 2004)
- GP-8 — Soil Boring Sample (Collected August 2004)
- Basement Crock or Catch Basin
- Floor Drain
- Basement Area

N
W
E
S

US EPA Region III Risk-Based Concentrations[1]		
ANALYTES[2]	Industrial Direct Contact RBC[3]	Residential Direct Contact RBC[3]
BENZENE	52,000	11,600
CHLOROFORM	10,220,000	782,000
1,2-DICHLOROBENZENE	91,980,000	7,039,000
1,1-DICHLOROETHANE	102,200,000	7,821,000
1,2-DICHLOROETHANE	31,400	7,000
CIS-1,2-DICHLOROETHENE	10,220,000	782,000
TRANS-1,2-DICHLOROETHENE	20,440,000	1,564,000
DIISOPROPYL ETHER	NL	NL
ETHYLBENZENE	102,200,000	7,821,000
HEXANE	11,242,000,000	860,357,000
LEAD	NL	NL
METHYLENE CHLORIDE	382,000	85,000
ANTHRACENE	306,600,000	23,464,000
BENZ[A]ANTHRACENE	3,900	870
BENZO[B]FLUORANTHENE	3,900	870
BENZO[K]FLUORANTHENE	39,200	8,700
BENZO[A]PYRENE	390	87
CHRYSENE	392,000	87,000
FLUORANTHENE	40,880,000	3,129,000
INDENO[1,2,3-C,D]PYRENE	3,900	870
2-METHYLNAPHTHALENE	4,088,000	313,000
NAPHTHALENE	20,440,000	1,564,000
PHENANTHRENE	NL	NL
PYRENE	30,660,000	2,346,000
n-PROPYLBENZENE	NL	NL
TETRACHLOROETHENE	5,300	1,200
TOLUENE	204,400,000	15,643,000
1,1,1-TRICHLOROETHANE	286,160,000	21,900,000
TRICHLOROETHENE	7,200	1,600
1,2,4-TRIMETHYLBENZENE	51,100,000	3,911,000
1,3,5-TRIMETHYLBENZENE	51,100,000	3,911,000
XYLENES	204,400,000	15,643,000
DRO	NL	NL
GRO	NL	NL

[1] Updated April 2004
[2] Only Detected Compounds Shown
[3] All units in ug/kg, except where shown
RBC = Risk-based Concentration
NOTE: Region III 10/4/95 Direct Contact RBCs utilized in original risk assessment, "*Evaluation of Site-Specific Soil Cleanup Standards, Findley Adhesives, Inc., 2930 West Center Street, Milwaukee, WI by Environmental Software Consultants, Inc.*", dated 3/13/96 for which conditional closure was granted on 6/11/97.

Wisconsin Generic Residual Contaminant Levels		
ANALYTES[1]	Industrial Direct Contact RCL[2]	Residential Direct Contact RCL[2]
BENZENE[3]	2,800	170
CHLOROFORM[3]	950	57
1,2-DICHLOROBENZENE	600,000	600,000
1,1-DICHLOROETHANE[3]	1,600,000	510,000
1,2-DICHLOROETHANE[3]	1,300	76
CIS-1,2-DICHLOROETHENE[3]	1,300,000	156,000
TRANS-1,2-DICHLOROETHENE[3]	3,200,000	313,000
DIISOPROPYL ETHER[3]	1,900,000	1,900,000
ETHYLBENZENE[3]	400,000	400,000
HEXANE[3]	270,000	82,000
LEAD[6]	500,000	50,000
METHYLENE CHLORIDE[3]	45,000	2,700
ANTHRACENE[4]	300,000,000	5,000,000
BENZ[A]ANTHRACENE[4]	3,900	88
BENZO[B]FLUORANTHENE[4]	3,900	88
BENZO[K]FLUORANTHENE[4]	39,000	880
BENZO[A]PYRENE[4]	390	8.8
CHRYSENE[4]	390,000	8,800
FLUORANTHENE[4]	40,000,000	600,000
INDENO[1,2,3-C,D]PYRENE[4]	3,900	88
**2-METHYLNAPHTHALENE[4]	40,000,000	600,000
NAPHTHALENE[4]	110,000	20,000
PHENANTHRENE[4]	390,000	18,000
PYRENE[4]	30,000,000	500,000
n-PROPYLBENZENE[3]	NL	NL
TETRACHLOROETHENE[3]	35,000	1,230
TOLUENE[3]	670,000	650,000
1,1,1-TRICHLOROETHANE	1,200,000	1,200,000
TRICHLOROETHENE[3]	240	14
1,2,4-TRIMETHYLBENZENE[3]	350,000	50,000
1,3,5-TRIMETHYLBENZENE[3]	200,000	29,000
XYLENES[3]	1,900,000	280,000
DRO[5]	100/250 mg/kg	100/250 mg/kg
GRO[5]	100/250 mg/kg	100/250 mg/kg

[1] Only Detected Compounds Shown
[2] All units in ug/kg, except where shown
[3] Values calculated per '*Determining Residual Contaminant Levels Using EPA Soil Screening Level Web Site*', *Publication RR-682.*
[4] Values from Table 1, "*Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance*, Publication RR-519-17
[5] Value for GRO/DRO from NR 720.09 (protection of groundwater). Value depends on soil type.
[6] Direct Contact Value for lead from Table 2, NR 720.11
RCL = Residual Contaminant Levels

J:\COMMON\00963023 - Bostik Center ST\figures\REC and Boring Location Map.dwg

ENSR INTERNATIONAL

Historical Soil Analytical Results

Bostik Findley
2930 West Center Street
Milwaukee, Wisconsin

DRWN: HEP	SCALE: 1" = 25'
CHK'D: LG	DATE: 08-03-04
APP'D: BL	**FIGURE I-2**

TABLE OF MOST RECENT ANALYTICAL RESULTS

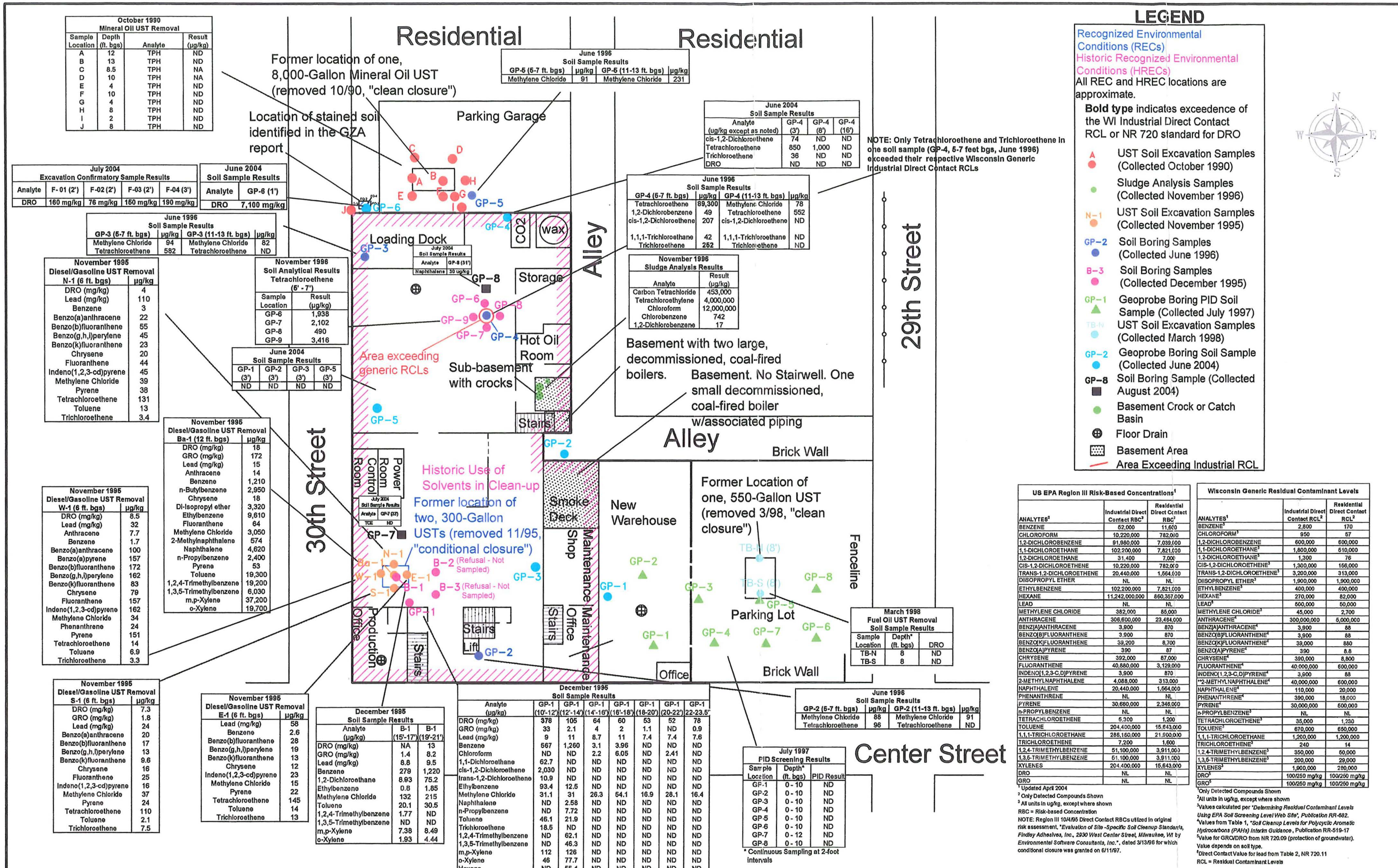
TABLE 1
SOIL ANALYTICAL RESULTS - ENSR INVESTIGATION

Bostik Findley
2930 W. Center St.
Milwaukee, WI

	Sample Identification, Depth and Date Sampled												
Analyte[1]	**GP-1** **3 ft bgs** 6/15/04	**GP-2** **3 ft bgs** 6/15/04	**GP-3** **3 ft bgs** 6/15/04	**GP-4** **3 ft bgs** 6/15/04	**GP-4** **8 ft bgs** 6/15/04	**GP-4** **16 ft bgs** 6/15/04	**GP-5** **3 ft bgs** 6/15/04	**GP-6** **1ft bgs** 6/15/04	**GP-7*** **33ft bgs** 7/30/04	**GP-8** **31 ft bgs** 7/30/04	**Wisconsin Generic Direct Contact Industrial RCL**	**Wisconsin Generic Direct Contact Residential RCL**	**Wisconsin Generic Soil to Groundwater**
VOCs (µg/kg)													
cis-1,2-Dichloroethene	<25	<25	<25	**74**	<25	<25	<25	<25	<31	<28	1,300,000[2]	156000[2]	27[2]
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<31	30	110,000[3]	20000[3]	400[3]
Tetrachloroethene	<25	<25	<25	**850**	**1,000**	<25	<25	<25	<31	<28	35,000[2]	1230[2]	4.1[2]
Trichloroethene	<25	<25	<25	**36**	<25	<25	<25	<25	<31*	<28	240[2]	14[2]	3.7[2]
DRO (mg/kg)													
	NA	NA	NA	NA	NA	NA	NA	**7,100**	NA	NA	100/250[5]	100/250[5]	100/250[5]
RCRA Metals (mg/kg)													
Arsenic (mg/kg)	**5.4**	**2.7**	**5.6**	**9.2**	NA	NA	**12**	NA	NA	NA	1.6 mg/kg[4]	0.039 mg/kg[4]	0.58 mg/kg[2]
Barium (mg/kg)	69	100	65	98	NA	NA	140	NA	NA	NA	71,500,000 mg/kg[2]	1,100 mg/kg[2]	330 mg/kg[2]
Cadmium (mg/kg)	0.51	0.40	0.41	0.34	NA	NA	0.38	NA	NA	NA	510 mg/kg[4]	8 mg/kg[4]	0.75 mg/kg[2]
Chromium (mg/kg)	20	23	17	23	NA	NA	22	NA	NA	NA	NL[4]	16,000 (Cr +3) mg/kg[4]	NL[4]
Lead (mg/kg)	19	15	19	15	NA	NA	13	NA	NA	NA	500 mg/kg[4]	50 mg/kg[4]	NL[4]
Mercury (mg/kg)	0.049	0.075	0.020	0.084	NA	NA	0.036	NA	NA	NA	2,900 mg/kg[2]	2,900 mg/kg[2]	0.42 mg/kg[2] (elemental)
Selenium (mg/kg)	0.53	<0.44	0.90	<0.44	NA	NA	<0.42	NA	NA	NA	5,110,000 mg/kg[2]	78,200 mg/kg[2]	1.0 mg/kg[2]
Silver (mg/kg)	0.046	0.069	0.051	0.050	NA	NA	0.072	NA	NA	NA	5,110,000 mg/kg[2]	78,200 mg/kg[2]	6.2 mg/kg[2]

Notes:
[1]Only Detected Compounds Shown
[2]RCL values calculated per *"Determining Residual Contaminant Levels Using EPA Soil Screening Level Web Site",* Publication RR-682.
[3]Value from Table 1, "Soil Cleanup Levels for Polycyclic Aromatic Compounds (PAHs) Interim Guidance", Publication RR-519-17
[4]Direct Contact RCL Value from Table 2, NR 720.11
[5]Value for GRO/DRO from NR 720.09 (protection of groundwater). Value depends on soil type.
bgs = below ground surface.
DRO = Diesel range organics.
µg/kg = micrograms per kilogram (parts per billion).
mg/kg = milligram per kilogram (parts per million).
NA = Not Analyzed
NL = Not Listed
VOCs = volatile organic compounds.
RCL = Residual Contamination Levels
Concentrations in bold and outlined indicate and exceedance of an the Wisconsin Generic Groundwater Protection RCL
* Trichloroethene was initially detected in the sample from GP-7 collected at 33 feet bgs. ENSR requested a reanalysis of the samples from both GP-7 and GP-8. The reanalysis of the sample from GP-8 verified the initial naphthalene result; however, trichloroethene was not detected in the sample from GP-7. ENSR requested the laboratory evaluate the discrepancy. An August 11, 2004 letter from the TestAmerica Laboratory Manager, states that, "However, due to the low level detection (the result is at the Limit of Quantification) and the fact that two subsequent analysis failed to confirm the initial findings, I feel the first analyses was a false detection of Trichloroethene."

SOIL IMPACT CONTOUR MAP



LEGEND

Recognized Environmental Conditions (RECs)
Historic Recognized Environmental Conditions (HRECs)
All REC and HREC locations are approximate.
Bold type indicates exceedence of the WI Industrial Direct Contact RCL or NR 720 standard for DRO

- A — UST Soil Excavation Samples (Collected October 1990)
- Sludge Analysis Samples (Collected November 1996)
- N-1 — UST Soil Excavation Samples (Collected November 1995)
- GP-2 — Soil Boring Samples (Collected June 1996)
- B-3 — Soil Boring Samples (Collected December 1995)
- GP-1 — Geoprobe Boring PID Soil Sample (Collected July 1997)
- TB-N — UST Soil Excavation Samples (Collected March 1998)
- GP-2 — Geoprobe Boring Soil Sample (Collected June 2004)
- GP-8 — Soil Boring Sample (Collected August 2004)
- Basement Crock or Catch Basin
- Floor Drain
- Basement Area
- Area Exceeding Industrial RCL

NOTE: Only Tetrachloroethene and Trichloroethene in one soil sample (GP-4, 5-7 feet bgs, June 1996) exceeded their respective Wisconsin Generic Industrial Direct Contact RCLs

October 1990 Mineral Oil UST Removal

Sample Location	Depth (ft. bgs)	Analyte	Result (µg/kg)
A	12	TPH	ND
B	13	TPH	ND
C	8.5	TPH	NA
D	10	TPH	NA
E	4	TPH	ND
F	10	TPH	ND
G	4	TPH	ND
H	8	TPH	ND
I	2	TPH	ND
J	8	TPH	ND

July 2004 Excavation Confirmatory Sample Results

Analyte	F-01 (2')	F-02 (2')	F-03 (2')	F-04 (3')
DRO	160 mg/kg	76 mg/kg	160 mg/kg	190 mg/kg

June 2004 Soil Sample Results

Analyte	GP-6 (1')
DRO	7,100 mg/kg

June 1996 Soil Sample Results

GP-3 (5-7 ft. bgs)	µg/kg	GP-3 (11-13 ft. bgs)	µg/kg
Methylene Chloride	94	Methylene Chloride	82
Tetrachloroethene	582	Tetrachloroethene	ND

November 1995 Diesel/Gasoline UST Removal

N-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	4
Lead (mg/kg)	110
Benzene	3
Benzo(a)anthracene	22
Benzo(b)fluoranthene	55
Benzo(g,h,i)perylene	45
Benzo(k)fluoranthene	23
Chrysene	20
Fluoranthene	44
Indeno(1,2,3-cd)pyrene	45
Methylene Chloride	39
Pyrene	38
Tetrachloroethene	131
Toluene	13
Trichloroethene	3.4

November 1996 Soil Analytical Results Tetrachloroethene (6' - 7')

Sample Location	Result (µg/kg)
GP-6	1,938
GP-7	2,102
GP-8	490
GP-9	3,416

June 2004 Soil Sample Results

GP-1 (3')	GP-2 (3')	GP-3 (3')	GP-5 (3')
ND	ND	ND	ND

July 2004 Soil Sample Results

Analyte	GP-8 (31')
Naphthalene	30 ug/kg

July 2004 Soil Sample Results

Analyte	GP-7 (33')
TCE	ND

June 1996 Soil Sample Results

GP-5 (5-7 ft. bgs)	µg/kg	GP-5 (11-13 ft. bgs)	µg/kg
Methylene Chloride	91	Methylene Chloride	231

June 2004 Soil Sample Results

Analyte (ug/kg except as noted)	GP-4 (3')	GP-4 (8')	GP-4 (16')
cis-1,2-Dichloroethene	74	ND	ND
Tetrachloroethene	850	1,000	ND
Trichloroethene	36	ND	ND
DRO	ND	ND	ND

June 1996 Soil Sample Results

GP-4 (5-7 ft. bgs)	µg/kg	GP-4 (11-13 ft. bgs)	µg/kg
Tetrachloroethene	**89,300**	Methylene Chloride	78
1,2-Dichlorobenzene	49	Tetrachloroethene	552
cis-1,2-Dichloroethene	207	cis-1,2-Dichloroethene	ND
1,1,1-Trichloroethane	42	1,1,1-Trichloroethane	ND
Trichloroethene	**252**	Trichloroethene	ND

November 1996 Sludge Analysis Results

Analyte	Result (µg/kg)
Carbon Tetrachloride	453,000
Tetrachloroethylene	4,000,000
Chloroform	12,000,000
Chlorobenzene	742
1,2-Dichlorobenzene	17

November 1995 Diesel/Gasoline UST Removal

Ba-1 (12 ft. bgs)	µg/kg
DRO (mg/kg)	18
GRO (mg/kg)	172
Lead (mg/kg)	15
Anthracene	14
Benzene	1,210
n-Butylbenzene	2,950
Chrysene	18
Di-Isopropyl ether	3,320
Ethylbenzene	9,610
Fluoranthene	64
Methylene Chloride	3,050
2-Methylnaphthalene	574
Naphthalene	4,620
n-Propylbenzene	2,400
Pyrene	53
Toluene	19,300
1,2,4-Trimethylbenzene	19,200
1,3,5-Trimethylbenzene	6,030
m,p-Xylene	37,200
o-Xylene	19,700

November 1995 Diesel/Gasoline UST Removal

W-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	8.5
Lead (mg/kg)	32
Anthracene	7.7
Benzene	1.7
Benzo(a)anthracene	100
Benzo(a)pyrene	157
Benzo(b)fluoranthene	172
Benzo(g,h,i)perylene	162
Benzo(k)fluoranthene	83
Chrysene	79
Fluoranthene	157
Indeno(1,2,3-cd)pyrene	162
Methylene Chloride	34
Phenanthrene	24
Pyrene	151
Tetrachloroethene	14
Toluene	6.9
Trichloroethene	3.3

November 1995 Diesel/Gasoline UST Removal

S-1 (6 ft. bgs)	µg/kg
DRO (mg/kg)	7.3
GRO (mg/kg)	1.8
Lead (mg/kg)	24
Benzo(a)anthracene	20
Benzo(b)fluoranthene	17
Benzo(g,h,i)perylene	13
Benzo(k)fluoranthene	9.6
Chrysene	16
Fluoranthene	25
Indeno(1,2,3-cd)pyrene	16
Methylene Chloride	37
Pyrene	24
Tetrachloroethene	110
Toluene	2.1
Trichloroethene	7.5

November 1995 Diesel/Gasoline UST Removal

E-1 (6 ft. bgs)	µg/kg
Lead (mg/kg)	58
Benzene	2.6
Benzo(b)fluoranthene	28
Benzo(g,h,i)perylene	19
Benzo(k)fluoranthene	13
Chrysene	12
Indeno(1,2,3-cd)pyrene	23
Methylene Chloride	15
Pyrene	22
Tetrachloroethene	145
Toluene	14
Trichloroethene	13

December 1995 Soil Sample Results

Analyte (µg/kg)	B-1 (15'-17')	B-1 (19'-21')
DRO (mg/kg)	NA	13
GRO (mg/kg)	1.4	8.2
Lead (mg/kg)	8.8	9.5
Benzene	279	1,220
1,2-Dichloroethane	8.93	75.2
Ethylbenzene	0.8	1.85
Methylene Chloride	132	215
Toluene	20.1	30.5
1,2,4-Trimethylbenzene	1.77	ND
1,3,5-Trimethylbenzene	ND	ND
m,p-Xylene	7.38	8.49
o-Xylene	1.93	4.44

December 1995 Soil Sample Results

Analyte (µg/kg)	GP-1 (10'-12')	GP-1 (12'-14')	GP-1 (14'-16')	GP-1 (16'-18')	GP-1 (18-20')	GP-1 (20-22')	GP-1 22-23.5'
DRO (mg/kg)	378	105	64	60	53	52	78
GRO (mg/kg)	33	2.1	4	2	1.1	ND	0.9
Lead (mg/kg)	9	11	8.7	11	7.4	7.4	7.6
Benzene	567	1,260	3.1	3.96	ND	ND	ND
Chloroform	ND	ND	2.2	6.05	ND	2.41	ND
1,1-Dichloroethane	62.7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	2,030	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	10.9	ND	ND	ND	ND	ND	ND
Ethylbenzene	93.4	12.5	ND	ND	ND	ND	ND
Methylene Chloride	31.1	31	26.3	54.1	16.9	28.1	16.4
Naphthalene	ND	2.58	ND	ND	ND	ND	ND
n-Propylbenzene	ND	7.72	ND	ND	ND	ND	ND
Toluene	46.1	21.9	ND	ND	ND	ND	ND
Trichloroethene	18.5	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	62.1	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	46.3	ND	ND	ND	ND	ND
m,p-Xylene	112	126	ND	ND	ND	ND	ND
o-Xylene	46	77.7	ND	ND	ND	ND	ND
Hexane	ND	55.4	ND	ND	ND	ND	ND

March 1998 Fuel Oil UST Removal Soil Sample Results

Sample Location	Depth* (ft. bgs)	DRO
TB-N	8	ND
TB-S	8	ND

June 1996 Soil Sample Results

GP-2 (5-7 ft. bgs)	µg/kg	GP-2 (11-13 ft. bgs)	µg/kg
Methylene Chloride	88	Methylene Chloride	91
Tetrachloroethene	96	Tetrachloroethene	ND

July 1997 PID Screening Results

Sample Location	Depth* (ft. bgs)	PID Result
GP-1	0 - 10	ND
GP-2	0 - 10	ND
GP-3	0 - 10	ND
GP-4	0 - 10	ND
GP-5	0 - 10	ND
GP-6	0 - 10	ND
GP-7	0 - 12	ND
GP-8	0 - 10	ND

* Continuous Sampling at 2-foot intervals

US EPA Region III Risk-Based Concentrations[1]

ANALYTES[2]	Industrial Direct Contact RBC[3]	Residential Direct Contact RBC[3]
BENZENE	52,000	11,600
CHLOROFORM	10,220,000	782,000
1,2-DICHLOROBENZENE	91,980,000	7,039,000
1,1-DICHLOROETHANE	102,200,000	7,821,000
1,2-DICHLOROETHANE	31,400	7,000
CIS-1,2-DICHLOROETHENE	10,220,000	782,000
TRANS-1,2-DICHLOROETHENE	20,440,000	1,564,000
DIISOPROPYL ETHER	NL	NL
ETHYLBENZENE	102,200,000	7,821,000
HEXANE	11,242,000,000	860,357,000
LEAD	NL	NL
METHYLENE CHLORIDE	382,000	85,000
ANTHRACENE	306,600,000	23,464,000
BENZ(A)ANTHRACENE	3,900	870
BENZO(B)FLUORANTHENE	3,900	870
BENZO(K)FLUORANTHENE	39,200	8,700
BENZO(A)PYRENE	390	87
CHRYSENE	392,000	87,000
FLUORANTHENE	40,880,000	3,129,000
INDENO(1,2,3-C,D)PYRENE	3,900	870
2-METHYLNAPHTHALENE	4,088,000	313,000
NAPHTHALENE	20,440,000	1,564,000
PHENANTHRENE	NL	NL
PYRENE	30,660,000	2,346,000
n-PROPYLBENZENE	NL	NL
TETRACHLOROETHENE	6,300	1,200
TOLUENE	204,400,000	15,643,000
1,1,1-TRICHLOROETHANE	286,160,000	21,900,000
TRICHLOROETHENE	7,200	1,600
1,2,4-TRIMETHYLBENZENE	51,100,000	3,911,000
1,3,5-TRIMETHYLBENZENE	51,100,000	3,911,000
XYLENES	204,400,000	15,643,000
DRO	NL	NL
GRO	NL	NL

[1] Updated April 2004
[2] Only Detected Compounds Shown
[3] All units in ug/kg, except where shown
RBC = Risk-based Concentration
NOTE: Region III 10/4/95 Direct Contact RBCs utilized in original risk assessment, "Evaluation of Site-Specific Soil Cleanup Standards, Findley Adhesives, Inc., 2930 West Center Street, Milwaukee, WI by Environmental Software Consultants, Inc.", dated 3/13/96 for which conditional closure was granted on 6/11/97.

Wisconsin Generic Residual Contaminant Levels

ANALYTES[1]	Industrial Direct Contact RCL[2]	Residential Direct Contact RCL[2]
BENZENE[3]	2,800	170
CHLOROFORM[3]	950	57
1,2-DICHLOROBENZENE	600,000	600,000
1,1-DICHLOROETHANE[3]	1,800,000	510,000
1,2-DICHLOROETHANE[3]	1,300	76
CIS-1,2-DICHLOROETHENE[3]	1,300,000	156,000
TRANS-1,2-DICHLOROETHENE[3]	3,200,000	313,000
DIISOPROPYL ETHER[3]	1,900,000	1,900,000
ETHYLBENZENE[3]	400,000	400,000
HEXANE[3]	270,000	82,000
LEAD[6]	500,000	50,000
METHYLENE CHLORIDE[3]	45,000	2,700
ANTHRACENE[4]	300,000,000	5,000,000
BENZ(A)ANTHRACENE[4]	3,900	88
BENZO(B)FLUORANTHENE[4]	3,900	88
BENZO(K)FLUORANTHENE[4]	39,000	880
BENZO(A)PYRENE[4]	390	8.8
CHRYSENE[4]	390,000	8,800
FLUORANTHENE[4]	40,000,000	600,000
INDENO(1,2,3-C,D)PYRENE[4]	3,900	88
**2-METHYLNAPHTHALENE[4]	40,000,000	600,000
NAPHTHALENE[4]	110,000	20,000
PHENANTHRENE[4]	390,000	18,000
PYRENE[4]	30,000,000	500,000
n-PROPYLBENZENE[3]	NL	NL
TETRACHLOROETHENE[3]	35,000	1,230
TOLUENE[3]	670,000	650,000
1,1,1-TRICHLOROETHANE	1,200,000	1,200,000
TRICHLOROETHENE[3]	240	14
1,2,4-TRIMETHYLBENZENE[3]	350,000	60,000
1,3,5-TRIMETHYLBENZENE[3]	200,000	29,000
XYLENES[3]	1,900,000	280,000
DRO[5]	100/250 mg/kg	100/250 mg/kg
GRO[5]	100/250 mg/kg	100/250 mg/kg

[1] Only Detected Compounds Shown
[2] All units in ug/kg, except where shown
[3] Values calculated per "Determining Residual Contaminant Levels Using EPA Soil Screening Level Web Site", Publication RR-682.
[4] Values from Table 1, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance", Publication RR-519-97
[5] Value for GRO/DRO from NR 720.09 (protection of groundwater). Value depends on soil type.
[6] Direct Contact Value for lead from Table 2, NR 720.11
RCL = Residual Contaminant Levels

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ENSR INTERNATIONAL

Historical Soil Analytical Results/Area Exceeding RCLs

Bostik Findley
2930 West Center Street
Milwaukee, Wisconsin

DRWN: HEP	SCALE: 1" = 25'
CHK'D: LG	DATE: 08-03-04
APP'D: BL	FIGURE I-3

RESPONSIBLE PARTY STATEMENT

BOSTIK FINDLEY

November 19, 2004

Ms. Margaret Brunette
Wisconsin Department of Natural Resources
P.O. Box 12436
Milwaukee, WI 53212

Re: Former Bostik Findley Facility
2930 West Center Street
Milwaukee, Wisconsin
WDNR BRRTS #: 03-41-005301

Dear Ms. Brunette:

As required for site closure under the Wisconsin Department of Natural Resources Geographic Information System ("GIS") Registry of Closed Remediation Sites, Bostik Findley Inc. is the responsible party for the property located at 2930 West Center Street, Milwaukee, Wisconsin, and believes that the legal description for the property contained within this GIS Registry packet is accurate and complete.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Kimberly Dabertin
Regulatory Affairs
Direct Phone: 1.414.607.1245
facsimile: 1.414.607.1473
email: kimberly.dabertin@bostikfindley-us.com

KD/jse

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