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CAPE ROMANZOF LRRS
ALASKA

ADMINISTRATIVE RECORD
COVER SHEET

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United States Air Force
611th Air Support Group
611th Civil Engineer Squadron

Elmendorf AFB, Alaska

Biocell Closure Report
Biotreatment Cell Construction, Operation, and Maintenance
Cape Romanzof LRRS, Alaska

June 23, 2000

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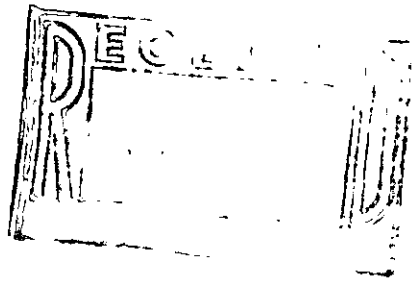
Prepared by

Harding Lawson Associates/Wilder Construction Company Joint Venture

June 23, 2000



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1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE) retained Harding Lawson Associates/Wilder Construction Company Joint Venture (HLA/Wilder) to prepare this biocell closure plan for Biocells 1 and 3 at the U.S. Air Force (USAF) Cape Romanzof Long Range Radar Site, Cape Romanzof, Alaska (Figure 1). The USACE assigned this project to HLA/Wilder under Delivery Order 0004 of Contract DACA85-94-D-0015.

This biocell closure report is being prepared to document biocell closure sampling activities and present alternative cleanup levels (ACLs) to close the biocells and allow beneficial use of the soil by the USAF as cover material at Landfill 2 (LF03), west of Lower Camp. During construction of the biocells, most of the material in the cells was screened to remove material greater than 2 inches in diameter, making it suitable for use as landfill cover material. Currently, the USAF does not have a readily available source of suitable cover material.

1.1 Site Description and Background

Cape Romanzof began operations in 1953. Emerging technologies during the subsequent 30 years allowed for several facility renovations that resulted in the station becoming a minimally attended radar site. As of 1994, six station personnel operate and maintain the site (USAF, 611 Civil Engineering Squadron/Civil Engineering Operations Squadron [CES/CEOS], 1995).

During 1994, the 611 CES/CEOS excavated and stockpiled approximately 1,300 cubic yards (yd^3) of petroleum-contaminated soil in Containment Cell 1, near the barge cargo beaching area (Figure 2); and approximately 1,400 yd^3 of petroleum-contaminated soil in Containment Cell 3, near Lower Camp (Figure 3) (USACE, 1995). Containment Cells 1 and 3 were retrofitted into Biocells 1 and 3 during June and July 1996 by the 611 CES and HLA/Wilder under Delivery Order 0004.

1.2 Environmental Setting

Cape Romanzof lies in the maritime climatic zone. Average summer temperatures range from 39 to 53 degrees Fahrenheit (°F), and winter temperatures range from 5 to 20 °F. The average annual precipitation is 25 inches (Arctic Environmental Information and Data Center [AEIDC], 1989).

Cape Romanzof is in the Yukon-Kuskokwim Coastal Lowland, a marshy, lake-dotted deltaic plain of coastal deposits of interlayered alluvial and marine sediments. Thin to moderately thick (to 600 feet thick) permafrost zones may occur in predominately fine-grained sediments (Ferrians, 1965); however, permafrost has not been observed in the Cape Romanzof area (USAF 611 CES/CEOS, 1995). Ground-surface elevations at Cape Romanzof range from zero feet mean sea level (MSL) at the Bering Sea shoreline, to approximately 2,300 feet MSL at Upper Camp.

The geology of Cape Romanzof Upper Camp consists of sand, gravel, and boulders overlying granitic bedrock of Towak Mountain. At Lower Camp, thin to moderately thick talus (coarse-grained materials) and alluvial sequences have been transported downslope into the steeply sloping valley floor of Fowler Creek and tributaries. The mixed talus and alluvial materials consist of large granitic boulders, rock fragments (cobble-sized), sand, and minor amounts of silt and clay. The talus layer is between 57 and 74 feet thick and is underlain by weathered bedrock. Granitic bedrock underlies the unconsolidated deposits (Woodward-Clyde Consultants [WCC], 1992).

The depth to groundwater varies with location at the site. Near Landfill 2 (LF03) the depth to groundwater was approximately 3 feet below ground surface (bgs) in June 1997 (HLA, 1998), to approximately 30 feet bgs recorded on the well log for the Lower Camp water supply well (WCC, 1989).

Fowler Creek is the main surface-water feature. Fowler Creek has a watershed area of approximately 8.5 square miles that drains into Kokechik

Bay. Locally, springs flow from the hillsides of the watershed (WCC, 1992).

Undisturbed vegetation consists of alpine/barren ground communities including mountain avens, lichens, low-growing herbs, and grasses (USAF 611 CES/CEOS, 1995).

1.3 Biocell Construction

Biocells 1 and 3 were constructed during June and July 1996 by the 611 CES and HLA/Wilder under Delivery Order 0004. Construction activities involved retrofitting two soil storage cells previously constructed by the 611 CES. A summary of the construction events is presented below.

Biocell 1

- Biocell 1 was constructed near the beach landing area (Figure 2). Construction involved the 611 CES screening approximately 1,300 yd^3 of soil to remove material larger than 2 inches in diameter, then transferring the screened soil to the cell with a front-end loader. Horizontal laterals of perforated polyethylene pipe wrapped in a geotextile "sock" were connected to blank polyvinyl chloride (PVC) risers then installed as soil was placed into the cell. Nutrients (20-10-10 fertilizer) were dry-broadcast across the surface as each load was placed at an approximate rate of 4 pounds per yd^3. The biocell surface was sloped to drain and a semipermeable geotextile fabric cover was installed. The semipermeable geotextile cover was retrofitted with an impermeable cover in late 1997.

Biocell 3

- Biocell 3 was constructed at Lower Camp near Building 2-217 (Figure 3). Construction involved removing approximately 1,400 yd^3 of soil from the storage cell and placing the material in a lined temporary stockpile. A portion of this soil was screened in a manner similar to Biocell 1 for placement over the liner and air conveyance piping. The horizontal perforated polyethylene pipe laterals and water drainage system were taped to the liner, and the soil was placed into the biocell from the side berm with a front-end loader and excavator. Nutrients (20-10-10 fertilizer) were dry-broadcast across the surface as each load was placed at an approximate rate of 4 pounds per yd^3. The biocell surface was sloped to drain and a semipermeable geotextile fabric cover was installed. The semipermeable geotextile cover was retrofitted with an impermeable cover in late 1997.

1.4 Objective

The objective of the confirmation sampling was to collect representative hydrocarbon concentration and site-specific data for use in closure of Biocells 1 and 3 in accordance with the Alaska Department of Environmental Conservation (ADEC) requirements established in Title 18, Alaska Administrative Code, Chapter 75 (18 AAC 75); and the ADEC-prepared *Draft Guidance on Developing Soil Cleanup Levels Under Methods Two and Three*, dated March 22, 1999.

Closure of the biocells will provide the USAF with a readily available source of suitable material for use as additional cover at Landfill 2 (LF03), west of Lower Camp.

To meet the project objectives the following tasks were completed:

- Collected and analyzed samples from each biocell and near the active landfill in accordance with the biocell closure plan (HLA/Wilder, 1999) and 18 AAC 75
- Performed a contaminant leaching assessment by using SESOIL to assess possible contaminant migration to underlying soil and groundwater at the active landfill
- Identified cleanup levels under 18 AAC 75 Methods Two and Three for comparison with confirmation sample results
- Prepared this report summarizing field activities, modeling results, and cleanup levels for use in obtaining closure of Biocells 1 and 3. Included are ADEC reporting requirements for data presentation and calculations.

2.0 SAMPLING AND ANALYSIS

Field and analytical procedures specific to the confirmation sampling and analysis are presented below. Project organization, quality assurance objectives, data validation, performance and system audits, and corrective actions are presented in the quality assurance project plan included in an appendix of the contractor quality control plan (HLA/Wilder, 1996b).

2.1 Field Procedures

2.1.1 Confirmation Sampling

Confirmation samples were collected at the approximate locations of the baseline sampling conducted in 1996. The baseline sample locations were selected based on a three-dimensional sampling grid established to best fit the final configuration of the two biocells. The sampling locations were spaced equidistant laterally at both biocells. Within each area defined by the grid, a soil sample was collected from a random depth at Biocell 1. The maximum sample depth at Biocell 3 was limited to 2.5 feet below the surface because of the coarser-grained, unscreened soil and refusal of the sampling tools. Samples were collected a minimum of 18 inches below the biocell surface. Samples were collected by using a hand auger with extensions and stainless-steel trowels.

Sample fractions for laboratory analysis of gasoline-range organics (GRO); benzene, toluene, ethylbenzene, and xylenes (BTEX); and volatile organic compounds (VOCs) were retrieved from the sampling device first to minimize aeration. Sample locations to be analyzed for VOCs and semivolatile organic compounds (SVOCs) were selected based on locations with the highest photoionization detector (PID) field-screening results, as described below. Representative samples for total organic carbon (TOC) analysis were collected from undisturbed soil in the vicinity of the active landfill.

After samples were collected and labeled and sample information was recorded in the field notebook, the samples were placed in a cooler with frozen ice substitute for shipment to the analytical laboratory.

2.1.2 Field Measurements

Headspace screening was conducted by placing soil in a quart-sized resealable bag until the bag was approximately one-half full. The soil was warmed for approximately 15 minutes, then the PID probe was inserted into the bag for approximately 30 seconds and the highest reading recorded. The maximum headspace reading, soil type, odor, and sample location were recorded in the field notebook. Field screening samples were collected at a rate of one sample per 100 yd^3. The areas with the most elevated field screening results were selected for laboratory analysis.

2.1.3 Decontamination Procedures

Equipment that contacted potentially contaminated soil was decontaminated before and after use with a portable decontamination system of coolers containing wash and rinse water.
Decontamination consisted of washing equipment in a solution of non-phosphate detergent followed by potable and deionized water rinses.

Decontamination fluids were contained and introduced into the biocells. The volume of decontamination fluids was less than 5 gallons.

2.2 Analytical Procedures

Confirmation samples were submitted for analysis to Commercial Testing & Environmental Services in Anchorage, Alaska. Analytical procedures used are summarized below.

- GRO/BTEX by State of Alaska Method AK101
- Diesel-range organics (DRO) by State of Alaska Method AK102
- Residual-range organics (RRO) by State of Alaska Method AK103
- VOCs by U.S. Environmental Protection Agency (EPA) Method 8260

- Carcinogenic polynuclear aromatic hydrocarbons (cPAHs) by selective ion monitoring
- TOC by laboratory-modified EPA Method 415.1

Quality control (QC) samples for this project were collocated with project samples. Trip blanks of surrogate-fortified methanol were shipped with the GRO samples. The QC samples were submitted blind (labeled with a number different from the project sample). Quality assurance samples were eliminated from the original scope of work at the request of the USACE. The sample record log and laboratory data packages are in Appendix A.

Data quality was assessed for project and QC soil samples collected and analyzed during the confirmation sampling event. The results of the data assessment and checklists are in Appendix A. On the basis of the data quality assessment, the data are considered acceptable.

3.0 EVALUATION OF CLEANUP LEVELS

3.1 Approach and Methodology

Biocell soil cleanup levels were evaluated by using Methods Two and Three in 18 AAC 75 and results from contaminant leaching assessment modeling conducted by using SESOIL. Section 3.2 presents modeling results. Section 3.3 incorporates the modeling results and presents cleanup levels.

The original leaching assessment model input parameters used soil in the biocells as cover material over the active landfill north of Lower Camp instead of Landfill 2 (LF03), west of Lower Camp. The change of landfills was the result of negotiations with regulatory agencies. The contractor was requested to change the landfill where the material would be used as cover material, but was not requested to reevaluate model input parameters or rerun the model. The leaching assessment model discussion was not changed to reflect possible parameter changes resulting from soil placement at Landfill 2 (LF03).

3.2 SESOIL Model

Leaching Assessment Modeling

A site-specific leaching assessment model of the proposed application of the biocell soil as cover at Landfill 2 (LF03) was conducted by using SESOIL (Bonazountas and Wagner, 1984). SESOIL is a seasonal compartment infiltration and contaminant transport model developed for the EPA in 1981 by Arthur D. Little, Inc. The original program code has been updated several times, most recently being incorporated into the RISKPRO system for windows (General Sciences Corporation [GSC], 1995).

The ADEC has guidance for fate and transport modeling under the contaminated sites remediation program (ADEC, 1998). The guidance recommends use of models that provide conservative predictions; are technically sound and legally defensible; are readily available, widely distributed, and generally accepted; and have received adequate peer review. The SESOIL model meets these requirements.

Several studies have been conducted on the SESOIL model, including sensitivity analysis, comparison with other models, and comparison with field data (Hetrick et al., 1994; Brar, 1996). SESOIL has been applied by state regulatory agencies to formulate soil cleanup levels in California (Brar, 1996) and Oregon (Anderson, 1992), to rank sites in Wisconsin (Brar, 1996), and to support formulation of risk-based cleanup levels in Alaska.

SESOIL is a one-dimensional vertical solute transport model for the unsaturated zone. The model considers only one compound at a time and is based on mass balance and equilibrium partitioning of the chemical between the dissolved, sorbed, and vapor phases.

3.2.1 Input Parameters

Site-specific SESOIL input parameters used during modeling are described below. SESOIL input parameters are presented in Appendix B.

Climatic Data

Climatic data used in the modeling were obtained from the AEIDC (AEIDC, 1989) *Climatological Summary for Cape Romanzof, Alaska,* for the period of 1953 to 1987. The climatic input parameters for SESOIL are summarized in Table 1.

Hydrogeologic Data

Inspection of surface soil at the active landfill and Landfill 2 (LF03) sites indicates the soil is a mixture of gravel, sand, and silt. For the purpose of the model the soil was conservatively classified as a very loose poorly graded sandy gravel (GP) (American Society for Testing and Materials [ASTM], 1990). Given the waste-handling practices at Cape Romanzof (incinerated combustible waste and thickened sewage sludge are placed in the active landfill), it is reasonable to assume that a significant percentage of the refuse layer in the landfill is ash or sewage sludge. The large proportion of organic carbon material (ash and sludge) would decrease the leachability of DRO components (the primary contaminant of concern for leaching assessment; see Section 3.2.2) because of the tendency for organic compounds to sorb onto carbon. However, to be conservative, the refuse layer was modeled by using soil properties of a very loose poorly graded sandy gravel. Soil type and other soil input parameters are summarized in Table 2.

The well completion log for the Cape Romanzof water supply well indicates groundwater was encountered at a depth of 30 feet bgs (WCC, 1989).

From site observations at the active landfill, and as-built drawings, a model in SESOIL was built to simulate precipitation leaching through the active landfill with the biocell soil used as cover.

For the model the estimated area for application of the biocell soil (all areas summed together) was approximately 9,450 square feet (ft^2), or 8,800,000 square centimeters (cm^2). Figure 4 shows the steps taken to build the SESOIL contaminant model for the active landfill.

1. The known chemical data are shown conceptually.
2. The subsurface is divided into layers: a 2-foot-thick layer of contaminated soil beginning at the surface, underlain by a 4-foot-thick layer of refuse, underlain by a 24-foot-thick layer of sandy gravel extending to groundwater. The 24-foot-thick layer was divided into two layers to take advantage of SESOIL's sublayering capabilities and decrease rounding errors in the model calculation.
3. The contaminant loadings used for the SESOIL runs are in Figure 4. The indicated loadings indicated are applied to each sublayer of the top (contaminated) layer.

Table 2. SESOIL Soil Input Parameters, Cape Romanzof, Alaska

Parameter	Value	Reference
Soil type	Poorly graded sandy gravel	1999 site observation
Soil density (g/cm^3)	1.76	Das, 1990
Intrinsic permeability (sand) (cm^2)	1.2×10^{-7}	Bonazountas and Wagner, 1984
Disconnectedness index (unitless)	9.4	Result of model calibration
Porosity (fraction)	0 3	Bonazountas and Wagner, 1984
Organic carbon content (percent)	0.3	*
Freundlich exponent (unitless)	1	Bonazountas and Wagner, 1984
Average soil moisture (percent)	10.8	*
Depth to groundwater (cm)	914	Site drinking water well log
Thickness of contaminated layer (cm)	61	Landfill design (cover thickness)
Surface area of contamination (cm^2)	8.8×10^6	As-built drawings
pH	7	default
Index of volatilization/ diffusion occurrence	1 (top layer) 0 (lower layers)	GSC, 1995, Anderson, 1992

cm	Centimeters
cm^2	Square centimeters
g/cm^3	Grams per cubic centimeter
*	Based on site soil sample analytical results

Table 1. SESOIL Climatic Input Parameters, Cape Romanzof, Alaska[a]

Parameter	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May[f]	Jun	Jul	Aug	Sep
Temperature (°C)	0.1	-5.00[f]	-10.33[f]	-10.39[f]	-12.39[f]	-9.44[f]	-6.06[f]	1.56[f]	6.56	9.50	9.44	6.44
Cloud cover (fraction)[b]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Relative humidity (fraction)[b]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Albedo (fraction)[b]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Evapotranspiration[b] (cm/day)	0.034	0.00[f]	0.00[f]	0.00[f]	0.00[f]	0.00[f]	0.00[f]	0.23[f]	0.13	0.22	0.30	0.23
Precipitation (cm)	6.02	0.010[f]	0.010[f]	0.010[f]	0.010[f]	0.010[f]	0.010[f]	21.20[f]	5.44	7.42	12.19	11.79
Mean time rain[c] (days)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Mean number of storms[d] (unitless)	6.9	0.10[f]	0.10[f]	0.10[f]	0 10[f]	0.10[f]	0.10[f]	23.3[f]	6.20	7.30	10.20	10 80
Mean season (days)[e]	30.40	30.40	30.40	30.40	30.40	30.40	30.40	30.40	30.40	30.40	30.40	30.40

°C Degrees Celsius
cm Centimeters
cm/day Centimeters per day

a. Unless otherwise noted, source is Arctic Environmental Information and Data Center (AEIDC), University of Alaska, *Alaska Climate Summaries, Second Edition, 1989* Climatalogical summary for Cape Romanzof, Alaska for period 1953 to 1987.
b. *Potential Evapotranspiration and Climate in Alaska by Thornthwaite's Classification* by Patrick and Black (1992) indicates that evapotranspiration at Cape Romanzof is expected to be approximately 54 percent of average annual precipitation. Evapotranspiration input values were calculated using this percentage and the mean monthly precipitation. Because evapotranspiration was entered directly into SESOIL, the model does not require values for cloud cover, relative humidity, or albedo.
c. Estimate.
d. AEIDC, 1989, Mean number of days per month with precipitation of 0.01 inches or more for Cape Romanzof.
e. Average length of a month.
f. Data for precipitation, evapotranspiration, and mean number of storms in months having an average temperature below freezing was applied in May to simulate the affect of winter freezup and spring breakup on soil leaching conditions.

3.2.2 Chemicals of Concern

Chemicals of Concern

The ADEC has established hydrocarbon cleanup levels (18 AAC 75.341) for the following hydrocarbon ranges in vadose-zone soil (ADEC, 1999):

- Gasoline-Range – GRO compounds corresponding to an alkane range of C_6 to C_{10}
- Diesel-Range – DRO compounds corresponding to an alkane range of C_{10} to C_{25}
- Residual-Range – RRO compounds corresponding to an alkane range of C_{25} to C_{36}

Sample results indicate GRO, BTEX, and RRO compounds are not present in the biocell soil at concentrations above cleanup levels (Section 3.3).

To perform the leachability assessment, it was necessary to identify specific compounds as surrogates for the DRO because DRO analytical results represent complex hydrocarbon mixtures. The surrogates are used in the leaching assessment model instead of a fuel mixture because the required chemical-specific parameters required to run the model (i.e., adsorption coefficients, solubilities, diffusivities, Henry's law constants, and molecular weights) are not available for fuel mixtures.

Physical properties for potential DRO surrogate compounds in the biocell soil are presented in Table 3. The surrogate compounds considered include benzene, xylenes, naphthalene, fluorene, fluoranthene, phenanthrene, and benzo(a)pyrene. Appropriate DRO surrogates are identified as compounds with the following characteristics:

- Are components of the fuel mixture
- Have relatively high mobilities and toxicities
- Have established maximum contaminant levels (MCLs) and/or risk-based concentrations (RBCs)
- Have specific chemical parameters available to evaluate leachability (i.e., diffusivities, solubilities, adsorption coefficients, and Henry's law constants)
- Are quantified by using standard analytical methods

Of the compounds in Table 3 that were considered as possible DRO surrogates, naphthalene was selected as a conservative representation of DRO properties for modeling for the following reasons.

- Naphthalene has 10 carbon atoms. By definition in 18 AAC 75, DRO compounds have between 10 and 25 carbon atoms.
- Naphthalene is the most soluble of the compounds in Table 3 with at least 10 carbon atoms. Solubility is a sensitive input parameter in SESOIL. The more soluble the compound, the more mobile it is in the model.
- Inspection of the chromatograms of the DRO results for samples 99RMZO103SL and 99RMZO308SL indicate that the highest concentrations of straight-chain alkanes in these samples are compounds with 12 to 15 carbons. Because naphthalene has only 10 carbons, it adds a conservative factor of safety to the model. Because naphthalene has a higher solubility than compounds with 12 to 15 carbons, it would be expected to leach faster and at a higher concentration than compounds such as fluorene, fluoranthene, and phenanthrene.
- Of the compounds in Table 3 with at least 10 carbons, naphthalene has the lowest adsorption coefficient on organic carbon (K_{oc}). The K_{oc} is a very sensitive parameter in SESOIL. The higher the K_{oc}, the more the compound adsorbs to organic carbon in the modeled soil column, and the less likely it is to leach.
- Naphthalene is a suspected carcinogen.
- Naphthalene was detected in two of four samples analyzed. The maximum concentration of naphthalene was 1,130 micrograms per kilogram (µg/kg).

Table 3. Physical Properties of Selected Diesel Component Compounds

Parameters	Benzene	Xylenes	Naphthalene	Fluorene	Fluoranthene	Phenanthrene	Benzo(a)pyrene	Reference
Empirical Formula	C_6H_6	C_8H_{10}	$C_{10}H_8$	$C_{13}H_{10}$	$C_{16}H_{10}$	$C_{14}H_{10}$	$C_{20}H_{12}$	Montgomery and Welkom, 1989
Solubility in Water (µg/ml)	1,780	213	34	1.98	0.37	1.29	3	Montgomery and Welkom, 1989
Diffusion Coefficient in Air (cm^2/sec)	0.091	0.075	0.066	0.056	0.049	0.053	0.043	Schwarzenback et al., 1993
Henry's Law Constant (m^3 • atm/mole)	0.0055	0.0053	0.0004	0 00021	0.0169	0.00013	2.4x10-6	Montgomery and Welkom, 1989
Adsorption Coefficient on Organic Carbon (K_{OC})	83	129	1,288	5,012	41,687	5,248	398,107	Montgomery and Welkom, 1989
Molecular Weight (g/mole)	78.1	106.17	128.2	166.22	202.26	178.24	252.32	Montgomery and Welkom, 1989
Biodegradation rate in solid and liquid phases (per day)	6.3×10^{-4}	2.1×10^{-4}[a]	$6\,3 \times 10^{-3}$	$1\,1 \times 10^{-4}$	1.6×10^{-4}	3.5×10^{-4}	$1\,3 \times 10^{-4}$	Dragun, 1988

atm/mole	Atmospheres per mole
cm^2	Centimeters squared
cm^2/sec	Centimeters squared per second
g/mole	Grams per mole
m^3	Cubic meters
µg/ml	Micrograms per milliliter

a. Biodegradation rate for o-xylene

For the initial model runs, the physical properties for naphthalene (Table 3) were input into SESOIL to model the weathered DRO in the biocell soil. A naphthalene concentration of 6,180 milligrams per kilogram (mg/kg) was applied to all ten sublayers of the top layer in the soil column. The 6,180 mg/kg concentration was selected because that was the greatest DRO confirmation soil sample result.

3.2.3 Model Calibration

Calibration of the SESOIL model to actual site conditions was accomplished through use of the disconnectedness index, soil moisture results for soil samples from the site, and soil moistures calculated by the model. The disconnectedness index is a parameter used in SESOIL, and is defined as the exponent relating the 'wetting' or 'drying' time dependent intrinsic permeability of the soil to its saturated intrinsic permeability (Hetrick, et al., 1994). The disconnectedness index is used by SESOIL to calculate the average soil moisture in the soil column. To calibrate the model, the user adjusts the disconnectedness index until the model calculates a soil moisture equal to the measured soil moisture at the site.

The average moisture content for the two samples collected from the landfill area was 10.8 percent. A disconnectedness index of 9.4 was arrived at iteratively to yield a calculated 10.9 percent average soil moisture.

3.2.4 Model Results

While modeling the fate and transport of the DRO, surrogate naphthalene, an attempt was made to make conservative yet reasonable assumptions for SESOIL model input parameters. Table 4 presents a summary of model runs and results.

Appendix C presents the SESOIL model output results for run number 11 (naphthalene at an initial contaminant loading of 6,180 mg/kg), as well as graphical output of all model runs. Model results indicate the DRO surrogate naphthalene will leach to a depth of approximately 3.6 feet (1.1 meters) after 5 years. The dissolved naphthalene concentration calculated by the model was approximately 1 milligram per liter (mg/L) at a depth of 90 centimeters (cm). The adsorbed soil concentration output by the model for a depth of 90 cm was approximately 4 mg/kg.

The refuse extends to a depth of approximately 6 feet (1.8 meters). Additional model runs were performed to estimate the concentration and time for the leachate to travel to the bottom of the refuse. Results from run number 14 indicate it would take approximately 180 months (15 years) for the DRO surrogate to leach 6 feet (1.83 meters) to the bottom of the refuse. SESOIL calculated the dissolved concentration of naphthalene in soil pore water would be $5x10^{-6}$ mg/L and the concentration of naphthalene adsorbed to soil would be $1.5x10^{-5}$ mg/kg. At these concentrations, naphthalene is not detectable using present analytical chemistry methods.

3.2.5 Model Sensitivity Analysis

The literature (Hetrick, et al., 1994; Anderson, 1992; and Brar, 1996) suggests the SESOIL model is sensitive to several input parameters, including contaminant loading concentration, biodegradation rate, adsorption coefficient on organic carbon, intrinsic permeability, precipitation, and organic carbon content.

To assess the sensitivity of the Cape Romanzof SESOIL model to biodegradation rate, adsorption coefficient on organic carbon, and intrinsic permeability, these parameters were varied in additional SESOIL runs to see the effect on modeled leachate depth and concentration. Because the input values for contaminant loading, precipitation, and organic carbon content were based on actual site data, these parameters were excluded from sensitivity analysis.

Model runs 15 through 21 (Table 4) were performed as the sensitivity analysis. In model runs 15 and 16, biodegradation rate was varied. In run number 15, a three-order-of-magnitude change in biodegradation rate resulted in an eight-order-of-magnitude increase in the adsorbed soil concentration to reach the bottom of the refuse layer (183 cm). This indicates the concentrations at which compounds leach is sensitive to the

Table 4. SESOIL Model Run Summary and Results

Run Filename (Number)	Compound	Biodegradation Rate Coefficient (day^{-1})	K_{oc} ([ug/g-OC]/ µg/ml)	Intrinsic Permeability (cm^2)	Maximum Adsorbed Soil Concentration/ time to reach 76 cm depth (µg/g/years)	Maximum Adsorbed Soil Concentration/ time to reach 183 cm depth (µg/g/years)	Average Concentration in Groundwater (914 cm depth)/ time to reach (µg/ml/years)
10	Naphthalene	$6.3x10^{-3}$	1,288	$1.2x10^{-7}$	17 / 3.1	0.000015 / 15.0	na
11	Fluorene	$1.1x10^{-4}$	1.7	$1.2x10^{-7}$	25 / 12.1	na	na
12	Fluoranthene	$1.6x10^{-3}$	0.17	$1.2x10^{-7}$	na	na	na
13	Benzo(a)pyrene	$1.3x10^{-4}$	0.17	$1.2x10^{-7}$	na	na	na
14	Naphthalene	$6\ 3x10^{-3}$	1,288	$1.2x10^{-7}$	17 / 3.1	0.000015 / 15.0	na
15	Naphthalene	0	1,288	$1.2x10^{-7}$	135 / 3.7	135 / 18.8	na
16	Naphthalene	$6.3x10^{-2}$	1,288	$1.2x10^{-7}$	0.55 / 2	$4x10^{-11}$ / 14.6	na
17	Naphthalene	$6.3x10^{-3}$	128.8	$1.2x10^{-7}$	10 / 0.7	0.7 / 1	$1.5x10^{-8}$ / 15.8
18	Naphthalene	$6.3x10^{-3}$	12,880	$1.2x10^{-7}$	$4x10^{-10}$ / 17.5	na	na
19	Naphthalene	$6.3x10^{-3}$	1,288	$1.2x10^{-8}$	17 / 3.2	0.000014 / 15.8	na
20	Naphthalene	$6.3x10^{-3}$	1,288	$1.2x10^{-6}$	17 / 3.1	0.000015 / 15.0	na
21	Naphthalene	0	128.8	$1.2x10^{-7}$	13 / 0.8	13 / 2.8	1.9 / 17.1

K_{oc}	Adsorption coefficient on organic carbon
µg/g	micrograms per gram
cm	Centimeters
cm^2	Square centimeters
OC	Organic carbon
day^{-1}	per day
µg/ml	micrograms per milliliter
na	Compound did not leach to the indicated depth in the modeled duration (25 years).

biodegradation rate coefficient. If the compound is biodegrading at a high rate, less of it will leach.

In model runs 17 and 18, K_{oc} was varied. In run number 17, a decrease of one order of magnitude in K_{oc} resulted in a five-order-of-magnitude increase in concentration, while the contaminant leached to the bottom of the refuse layer (183 cm) in $1/15^{th}$ the time. In addition, the contaminant leached to the water table within the modeled time duration (25 years). This indicates the rate and concentration at which a compound in the model will leach is sensitive to K_{oc}. A compound will leach much slower or not at all if it adsorbs to organic carbon.

In model runs 19 and 20, intrinsic permeability was varied one order of magnitude higher and lower than the value in Table 3. In each run, the concentrations and depths did not vary significantly, indicating intrinsic permeability is not sensitive to the model.

As a final check on sensitivity, the biodegradation rate was decreased to zero, and K_{oc} was decreased by one order of magnitude for model run 21. This run was meant to be a 'worst case' prediction of contaminant leaching. As Table 4 indicates, the contaminant reached the groundwater table in approximately 17 years. However, this scenario is considered unlikely.

3.3 Cleanup Levels

Soil sample results are compared to cleanup levels summarized on Tables 5 and 6. Most results are compared to cleanup levels under the Method Two (18 AAC 75) most restrictive pathway. For compounds with concentrations above Method Two cleanup levels, Method Three (18 AAC 75) was used to develop ACLs. Method Three was used to develop ACLs for benzene (Biocell 3) and RRO (Biocell 3). For DRO (Biocells 1 and 3), the SESOIL modeling results discussed above were used. Appendix D contains cleanup level calculations and supporting information.

The benzene ACL was evaluated because although benzene was not reported above the detection limits, some of the detection limits did not meet data quality objectives and were slightly greater than the Method Two migration to groundwater pathway cleanup level (0.02 mg/kg).

DRO ACLs were developed by using the results from the leaching assessment using SESOIL. A complete discussion of the modeling and results is in Section 3.2.

RRO ACLs were evaluated for Biocell 1 using Method 3 and parameters for an industrial/ commercial land use scenario. The calculated RRO ACL for the industrial/commercial scenario is greater than 22,000 mg/kg; the maximum allowable concentration in Table B2 (18 AAC 75).

3.4 Cumulative Risk

A determination of cumulative risk in accordance with 18 AAC 75.325(g) and 75.340(k) following the suggested presentation format in Appendix D of the *Draft Guidance on Developing Soil Cleanup Levels Under Methods Two and Three* (ADEC, 1999c) is included in Appendix D.

4.0 FINDINGS AND CONCLUSIONS

Confirmation soil samples were collected and analyzed from Biocells 1 and 3 in accordance with the biocell closure plan (HLA/Wilder, 1999). HLA/Wilder makes the following conclusions.

- Confirmation soil samples from Biocells 1 and 3 were collected and analyzed in accordance with the biocell closure plan (HLA/Wilder, 1999).
- Two background soil samples for TOC analysis were collected from the area of the active landfill. These results were used in the leaching assessment evaluation and ACLs.
- Leaching assessment modeling performed as requested by the ADEC in their biocell closure plan comments dated June 14, 1999, and discussed during a July 19, 1999, meeting between the USAF, USACE, ADEC, and HLA/Wilder, was conducted by using SESOIL. Multiple runs of the model with a range of input parameters indicate naphthalene

Table 5. Biocell 1 Soil Results

		Sample Number	99RMZ0101SL	99RMZ0102SL	99RMZ0103SL	99RMZ0104SL	99RMZ0105SL	99RMZ0106SL	99RMZ0107SL	99RMZ0108SL	99RMZ0109SL	99RMZ0110SL	99RMZ0111SL	99RMZ0112SL	99RMZ0113SL
		Location (biocell/area)	Biocell 1 - 1	Biocell 1 - 2	Biocell 1 - 3	Biocell 1 - 4	Biocell 1 - 5	Biocell 1 - 6	Biocell 1 - 7	Biocell 1 - 8	Biocell 1 - 9	Biocell 1 - 10	Biocell 1 - 11	Biocell 1 - 12	Biocell 1 - 13
		Date Collected	8/25/99	8/25/99	8/25/99	8/25/99	8/25/99	8/25/99	8/25/99	8/25/99	8/25/99	8/25/99	8/25/99	8/25/99	8/25/99
		Depth (feet bgs)	2.5	5.5	5	3.5	3.5	1.5	5.5	1.5	2.5	1.5	3	3.5	2.5
		OVM Reading (ppm)	2	31	9	1	1	2	4	1	7.5	3	2	3	1
		Sample Type	PR	PR	PR	PR	PR	PR	PR	PR	PR	PR	PR	PR	PR
Analyte	**Analytical Method**	**Units**	**Cleanup Level[a]**												
Gasoline-Range Organics	AK101	mg/kg	300[b]	ND (3.56)	ND (3.03)	3.37	ND (3.40)	ND (3.19)	ND (3.30)	5.33	ND (4.17)	ND (3.26)	ND (3.06)	ND (3.29)	ND (3.14)	ND (2.57)
Diesel-Range Organics	AK102	mg/kg	6,180[c]	2,530	4,300	5,720	2,150	1,620	2,530	4,450	3,360	6,180	3,250	3,980	1,580	388
Residual-Range Organics	AK103	mg/kg	22,000[d]	6,360	11,600	13,300	6,900	4,230	8,310	12,100	11,300	18,400	11,800	13,400	5,190	1,520
BTEX																
Benzene	EPA 8021	mg/kg	0.02	ND (0.0178)	ND (0.0152)	ND (0.0148)	ND (0.0170)	ND (0.0159)	ND (0.0165)	ND (0.0143)	ND (0.0209)	ND (0.0163)	ND (0.0153)	ND (0.0165)	ND (0.0157)	ND (0.0128)
Toluene	EPA 8021	mg/kg	5.4[e]	ND (0.0711)	ND (0.0607)	ND (0.0593)	ND (0.0680)	ND (0.0638)	ND (0.0661)	ND (0.0571)	ND (0.0835)	ND (0.0652)	ND (0.0612)	ND (0.0659)	ND (0.628)	ND (0.0513)
Ethylbenzene	EPA 8021	mg/kg	5.5[e]	ND (0.0711)	ND (0.0607)	ND (0.0593)	ND (0.0680)	ND (0.0638)	ND (0.0661)	ND (0.0571)	ND (0.0835)	ND (0.0652)	ND (0.0612)	ND (0.0659)	ND (0.628)	ND (0.0513)
Xylenes	EPA 8021	mg/kg	78[e]	ND (0.142)	ND (0.121)	ND (0.119)	ND (0.136)	ND (0.128)	ND (0.132)	ND (0.114)	ND (0.167)	ND (0.130)	ND (0.122)	ND (0.132)	ND (0.123)	ND (0.103)
VOCs																
Benzene	EPA 8260B	mg/kg	0.02	--	ND (0.030)	ND (0.030)	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	EPA 8260B	mg/kg	5.5	--	ND (0.030)	ND (0.030)	--	--	--	--	--	--	--	--	--	--
Toluene	EPA 8260B	mg/kg	5.4	--	ND (0.030)	ND (0.030)	--	--	--	--	--	--	--	--	--	--
m,p-Xylenes	EPA 8260B	mg/kg	NE	--	ND (0.030)	ND (0.030)	--	--	--	--	--	--	--	--	--	--
o-Xylene	EPA 8260B	mg/kg	NE	--	ND (0.030)	ND (0.030)	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																
Naphthalene	PAH SIM	µg/kg	43,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	PAH SIM	µg/kg	NE	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Acenaphthene	PAH SIM	µg/kg	210,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Fluorene	PAH SIM	µg/kg	270,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Phenanthrene	PAH SIM	µg/kg	NE	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Anthracene	PAH SIM	µg/kg	4,300,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Fluoranthene	PAH SIM	µg/kg	2,100,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Pyrene	PAH SIM	µg/kg	1,500,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	PAH SIM	µg/kg	6,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Chrysene	PAH SIM	µg/kg	620,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	PAH SIM	µg/kg	11,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	PAH SIM	µg/kg	110,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	PAH SIM	µg/kg	1,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	PAH SIM	µg/kg	11,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	PAH SIM	µg/kg	1,000	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	PAH SIM	µg/kg	NE	--	ND (3.8)	ND (4.0)	--	--	--	--	--	--	--	--	--	--

--	Not analyzed
ACL	Alternative cleanup level
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylenes
EPA	U.S. Environmental Protection Agency
µg/kg	Micrograms per kilogram
mg/kg	Milligrams per kilogram
NA	Not applicable
ND	Not detected at or above the concentration in parentheses
NE	None established
OVM	Organic vapor meter
PAH SIM	Polynuclear aromatic hydrocarbons by selective ion monitoring
ppm	Parts per million
PR	Project sample
VOCs	Volatile organic compounds

a. Unless otherwise noted, cleanup levels are from Alaska Department of Environmental Conservation (ADEC) Title 18, Alaska Administrative Code, Chapter 75 (18 AAC 75), Oil and Hazardous Substances Pollution Control Regulations, Table B1 Method Two - Soil Cleanup Levels. Adopted January 22, 1999.
b. ADEC, 18 AAC 75, Table B2 Method Two - Under 40-inch Zone, Migration to Groundwater Pathway.
c. ADEC, 18 AAC 75, Method Three ACL developed in conjunction with leaching assessment modeling (see Section 4).
d. ADEC, 18 AAC 75, Method Three ACL most conservative pathway for industrial/commercial scenario calculated exceeded the maximum allowable concentration

Table 6. Biocell 3 Soil Results

	Sample Number	99RMZ0301SL	99RMZ0302SL	99RMZ0303SL	99RMZ0304SL	99RMZ0305SL	99RMZ0306SL	99RMZ0307SL	99RMZ0308SL	99RMZ0309SL	99RMZ0310SL	99RMZ0311SL	99RMZ0312SL	99RMZ0313SL	99RMZ0314SL	99RMZ0315SL	99RMZ0316SL	99RMZ0317SL	99RMZ03TBSL
	Location (biocell/area)	Biocell 3 - 1	Biocell 3 - 2	Biocell 3 - 3	Biocell 3 - 4	Biocell 3 - 5	Biocell 3 - 6	Biocell 3 - 7	Biocell 3 - 8	Biocell 3 - 7	Biocell 3 - 9	Biocell 3 - 11	Biocell 3 - 10	Biocell 3 - 12	Biocell 3 - 13	Biocell 3 - 13	Biocell 3 - 14	Biocell 3 - 15	NA
	Date Collected	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999	8/24/1999
	Depth (feet bgs)	1.5	2.0	2.0	1.5	1.5	1.5	1.5	2.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	NA
	OVM Reading (ppm)	257	207	197	129	110	118	77	72	NA	31	11	77	199	2	NA	62	8.8	NA
	Sample Type	PR	PR	PR	PR	PR	PR	PR	PR	QC	PR	PR	PR	PR	PR	QC	PR	PR	QC
Analyte	**Analytical Method**	**Units**	**Cleanup Level[a]**																	
Gasoline-Range Organics	AK101	mg/kg	300[b]	114	140	95.9	111	105	65.3	40.9	75.4	55.6	31.8	24.8	59.4	132	ND (3.55)	ND (3.38)	ND (3.14)	ND (3.21)	ND (2.50)
Diesel-Range Organics	AK102	mg/kg	6,180[c]	2,740	2,770	3,180	4,130	2,690	3,350	3,280 J	4,400	1,650 J	1,740	1,800	3,700	2,600	154	263	1,200	285	--
Residual-Range Organics	AK103	mg/kg	10,000[d]	351	348	590	624	430	480	322	412	226	289	252	262	ND (167)	297	304	256	191	--
BTEX																					
Benzene	EPA 8021	mg/kg	0.13[e]	ND (0.0549)	ND (0.0670)	ND (0.0540)	ND (0.0650)	ND (0.0613)	ND (0.0858)	ND (0.0693)	ND (0.0746)	ND (0.0693)	ND (0.0711)	ND (0.684)	ND (0.0693)	ND (0.0808)	ND (0.0178)	ND (0.0169)	ND (0.0157)	ND (0.0160)	--
Toluene	EPA 8021	mg/kg	5.4	ND (0.220)	ND (0.0268)	ND (0.216)	ND (0.260)	0.277	ND (0.343)	ND (0.277)	ND (0.298)	ND (0.277)	ND (0.284)	ND (0.273)	ND (0.277)	ND (0.323)	ND (0.0711)	ND (0.0676)	ND (0.0628)	ND (0.0642)	--
Ethylbenzene	EPA 8021	mg/kg	5.5	0.869	1.11	0.734	0.697	0.55	ND (0.343)	ND (0.277)	ND (0.298)	ND (0.277)	ND (0.284)	ND (0.273)	ND (0.277)	ND (0.323)	ND (0.0711)	ND (0.0676)	ND (0.0628)	ND (0.0642)	--
Xylenes	EPA 8021	mg/kg	78	3.05	3.63	2.39	1.56	1.98	1.12	0.95	2.13	1.13	0.712	ND (0.546)	1.05	2.67	ND (0.142)	ND (0.135)	ND (0.126)	ND (0.128)	--
VOCs																					
Benzene	EPA 8260B	mg/kg	0.13[e]	ND (0.022)	ND (0.027)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	EPA 8260B	mg/kg	5.5	0.0644	0.0901	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	EPA 8260B	mg/kg	5.4	0.0226	ND (0.027)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylenes	EPA 8260B	mg/kg	NE	0.711	0.627	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	EPA 8260B	mg/kg	NE	0.869	1.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene	EPA 8260B	mg/kg	NE	0.0793	0.0997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Propylbenzene	EPA 8260B	mg/kg	NE	0.141	0.187	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	EPA 8260B	mg/kg	NE	2.23	1.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	EPA 8260B	mg/kg	NE	4.43	3.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	EPA 8260B	mg/kg	NE	0.277	0.307	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	EPA 8260B	mg/kg	NE	0.0659	0.0598	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Butylbenzene	EPA 8260B	mg/kg	NE	0.422	0.499	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Isopropyltoluene	EPA 8260B	mg/kg	NE	0.153	0.168	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	EPA 8260B	mg/kg	43	1.35	1.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	EPA 8260B	mg/kg	0.015	0.141	ND (0.13)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																					
Naphthalene	PAH SIM	µg/kg	43,000[e]	973	1,130	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	PAH SIM	µg/kg	NE	ND (35)	ND (38)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	PAH SIM	µg/kg	210,000[e]	ND (35)	ND (38)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	PAH SIM	µg/kg	270,000[e]	ND (35)	ND (38)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	PAH SIM	µg/kg	NE	59.3	49.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	PAH SIM	µg/kg	4,300,000[e]	11.4	9.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	PAH SIM	µg/kg	2,100,000[e]	64.8	30.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	PAH SIM	µg/kg	1,500,000[e]	66.4	34.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	PAH SIM	µg/kg	6,000[e]	29.3	10.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	PAH SIM	µg/kg	620,000[e]	31.7	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	PAH SIM	µg/kg	11,000[e]	28.9	9.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	PAH SIM	µg/kg	110,000[e]	11.6	4.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	PAH SIM	µg/kg	1,000[e]	25.6	7.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	PAH SIM	µg/kg	11,000[e]	15.4	4.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	PAH SIM	µg/kg	1,000[e]	4.59	ND (1.9)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	PAH SIM	µg/kg	NE	20.1	9.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

--	Not analyzed
ACL	Alternative cleanup level
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylenes
EPA	U.S. Environmental Protection Agency
µg/kg	Micrograms per kilogram
mg/kg	Milligrams per kilogram
NA	Not applicable
ND	Not detected at or above the concentration in parentheses
NE	None established
OVM	Organic vapor meter
PAH SIM	Polynuclear aromatic hydrocarbons by selective ion monitoring
ppm	Parts per million
PR	Project sample
VOCs	Volatile organic compounds

Data Qualifiers

J	Estimated concentration

a. Unless otherwise noted, cleanup levels are from Alaska Department of Environmental Conservation (ADEC) Title 18, Alaska Administrative Code, Chapter 75 (18 AAC 75), Oil and Hazardous Substances Pollution Control Regulations, Table B1 Method Two - Under 40-inch Zone Adopted January 22, 1999.
b. ADEC, 18 AAC 75, Table B2 Method Two - Under 40-inch Zone, Migration to Groundwater Pathway.
c. ADEC, 18 AAC 75, Method Three ACL developed using leaching assessment modeling results (see section 4)
d. ADEC, 18 AAC 75, Table B2 Method Two - Under 40-inch Zone, Ingestion Pathway.
e. ADEC, 18 AAC 75, Method Three ACL, Migration to Groundwater Pathway (see Appendix D for calculations).

(used as a conservative DRO surrogate for the purpose of modeling) at a concentration equal to the maximum confirmation sample DRO concentration does not leach to a depth below the landfill after 25 years.

- Confirmation soil samples do not exceed the cleanup levels evaluated in this report and summarized in Tables 5 and 6.
- Data presentation, calculations, and discussion in this report meet ADEC requirements for cleanup level approval and closure of Biocells 1 and 3.
- Closure of Biocells 1 and 3 will allow the USAF beneficial use of the soil in the biocells as cover material at Landfill 2 (LF03) west of Lower Camp. Currently, the USAF does not have an available alternative source of suitable cover material.

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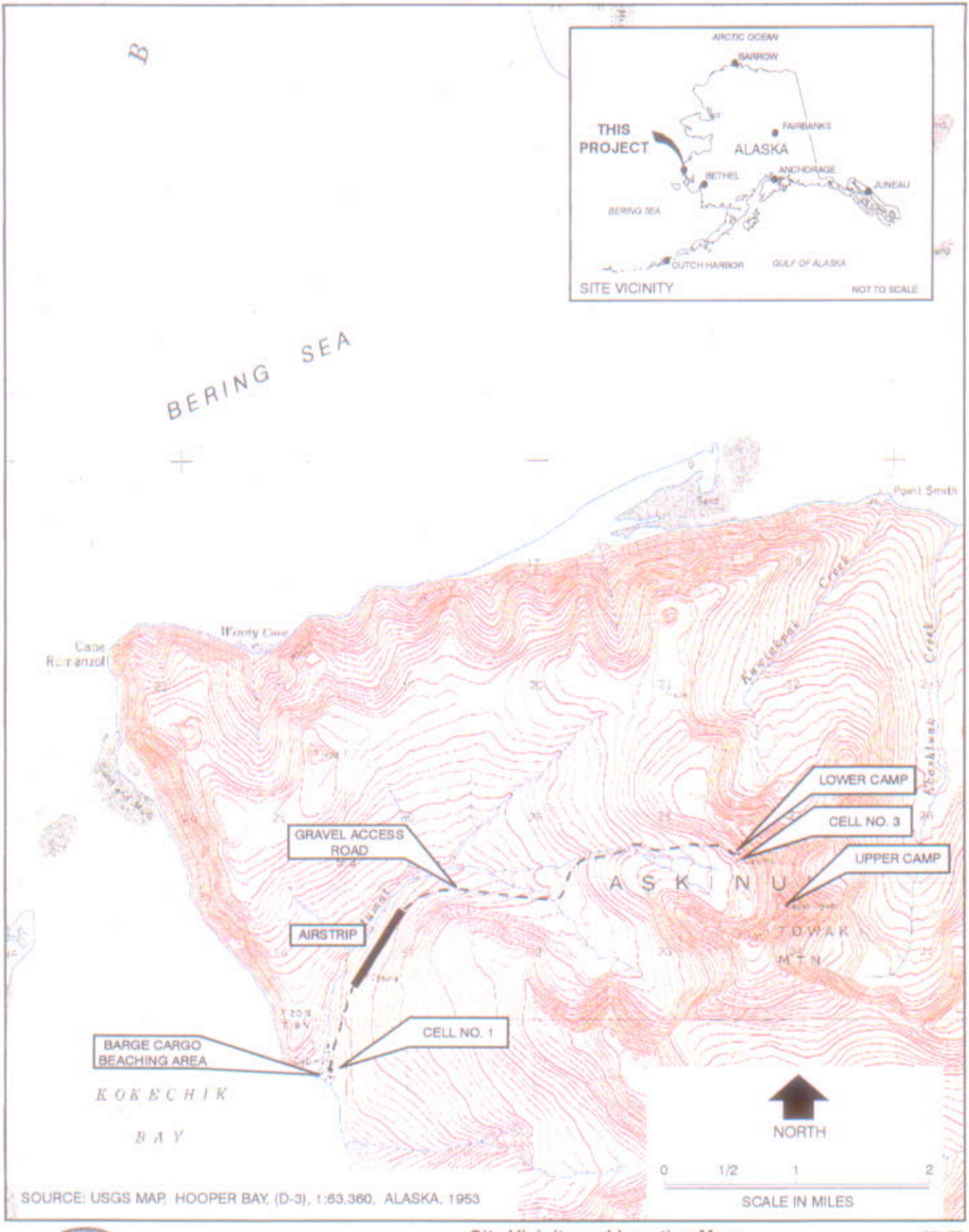
FIGURES

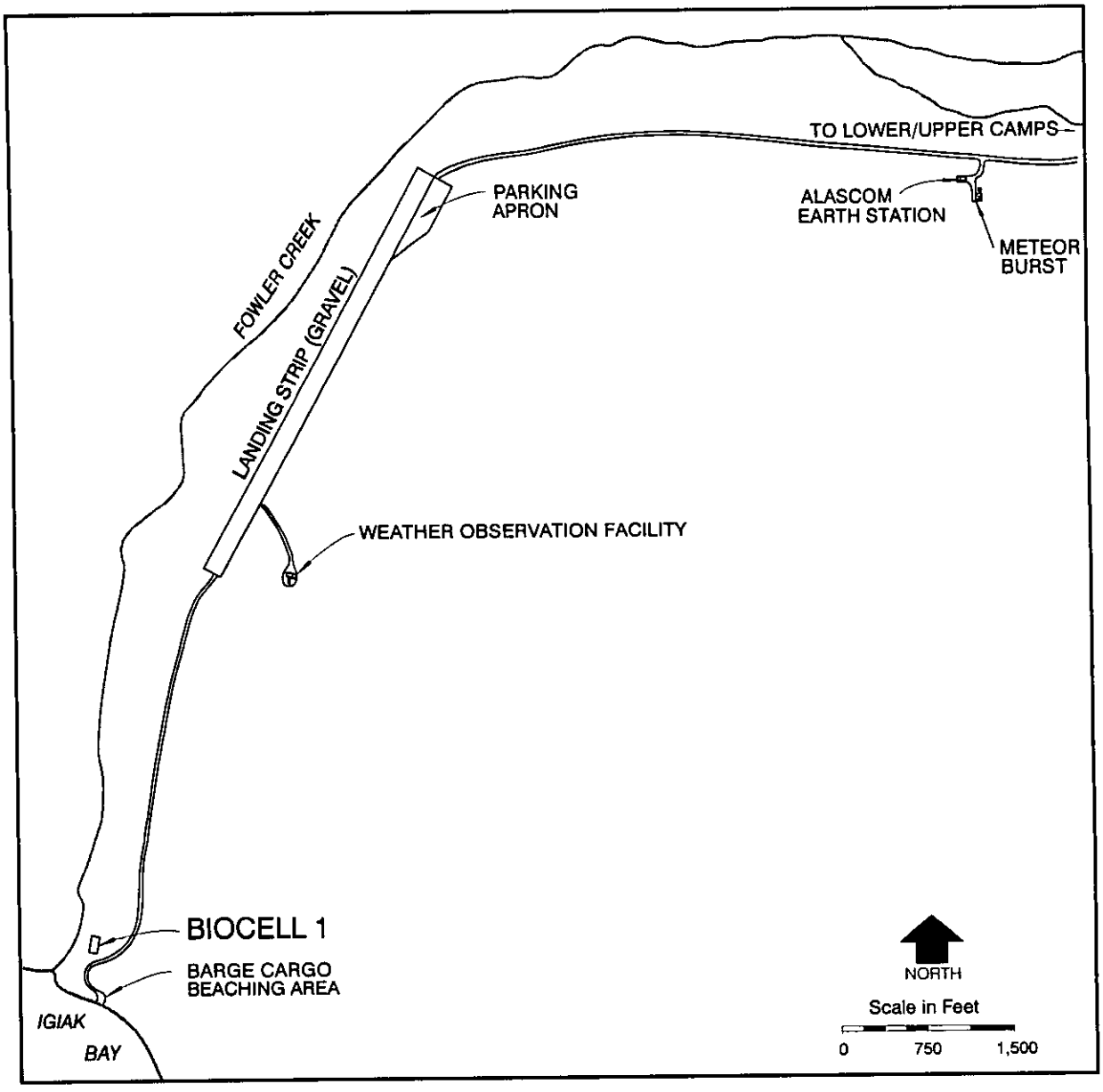


Site Vicinity and Location Maps

FIGURE 1

Cape Romanzof AFS Biocell Closure
Cape Romanzof, Alaska

DRAWN	PROJECT NUMBER	APPROVED	DATE	FILE NAME
BJ	33360		1/00	427c

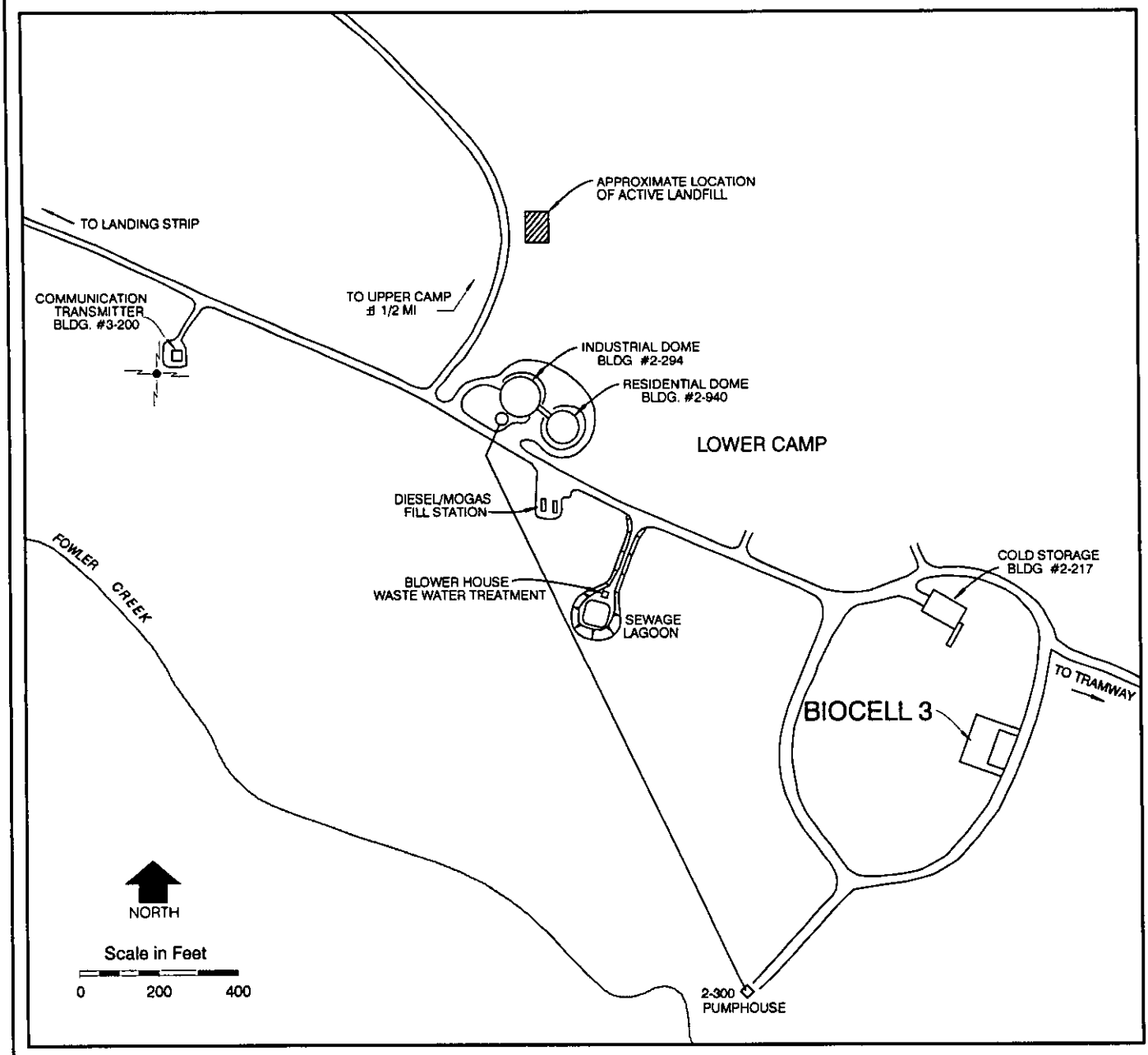


Biocell 1 Site Plan

FIGURE 2

Cape Romanzof AFS Biocell Closure
Cape Romanzof, Alaska

DRAWN	PROJECT NUMBER	APPROVED	DATE	FILE NAME
BJ	33360		1/00	428c



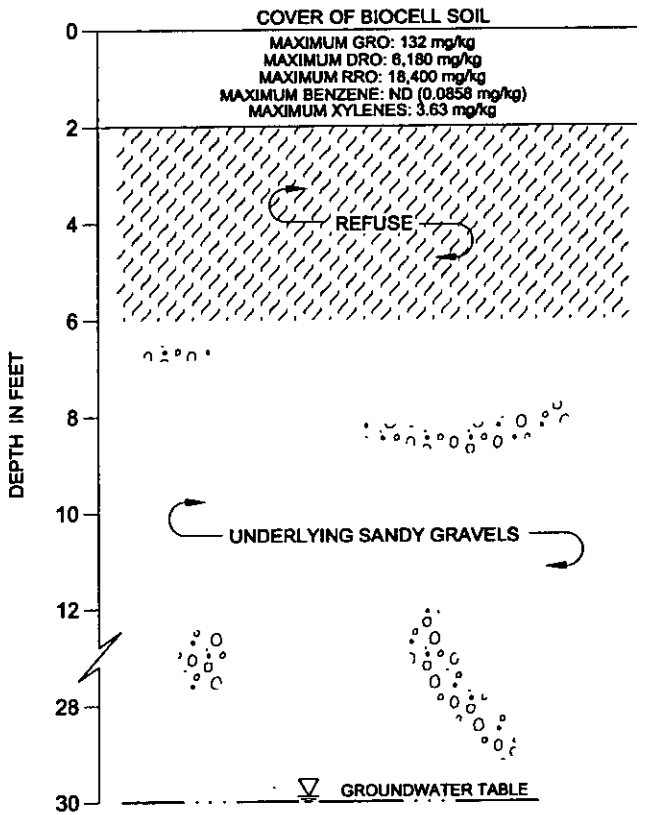
Biocell 3 Site Plan

FIGURE 3

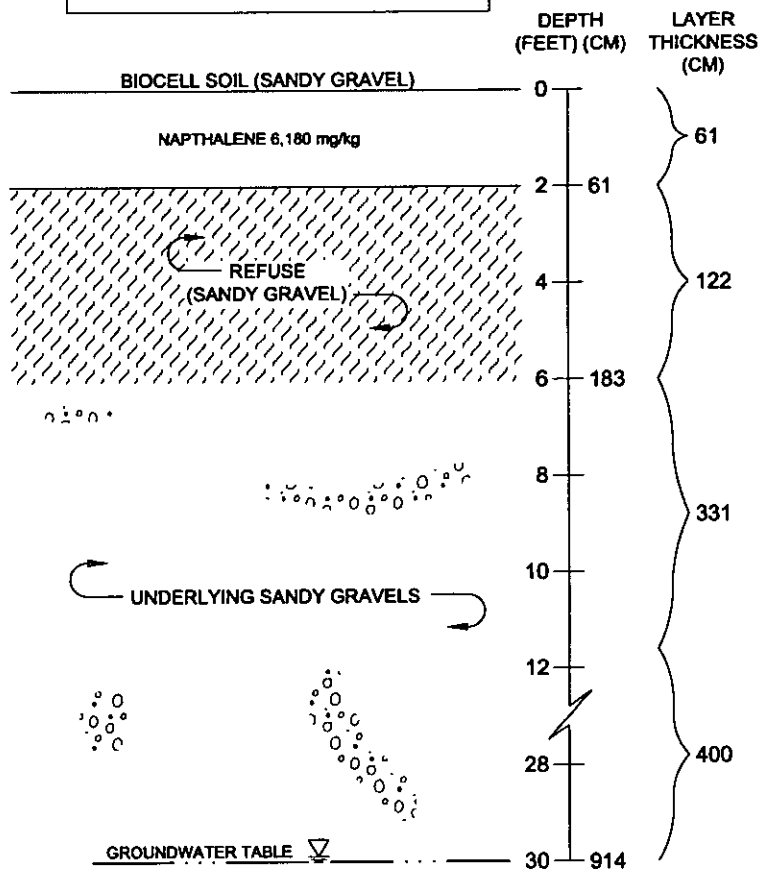
Cape Romanzof AFS Biocell Closure
Cape Romanzof, Alaska

DRAWN	PROJECT NUMBER	APPROVED	DATE	FILE NAME
BJ	33360		1/00	429c

LANDFILL STRATIGRAPHY WITH MAXIMUM CONTAMINANT CONCENTRATIONS IN COVER SOIL



CONCEPTUAL MODEL INTERVALS WITH SURROGATE CONTAMINANT LOADING



SOIL PROPERTIES (ENTIRE COLUMN)
SANDY GRAVEL:

BULK DENSITY 1.76 g/cm ^{3}
INTRINSIC PERMEABILITY 1.2 x 10 $^{-7}$ CM ^{2}
AVERAGE SOIL MOISTURE 10.8%
ORGANIC CARBON 0.3%
POROSITY 0.3%

NOT TO SCALE

LEGEND

GRO	GASOLINE-RANGE ORGANICS
DRO	DIESEL-RANGE ORGANICS
RRO	RESIDUAL-RANGE ORGANICS
g/cm3	GRAMS PER CUBIC CENTIMETER
mg/kg	MILLIGRAMS PER KILOGRAM
cm	CENTIMETERS
cm 2	SQUARE CENTIMETERS
%	PERCENT

Conceptual Model for SESOIL

FIGURE 4

Cape Romanzof AFS Biocell Closure
Cape Romanzof, Alaska

DRAWN	PROJECT NUMBER	APPROVED	DATE	FILE NAME
CEH	33360		1/00	33360a1.dwg

APPENDIX A

SAMPLE RECORD LOG AND LABORATORY DATA

Sample Record Log
Cape Romanzof LRRS Biocells

							LABORATORY ANALYSIS											
Sample Number	Sample Location	Date	Time	Sample Depth (feet)	PR	QC	AK 102 (DRO)	AK 101 (GRO)	AK 103 RRO	8021 BTEX	8270 (SVOCs)	8260 VOCs	Total Organic Carbon (Modified EPA Method 415 1)	Microbial/Nutrient	Duplicate Number	PID (PPM)	Lab	Comments
99RMZ0101SL	Cell 1 - 1	8/25/99	940	2 5	X		X	X	X							2	CT&E	
99RMZ0102SL	Cell 1 - 2	8/25/99	1000	5 5	X		X	X	X		X	X				31	CT&E	
99RMZ0103SL	Cell 1 - 3	8/25/99	1005	5	X		X	X	X		X	X				9	CT&E	
99RMZ0104SL	Cell 1 - 4	8/25/99	1010	3 5	X		X	X	X							1	CT&E	
99RMZ0105SL	Cell 1 - 5	8/25/99	1020	3.5	X		X	X	X							1	CT&E	
99RMZ0106SL	Cell 1 - 6	8/25/99	1040	1 5	X		X	X	X							2	CT&E	
99RMZ0107SL	Cell 1 - 7	8/25/99	1110	5 5	X		X	X	X							4	CT&E	
99RMZ0108SL	Cell 1 - 8	8/25/99	1120	1 5	X		X	X	X							1	CT&E	
99RMZ0109SL	Cell 1 - 9	8/25/99	1140	2 5	X		X	X	X							7.5	CT&E	
99RMZ0110SL	Cell 1 - 10	8/25/99	1145	1.5	X		X	X	X							3	CT&E	
99RMZ0111SL	Cell 1 - 11	8/25/99	1330	3	X		X	X	X							2	CT&E	
99RMZ0112SL	Cell 1 - 12	8/25/99	1335	3 5	X		X	X	X							3	CT&E	
99RMZ0113SL	Cell 1 - 13	8/25/99	1350	2.5	X		X	X	X							1	CT&E	
99RMZ0301SL	Cell 3 - 1	8/24/99	1300	1 5	X			X	X	X	X	X				257	CT&E	
99RMZ0302SL	Cell 3 - 2	8/24/99	1320	2 0	X			X	X	X	X	X				207	CT&E	
99RMZ0303SL	Cell 3 - 3	8/24/99	1340	2 0	X		X	X	X	X						197	CT&E	
99RMZ0304SL	Cell 3 - 4	8/24/99	1400	1 5	X		X	X	X	X						129	CT&E	
99RMZ0305SL	Cell 3 - 5	8/24/99	1415	1 5	X		X	X	X	X						110	CT&E	
99RMZ0306SL	Cell 3 - 6	8/24/99	1430	1 5	X		X	X	X	X						118	CT&E	
99RMZ0307SL	Cell 3 - 7	8/24/99	1445	1 5	X		X	X	X	X						77	CT&E	
99RMZ0308SL	Cell 3 - 8	8/24/99	1500	2 5	X		X	X	X	X						72	CT&E	
99RMZ0309SL	Cell 3 - 7	8/24/99	1450	1 5		X	X	X	X	X					99RMZ0307SL	NA	CT&E	Duplicate of 99RMZ0307SL
99RMZ0310SL	Cell 3 - 9	8/24/99	1515	1 5	X		X	X	X	X						31	CT&E	
99RMZ0311SL	Cell 3 - 11	8/24/99	1550	1 5	X		X	X	X	X						11	CT&E	
99RMZ0312SL	Cell 3 - 10	8/24/99	1610	1 5	X		X	X	X	X						77	CT&E	
99RMZ0313SL	Cell 3 - 12	8/24/99	1620	1.5	X		X	X	X	X						199	CT&E	
99RMZ0314SL	Cell 3 - 13	8/24/99	1635	1 5	X		X	X	X	X						2	CT&E	
99RMZ0315SL	Cell 3 - 13	8/24/99	1645	1 5		X	X	X	X	X					99RMZ0314SL	NA	CT&E	Duplicate of 99RMZ0314SL
99RMZ0316SL	Cell 3 - 14	8/24/99	1800	1 5	X		X	X	X	X						62	CT&E	
99RMZ0317SL	Cell 3 - 15	8/24/99	1900	1 5	X		X	X	X	X						8.8	CT&E	
99RMZ03TBSL	NA	8/24/99	1250	NA		X		X		X		X				NA	CT&E	Trip Blank
99RMZTOC1SL	Active LF	8/25/99	1840	1 0									X					
99RMZTOC2SL	Active LF	8/25/99	1845	1 0									X					

Data Quality Assessment
Cape Romanzof Biocells
Project Number 33360

Thirty two soil samples and one trip blank were collected August 24 through 25, 1999, from the Cape Romanzof Biocells. Two quality control (QC) samples were collected; quality assessment (QA) samples were not collected in accordance with the delivery order. Project and QC samples were analyzed by Commercial Testing & Engineering (CT&E) of Anchorage, Alaska. The data quality review included examination and review of sample holding times, temperatures, custody records, and reported results for samples and extraction QC. Analytical data was reviewed according to the *Chemical Quality Assurance for Hazardous, Toxic, and Radioactive Waste Projects*, USACE EM-200-1-6, dated October 10, 1997. Soil samples for volatile organic compounds (VOCs) were sampled and preserved according to U.S. Environmental Protection Agency (EPA) Method 5035, medium-level. Gasoline-range organics (GRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX) were sampled and preserved according to Alaska Department of Environmental Conservation (ADEC) Method AK101.

Soil samples

Soil confirmation and characterization samples were analyzed for VOCs by EPA Method 8260; polynuclear aromatic hydrocarbons by EPA Method 8270-Selective Ion Monitoring; GRO by ADEC Method AK101; BTEX by EPA Method 8021; diesel-range organics (DRO) by AK102; residual-range organics (RRO) by AK103; and total organic carbon by EPA Method 9060. The coolers containing samples from work orders 994540 and 994541 were received at 6.9 degrees Celsius (°C), above the required 4.0° +/-2.0°C. Analyses, with the exception of GRO/BTEX, performed on the samples in these coolers may be biased low. Method AK101 field preservation requires samples be kept below 25°C, so GRO/BTEX samples were not affected. Samples 99RMZTOC1SL and 99RMZTOC2SL were not listed on the chain-of-custody (COC); request for analysis was confirmed by laboratory.

Method blanks for several samples contained levels of target analytes above the method detection limit (MDL), but below the practical quantitation limit (PQL). Some surrogates were outside QC limits due to sample dilution or coelution with target analytes. Results for the samples are not affected. The RPDs for field replicates were greater than 50 percent for some compounds; these compounds have been flagged as estimated.

DATA QUALITY ASSESSMENT (Note: Any "No" answer requires a comment)

Project: Cape Romanzof Biocells, Project No. 33360

Laboratory Batch No.: CTE 994540

	Yes	No	Not Required
1. Were samples received in good condition?		X	
2. Were samples analyzed for requested parameters?	X		
3. Is the USACE Data Deliverables package complete?	X		
4. Were samples extracted/analyzed within holding time acceptance criteria?	X		
5. For soils, were sample results reported on a "dry weight" basis?	X		
6. For volatiles, were trip blank analytes all reported as ND?	X		
7. Were calibration and CCV/LS criteria met?	X		
8. Were instrument blanks reported as ND?	X		
9. Were method blanks reported as ND?	X		
10. Are the LCS/LCSDs within acceptance criteria?	X		
11. Are the MS/MSDs within acceptance criteria?			X
12. Are the LCS/LCSD relative percent differences within acceptance criteria?	X		
13. Are the MS/MSD relative percent differences within acceptance criteria?			X
14. Are the sample duplicate relative percent differences within acceptance criteria?	X		
15. Are the surrogate percent recoveries within acceptance criteria?		X	
16. Are the field duplicate relative percent differences less than 50 percent?		X	

Comments:

- Analytical data was reviewed according to the Chemical Quality Assurance for Hazardous, Toxic, and Radioactive Waste (HTRW) Projects, USACE EM-200-1-6, October 10, 1997.
- All data may be accepted without qualification except as noted below.
- Samples were received at 6.9°C, which is outside the required 4 0°C +/- 2.0°C.
- Method blanks contained some compounds above the MDL, but below the PQL. Sample results were not affected.
- GRO/BTEX surrogate recoveries were outside QC limits due to sample dilution or coelution with target analytes for samples 99RMZ0301SL, 99RMZ0302SL, 99RMZ0303SL, 99RMZ0304SL, 99RMZ0305SL, 99RMZ0306SL, 99RMZ0307SL, 99RMZ0308SL, 99RMZ0309SL, 99RMZ0310SL, 99RMZ0311SL, 99RMZ0312SL, and 99RMZ0313SL. Results were not affected.
- DRO/RRO surrogate recoveries were outside QC limits due to sample dilution or coelution with target analytes for samples 99RMZ0303SL, 99RMZ0304SL, 99RMZ0305SL, 99RMZ0306SL, 99RMZ0307SL, 99RMZ0308SL, and 99RMZ0310SL. Results were not affected.
- VOC surrogate recovery for 4-Bromofluorobenzene was outside QC limits All other surrogates were within limits, therefore, results should not be affected.
- Field duplicate samples 99RMZ0307SL and 99RMZ0309SL have RPDs of less than 50% for all compounds except DRO (66%). DRO results for these samples should be considered estimated.
- Field duplicate samples 99RMZ0314SL and 99RMZ0315SL have RPDs of less than 50% for all compounds.

Reviewer: Michelle T. Turner **Date:** 12/16/99

DATA QUALITY ASSESSMENT (Note: Any "No" answer requires a comment)

Project: Cape Romanzof Biocells, Project No. 33360

Laboratory Batch No.: CTE 994541

	Yes	No	Not Required
1. Were samples received in good condition?	X		
2. Were samples analyzed for requested parameters?	X		
3. Is the USACE Data Deliverables package complete?	X		
4. Were samples extracted/analyzed within holding time acceptance criteria?	X		
5. For soils, were sample results reported on a "dry weight" basis?	X		
6. For volatiles, were trip blank analytes all reported as ND?			X
7. Were calibration and CCV/LS criteria met?	X		
8. Were instrument blanks reported as ND?	X		
9. Were method blanks reported as ND?	X		
10. Are the LCS/LCSDs within acceptance criteria?	X		
11. Are the MS/MSDs within acceptance criteria?			X
12. Are the LCS/LCSD relative percent differences within acceptance criteria?	X		
13. Are the MS/MSD relative percent differences within acceptance criteria?			X
14. Are the sample duplicate relative percent differences within acceptance criteria?	X		
15. Are the surrogate percent recoveries within acceptance criteria?	X		
16. Are the field duplicate relative percent differences less than 50 percent?			X

Comments:

- Analytical data was reviewed according to the Chemical Quality Assurance for Hazardous, Toxic, and Radioactive Waste (HTRW) Projects, USACE EM-200-1-6, October 10, 1997.
- All data may be accepted without qualification except as noted below.
- Samples were received at 6 9°C, which is outside the required 4.0°C +/- 2.0°C.
- Samples 99RMZTOC1SL and 99RMZTOC2SL were not on the COC, but were added to this work order by fax as per sample receipt form.
- Method blanks contained some compounds above the MDL, but below the PQL Sample results were not affected.

Reviewer: Michelle T. Turner Date: 12/16/99

DATA QUALITY ASSESSMENT (Note: Any "No" answer requires a comment)

Project: Cape Romanzof Biocells, Project No. 33360

Laboratory Batch No.: CTE 994542

	Yes	No	Not Required
1. Were samples received in good condition?	X		
2. Were samples analyzed for requested parameters?	X		
3. Is the USACE Data Deliverables package complete?		X	
4. Were samples extracted/analyzed within holding time acceptance criteria?	X		
5. For soils, were sample results reported on a "dry weight" basis?	X		
6. For volatiles, were trip blank analytes all reported as ND?			X
7. Were calibration and CCV/LS criteria met?	X		
8. Were instrument blanks reported as ND?	X		
9. Were method blanks reported as ND?	X		
10. Are the LCS/LCSDs within acceptance criteria?	X		
11. Are the MS/MSDs within acceptance criteria?			X
12. Are the LCS/LCSD relative percent differences within acceptance criteria?	X		
13. Are the MS/MSD relative percent differences within acceptance criteria?			X
14. Are the sample duplicate relative percent differences within acceptance criteria?	X		
15. Are the surrogate percent recoveries within acceptance criteria?		X	
16. Are the field duplicate relative percent differences less than 50 percent?	X		

Comments:

- Analytical data was reviewed according to the Chemical Quality Assurance for Hazardous, Toxic, and Radioactive Waste (HTRW) Projects, USACE EM-200-1-6, October 10, 1997.
- All data may be accepted without qualification except as noted below.
- Method blanks contained some compounds above the MDL, but below the PQL. Sample results were not affected.
- DRO/RRO surrogate recoveries were outside QC limits due to sample dilution or coelution with target analytes for samples 99RMZ0314SL, 99RMZ0315SL, 99RMZ0316SL, 99RMZ0317SL, 99RMZ0101SL, 99RMZ0102SL, 99RMZ0103SL, 99RMZ0104SL, 99RMZ0105SL, 99RMZ0106SL, 99RMZ0107SL, 99RMZ0108SL, 99RMZ0109SL, 99RMZ0110SL, 99RMZ0111SL, 99RMZ0112SL, and 99RMZ0113SL. Results were not affected.
- PAH-SIMs surrogate recovery for Naphthalene-d8 was outside QC limits due to coelution with target analytes for sample 99RMZ0318SL.
- PAH-SIMs surrogate recovery for Chrysene was outside QC limits biased low. Other surrogates were within QC limits and results should not be affected.
- Field duplicate samples 99RMZ0314SL & 99RMZ0315SL have RPDs of less than 50% for all compounds.

Reviewer: Michelle T. Turner **Date:** 12/16/99

CTE Environmental Services
Alaska Division
Laboratory Data Report

Project: 33360.4 Cape Romanzof Biocell

Client: Harding Lawson & Assoc

CTE Work Order: 994541

Contents:

Chain of Custody
Quality Control Summary Forms

Note:

Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the proper regulatory authority and/or CTE's Quality Assurance Program Plan.

Case Narrative

Customer: HARLAWP — Harding Lawson & Assoc
Project: 994541 — 33360.4 Cape Romanzof Biocell

There were no analytical anomalies associated with your data.

HLA

Lawson Assoc
/th Place
An... ge, Alaska 99518
907/563-8102
Telecopy: 907/561-4574

994541 CHAIN OF CUSTODY FORM

Lab: CTEE

Samplers: Howard Howard
Laura Johnson

Job Number: 33360.4
Name/Location: Cape Romanzof Biocell
Project Manager: Bryan Lund
Recorder: Lori (Signature Required)

	SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	Other	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES
1	49			X					1				99	08	25	1005	99RMZ0103SL
2	49			X					1				99	08	25	1010	99RMZ0104SL
3	49			X					1				99	08	25	1020	99RMZ0105SL
4	49			X					1				99	08	25	1040	99RMZ0106SL
5	49			X					1				99	08	25	1110	99RMZ0107SL
6	49			X					1				99	08	25	1120	99RMZ0108SL
7	49			X					1				99	08	25	1140	99RMZ0109SL
8	49			X					1				99	08	25	1145	99RMZ0110SL
9	49			X					1				99	08	25	1330	99RMZ0111SL
10	49			X					1				99	08	25	1335	99RMZ0112SL
11	49			X					1				99	08	25	1350	99RMZ0113SL

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	AK101 GRO/BTEX	8240
						X	X
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	

136 33

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 8/27/99 9:05		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
	[signature]	8-27-99 0905
METHOD OF SHIPMENT		

6533

Laboratory Copy White — Project Office Copy Yellow — Field or Office Copy Pink

6.9°C

136 34

994541

FACSIMILE TRANSMISSION

To: Jennifer @ CT&E

Fax Number: 561-5301

From: Lorei

Date: 8/27/99

Subject: Chains/samples for Cape Romanzof

Project Number: 33360.4

Number of pages (including this cover sheet): 1

Remarks:

Hi Jennifer —

There are two TOC samples in my coolers that didn't make it on the chain.

(12) 99RMZTOC1SL 1840 8/25/99

(13) 99RMZTOC2SL 1845 8/25/99

Please run for TOC —

Thanks —

Lorei

cc:

Transmitted by:

WILDER

HLA/Wilder JV
601 East 57th Place
Anchorage, AK 99518 - (907) 563-8102

FAX (907) 561-4574

136 35

Facsimile Transmittal Form

CT&E Environmental Services Inc.
200 W. Potter Drive
Anchorage, AK 99518-1605
Telephone: (907) 562-2343
Facsimile: (907) 561-5301

Date: 12/21/99

No. of Pages: 2

CT&E Ref. No.: 994541

To: Michelle

Phone:

Fax: 561 4574

From: ___Stephen Ede ___Dave Meyer
X Heather Hall ___Shane Poston
___Chuck Homestead ___Rhonda Strucher
___Gene Larmi ___Joyce Windebank

Other:

Remarks:

This is the only "changeorder"/COC I can find in the folder.

Please let me know if you need anything else.

Thx HH

CT&E Environmental Services Inc.

SAMPLE RECEIPT FORM

994541

CT&E WO#:

Yes	No		
	X	Are samples **RUSH**, priority, or *within 72 hrs* of **hold time**?	
	X	If yes, have you done *e-mail notification*?	
		Are samples *within 24 hrs* of **hold time** or **due date**?	
	X	If yes, have you *spoken with* Supervisor?	
	X	Are there any **problems** (e.g., ids, analyses)?	
X		Were samples preserved correctly and pH verified?	
		Has Project Manager been notified of problems?	
X		Is this an ACOE/AFCEE/ADEC project?	
X		Will a **data package** be required?	
	X	If this is for PWS, provide **PWSID**.	
		Is there a **quote** for this project?	
	X	Will **courier** charges apply?	

Completed by (sign): Tara Howell (print): Tara Howell

Due Date: 9-6-99
Received Date/Time: 8-27-99 0905
Cooler Temperature: 6.9°C
Sample Condition: (Good) / Poor
Matrix of each Sample:

2	- 1 → - 11
	" "
	" "
	" "
	Trip Blank
	MS/MSD

Additional Sample Remarks:
Yes AK101s/_____ 8260s field pres'd?
Field-filtered for dissolved_____?
Lab-filter for dissolved_____?
Ref Lab required?
Notes: No 7oz Solids jars!

*** The following *must* be completed for *all* ACOE & AFCEE projects: ***

Yes	No		*Notes:*
	X	Is cooler temperature 4 ± C?	6.9°C
		thermometer used:	CTE3
	X	Was there an airbill, etc? note #:	hand carry
X		Was cooler sealed with custody seals?	
		#/where?	2 on front
X		Were seals intact upon arrival?	
X		Was there a COC with cooler?	
X		Was the COC filled out properly?	
	X	Did the COC indicate ACOE/AFCEE project?	
	X	Did the COC and samples correspond?	Samples 12 & 13 were not on COC, but added via fax (attached)
X		Were samples screened with Geiger counter?	
X		Were all samples packed to prevent breakage?	
		packing material:	bubble wrap
X		Were all samples unbroken and clearly labelled?	
X		Were all samples sealed in separate plastic bags?	
NA		Were all bottles for volatiles free of headspace?	
X		Were correct container/sample sizes submitted?	
		Was client notified of problems? (specify below)	

Individual contacted:
Date & Time:
Phone/Fax #:

# of each Container Received:

	950 ml amber	unpres'd
	950 ml amber	w/ HCl
	500 ml amber	w/ H2SO4
	1L cubies	unpres'd
	1L cubies	w/ HNO3
	1L cubies	w/ H2SO4
	1L cubies	w/ NaOH + ZnAc
	120 ml coli	bottles
	60 ml	Nalg
	8 oz amber	unpres'd
	4 oz amber	unpres'd
11	4 oz w/ septa	w/ MeOH
	40 ml vials	w/ HCl
	Other (specify)	
	Other (specify)	

#/Log In Proofed by:

136 36

CT&E Environmental Services Inc.
Laboratory Division

Laboratory Analysis Report

September 07, 1999

Bryan Lund
Harding Lawson & Assoc
601 East 57th Place
Anchorage, AK 99518

Client Name	Harding Lawson & Assoc
Project ID	33360.4 Cape Romanzof Biocell [994541]
Printed	September 07, 1999

Enclosed are the analytical results associated with the above project.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value that falls below PQL, but is greater than the MDL.
B - Indicates the analyte is found in the blank associated with the sample.
* - The analyte has exceeded allowable limits.
GT - Greater Than
D - Secondary Dilution
LT - Less Than
! - Surrogate out of range

CT&E Environmental Services Inc.

CT&E Ref.#	994541001	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 10:05
Client Sample ID	99RMZ0103SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	82.0		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.37	2.96	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Benzene	0.0148 U	0.0148	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Toluene	0.0593 U	0.0593	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Ethylbenzene	0.0593 U	0.0593	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
P & M -Xylene	0.0593 U	0.0593	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
o-Xylene	0.0593 U	0.0593	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	55.9		%	AK101/8021B	(50-150)	08/25/99	09/03/99	
1,4-Difluorobenzene <Surr>	94.1		%	AK101/8021B	(50-150)	08/25/99	09/03/99	
VOA by GC/MS Method SW8260								
Dichlorodifluoromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Chloromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Vinyl chloride	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Bromomethane	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Chloroethane	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Trichlorofluoromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1-Dichloroethene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Carbon disulfide	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Methylene chloride	0.15 U	0.15	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS

CT&E Environmental Services Inc.

CT&E Ref.#	994541001	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 10:05
Client Sample ID	99RMZ0103SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
trans-1,2-Dichloroethene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1-Dichloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
2-Butanone (MEK)	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
2,2-Dichloropropane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
cis-1,2-Dichloroethene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Bromochloromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Chloroform	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1,1-Trichloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Carbon tetrachloride	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1-Dichloropropene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Benzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2-Dichloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Trichloroethene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2-Dichloropropane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Dibromomethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Bromodichloromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
2-chloroethylvinyl ether	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
cis-1,3-Dichloropropene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
4-Methyl-2-pentanone (MIBK)	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Toluene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
trans-1,3-Dichloropropene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1,2-Trichloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Tetrachloroethene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,3-Dichloropropane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
2-Hexanone	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Dibromochloromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2-Dibromoethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Chlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1,1,2-Tetrachloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Ethylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
P & M -Xylene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
o-Xylene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS

CT&E Environmental Services Inc.

CT&E Ref.#	994541001
Client Name	Harding Lawson & Assoc
Project Name/#	33360.4 Cape Romanzof Biocell
Client Sample ID	99RMZ0103SL
Matrix	Soil/Solid
Ordered By	
PWSID	

Client PO#	Work Auth # 005
Printed Date/Time	09/07/99 17:31
Collected Date/Time	08/25/99 10:05
Received Date/Time	08/27/99 09:05
Technical Director: Stephen C. Ede	

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Styrene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Bromoform	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Isopropylbenzene (Cumene)	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Bromobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1,2,2-Tetrachloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2,3-Trichloropropane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
n-Propylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
2-Chlorotoluene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
4-Chlorotoluene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,3,5-Trimethylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
tert-Butylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2,4-Trimethylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
sec-Butylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,3-Dichlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
4-Isopropyltoluene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,4-Dichlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2-Dichlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
n-Butylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2-Dibromo-3-chloropropane	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2,4-Trichlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Hexachlorobutadiene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Naphthalene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2,3-Trichlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Surrogates								
1,2-Dichloroethane-D4 <surr>	89.8		%	SW846-8260	(74-123)	08/25/99	09/02/99	
Dibromofluoromethane <surr>	98		%	SW846-8260	(80-118)	08/25/99	09/02/99	
Toluene-d8 <surr>	99.8		%	SW846-8260	(79-130)	08/25/99	09/02/99	
4-Bromofluorobenzene <Surr>	71.5		%	SW846-8260	(71-141)	08/25/99	09/02/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994541002	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 10:10
Client Sample ID	99RMZ0104SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	85.6		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.40 U	3.40	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Benzene	0.0170 U	0.0170	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Toluene	0.0680 U	0.0680	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Ethylbenzene	0.0680 U	0.0680	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
P & M -Xylene	0.0680 U	0.0680	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
o-Xylene	0.0680 U	0.0680	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	73.1		%	AK101/8021B	(50-150)	08/25/99	09/03/99	
1,4-Difluorobenzene <Surr>	94		%	AK101/8021B	(50-150)	08/25/99	09/03/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994541003	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 10:20
Client Sample ID	99RMZ0105SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	90.1		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.19 U	3.19	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Benzene	0.0159 U	0.0159	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Toluene	0.0638 U	0.0638	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Ethylbenzene	0.0638 U	0.0638	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
P & M -Xylene	0.0638 U	0.0638	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
o-Xylene	0.0638 U	0.0638	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	60.6		%	AK101/8021B	(50-150)	08/25/99	09/03/99	
1,4-Difluorobenzene <Surr>	97.1		%	AK101/8021B	(50-150)	08/25/99	09/03/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994541004	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 10:40
Client Sample ID	99RMZ0106SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	Julie Lebank

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	88.8		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.30 U	3.30	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Benzene	0.0165 U	0.0165	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Toluene	0.0661 U	0.0661	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Ethylbenzene	0.0661 U	0.0661	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
P & M -Xylene	0.0661 U	0.0661	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
o-Xylene	0.0661 U	0.0661	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	60.2		%	AK101/8021B	(50-150)	08/25/99	09/03/99	
1,4-Difluorobenzene <Surr>	96.5		%	AK101/8021B	(50-150)	08/25/99	09/03/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994541005	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 11:10
Client Sample ID	99RMZ0107SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	84.1		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	5.33	2.86	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Benzene	0.0143 U	0.0143	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Toluene	0.0571 U	0.0571	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Ethylbenzene	0.0571 U	0.0571	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
P & M -Xylene	0.0571 U	0.0571	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
o-Xylene	0.0571 U	0.0571	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	60.4		%	AK101/8021B	(50-150)	08/25/99	09/03/99	
1,4-Difluorobenzene <Surr>	92.5		%	AK101/8021B	(50-150)	08/25/99	09/03/99	

F-7201

CT&E Environmental Services Inc.

CT&E Ref.#	994541006	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 11:20
Client Sample ID	99RMZ0108SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	90.4		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	4.17 U	4.17	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Benzene	0.0209 U	0.0209	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Toluene	0.0835 U	0.0835	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Ethylbenzene	0.0835 U	0.0835	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
P & M -Xylene	0.0835 U	0.0835	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
o-Xylene	0.0835 U	0.0835	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	52.4		%	AK101/8021B	(50-150)	08/25/99	09/03/99	
1,4-Difluorobenzene <Surr>	95.7		%	AK101/8021B	(50-150)	08/25/99	09/03/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994541007	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 11:40
Client Sample ID	99RMZ0109SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	91.5		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.26 U	3.26	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Benzene	0.0163 U	0.0163	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Toluene	0.0652 U	0.0652	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Ethylbenzene	0.0652 U	0.0652	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
P & M -Xylene	0.0652 U	0.0652	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
o-Xylene	0.0652 U	0.0652	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	63.7		%	AK101/8021B	(50-150)	08/25/99	09/03/99	
1,4-Difluorobenzene <Surr>	95.2		%	AK101/8021B	(50-150)	08/25/99	09/03/99	

F-701

CT&E Environmental Services Inc.

CT&E Ref.#	994541008	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 11:45
Client Sample ID	99RMZ0110SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	Jwandebank

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	91.8		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.06 U	3.06	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Benzene	0.0153 U	0.0153	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Toluene	0.0612 U	0.0612	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Ethylbenzene	0.0612 U	0.0612	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
P & M -Xylene	0.0612 U	0.0612	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
o-Xylene	0.0612 U	0.0612	mg/Kg	AK101/8021B		08/25/99	09/03/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	53.8		%	AK101/8021B	(50-150)	08/25/99	09/03/99	
1,4-Difluorobenzene <Surr>	94.6		%	AK101/8021B	(50-150)	08/25/99	09/03/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994541009	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 13:30
Client Sample ID	99RMZ0111SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	91.6		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.29 U	3.29	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Benzene	0.0165 U	0.0165	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Toluene	0.0659 U	0.0659	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Ethylbenzene	0.0659 U	0.0659	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
P & M -Xylene	0.0659 U	0.0659	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
o-Xylene	0.0659 U	0.0659	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	67.8		%	AK101/8021B	(50-150)	08/25/99	09/04/99	
1,4-Difluorobenzene <Surr>	96.5		%	AK101/8021B	(50-150)	08/25/99	09/04/99	

F-701

CT&E Environmental Services Inc.

CT&E Ref.#	994541010	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 13:35
Client Sample ID	99RMZ0112SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	Jill Lobank

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	88.1		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.14 U	3.14	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Benzene	0.0157 U	0.0157	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Toluene	0.0628 U	0.0628	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Ethylbenzene	0.0628 U	0.0628	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
P & M -Xylene	0.0628 U	0.0628	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
o-Xylene	0.0628 U	0.0628	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	64.4		%	AK101/8021B	(50-150)	08/25/99	09/04/99	
1,4-Difluorobenzene <Surr>	94.5		%	AK101/8021B	(50-150)	08/25/99	09/04/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994541011	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 13:30
Client Sample ID	99RMZ0113SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	92.2		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	2.57 U	2.57	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Benzene	0.0128 U	0.0128	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Toluene	0.0513 U	0.0513	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Ethylbenzene	0.0513 U	0.0513	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
P & M -Xylene	0.0513 U	0.0513	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
o-Xylene	0.0513 U	0.0513	mg/Kg	AK101/8021B		08/25/99	09/04/99	DAR
Surrogates								
4-Bromofluorobenzene <Surr>	71.5		%	AK101/8021B	(50-150)	08/25/99	09/04/99	
1,4-Difluorobenzene <Surr>	96.6		%	AK101/8021B	(50-150)	08/25/99	09/04/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994541012	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 18:40
Client Sample ID	99RMZTOC1SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	S Windlebank

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Total Solids	90.8		%	SM18 2540G			09/07/99	SEC
Total Organic Carbon	3067	1300	mg/Kg	TOC CTE SOP		08/31/99	08/31/99	SCL

CT&E Environmental Services Inc.

CT&E Ref.#	994541013	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/07/99 17:31
Project Name/#	33360.4 Cape Romanzof Biocell	**Collected Date/Time**	08/25/99 18:45
Client Sample ID	99RMZTOC2SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	89.6		%	SM18 2540G			09/07/99	SEC
Total Organic Carbon	3241	1680	mg/Kg	TOC CTE SOP		08/31/99	08/31/99	SCL

F-7.01

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocell

QC Batch SPT 2952 (65729)
Original Matrix Soil/Solid **Analysis Method** SM18 2540G

QC results affect the following production samples:

994541001	994541002	994541003	994541004	994541005
994541006	994541007	994541008	994541009	994541010
994541011				

QC results for Method Blank [260775]

Run Instrument:

Parameter	Analyzed	Result	PQL	Units
Total Solids	09/03/99	99.9		%

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocell
QC Batch	SPT 2952 (65729)
Original	994678001
Matrix	Soil/Solid
Analysis Method	SM18 2540G

QC results affect the following production samples:

994541001, 994541002, 994541003, 994541004, 994541005, 994541006, 994541007, 994541008, 994541009, 994541010, 994541011

QC results for Duplicate [260776]

Parameter	Original Result	QC Result	RPD	RPD Limits	Analyzed	Instru ID
Total Solids	81.9	82.4	.62		09/03/99	

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocell

QC Batch SPT 2953 (65759)
Original
Matrix Soil/Solid **Analysis Method** SM18 2540G

QC results affect the following production samples:

994541012 994541013

QC results for Method Blank [260910]

Run Instrument:

Parameter	Analyzed	Result	PQL	Units
Total Solids	09/07/99	100		%

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocell
QC Batch	SPT 2953 (65759)
Original	994541012
Matrix	Soil/Solid
Analysis Method	SM18 2540G

QC results affect the following production samples:

994541012 994541013

QC results for Duplicate [260911]

Parameter	Original Result	QC Result	RPD	RPD Limits	Analyzed	Instru ID
Total Solids	90.8	92.7	2.1		09/07/99	

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc		
Workorder	33360.4 Cape Romanzof Biocell		
QC Batch	WXX 2124 (65623)		
Original		**Prep Date**	08/31/99 17:14
Matrix	Soil/Solid	**Analysis Method**	TOC CTE SOP

QC results affect the following production samples:

994541012 994541013

QC results for Method Blank [260192]

Run Instrument:

Parameter	Analyzed	Result	PQL	Units
Total Organic Carbon	08/31/99	1000 U	1000	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocell
QC Batch	WXX 2124 (65623)
Original Matrix	Soil/Solid
Prep Date	08/31/99 17:12
Analysis Method	TOC CTE SOP

QC results affect the following production samples:

994541012 994541013

QC results for Lab Check Standard [260193]

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Total Organic Carbon	LCS	9150	104	75-125			8800mg/Kg	08/31/99	

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocell

QC Batch VXX 5566 (65498)
Original
Matrix Soil/Solid

Prep Date 09/01/99 11:30
Analysis Method SW846-8260

QC results affect the following production samples:

994541001

QC results for Method Blank [259526]

Run Instrument: HP 5890 Series II MS1 VMA

Parameter	Analyzed	Result	PQL	Units
Dichlorodifluoromethane	09/01/99	0.050 U	0.050	mg/Kg
Chloromethane	09/01/99	0.050 U	0.050	mg/Kg
Vinyl chloride	09/01/99	0.050 U	0.050	mg/Kg
Bromomethane	09/01/99	0.50 U	0.50	mg/Kg
Chloroethane	09/01/99	0.50 U	0.50	mg/Kg
Trichlorofluoromethane	09/01/99	0.050 U	0.050	mg/Kg
1,1-Dichloroethene	09/01/99	0.050 U	0.050	mg/Kg
Carbon disulfide	09/01/99	0.50 U	0.50	mg/Kg
Methylene chloride	09/01/99	0.25 U	0.25	mg/Kg
trans-1,2-Dichloroethene	09/01/99	0.050 U	0.050	mg/Kg
1,1-Dichloroethane	09/01/99	0.050 U	0.050	mg/Kg
2-Butanone (MEK)	09/01/99	0.50 U	0.50	mg/Kg
2,2-Dichloropropane	09/01/99	0.050 U	0.050	mg/Kg
cis-1,2-Dichloroethene	09/01/99	0.050 U	0.050	mg/Kg
Bromochloromethane	09/01/99	0.050 U	0.050	mg/Kg
Chloroform	09/01/99	0.050 U	0.050	mg/Kg
1,1,1-Trichloroethane	09/01/99	0.050 U	0.050	mg/Kg
Carbon tetrachloride	09/01/99	0.050 U	0.050	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocell
QC Batch	VXX 5566 (65498)
Original	
Matrix	Soil/Solid
Prep Date	09/01/99 11:30
Analysis Method	SW846-8260

QC results for Method Blank [259526] (continued)

Run Instrument: HP 5890 Series II MS1 VMA

Parameter	Analyzed	Result	PQL	Units
1,1-Dichloropropene	09/01/99	0.050 U	0.050	mg/Kg
Benzene	09/01/99	0.050 U	0.050	mg/Kg
1,2-Dichloroethane	09/01/99	0.050 U	0.050	mg/Kg
Trichloroethene	09/01/99	0.050 U	0.050	mg/Kg
1,2-Dichloropropane	09/01/99	0.050 U	0.050	mg/Kg
Dibromomethane	09/01/99	0.050 U	0.050	mg/Kg
Bromodichloromethane	09/01/99	0.050 U	0.050	mg/Kg
2-Chloroethyl Vinyl Ether	09/01/99	0.50 U	0.50	mg/Kg
cis-1,3-Dichloropropene	09/01/99	0.050 U	0.050	mg/Kg
4-Methyl-2-pentanone (MIBK)	09/01/99	0.50 U	0.50	mg/Kg
Toluene	09/01/99	0.050 U	0.050	mg/Kg
trans-1,3-Dichloropropene	09/01/99	0.050 U	0.050	mg/Kg
1,1,2-Trichloroethane	09/01/99	0.050 U	0.050	mg/Kg
Tetrachloroethene	09/01/99	0.050 U	0.050	mg/Kg
1,3-Dichloropropane	09/01/99	0.050 U	0.050	mg/Kg
2-Hexanone	09/01/99	0.50 U	0.50	mg/Kg
Dibromochloromethane	09/01/99	0.050 U	0.050	mg/Kg
1,2-Dibromoethane	09/01/99	0.050 U	0.050	mg/Kg
Chlorobenzene	09/01/99	0.050 U	0.050	mg/Kg
1,1,1,2-Tetrachloroethane	09/01/99	0.050 U	0.050	mg/Kg
Ethylbenzene	09/01/99	0.050 U	0.050	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc		
Workorder	33360.4 Cape Romanzof Biocell		
QC Batch	VXX 5566 (65498)		
Original		**Prep Date**	09/01/99 11:30
Matrix	Soil/Solid	**Analysis Method**	SW846-8260

QC results for Method Blank [259526] (continued)

Run Instrument: HP 5890 Series II MS1 VMA

Parameter	Analyzed	Result	PQL	Units
P & M -Xylene	09/01/99	0.050 U	0.050	mg/Kg
o-Xylene	09/01/99	0.050 U	0.050	mg/Kg
Styrene	09/01/99	0.050 U	0.050	mg/Kg
Bromoform	09/01/99	0.050 U	0.050	mg/Kg
Isopropylbenzene (Cumene)	09/01/99	0.050 U	0.050	mg/Kg
Bromobenzene	09/01/99	0.050 U	0.050	mg/Kg
1,1,2,2-Tetrachloroethane	09/01/99	0.050 U	0.050	mg/Kg
1,2,3-Trichloropropane	09/01/99	0.050 U	0.050	mg/Kg
n-Propylbenzene	09/01/99	0.050 U	0.050	mg/Kg
2-Chlorotoluene	09/01/99	0.050 U	0.050	mg/Kg
4-Chlorotoluene	09/01/99	0.050 U	0.050	mg/Kg
1,3,5-Trimethylbenzene	09/01/99	0.050 U	0.050	mg/Kg
tert-Butylbenzene	09/01/99	0.050 U	0.050	mg/Kg
1,2,4-Trimethylbenzene	09/01/99	0.050 U	0.050	mg/Kg
sec-Butylbenzene	09/01/99	0.050 U	0.050	mg/Kg
1,3-Dichlorobenzene	09/01/99	0.050 U	0.050	mg/Kg
4-Isopropyltoluene	09/01/99	0.050 U	0.050	mg/Kg
1,4-Dichlorobenzene	09/01/99	0.050 U	0.050	mg/Kg
1,2-Dichlorobenzene	09/01/99	0.050 U	0.050	mg/Kg
n-Butylbenzene	09/01/99	0.050 U	0.050	mg/Kg
1,2-Dibromo-3-chloropropane	09/01/99	0.50 U	0.50	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc		
Workorder	33360.4 Cape Romanzof Biocell		
QC Batch	VXX 5566 (65498)		
Original		**Prep Date**	09/01/99 11:30
Matrix	Soil/Solid	**Analysis Method**	SW846-8260

QC results for Method Blank [259526] (continued)

Run Instrument: HP 5890 Series II MS1 VMA

Parameter	Analyzed	Result	PQL	Units
1,2,4-Trichlorobenzene	09/01/99	0.050 U	0.050	mg/Kg
Hexachlorobutadiene	09/01/99	0.050 U	0.050	mg/Kg
Naphthalene	09/01/99	0.0480 J	0.050	mg/Kg
1,2,3-Trichlorobenzene	09/01/99	0.050 U	0.050	mg/Kg

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocell

QC Batch VXX 5566 (65498)
Original
Matrix Soil/Solid

Prep Date 09/01/99 11:30
Analysis Method SW846-8260

QC results affect the following production samples:

994541001

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528]

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Dichlorodifluoromethane	LCS	0.525	105	13-190			.5mg/Kg	09/01/99	VMA
	LCSD	0.519	104		.96	0-20	.5mg/Kg	09/01/99	VMA
Chloromethane	LCS	0.465	92.9	77-140			.5mg/Kg	09/01/99	VMA
	LCSD	0.451	90.1		3.1	0-20	.5mg/Kg	09/01/99	VMA
Vinyl chloride	LCS	0.535	107	76-137			.5mg/Kg	09/01/99	VMA
	LCSD	0.52	104		2.8	0-20	.5mg/Kg	09/01/99	VMA
Bromomethane	LCS	0.65	130	65-181			.5mg/Kg	09/01/99	VMA
	LCSD	0.756	151		14.9	0-20	.5mg/Kg	09/01/99	VMA
Chloroethane	LCS	0.618	124	64-174			.5mg/Kg	09/01/99	VMA
	LCSD	0.754	151		19.6	0-20	.5mg/Kg	09/01/99	VMA
Trichlorofluoromethane	LCS	0.553	111	56-147			.5mg/Kg	09/01/99	VMA
	LCSD	0.556	111		0	0-20	.5mg/Kg	09/01/99	VMA
1,1-Dichloroethene	LCS	0.587	117	75-123			.5mg/Kg	09/01/99	VMA
	LCSD	0.589	118		.85	0-20	.5mg/Kg	09/01/99	VMA
Carbon disulfide	LCS	0.656	87.5	67-140			.75mg/Kg	09/01/99	VMA
	LCSD	0.65	86.7		.92	0-20	.75mg/Kg	09/01/99	VMA
Methylene chloride	LCS	0.562	112	53-155			.5mg/Kg	09/01/99	VMA
	LCSD	0.618	124		10.2	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocell

QC Batch VXX 5566 (65498)
Original
Matrix Soil/Solid

Prep Date 09/01/99 11:30
Analysis Method SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
trans-1,2-Dichloroethene	LCS	0.589	118	78-126			.5mg/Kg	09/01/99	VMA
	LCSD	0.597	119		.84	0-20	.5mg/Kg	09/01/99	VMA
1,1-Dichloroethane	LCS	0.542	108	74-130			.5mg/Kg	09/01/99	VMA
	LCSD	0.538	108		0	0-20	.5mg/Kg	09/01/99	VMA
2-Butanone (MEK)	LCS	0.714	95.2	75-124			.75mg/Kg	09/01/99	VMA
	LCSD	0.703	93.7		1.6	0-20	.75mg/Kg	09/01/99	VMA
2,2-Dichloropropane	LCS	0.574	115	88-131			.5mg/Kg	09/01/99	VMA
	LCSD	0.584	117		1.7	0-20	.5mg/Kg	09/01/99	VMA
cis-1,2-Dichloroethene	LCS	0.547	109	84-124			.5mg/Kg	09/01/99	VMA
	LCSD	0.545	109		0	0-20	.5mg/Kg	09/01/99	VMA
Bromochloromethane	LCS	0.557	111	81-131			.5mg/Kg	09/01/99	VMA
	LCSD	0.55	110		.9	0-20	.5mg/Kg	09/01/99	VMA
Chloroform	LCS	0.558	112	89-123			.5mg/Kg	09/01/99	VMA
	LCSD	0.564	113		.89	0-20	.5mg/Kg	09/01/99	VMA
1,1,1-Trichloroethane	LCS	0.581	116	85-131			.5mg/Kg	09/01/99	VMA
	LCSD	0.582	116		0	0-20	.5mg/Kg	09/01/99	VMA
Carbon tetrachloride	LCS	0.597	119	76-139			.5mg/Kg	09/01/99	VMA
	LCSD	0.608	122		2.5	0-20	.5mg/Kg	09/01/99	VMA
1,1-Dichloropropene	LCS	0.585	117	92-136			.5mg/Kg	09/01/99	VMA
	LCSD	0.586	117		0	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocell
QC Batch	VXX 5566 (65498)
Original	
Matrix	Soil/Solid
Prep Date	09/01/99 11:30
Analysis Method	SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Benzene	LCS	0.555	111	84-117			.5mg/Kg	09/01/99	VMA
	LCSD	0.56	112		.9	0-20	.5mg/Kg	09/01/99	VMA
1,2-Dichloroethane	LCS	0.587	117	84-135			.5mg/Kg	09/01/99	VMA
	LCSD	0.594	119		1.7	0-20	.5mg/Kg	09/01/99	VMA
Trichloroethene	LCS	0.54	108	89-126			.5mg/Kg	09/01/99	VMA
	LCSD	0.538	108		0	0-20	.5mg/Kg	09/01/99	VMA
1,2-Dichloropropane	LCS	0.579	116	94-124			.5mg/Kg	09/01/99	VMA
	LCSD	0.591	118		1.7	0-20	.5mg/Kg	09/01/99	VMA
Dibromomethane	LCS	0.554	111	86-124			.5mg/Kg	09/01/99	VMA
	LCSD	0.565	113		1.8	0-20	.5mg/Kg	09/01/99	VMA
Bromodichloromethane	LCS	0.565	113	80-121			.5mg/Kg	09/01/99	VMA
	LCSD	0.563	113		0	0-20	.5mg/Kg	09/01/99	VMA
2-Chloroethyl Vinyl Ether	LCS	0.645	85.9	78-122			.75mg/Kg	09/01/99	VMA
	LCSD	0.668	89.1		3.7	0-20	.75mg/Kg	09/01/99	VMA
cis-1,3-Dichloropropene	LCS	0.522	104	85-114			.5mg/Kg	09/01/99	VMA
	LCSD	0.53	106		1.9	0-20	.5mg/Kg	09/01/99	VMA
4-Methyl-2-pentanone (MIBK)	LCS	0.637	84.9	62-131			.75mg/Kg	09/01/99	VMA
	LCSD	0.655	87.3		2.8	0-20	.75mg/Kg	09/01/99	VMA
Toluene	LCS	0.537	107	73-125			.5mg/Kg	09/01/99	VMA
	LCSD	0.523	105		1.9	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocell
QC Batch	VXX 5566 (65498)
Original	
Matrix	Soil/Solid
Prep Date	09/01/99 11:30
Analysis Method	SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
trans-1,3-Dichloropropene	LCS	0.5	99.9	83-116			.5mg/Kg	09/01/99	VMA
	LCSD	0.498	99.6		.3	0-20	.5mg/Kg	09/01/99	VMA
1,1,2-Trichloroethane	LCS	0.534	107	87-121			.5mg/Kg	09/01/99	VMA
	LCSD	0.551	110		2.8	0-20	.5mg/Kg	09/01/99	VMA
Tetrachloroethene	LCS	0.53	106	71-139			.5mg/Kg	09/01/99	VMA
	LCSD	0.523	105		.95	0-20	.5mg/Kg	09/01/99	VMA
1,3-Dichloropropane	LCS	0.53	106	84-121			.5mg/Kg	09/01/99	VMA
	LCSD	0.535	107		.94	0-20	.5mg/Kg	09/01/99	VMA
2-Hexanone	LCS	0.73	97.3	64-130			.75mg/Kg	09/01/99	VMA
	LCSD	0.737	98.3		1	0-20	.75mg/Kg	09/01/99	VMA
Dibromochloromethane	LCS	0.51	102	71-136			.5mg/Kg	09/01/99	VMA
	LCSD	0.508	102		0	0-20	.5mg/Kg	09/01/99	VMA
1,2-Dibromoethane	LCS	0.535	107	82-129			.5mg/Kg	09/01/99	VMA
	LCSD	0.535	107		0	0-20	.5mg/Kg	09/01/99	VMA
Chlorobenzene	LCS	0.519	104	80-122			.5mg/Kg	09/01/99	VMA
	LCSD	0.524	105		.96	0-20	.5mg/Kg	09/01/99	VMA
1,1,1,2-Tetrachloroethane	LCS	0.573	115	83-128			.5mg/Kg	09/01/99	VMA
	LCSD	0.561	112		2.6	0-20	.5mg/Kg	09/01/99	VMA
Ethylbenzene	LCS	0.565	113	82-122			.5mg/Kg	09/01/99	VMA
	LCSD	0.555	111		1.8	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocell

QC Batch VXX 5566 (65498)
Original
Matrix Soil/Solid

Prep Date 09/01/99 11:30
Analysis Method SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
P & M -Xylene	LCS	1.13	113	83-120			1mg/Kg	09/01/99	VMA
	LCSD	1.12	112		.89	0-20	1mg/Kg	09/01/99	VMA
o-Xylene	LCS	0.523	105	82-120			.5mg/Kg	09/01/99	VMA
	LCSD	0.513	103		1.9	0-20	.5mg/Kg	09/01/99	VMA
Styrene	LCS	0.517	103	82-124			.5mg/Kg	09/01/99	VMA
	LCSD	0.514	103		0	0-20	.5mg/Kg	09/01/99	VMA
Bromoform	LCS	0.538	108	73-127			.5mg/Kg	09/01/99	VMA
	LCSD	0.513	103		4.7	0-20	.5mg/Kg	09/01/99	VMA
Isopropylbenzene (Cumene)	LCS	0.497	99.3	78-130			.5mg/Kg	09/01/99	VMA
	LCSD	0.5	99.9		.6	0-20	.5mg/Kg	09/01/99	VMA
Bromobenzene	LCS	0.556	111	85-121			.5mg/Kg	09/01/99	VMA
	LCSD	0.543	109		1.8	0-20	.5mg/Kg	09/01/99	VMA
1,1,2,2-Tetrachloroethane	LCS	0.618	124	72-135			.5mg/Kg	09/01/99	VMA
	LCSD	0.606	121		2.4	0-20	.5mg/Kg	09/01/99	VMA
1,2,3-Trichloropropane	LCS	0.574	115	67-141			.5mg/Kg	09/01/99	VMA
	LCSD	0.58	116		.87	0-20	.5mg/Kg	09/01/99	VMA
n-Propylbenzene	LCS	0.518	104	67-136			.5mg/Kg	09/01/99	VMA
	LCSD	0.51	102		1.9	0-20	.5mg/Kg	09/01/99	VMA
2-Chlorotoluene	LCS	0.56	112	74-138			.5mg/Kg	09/01/99	VMA
	LCSD	0.556	111		.9	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocell
QC Batch	VXX 5566 (65498)
Original Matrix	Soil/Solid
Prep Date	09/01/99 11:30
Analysis Method	SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
4-Chlorotoluene	LCS	0.561	112	71-137			.5mg/Kg	09/01/99	VMA
	LCSD	0.547	109		2.7	0-20	.5mg/Kg	09/01/99	VMA
1,3,5-Trimethylbenzene	LCS	0.52	104	75-132			.5mg/Kg	09/01/99	VMA
	LCSD	0.522	104		0	0-20	.5mg/Kg	09/01/99	VMA
tert-Butylbenzene	LCS	0.48	96	68-134			.5mg/Kg	09/01/99	VMA
	LCSD	0.475	94.9		1.2	0-20	.5mg/Kg	09/01/99	VMA
1,2,4-Trimethylbenzene	LCS	0.535	107	79-131			.5mg/Kg	09/01/99	VMA
	LCSD	0.517	103		3.8	0-20	.5mg/Kg	09/01/99	VMA
sec-Butylbenzene	LCS	0.528	106	78-136			.5mg/Kg	09/01/99	VMA
	LCSD	0.51	102		3.8	0-20	.5mg/Kg	09/01/99	VMA
1,3-Dichlorobenzene	LCS	0.485	97	78-126			.5mg/Kg	09/01/99	VMA
	LCSD	0.508	102		5	0-20	.5mg/Kg	09/01/99	VMA
4-Isopropyltoluene	LCS	0.54	108	70-133			.5mg/Kg	09/01/99	VMA
	LCSD	0.522	104		3.8	0-20	.5mg/Kg	09/01/99	VMA
1,4-Dichlorobenzene	LCS	0.54	108	77-132			.5mg/Kg	09/01/99	VMA
	LCSD	0.524	105		2.8	0-20	.5mg/Kg	09/01/99	VMA
1,2-Dichlorobenzene	LCS	0.54	108	93-122			.5mg/Kg	09/01/99	VMA
	LCSD	0.532	106		1.9	0-20	.5mg/Kg	09/01/99	VMA
n-Butylbenzene	LCS	0.543	109	81-141			.5mg/Kg	09/01/99	VMA
	LCSD	0.543	109		0	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc		
Workorder	33360.4 Cape Romanzof Biocell		
QC Batch	VXX 5566 (65498)		
Original		**Prep Date**	09/01/99 11:30
Matrix	Soil/Solid	**Analysis Method**	SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
1,2-Dibromo-3-chloropropane	LCS	0.582	116	60-144			.5mg/Kg	09/01/99	VMA
	LCSD	0.601	120		3.4	0-20	.5mg/Kg	09/01/99	VMA
1,2,4-Trichlorobenzene	LCS	0.567	113	86-129			.5mg/Kg	09/01/99	VMA
	LCSD	0.556	111		1.8	0-20	.5mg/Kg	09/01/99	VMA
Hexachlorobutadiene	LCS	0.541	108	80-152			.5mg/Kg	09/01/99	VMA
	LCSD	0.562	112		3.6	0-20	.5mg/Kg	09/01/99	VMA
Naphthalene	LCS	0.632	126	80-130			.5mg/Kg	09/01/99	VMA
	LCSD	0.641	128		1.6	0-20	.5mg/Kg	09/01/99	VMA
1,2,3-Trichlorobenzene	LCS	0.592	118	81-132			.5mg/Kg	09/01/99	VMA
	LCSD	0.581	116		1.7	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocell
QC Batch	VXX 5582 (65676)
Original	
Matrix	Soil/Solid
Prep Date	09/03/99 14:20
Analysis Method	AK101/8021B

QC results affect the following production samples:

994541001	994541002	994541003	994541004	994541005
994541006	994541007	994541008	994541009	994541010
994541011				

QC results for Method Blank [260588]

Run Instrument: HP 5890 Series II PID+FID VDA

Parameter	Analyzed	Result	PQL	Units
Gasoline Range Organics	09/03/99	0.233 J	2.50	mg/Kg
Benzene	09/03/99	0.0125 U	0.0125	mg/Kg
Toluene	09/03/99	0.0230 J	0.0500	mg/Kg
Ethylbenzene	09/03/99	0.0500 U	0.0500	mg/Kg
P & M -Xylene	09/03/99	0.0500 U	0.0500	mg/Kg
o-Xylene	09/03/99	0.0500 U	0.0500	mg/Kg

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocell

QC Batch VXX 5582 (65676)
Original
Matrix Soil/Solid

Prep Date 09/03/99 14:20
Analysis Method AK101/8021B

QC results affect the following production samples:

994541001	994541002	994541003	994541004	994541005
994541006	994541007	994541008	994541009	994541010
994541011				

QC results for Lab Check Standard [260589] - Lab Check Standard Duplicate [260590]

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Gasoline Range Organics	LCS	19.9	88.4	80-120			22.5mg/Kg	09/03/99	VDA
	LCSD	21.1	93.7		5.8	0-20	22.5mg/Kg	09/03/99	VDA
Benzene	LCS	0.865	104	80-120			.83mg/Kg	09/03/99	VDA
	LCSD	0.866	104		0	0-20	.83mg/Kg	09/03/99	VDA
Toluene	LCS	3.71	111	80-120			3.35mg/Kg	09/03/99	VDA
	LCSD	3.7	110		.9	0-20	3.35mg/Kg	09/03/99	VDA
Ethylbenzene	LCS	0.631	100	80-120			.628mg/Kg	09/03/99	VDA
	LCSD	0.627	99.9		.1	0-20	.628mg/Kg	09/03/99	VDA
P & M -Xylene	LCS	2.32	104	80-120			2.24mg/Kg	09/03/99	VDA
	LCSD	2.31	103		.97	0-20	2.24mg/Kg	09/03/99	VDA
o-Xylene	LCS	0.892	104	80-120			.859mg/Kg	09/03/99	VDA
	LCSD	0.886	103		.97	0-20	.859mg/Kg	09/03/99	VDA

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HARDING LAWSON
ASSOCIATES

CTE Environmental Services
Alaska Division
Laboratory Data Report

Project: 33360.4 Cape Romanzof Biocells

Client: Harding Lawson & Assoc

CTE Work Order: 994540

Contents:

Chain of Custody
Quality Control Summary Forms

Note:

Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the proper regulatory authority and/or CTE's Quality Assurance Program Plan.

Case Narrative

Customer: HARLAWP Harding Lawson & Assoc

Project: 994540 33360.4 Cape Romanzof Biocells

994540001 PS

8260 - Concentration of methylene chloride may be biased high due to lab contamination (as detected in preceeding instrument blank).
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.

994540002 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.

994540003 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Possible lube oil pattern.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

994540004 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994540005 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994540006 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994540007 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994540008 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Case Narrative

Customer: HARLAWP **Harding Lawson & Assoc**

Project: 994540 **33360.4 Cape Romanzof Biocells**

994540009 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.

994540010 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994540011 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

994540012 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

994540013 PS

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

994540020 PS

8260 - Recovery of BFB field surrogate is biased low. Low recovery was confirmed by two previous 8260 analytical runs of this sample.

259386 LCS

RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

259387 LCSD

RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

262571 CCV

PAHSIM - CCV rpd criteria for surrogate #1(39%) is biased high. The results are not significantly affected.

262570 IB

PAHSIM - Recovery for surrogate #1(121%) is biased high. The results are not significantly affected.

Harding Lawson Associa
601 East 57th Place
Anchorage, AK 99518
907 / 563-8102
907 / 561-4574 FAX

994540 CHAIN OF CUSTODY FORM

1/3

Lab: CT&E

Samplers: Howard Hoen
Lorri Johnson

Project Number: 33360 .4
Name/Location: Cape Romanzof Bixells
Project Manager: Bryan Lund
Recorder: Lori Sol (Signature Required)

136 75

	SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	Methanol	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	AK101 Geo/BTEX	AK102/AK103 DRO/RRO	PAH SVOC 8270
1	WG			X		2			1				99	08	24	1300	99RMZ0301SL						X	X	X	X
2	WG			X		2			1				99	08	24	1320	99RMZ0302SL						X	X	X	X
3	WG			X		1			1				99	08	24	1340	99RMZ0303SL						X		X	
4	WG			X		1			1				99	08	24	1400	99RMZ0304SL						X		X	
5	WG			X		1			1				99	08	24	1415	99RMZ0305SL						X		X	X
6	WG			X		1			1				99	08	24	1430	99RMZ0306SL						X		X	X
7	WG			X		1			1				99	08	24	1445	99RMZ0307SL						X		X	X
8	WG			X		1			1				99	08	24	1500	99RMZ0308SL						X		X	X
9	WG			X		1			1				99	08	24	1450	99RMZ0309SL						X		X	
10	WG			X		1			1				99	08	24	1515	99RMZ0310SL						X		X	

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) Howard Hoen 8/27/99 9:05	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) Jana D Howell 8-27-99 0905	DATE/TIME
METHOD OF SHIPMENT		

6533

White — Laboratory Copy — Yellow — Office Copy — Pink — Field or Other Copy

6.9

Harding Lawson Associates
601 East 57th Place
Anchorage AK 9951
907 / 563-8102
907 / 561-4574 FAX

994540 CHAIN OF CUSTODY FORM

Lab: CT&E 136 76 2/3

Samplers: Howard Hoen, Lorri Johnson

Project Number: 33360.4

Name/Location: Cape Romanzof Biocell

Project Manager: Bryan Lund

Recorder: [signature] (Signature Required)

	Source Code	Matrix: Water	Sediment	Soil	Oil	#Containers & Preserv.: Unpres.	H_2SO_4	HNO_3	MeOH	Sample Number or Lab Number: Yr	Wk	Seq	Date: Yr	Mo	Dy	Time	Station Description/Notes	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP Metals	EPA 8015M/TPH	AK 101 GRO/BTEX	8260	[illegible]	[illegible]
11	49			X		4			1				99	08	24	1550	99RMZ0311SL							X		X	2
12	49			X		4			1				99	08	24	1610	99RMZ0312SL							X		X	2
13	49			X		4			1				99	08	24	1620	99RMZ0313SL							X		X	2
14	49			X		4			1				99	08	24	1635	99RMZ0314SL							X		X	2
15	49			X		4			1				99	08	24	1645	99RMZ0315SL							X		X	2
16	49			X		4			1				99	08	24	1800	99RMZ0316SL							X		X	2
17	49			X		4			1				99	08	24	1900	99RMZ0317SL							X		X	2
18	49			X		4			1				99	08	24	1250	99RMZ03TBSL							X	X	2	2
	~~49~~			~~X~~		~~4~~			~~1~~				~~99~~	~~08~~	~~24~~	~~1325~~	~~99RMZ0318SL~~									~~3~~	~~2~~
19	49			X		4			1				99	08	25	0940	99RMZ0101SL							X		3	2
20	49			X		4			1				99	08	25	0000	99RMZ0102SL							X	X	4	5

Lab Number: Yr	Wk	Seq	Depth in Feet	Col Mtd CD	QA Code	Miscellaneous

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[signature] 8/27/99 2:05		

Dispatched by: (Signature)	Date/Time	Received for Lab by: (Signature)	Date/Time
		[signature] Howell	8/27/99 0905

Method of Shipment

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

1.9°C

136 77

994540

CT&E Environmental Services Inc.

SAMPLE RECEIPT FORM

CT&E WO#:

Yes	No		
	X	Are samples **RUSH**, priority, or *within 72 hrs* of **hold time**?	
		If yes, have you done *e-mail notification*?	
	X	Are samples *within 24 hrs* of **hold time** or **due date**?	
		If yes, have you *spoken with* Supervisor?	
X		Are there any **problems** (e.g., ids, analyses)?	
X		Were samples preserved correctly and pH verified?	

Sample #10, #15, ~~#~~ #m do not have ID. written on the jar label, but were matched by simple date/time.

X		Has Project Manager been notified of problems?	
X		Is this an ACOE/AFCEE/ADEC project?	
X		Will a **data package** be required?	
	X	If this is for PWS, provide **PWSID**.	
		Is there a **quote** for this project?	
	X	Will **courier** charges apply?	

Completed by (sign): Sara Howell (print): _____

Due Date: ~~9-7~~ 9-6-99
Received Date/Time: 8-27-99 0905
Cooler Temperature: 6.9°C
Sample Condition: (Good) Poor
Matrix of each Sample:

2	" "	-1 → -20
	" "	
	" "	
	" "	
2	Trip Blank	-18
	MS/MSD	

Additional Sample Remarks:

Yes	AK101s/_____ 8260s field pres'd?	
	Field-filtered for dissolved_____?	
	Lab-filter for dissolved_____?	
	Ref Lab required?	

Notes: NO % Solid jars

*** The following *must* be completed for *all* ACOE & AFCEE projects: ***

Yes	No		Notes:
	X	Is cooler temperature 4 ± C?	6.9°C
		thermometer used:	CTE3
	X	Was there an airbill, etc? note #:	hand carry
X		Was cooler sealed with custody seals? #/where?	2 on front
X		Were seals intact upon arrival?	
X		Was there a COC with cooler?	
X		Was the COC filled out properly?	
	X	Did the COC indicate ACOE/AFCEE project?	
X		Did the COC and samples correspond?	
X		Were samples screened with Geiger counter?	
X		Were all samples packed to prevent breakage?	
		packing material:	bubble wrap
X	X	Were all samples unbroken and clearly labelled?	See above notes
X		Were all samples sealed in separate plastic bags?	
NA		Were all bottles for volatiles free of headspace?	
X		Were correct container/sample sizes submitted?	
		Was client notified of problems? (specify below)	

# of each Container Received:

	950 ml amber	unpres'd
	950 ml amber	w/ HCl
	500 ml amber	w/ H2SO4
	1L cubies	unpres'd
	1L cubies	w/ HNO3
	1L cubies	w/ H2SO4
	1L cubies	w/ NaOH + ZnAc
	120 ml coli	bottles
	60 ml	Nalg
11	8 oz amber	unpres'd
	4 oz amber	unpres'd
20	4 oz w/ septa	w/ MeOH
	40 ml vials	w/ HCl
	Other (specify)	
	Other (specify)	

Individual contacted: _____ Phone/Fax #: _____ #/Log In Proofed by: _____

[redacted] & T[redacted] [redacted] Form Num[redacted] 4r2

CT&E Environmental Services Inc.
Laboratory Division

Laboratory Analysis Report

September 14, 1999

Bryan Lund
Harding Lawson & Assoc
601 East 57th Place
Anchorage, AK 99518

Client Name	Harding Lawson & Assoc
Project ID	33360.4 Cape Romanzof Biocells [994540]
Printed	September 14, 1999

Enclosed are the analytical results associated with the above project.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value that falls below PQL, but is greater than the MDL.
B - Indicates the analyte is found in the blank associated with the sample.
* - The analyte has exceeded allowable limits.
GT - Greater Than
D - Secondary Dilution
LT - Less Than
! - Surrogate out of range

CT&E Environmental Services Inc.

CT&E Ref.#	994540001	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:30
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:00
Client Sample ID	99RMZ0301SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windeblank

Sample Remarks:
8260 - Concentration of methylene chloride may be biased high due to lab contamination (as detected in preceeding instrument blank).
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		86.8		%	SM18 2540G			08/31/99	MAH
GRO/8021 Combo									
Gasoline Range Organics		114	11.0	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0549 U	0.0549	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.220 U	0.220	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.869	0.220	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		1.70	0.220	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		1.35	0.220	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	1010		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		99.2		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
VOA by GC/MS Method SW8260									
Dichlorodifluoromethane		0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chloromethane		0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Vinyl chloride		0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromomethane		0.22 U	0.22	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chloroethane		0.22 U	0.22	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS

CT&E Environmental Services Inc.

CT&E Ref.#	994540001	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:30
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:00
Client Sample ID	99RMZ0301SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Trichlorofluoromethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1-Dichloroethene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Carbon disulfide	0.22 U	0.22	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Methylene chloride	0.141	0.11	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
trans-1,2-Dichloroethene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1-Dichloroethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Butanone (MEK)	0.22 U	0.22	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2,2-Dichloropropane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
cis-1,2-Dichloroethene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromochloromethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chloroform	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,1-Trichloroethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Carbon tetrachloride	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1-Dichloropropene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Benzene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dichloroethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Trichloroethene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dichloropropane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Dibromomethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromodichloromethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Chloroethyl Vinyl Ether	0.22 U	0.22	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
cis-1,3-Dichloropropene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
4-Methyl-2-pentanone (MIBK)	0.22 U	0.22	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Toluene	0.0226	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
trans-1,3-Dichloropropene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,2-Trichloroethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Tetrachloroethene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,3-Dichloropropane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Hexanone	0.22 U	0.22	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Dibromochloromethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dibromoethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chlorobenzene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS

CT&E Environmental Services Inc.

CT&E Ref.#	994540001	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:30
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:00
Client Sample ID	99RMZ0301SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
1,1,1,2-Tetrachloroethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Ethylbenzene	0.0644	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
P & M -Xylene	0.711	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
o-Xylene	0.869	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Styrene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromoform	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Isopropylbenzene (Cumene)	0.0793	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromobenzene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,2,2-Tetrachloroethane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,3-Trichloropropane	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
n-Propylbenzene	0.141	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Chlorotoluene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
4-Chlorotoluene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,3,5-Trimethylbenzene	2.23	0.22	mg/Kg	SW846-8260		08/24/99	09/02/99	DRS
tert-Butylbenzene	0.0659	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,4-Trimethylbenzene	4.43	0.22	mg/Kg	SW846-8260		08/24/99	09/02/99	DRS
sec-Butylbenzene	0.277	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,3-Dichlorobenzene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
4-Isopropyltoluene	0.153	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,4-Dichlorobenzene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dichlorobenzene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
n-Butylbenzene	0.422	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dibromo-3-chloropropane	0.22 U	0.22	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,4-Trichlorobenzene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Hexachlorobutadiene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Naphthalene	1.35	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,3-Trichlorobenzene	0.022 U	0.022	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Surrogates								
1,2-Dichloroethane-D4 <surr>	83.5		%	SW846-8260	(74-123)	08/24/99	09/01/99	
Dibromofluoromethane <surr>	93		%	SW846-8260	(80-118)	08/24/99	09/01/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540001	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:30
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:00
Client Sample ID	99RMZ0301SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Toluene-d8 <surr>	102		%	SW846-8260	(79-130)	08/24/99	09/01/99	
4-Bromofluorobenzene <Surr>	88.7		%	SW846-8260	(71-141)	08/24/99	09/01/99	
DRO/RRO Combination								
Diesel Range Organics	2740	113	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Residual Range Organics GC	351	187	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Surrogates								
5a Androstane <surr>	118		%	AK102/103	(50-150)	09/01/99	09/06/99	
d-Triacontane <Surr>	129		%	AK102/103	(50-150)	09/01/99	09/06/99	
PAH SIM								
Naphthalene	973	35	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Acenaphthylene	35 U	35	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Acenaphthene	35 U	35	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Fluorene	35 U	35	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Phenanthrene	59.3	35	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Anthracene	11.4	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Fluoranthene	64.8	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Pyrene	66.4	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo(a)Anthracene	29.3	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Chrysene	31.7	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[b]Fluoranthene	28.9	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[k]fluoranthene	11.6	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[a]pyrene	25.6	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Indeno[1,2,3-c,d] pyrene	15.4	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM

CT&E Environmental Services Inc.

CT&E Ref.#	994540001	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:30
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:00
Client Sample ID	99RMZ0301SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Dibenzo[a,h]anthracene	4.59	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[g,h,i]perylene	20.1	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Surrogates								
Naphthalene-d8 <surr/IS>	53.1		%	PAH SIM	(9-187)	09/01/99	09/12/99	
Acenaphthene-d10 <surr/IS>	31.5		%	PAH SIM	(21-179)	09/01/99	09/12/99	
Chrysene-d12 <surr/IS>	80.3		%	PAH SIM	(46-154)	09/01/99	09/12/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540002	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:30
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:20
Client Sample ID	99RMZ0302SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	Jo Windebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Total Solids		85.7		%	SM18 2540G			08/31/99	MAH
GRO/8021 Combo									
Gasoline Range Organics		140	13.4	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0670 U	0.0670	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.268 U	0.268	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		1.11	0.268	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		1.81	0.268	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		1.82	0.268	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	1090		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		99.2		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
VOA by GC/MS Method SW8260									
Dichlorodifluoromethane		0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chloromethane		0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Vinyl chloride		0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromomethane		0.27 U	0.27	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chloroethane		0.27 U	0.27	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Trichlorofluoromethane		0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1-Dichloroethene		0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS

CT&E Environmental Services Inc.

CT&E Ref.#	994540002	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:30
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:20
Client Sample ID	99RMZ0302SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Carbon disulfide	0.27 U	0.27	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Methylene chloride	0.13 U	0.13	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
trans-1,2-Dichloroethene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1-Dichloroethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Butanone (MEK)	0.27 U	0.27	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2,2-Dichloropropane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
cis-1,2-Dichloroethene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromochloromethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chloroform	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,1-Trichloroethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Carbon tetrachloride	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1-Dichloropropene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Benzene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dichloroethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Trichloroethene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dichloropropane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Dibromomethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromodichloromethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Chloroethyl Vinyl Ether	0.27 U	0.27	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
cis-1,3-Dichloropropene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
4-Methyl-2-pentanone (MIBK)	0.27 U	0.27	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Toluene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
trans-1,3-Dichloropropene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,2-Trichloroethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Tetrachloroethene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,3-Dichloropropane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Hexanone	0.27 U	0.27	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Dibromochloromethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dibromoethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chlorobenzene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,1,2-Tetrachloroethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Ethylbenzene	0.0901	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS

CT&E Environmental Services Inc.

CT&E Ref.#	994540002	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:20
Client Sample ID	99RMZ0302SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
P & M -Xylene	0.627	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
o-Xylene	1.27	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Styrene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromoform	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Isopropylbenzene (Cumene)	0.0997	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromobenzene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,2,2-Tetrachloroethane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,3-Trichloropropane	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
n-Propylbenzene	0.187	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Chlorotoluene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
4-Chlorotoluene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,3,5-Trimethylbenzene	1.05	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
tert-Butylbenzene	0.0598	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,4-Trimethylbenzene	3.70	0.27	mg/Kg	SW846-8260		08/24/99	09/02/99	DRS
sec-Butylbenzene	0.307	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,3-Dichlorobenzene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
4-Isopropyltoluene	0.168	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,4-Dichlorobenzene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dichlorobenzene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
n-Butylbenzene	0.499	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dibromo-3-chloropropane	0.27 U	0.27	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,4-Trichlorobenzene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Hexachlorobutadiene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Naphthalene	1.28	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,3-Trichlorobenzene	0.027 U	0.027	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Surrogates								
1,2-Dichloroethane-D4 <surr>	83.6		%	SW846-8260	(74-123)	08/24/99	09/01/99	
Dibromofluoromethane <surr>	93.6		%	SW846-8260	(80-118)	08/24/99	09/01/99	
Toluene-d8 <surr>	106		%	SW846-8260	(79-130)	08/24/99	09/01/99	
4-Bromofluorobenzene <Surr>	96		%	SW846-8260	(71-141)	08/24/99	09/01/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540002	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:20
Client Sample ID	99RMZ0302SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
DRO/RRO Combination								
Diesel Range Organics	2770	104	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Residual Range Organics GC	348	172	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Surrogates								
5a Androstane <surr>	125		%	AK102/103	(50-150)	09/01/99	09/06/99	
d-Triacontane <Surr>	127		%	AK102/103	(50-150)	09/01/99	09/06/99	
PAH SIM								
Naphthalene	1130	38	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Acenaphthylene	38 U	38	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Acenaphthene	38 U	38	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Fluorene	38 U	38	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Phenanthrene	49.3	38	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Anthracene	9.37	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Fluoranthene	30.1	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Pyrene	34.5	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo(a)Anthracene	10.1	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Chrysene	13.0	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[b]Fluoranthene	9.11	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[k]fluoranthene	4.80	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[a]pyrene	7.63	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Indeno[1,2,3-c,d] pyrene	4.41	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Dibenzo[a,h]anthracene	1.9 U	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[g,h,i]perylene	9.50	1.9	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Surrogates								
Naphthalene-d8 <surr/IS>	57.6		%	PAH SIM	(9-187)	09/01/99	09/12/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540002	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:20
Client Sample ID	99RMZ0302SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Acenaphthene-d10 <surr/IS>	43.2		%	PAH SIM	(21-179)	09/01/99	09/12/99	
Chrysene-d12 <surr/IS>	75.3		%	PAH SIM	(46-154)	09/01/99	09/12/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540003	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:40
Client Sample ID	99RMZ0303SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	Q Windebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Possible lube oil pattern.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		85.8		%	SM18 2540G			08/31/99	MAH
GRO/8021 Combo									
Gasoline Range Organics		95.9	10.8	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0540 U	0.0540	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.216 U	0.216	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.734	0.216	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		1.22	0.216	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		1.17	0.216	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	914		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		99		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
DRO/RRO Combination									
Diesel Range Organics		3180	115	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Residual Range Organics GC		590	190	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Surrogates									
5a Androstane <surr>		125		%	AK102/103	(50-150)	09/01/99	09/06/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540003	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:40
Client Sample ID	99RMZ0303SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
d-Triacontane <Surr>	! 165		%	AK102/103	(50-150)	09/01/99	09/06/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540004	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 14:00
Client Sample ID	99RMZ0304SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	Windebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		85.0		%	SM18 2540G			08/31/99	MAH
GRO/8021 Combo									
Gasoline Range Organics		111	13.0	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0650 U	0.0650	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.260 U	0.260	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.697	0.260	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		1.05	0.260	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		0.506	0.260	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	902		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		93.8		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
DRO/RRO Combination									
Diesel Range Organics		4130	189	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Residual Range Organics GC		624	312	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Surrogates									
5a Androstane <surr>	!	152		%	AK102/103	(50-150)	09/01/99	09/06/99	

CT&E Ref.#	994540004	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 14:00
Client Sample ID	99RMZ0304SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results		PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates									
d-Triacontane <Surr>	!	157		%	AK102/103	(50-150)	09/01/99	09/06/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540005	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 14:15
Client Sample ID	99RMZ0305SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	Jg Windebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		87.7		%	SM18 2540G			08/31/99	MAH
GRO/8021 Combo									
Gasoline Range Organics		105	12.3	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0613 U	0.0613	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.277	0.245	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.550	0.245	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		1.20	0.245	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		0.778	0.245	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	894		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		97.8		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
DRO/RRO Combination									
Diesel Range Organics		2690	113	mg/Kg	AK102/103		09/01/99	09/06/99	MHP
Residual Range Organics GC		430	186	mg/Kg	AK102/103		09/01/99	09/06/99	MHP
Surrogates									
5a Androstane <surr>	!	216		%	AK102/103	(50-150)	09/01/99	09/06/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540005	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 14:15
Client Sample ID	99RMZ0305SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
d-Triacontane <Surr>	!	286	%	AK102/103	(50-150)	09/01/99	09/06/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540006	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 14:30
Client Sample ID	99RMZ0306SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	Wurdebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		88.8		%	SM18 2540G			08/31/99	MAH
GRO/8021 Combo									
Gasoline Range Organics		65.3	17.2	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0858 U	0.0858	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.343 U	0.343	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.343 U	0.343	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		0.758	0.343	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		0.430	0.343	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	355		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		92.5		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
DRO/RRO Combination									
Diesel Range Organics		3350	103	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Residual Range Organics GC		480	169	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Surrogates									
5a Androstane <surr>	!	275		%	AK102/103	(50-150)	09/01/99	09/06/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540006	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 14:30
Client Sample ID	99RMZ0306SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
d-Triacontane <Surr>	! 321		%	AK102/103	(50-150)	09/01/99	09/06/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540007	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 14:45
Client Sample ID	99RMZ0307SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	Windelbank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		89.5		%	SM18 2540G			08/31/99	MAH
GRO/8021 Combo									
Gasoline Range Organics		40.9	13.9	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0693 U	0.0693	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.277 U	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.277 U	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		0.555	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		0.399	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	280		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		90.8		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
DRO/RRO Combination									
Diesel Range Organics		3280	99.0	mg/Kg	AK102/103		09/01/99	09/06/99	MHP
Residual Range Organics GC		322	163	mg/Kg	AK102/103		09/01/99	09/06/99	MHP
Surrogates									
5a Androstane <surr>	!	205		%	AK102/103	(50-150)	09/01/99	09/06/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540007	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 14:45
Client Sample ID	99RMZ0307SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results		PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates									
d-Triacontane <Surr>		258		%	AK102/103	(50-150)	09/01/99	09/06/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540008	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 15:00
Client Sample ID	99RMZ0308SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	JW Winkebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		86.7		%	SM18 2540G			08/31/99	MAH
GRO/8021 Combo									
Gasoline Range Organics		75.4	14.9	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0746 U	0.0746	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.298 U	0.298	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.298 U	0.298	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		0.828	0.298	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		0.472	0.298	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	488		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		92.8		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
DRO/RRO Combination									
Diesel Range Organics		4400	111	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Residual Range Organics GC		412	184	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Surrogates									
5a Androstane <surr>	!	163		%	AK102/103	(50-150)	09/01/99	09/06/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540008	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 15:00
Client Sample ID	99RMZ0308SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
d-Triacontane <Surr>	I 215		%	AK102/103	(50-150)	09/01/99	09/06/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540009	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 14:50
Client Sample ID	99RMZ0309SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windlebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	88.4		%	SM18 2540G			08/31/99	MAH
GRO/8021 Combo								
Gasoline Range Organics	55.6	13.9	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene	0.0693 U	0.0693	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene	0.277 U	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene	0.277 U	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene	0.603	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene	0.527	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates								
4-Bromofluorobenzene <Surr> !	379		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>	92.9		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
DRO/RRO Combination								
Diesel Range Organics	1650	51.9	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Residual Range Organics GC	226	85.6	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Surrogates								
5a Androstane <surr>	125		%	AK102/103	(50-150)	09/01/99	09/06/99	
d-Triacontane <Surr>	144		%	AK102/103	(50-150)	09/01/99	09/06/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540010	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 15:15
Client Sample ID	99RMZ0310SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Winslebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		87.9		%	SM18 2540G			08/31/99	MAH
GRO/8021 Combo									
Gasoline Range Organics		31.8	14.2	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0711 U	0.0711	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.284 U	0.284	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.284 U	0.284	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		0.344	0.284	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		0.368	0.284	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	219		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		85.5		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
DRO/RRO Combination									
Diesel Range Organics		1740	52.6	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Residual Range Organics GC		289	86.7	mg/Kg	AK102/103		09/01/99	09/06/99	MMP
Surrogates									
5a Androstane <surr>	!	154		%	AK102/103	(50-150)	09/01/99	09/06/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540010	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 15:15
Client Sample ID	99RMZ0310SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
d-Triacontane <Surr>	! 225		%	AK102/103	(50-150)	09/01/99	09/06/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540011	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 15:50
Client Sample ID	99RMZ0311SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Total Solids		87.7		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo									
Gasoline Range Organics		24.8	13.7	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0684 U	0.0684	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.273 U	0.273	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.273 U	0.273	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		0.273 U	0.273	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		0.273 U	0.273	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	220		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		94.1		%	AK101/8021B	(50-150)	08/24/99	09/03/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540012	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 16:10
Client Sample ID	99RMZ0312SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		86.8		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo									
Gasoline Range Organics		59.4	13.9	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0693 U	0.0693	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.277 U	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.277 U	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		0.710	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		0.336	0.277	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	402		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		92.2		%	AK101/8021B	(50-150)	08/24/99	09/03/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540013	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 16:20
Client Sample ID	99RMZ0313SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windebank

Sample Remarks:
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Total Solids		86.5		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo									
Gasoline Range Organics		132	16.2	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene		0.0808 U	0.0808	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene		0.323 U	0.323	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene		0.323 U	0.323	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene		1.75	0.323	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene		0.921	0.323	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates									
4-Bromofluorobenzene <Surr>	!	608		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>		93		%	AK101/8021B	(50-150)	08/24/99	09/03/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540014	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 16:35
Client Sample ID	99RMZ0314SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J. Windebank

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	89.9		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.55 U	3.55	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Benzene	0.0178 U	0.0178	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Toluene	0.0711 U	0.0711	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Ethylbenzene	0.0711 U	0.0711	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
P & M -Xylene	0.0711 U	0.0711	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
o-Xylene	0.0711 U	0.0711	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Surrogates								
4-Bromofluorobenzene <Surr>	97.7		%	AK101/8021B	(50-150)	08/24/99	09/04/99	
1,4-Difluorobenzene <Surr>	89.4		%	AK101/8021B	(50-150)	08/24/99	09/04/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540015	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 16:45
Client Sample ID	99RMZ0315SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	90.2		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.38 U	3.38	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Benzene	0.0169 U	0.0169	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Toluene	0.0676 U	0.0676	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Ethylbenzene	0.0676 U	0.0676	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
P & M -Xylene	0.0676 U	0.0676	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
o-Xylene	0.0676 U	0.0676	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Surrogates								
4-Bromofluorobenzene <Surr>	87.4		%	AK101/8021B	(50-150)	08/24/99	09/04/99	
1,4-Difluorobenzene <Surr>	89.4		%	AK101/8021B	(50-150)	08/24/99	09/04/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540016	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 18:00
Client Sample ID	99RMZ0316SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	Windebank

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	91.5		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.14 U	3.14	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Benzene	0.0157 U	0.0157	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Toluene	0.0628 U	0.0628	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Ethylbenzene	0.0628 U	0.0628	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
P & M -Xylene	0.0628 U	0.0628	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
o-Xylene	0.0628 U	0.0628	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Surrogates								
4-Bromofluorobenzene <Surr>	84		%	AK101/8021B	(50-150)	08/24/99	09/04/99	
1,4-Difluorobenzene <Surr>	88.3		%	AK101/8021B	(50-150)	08/24/99	09/04/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540017
Client Name	Harding Lawson & Assoc
Project Name/#	33360.4 Cape Romanzof Biocells
Client Sample ID	99RMZ0317SL
Matrix	Soil/Solid
Ordered By	
PWSID	

Client PO#	
Printed Date/Time	09/14/99 16:31
Collected Date/Time	08/24/99 19:00
Received Date/Time	08/27/99 09:05
Technical Director: Stephen C. Ede	

Released By J Windebank

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	89.1		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.21 U	3.21	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Benzene	0.0160 U	0.0160	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Toluene	0.0642 U	0.0642	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Ethylbenzene	0.0642 U	0.0642	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
P & M -Xylene	0.0642 U	0.0642	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
o-Xylene	0.0642 U	0.0642	mg/Kg	AK101/8021B		08/24/99	09/04/99	ELB
Surrogates								
4-Bromofluorobenzene <Surr>	85.7		%	AK101/8021B	(50-150)	08/24/99	09/04/99	
1,4-Difluorobenzene <Surr>	90.3		%	AK101/8021B	(50-150)	08/24/99	09/04/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540018	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 12:50
Client Sample ID	99RMZ03TBSL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Winebark

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	100		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	2.50 U	2.50	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Benzene	0.0125 U	0.0125	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Toluene	0.0500 U	0.0500	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Ethylbenzene	0.0500 U	0.0500	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
P & M -Xylene	0.0500 U	0.0500	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
o-Xylene	0.0500 U	0.0500	mg/Kg	AK101/8021B		08/24/99	09/03/99	ELB
Surrogates								
4-Bromofluorobenzene <Surr>	88.9		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
1,4-Difluorobenzene <Surr>	88.1		%	AK101/8021B	(50-150)	08/24/99	09/03/99	
VOA by GC/MS Method SW8260								
Dichlorodifluoromethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chloromethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Vinyl chloride	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromomethane	0.25 U	0.25	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chloroethane	0.25 U	0.25	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Trichlorofluoromethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1-Dichloroethene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Carbon disulfide	0.25 U	0.25	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Methylene chloride	0.13 U	0.13	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS

CT&E Environmental Services Inc.

CT&E Ref.#	994540018
Client Name	Harding Lawson & Assoc
Project Name/#	33360.4 Cape Romanzof Biocells
Client Sample ID	99RMZ03TBSL
Matrix	Soil/Solid
Ordered By	
PWSID	

Client PO#	
Printed Date/Time	09/14/99 16:31
Collected Date/Time	08/24/99 12:50
Received Date/Time	08/27/99 09:05
Technical Director: Stephen C. Ede	

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
trans-1,2-Dichloroethene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1-Dichloroethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Butanone (MEK)	0.25 U	0.25	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2,2-Dichloropropane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
cis-1,2-Dichloroethene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromochloromethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chloroform	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,1-Trichloroethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Carbon tetrachloride	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1-Dichloropropene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Benzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dichloroethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Trichloroethene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dichloropropane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Dibromomethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromodichloromethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Chloroethyl Vinyl Ether	0.25 U	0.25	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
cis-1,3-Dichloropropene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
4-Methyl-2-pentanone (MIBK)	0.25 U	0.25	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Toluene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
trans-1,3-Dichloropropene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,2-Trichloroethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Tetrachloroethene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,3-Dichloropropane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Hexanone	0.25 U	0.25	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Dibromochloromethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dibromoethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Chlorobenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,1,2-Tetrachloroethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Ethylbenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
P & M -Xylene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
o-Xylene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS

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CT&E Environmental Services Inc.

CT&E Ref.#	994540018	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 12:50
Client Sample ID	99RMZ03TBSL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Styrene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromoform	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Isopropylbenzene (Cumene)	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Bromobenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,1,2,2-Tetrachloroethane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,3-Trichloropropane	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
n-Propylbenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
2-Chlorotoluene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
4-Chlorotoluene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,3,5-Trimethylbenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
tert-Butylbenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,4-Trimethylbenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
sec-Butylbenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,3-Dichlorobenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
4-Isopropyltoluene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,4-Dichlorobenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dichlorobenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
n-Butylbenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2-Dibromo-3-chloropropane	0.25 U	0.25	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,4-Trichlorobenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Hexachlorobutadiene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Naphthalene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
1,2,3-Trichlorobenzene	0.025 U	0.025	mg/Kg	SW846-8260		08/24/99	09/01/99	DRS
Surrogates								
1,2-Dichloroethane-D4 <surr>	88.1		%	SW846-8260	(74-123)	08/24/99	09/01/99	
Dibromofluoromethane <surr>	99.6		%	SW846-8260	(80-118)	08/24/99	09/01/99	
Toluene-d8 <surr>	104		%	SW846-8260	(79-130)	08/24/99	09/01/99	
4-Bromofluorobenzene <Surr>	101		%	SW846-8260	(71-141)	08/24/99	09/01/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994540019	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 09:40
Client Sample ID	99RMZ0101SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windebank

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	91.7		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.56 U	3.56	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
Benzene	0.0178 U	0.0178	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
Toluene	0.0711 U	0.0711	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
Ethylbenzene	0.0711 U	0.0711	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
P & M -Xylene	0.0711 U	0.0711	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
o-Xylene	0.0711 U	0.0711	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
Surrogates								
4-Bromofluorobenzene <Surr>	81.8		%	AK101/8021B	(50-150)	08/25/99	09/04/99	
1,4-Difluorobenzene <Surr>	88.2		%	AK101/8021B	(50-150)	08/25/99	09/04/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994540020	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 00:00
Client Sample ID	99RMZ0102SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windebank

Sample Remarks:
8260 - Recovery of BFB field surrogate is biased low. Low recovery was confirmed by two previous 8260 analytical runs of this sample.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	80.3		%	SM18 2540G			09/03/99	SEC
GRO/8021 Combo								
Gasoline Range Organics	3.03 U	3.03	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
Benzene	0.0152 U	0.0152	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
Toluene	0.0607 U	0.0607	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
Ethylbenzene	0.0607 U	0.0607	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
P & M -Xylene	0.0607 U	0.0607	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
o-Xylene	0.0607 U	0.0607	mg/Kg	AK101/8021B		08/25/99	09/04/99	ELB
Surrogates								
4-Bromofluorobenzene <Surr>	51.4		%	AK101/8021B	(50-150)	08/25/99	09/04/99	
1,4-Difluorobenzene <Surr>	88.9		%	AK101/8021B	(50-150)	08/25/99	09/04/99	
VOA by GC/MS Method SW8260								
Dichlorodifluoromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Chloromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Vinyl chloride	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Bromomethane	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Chloroethane	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Trichlorofluoromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1-Dichloroethene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS

CT&E Environmental Services Inc.

CT&E Ref.#	994540020	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 00:00
Client Sample ID	99RMZ0102SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Carbon disulfide	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Methylene chloride	0.15 U	0.15	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
trans-1,2-Dichloroethene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1-Dichloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
2-Butanone (MEK)	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
2,2-Dichloropropane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
cis-1,2-Dichloroethene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Bromochloromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Chloroform	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1,1-Trichloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Carbon tetrachloride	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1-Dichloropropene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Benzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2-Dichloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Trichloroethene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2-Dichloropropane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Dibromomethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Bromodichloromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
2-Chloroethyl Vinyl Ether	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
cis-1,3-Dichloropropene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
4-Methyl-2-pentanone (MIBK)	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Toluene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
trans-1,3-Dichloropropene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1,2-Trichloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Tetrachloroethene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,3-Dichloropropane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
2-Hexanone	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Dibromochloromethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2-Dibromoethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Chlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1,1,2-Tetrachloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Ethylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS

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CT&E Environmental Services Inc.

CT&E Ref.#	994540020	**Client PO#**	
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 00:00
Client Sample ID	99RMZ0102SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
P & M -Xylene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
o-Xylene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Styrene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Bromoform	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Isopropylbenzene (Cumene)	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Bromobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,1,2,2-Tetrachloroethane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2,3-Trichloropropane	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
n-Propylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
2-Chlorotoluene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
4-Chlorotoluene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,3,5-Trimethylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
tert-Butylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2,4-Trimethylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
sec-Butylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,3-Dichlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
4-Isopropyltoluene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,4-Dichlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2-Dichlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
n-Butylbenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2-Dibromo-3-chloropropane	0.30 U	0.30	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2,4-Trichlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Hexachlorobutadiene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Naphthalene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
1,2,3-Trichlorobenzene	0.030 U	0.030	mg/Kg	SW846-8260		08/25/99	09/02/99	DRS
Surrogates								
1,2-Dichloroethane-D4 <surr>	96.6		%	SW846-8260	(74-123)	08/25/99	09/02/99	
Dibromofluoromethane <surr>	102		%	SW846-8260	(80-118)	08/25/99	09/02/99	
Toluene-d8 <surr>	104		%	SW846-8260	(79-130)	08/25/99	09/02/99	
4-Bromofluorobenzene <Surr> !	65.7		%	SW846-8260	(71-141)	08/25/99	09/02/99	

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch SPT 2939 (65441)
Original
Matrix Soil/Solid **Analysis Method** SM18 2540G

QC results affect the following production samples:

994540001	994540002	994540003	994540004	994540005
994540006	994540007	994540008	994540009	994540010

QC results for Method Blank [259156]

Run Instrument:

Parameter	Analyzed	Result	PQL	Units
Total Solids	08/31/99	100		%

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch SPT 2939 (65441)
Original 994540001
Matrix Soil/Solid **Analysis Method** SM18 2540G

QC results affect the following production samples:

994540001	994540002	994540003	994540004	994540005
994540006	994540007	994540008	994540009	994540010

QC results for Duplicate [259157]

Parameter	Original Result	QC Result	RPD	RPD Limits	Analyzed	Instru ID
Total Solids	86.8	87.9	1.2		08/31/99	

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch SPT 2951 (65728)
Original
Matrix Soil/Solid **Analysis Method** SM18 2540G

QC results affect the following production samples:

994540011	994540012	994540013	994540014	994540015
994540016	994540017	994540018	994540019	994540020

QC results for Method Blank [260773]

Run Instrument:

Parameter	Analyzed	Result	PQL	Units
Total Solids	09/03/99	100		%

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	SPT 2951 (65728)
Original	994598002
Matrix	Soil/Solid
Analysis Method	SM18 2540G

QC results affect the following production samples:

994540011	994540012	994540013	994540014	994540015
994540016	994540017	994540018	994540019	994540020

QC results for Duplicate [260774]

Parameter	Original Result	QC Result	RPD	RPD Limits	Analyzed	Instru ID
Total Solids	94.8	94.7	.032		09/03/99	

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch VXX 5581 (65655)
Original Matrix Soil/Solid

Prep Date 09/03/99 14:29
Analysis Method AK101/8021B

QC results affect the following production samples:

994540001	994540002	994540003	994540004	994540005
994540006	994540007	994540008	994540009	994540010
994540011	994540012	994540013	994540014	994540015
994540016	994540017	994540018	994540019	994540020

QC results for Method Blank [260488]

Run Instrument: HP 5890 Series II PID+FID VCA

Parameter	Analyzed	Result	PQL	Units
Gasoline Range Organics	09/03/99	2.50 U	2.50	mg/Kg
Benzene	09/03/99	0.0125 U	0.0125	mg/Kg
Toluene	09/03/99	0.0500 U	0.0500	mg/Kg
Ethylbenzene	09/03/99	0.0500 U	0.0500	mg/Kg
P & M -Xylene	09/03/99	0.0500 U	0.0500	mg/Kg
o-Xylene	09/03/99	0.0500 U	0.0500	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	VXX 5581 (65655)
Original	
Matrix	Soil/Solid
Prep Date	09/03/99 14:29
Analysis Method	AK101/8021B

QC results affect the following production samples:

994540001	994540002	994540003	994540004	994540005
994540006	994540007	994540008	994540009	994540010
994540011	994540012	994540013	994540014	994540015
994540016	994540017	994540018	994540019	994540020

QC results for Lab Check Standard [260489] - Lab Check Standard Duplicate [260490]

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Gasoline Range Organics	LCS	21.7	96.5	80-120			22.5mg/Kg	09/03/99	VCA
	LCSD	21.5	95.7		.83	0-20	22.5mg/Kg	09/03/99	VCA
Benzene	LCS	0.86	104	80-120			.83mg/Kg	09/03/99	VCA
	LCSD	0.867	104		0	0-20	.83mg/Kg	09/03/99	VCA
Toluene	LCS	3.65	109	80-120			3.35mg/Kg	09/03/99	VCA
	LCSD	3.68	110		.91	0-20	3.35mg/Kg	09/03/99	VCA
Ethylbenzene	LCS	0.634	101	80-120			.628mg/Kg	09/03/99	VCA
	LCSD	0.639	102		.99	0-20	.628mg/Kg	09/03/99	VCA
P & M -Xylene	LCS	2.33	104	80-120			2.24mg/Kg	09/03/99	VCA
	LCSD	2.35	105		.96	0-20	2.24mg/Kg	09/03/99	VCA
o-Xylene	LCS	0.87	101	80-120			.859mg/Kg	09/03/99	VCA
	LCSD	0.878	102		.99	0-20	.859mg/Kg	09/03/99	VCA

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch XXX 5976 (65476)
Original
Matrix Soil/Solid

Prep Date 09/01/99 09:30
Analysis Method AK102/103

QC results affect the following production samples:

994540001	994540002	994540003	994540004	994540005
994540006	994540007	994540008	994540009	994540010

QC results for Method Blank [259385]

Run Instrument: HP 5890 Series II FID SV A F

Parameter	Analyzed	Result	PQL	Units
Diesel Range Organics	09/04/99	1.38 J	9.68	mg/Kg
Residual Range Organics GC	09/04/99	16.0 U	16.0	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	XXX 5976 (65476)
Original	
Matrix	Soil/Solid
Prep Date	09/01/99 09:30
Analysis Method	AK102/103

QC results affect the following production samples:

994540001	994540002	994540003	994540004	994540005
994540006	994540007	994540008	994540009	994540010

QC results for Lab Check Standard [259386] - Lab Check Standard Duplicate [259387]

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Diesel Range Organics	LCS	123	77.4	60-120			159mg/Kg	09/05/99	SAF
	LCSD	126	79		2	0-20	159mg/Kg	09/05/99	SAF
Residual Range Organics GC	LCS	194	122	60-140			159mg/Kg	09/05/99	SAF
	LCSD	219	138		12.3	0-20	159mg/Kg	09/05/99	SAF

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Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch XXX 5978 (65481)
Original Matrix Soil/Solid

Prep Date 09/01/99 09:30
Analysis Method PAH SIM

QC results affect the following production samples:

994540001 994540002

QC results for Method Blank [259392]

Run Instrument: HP 5890 Series II MS2 SVOA

Parameter	Analyzed	Result	PQL	Units
Naphthalene	09/11/99	1.6 U	1.6	ug/Kg
Acenaphthylene	09/11/99	1.6 U	1.6	ug/Kg
Acenaphthene	09/11/99	1.6 U	1.6	ug/Kg
Fluorene	09/11/99	1.6 U	1.6	ug/Kg
Phenanthrene	09/11/99	1.6 U	1.6	ug/Kg
Anthracene	09/11/99	1.6 U	1.6	ug/Kg
Fluoranthene	09/11/99	1.6 U	1.6	ug/Kg
Pyrene	09/11/99	1.6 U	1.6	ug/Kg
Benzo(a)Anthracene	09/11/99	1.6 U	1.6	ug/Kg
Chrysene	09/11/99	1.6 U	1.6	ug/Kg
Benzo[b]Fluoranthene	09/11/99	1.6 U	1.6	ug/Kg
Benzo[k]fluoranthene	09/11/99	1.6 U	1.6	ug/Kg
Benzo[a]pyrene	09/11/99	1.6 U	1.6	ug/Kg
Indeno[1,2,3-c,d] pyrene	09/11/99	1.6 U	1.6	ug/Kg
Dibenzo[a,h]anthracene	09/11/99	1.6 U	1.6	ug/Kg
Benzo[g,h,i]perylene	09/11/99	1.6 U	1.6	ug/Kg

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch XXX 5978 (65481)
Original
Matrix Soil/Solid

Prep Date 09/01/99 09:30
Analysis Method PAH SIM

QC results affect the following production samples:

994540001 994540002

QC results for Lab Check Standard [259393] - Lab Check Standard Duplicate [259394]

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Naphthalene	LCS	18.8	119	58-140			15.8ug/Kg	09/11/99	SOA
	LCSD	18.2	117		1.7	0-40	15.8ug/Kg	09/11/99	SOA
Acenaphthylene	LCS	16.2	103	52-120			15.8ug/Kg	09/11/99	SOA
	LCSD	15.8	102		.98	0-40	15.8ug/Kg	09/11/99	SOA
Acenaphthene	LCS	16.7	106	50-112			15.8ug/Kg	09/11/99	SOA
	LCSD	17.2	111		4.6	0-40	15.8ug/Kg	09/11/99	SOA
Fluorene	LCS	17.1	108	56-114			15.8ug/Kg	09/11/99	SOA
	LCSD	16.7	107		.93	0-40	15.8ug/Kg	09/11/99	SOA
Phenanthrene	LCS	15.5	98	38-124			15.8ug/Kg	09/11/99	SOA
	LCSD	14	89.8		8.7	0-40	15.8ug/Kg	09/11/99	SOA
Anthracene	LCS	11.9	75.3	44-149			15.8ug/Kg	09/11/99	SOA
	LCSD	9.16	58.9		24.4	0-40	15.8ug/Kg	09/11/99	SOA
Fluoranthene	LCS	15.1	95.8	42-139			15.8ug/Kg	09/11/99	SOA
	LCSD	13.7	88		8.5	0-40	15.8ug/Kg	09/11/99	SOA
Pyrene	LCS	16	102	45-137			15.8ug/Kg	09/11/99	SOA
	LCSD	14	90.2		12.3	0-40	15.8ug/Kg	09/11/99	SOA
Benzo(a)Anthracene	LCS	17.4	110	51-135			15.8ug/Kg	09/11/99	SOA
	LCSD	15.9	102		7.5	0-40	15.8ug/Kg	09/11/99	SOA

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CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch XXX 5978 (65481)
Original Matrix Soil/Solid

Prep Date 09/01/99 09:30
Analysis Method PAH SIM

QC results for Lab Check Standard [259393] - Lab Check Standard Duplicate [259394] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Chrysene	LCS	16.9	107	49-124			15.8ug/Kg	09/11/99	SOA
	LCSD	15.4	99.2		7.6	0-40	15.8ug/Kg	09/11/99	SOA
Benzo[b]Fluoranthene	LCS	16.9	107	40-125			15.8ug/Kg	09/11/99	SOA
	LCSD	15.6	100		6.8	0-40	15.8ug/Kg	09/11/99	SOA
Benzo[k]fluoranthene	LCS	18.4	117	45-137			15.8ug/Kg	09/11/99	SOA
	LCSD	18.7	120		2.5	0-40	15.8ug/Kg	09/11/99	SOA
Benzo[a]pyrene	LCS	14.7	93	49-130			15.8ug/Kg	09/11/99	SOA
	LCSD	10.8	69.3		29.2	0-40	15.8ug/Kg	09/11/99	SOA
Indeno[1,2,3-c,d] pyrene	LCS	17.2	109	42-128			15.8ug/Kg	09/11/99	SOA
	LCSD	17.4	112		2.7	0-40	15.8ug/Kg	09/11/99	SOA
Dibenzo[a,h]anthracene	LCS	17.3	110	69-150			15.8ug/Kg	09/11/99	SOA
	LCSD	16.9	108		1.8	0-40	15.8ug/Kg	09/11/99	SOA
Benzo[g,h,i]perylene	LCS	17.8	113	67-120			15.8ug/Kg	09/11/99	SOA
	LCSD	15.9	102		10.2	0-40	15.8ug/Kg	09/11/99	SOA

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	VXX 5566 (65498)
Original	
Matrix	Soil/Solid
Prep Date	09/01/99 11:30
Analysis Method	SW846-8260

QC results affect the following production samples:

994540001 994540002 994540018 994540020

QC results for Method Blank [259526]

Run Instrument: HP 5890 Series II MS1 VMA

Parameter	Analyzed	Result	PQL	Units
Dichlorodifluoromethane	09/01/99	0.050 U	0.050	mg/Kg
Chloromethane	09/01/99	0.050 U	0.050	mg/Kg
Vinyl chloride	09/01/99	0.050 U	0.050	mg/Kg
Bromomethane	09/01/99	0.50 U	0.50	mg/Kg
Chloroethane	09/01/99	0.50 U	0.50	mg/Kg
Trichlorofluoromethane	09/01/99	0.050 U	0.050	mg/Kg
1,1-Dichloroethene	09/01/99	0.050 U	0.050	mg/Kg
Carbon disulfide	09/01/99	0.50 U	0.50	mg/Kg
Methylene chloride	09/01/99	0.25 U	0.25	mg/Kg
trans-1,2-Dichloroethene	09/01/99	0.050 U	0.050	mg/Kg
1,1-Dichloroethane	09/01/99	0.050 U	0.050	mg/Kg
2-Butanone (MEK)	09/01/99	0.50 U	0.50	mg/Kg
2,2-Dichloropropane	09/01/99	0.050 U	0.050	mg/Kg
cis-1,2-Dichloroethene	09/01/99	0.050 U	0.050	mg/Kg
Bromochloromethane	09/01/99	0.050 U	0.050	mg/Kg
Chloroform	09/01/99	0.050 U	0.050	mg/Kg
1,1,1-Trichloroethane	09/01/99	0.050 U	0.050	mg/Kg
Carbon tetrachloride	09/01/99	0.050 U	0.050	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	VXX 5566 (65498)
Original Matrix	Soil/Solid
Prep Date	09/01/99 11:30
Analysis Method	SW846-8260

QC results for Method Blank [259526] (continued)

Run Instrument: HP 5890 Series II MS1 VMA

Parameter	Analyzed	Result	PQL	Units
1,1-Dichloropropene	09/01/99	0.050 U	0.050	mg/Kg
Benzene	09/01/99	0.050 U	0.050	mg/Kg
1,2-Dichloroethane	09/01/99	0.050 U	0.050	mg/Kg
Trichloroethene	09/01/99	0.050 U	0.050	mg/Kg
1,2-Dichloropropane	09/01/99	0.050 U	0.050	mg/Kg
Dibromomethane	09/01/99	0.050 U	0.050	mg/Kg
Bromodichloromethane	09/01/99	0.050 U	0.050	mg/Kg
2-Chloroethyl Vinyl Ether	09/01/99	0.50 U	0.50	mg/Kg
cis-1,3-Dichloropropene	09/01/99	0.050 U	0.050	mg/Kg
4-Methyl-2-pentanone (MIBK)	09/01/99	0.50 U	0.50	mg/Kg
Toluene	09/01/99	0.050 U	0.050	mg/Kg
trans-1,3-Dichloropropene	09/01/99	0.050 U	0.050	mg/Kg
1,1,2-Trichloroethane	09/01/99	0.050 U	0.050	mg/Kg
Tetrachloroethene	09/01/99	0.050 U	0.050	mg/Kg
1,3-Dichloropropane	09/01/99	0.050 U	0.050	mg/Kg
2-Hexanone	09/01/99	0.50 U	0.50	mg/Kg
Dibromochloromethane	09/01/99	0.050 U	0.050	mg/Kg
1,2-Dibromoethane	09/01/99	0.050 U	0.050	mg/Kg
Chlorobenzene	09/01/99	0.050 U	0.050	mg/Kg
1,1,1,2-Tetrachloroethane	09/01/99	0.050 U	0.050	mg/Kg
Ethylbenzene	09/01/99	0.050 U	0.050	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	VXX 5566 (65498)
Original	
Matrix	Soil/Solid
Prep Date	09/01/99 11:30
Analysis Method	SW846-8260

QC results for Method Blank [259526] (continued)

Run Instrument: HP 5890 Series II MS1 VMA

Parameter	Analyzed	Result	PQL	Units
P & M -Xylene	09/01/99	0.050 U	0.050	mg/Kg
o-Xylene	09/01/99	0.050 U	0.050	mg/Kg
Styrene	09/01/99	0.050 U	0.050	mg/Kg
Bromoform	09/01/99	0.050 U	0.050	mg/Kg
Isopropylbenzene (Cumene)	09/01/99	0.050 U	0.050	mg/Kg
Bromobenzene	09/01/99	0.050 U	0.050	mg/Kg
1,1,2,2-Tetrachloroethane	09/01/99	0.050 U	0.050	mg/Kg
1,2,3-Trichloropropane	09/01/99	0.050 U	0.050	mg/Kg
n-Propylbenzene	09/01/99	0.050 U	0.050	mg/Kg
2-Chlorotoluene	09/01/99	0.050 U	0.050	mg/Kg
4-Chlorotoluene	09/01/99	0.050 U	0.050	mg/Kg
1,3,5-Trimethylbenzene	09/01/99	0.050 U	0.050	mg/Kg
tert-Butylbenzene	09/01/99	0.050 U	0.050	mg/Kg
1,2,4-Trimethylbenzene	09/01/99	0.050 U	0.050	mg/Kg
sec-Butylbenzene	09/01/99	0.050 U	0.050	mg/Kg
1,3-Dichlorobenzene	09/01/99	0.050 U	0.050	mg/Kg
4-Isopropyltoluene	09/01/99	0.050 U	0.050	mg/Kg
1,4-Dichlorobenzene	09/01/99	0.050 U	0.050	mg/Kg
1,2-Dichlorobenzene	09/01/99	0.050 U	0.050	mg/Kg
n-Butylbenzene	09/01/99	0.050 U	0.050	mg/Kg
1,2-Dibromo-3-chloropropane	09/01/99	0.50 U	0.50	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	VXX 5566 (65498)
Original Matrix	Soil/Solid
Prep Date	09/01/99 11:30
Analysis Method	SW846-8260

QC results for Method Blank [259526] (continued)

Run Instrument: HP 5890 Series II MS1 VMA

Parameter	Analyzed	Result	PQL	Units
1,2,4-Trichlorobenzene	09/01/99	0.050 U	0.050	mg/Kg
Hexachlorobutadiene	09/01/99	0.050 U	0.050	mg/Kg
Naphthalene	09/01/99	0.0480 J	0.050	mg/Kg
1,2,3-Trichlorobenzene	09/01/99	0.050 U	0.050	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	VXX 5566 (65498)
Original	
Matrix	Soil/Solid
Prep Date	09/01/99 11:30
Analysis Method	SW846-8260

QC results affect the following production samples:

994540001 994540002 994540018 994540020

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528]

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Dichlorodifluoromethane	LCS	0.525	105	13-190			.5mg/Kg	09/01/99	VMA
	LCSD	0.519	104		.96	0-20	.5mg/Kg	09/01/99	VMA
Chloromethane	LCS	0.465	92.9	77-140			.5mg/Kg	09/01/99	VMA
	LCSD	0.451	90.1		3.1	0-20	.5mg/Kg	09/01/99	VMA
Vinyl chloride	LCS	0.535	107	76-137			.5mg/Kg	09/01/99	VMA
	LCSD	0.52	104		2.8	0-20	.5mg/Kg	09/01/99	VMA
Bromomethane	LCS	0.65	130	65-181			.5mg/Kg	09/01/99	VMA
	LCSD	0.756	151		14.9	0-20	.5mg/Kg	09/01/99	VMA
Chloroethane	LCS	0.618	124	64-174			.5mg/Kg	09/01/99	VMA
	LCSD	0.754	151		19.6	0-20	.5mg/Kg	09/01/99	VMA
Trichlorofluoromethane	LCS	0.553	111	56-147			.5mg/Kg	09/01/99	VMA
	LCSD	0.556	111		0	0-20	.5mg/Kg	09/01/99	VMA
1,1-Dichloroethene	LCS	0.587	117	75-123			.5mg/Kg	09/01/99	VMA
	LCSD	0.589	118		.85	0-20	.5mg/Kg	09/01/99	VMA
Carbon disulfide	LCS	0.656	87.5	67-140			.75mg/Kg	09/01/99	VMA
	LCSD	0.65	86.7		.92	0-20	.75mg/Kg	09/01/99	VMA
Methylene chloride	LCS	0.562	112	53-155			.5mg/Kg	09/01/99	VMA
	LCSD	0.618	124		10.2	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch VXX 5566 (65498)
Original
Matrix Soil/Solid

Prep Date 09/01/99 11:30
Analysis Method SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
trans-1,2-Dichloroethene	LCS	0.589	118	78-126			.5mg/Kg	09/01/99	VMA
	LCSD	0.597	119		.84	0-20	.5mg/Kg	09/01/99	VMA
1,1-Dichloroethane	LCS	0.542	108	74-130			.5mg/Kg	09/01/99	VMA
	LCSD	0.538	108		0	0-20	.5mg/Kg	09/01/99	VMA
2-Butanone (MEK)	LCS	0.714	95.2	75-124			.75mg/Kg	09/01/99	VMA
	LCSD	0.703	93.7		1.6	0-20	.75mg/Kg	09/01/99	VMA
2,2-Dichloropropane	LCS	0.574	115	88-131			.5mg/Kg	09/01/99	VMA
	LCSD	0.584	117		1.7	0-20	.5mg/Kg	09/01/99	VMA
cis-1,2-Dichloroethene	LCS	0.547	109	84-124			.5mg/Kg	09/01/99	VMA
	LCSD	0.545	109		0	0-20	.5mg/Kg	09/01/99	VMA
Bromochloromethane	LCS	0.557	111	81-131			.5mg/Kg	09/01/99	VMA
	LCSD	0.55	110		.9	0-20	.5mg/Kg	09/01/99	VMA
Chloroform	LCS	0.558	112	89-123			.5mg/Kg	09/01/99	VMA
	LCSD	0.564	113		.89	0-20	.5mg/Kg	09/01/99	VMA
1,1,1-Trichloroethane	LCS	0.581	116	85-131			.5mg/Kg	09/01/99	VMA
	LCSD	0.582	116		0	0-20	.5mg/Kg	09/01/99	VMA
Carbon tetrachloride	LCS	0.597	119	76-139			.5mg/Kg	09/01/99	VMA
	LCSD	0.608	122		2.5	0-20	.5mg/Kg	09/01/99	VMA
1,1-Dichloropropene	LCS	0.585	117	92-136			.5mg/Kg	09/01/99	VMA
	LCSD	0.586	117		0	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch VXX 5566 (65498)
Original
Matrix Soil/Solid

Prep Date 09/01/99 11:30
Analysis Method SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Benzene	LCS	0.555	111	84-117			.5mg/Kg	09/01/99	VMA
	LCSD	0.56	112		.9	0-20	.5mg/Kg	09/01/99	VMA
1,2-Dichloroethane	LCS	0.587	117	84-135			.5mg/Kg	09/01/99	VMA
	LCSD	0.594	119		1.7	0-20	.5mg/Kg	09/01/99	VMA
Trichloroethene	LCS	0.54	108	89-126			.5mg/Kg	09/01/99	VMA
	LCSD	0.538	108		0	0-20	.5mg/Kg	09/01/99	VMA
1,2-Dichloropropane	LCS	0.579	116	94-124			.5mg/Kg	09/01/99	VMA
	LCSD	0.591	118		1.7	0-20	.5mg/Kg	09/01/99	VMA
Dibromomethane	LCS	0.554	111	86-124			.5mg/Kg	09/01/99	VMA
	LCSD	0.565	113		1.8	0-20	.5mg/Kg	09/01/99	VMA
Bromodichloromethane	LCS	0.565	113	80-121			.5mg/Kg	09/01/99	VMA
	LCSD	0.563	113		0	0-20	.5mg/Kg	09/01/99	VMA
2-Chloroethyl Vinyl Ether	LCS	0.645	85.9	78-122			.75mg/Kg	09/01/99	VMA
	LCSD	0.668	89.1		3.7	0-20	.75mg/Kg	09/01/99	VMA
cis-1,3-Dichloropropene	LCS	0.522	104	85-114			.5mg/Kg	09/01/99	VMA
	LCSD	0.53	106		1.9	0-20	.5mg/Kg	09/01/99	VMA
4-Methyl-2-pentanone (MIBK)	LCS	0.637	84.9	62-131			.75mg/Kg	09/01/99	VMA
	LCSD	0.655	87.3		2.8	0-20	.75mg/Kg	09/01/99	VMA
Toluene	LCS	0.537	107	73-125			.5mg/Kg	09/01/99	VMA
	LCSD	0.523	105		1.9	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch VXX 5566 (65498)
Original Matrix Soil/Solid

Prep Date 09/01/99 11:30
Analysis Method SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
trans-1,3-Dichloropropene	LCS	0.5	99.9	83-116			.5mg/Kg	09/01/99	VMA
	LCSD	0.498	99.6		.3	0-20	.5mg/Kg	09/01/99	VMA
1,1,2-Trichloroethane	LCS	0.534	107	87-121			.5mg/Kg	09/01/99	VMA
	LCSD	0.551	110		2.8	0-20	.5mg/Kg	09/01/99	VMA
Tetrachloroethene	LCS	0.53	106	71-139			.5mg/Kg	09/01/99	VMA
	LCSD	0.523	105		.95	0-20	.5mg/Kg	09/01/99	VMA
1,3-Dichloropropane	LCS	0.53	106	84-121			.5mg/Kg	09/01/99	VMA
	LCSD	0.535	107		.94	0-20	.5mg/Kg	09/01/99	VMA
2-Hexanone	LCS	0.73	97.3	64-130			.75mg/Kg	09/01/99	VMA
	LCSD	0.737	98.3		1	0-20	.75mg/Kg	09/01/99	VMA
Dibromochloromethane	LCS	0.51	102	71-136			.5mg/Kg	09/01/99	VMA
	LCSD	0.508	102		0	0-20	.5mg/Kg	09/01/99	VMA
1,2-Dibromoethane	LCS	0.535	107	82-129			.5mg/Kg	09/01/99	VMA
	LCSD	0.535	107		0	0-20	.5mg/Kg	09/01/99	VMA
Chlorobenzene	LCS	0.519	104	80-122			.5mg/Kg	09/01/99	VMA
	LCSD	0.524	105		.96	0-20	.5mg/Kg	09/01/99	VMA
1,1,1,2-Tetrachloroethane	LCS	0.573	115	83-128			.5mg/Kg	09/01/99	VMA
	LCSD	0.561	112		2.6	0-20	.5mg/Kg	09/01/99	VMA
Ethylbenzene	LCS	0.565	113	82-122			.5mg/Kg	09/01/99	VMA
	LCSD	0.555	111		1.8	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch VXX 5566 (65498)
Original
Matrix Soil/Solid

Prep Date 09/01/99 11:30
Analysis Method SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
P & M -Xylene	LCS	1.13	113	83-120			1mg/Kg	09/01/99	VMA
	LCSD	1.12	112		.89	0-20	1mg/Kg	09/01/99	VMA
o-Xylene	LCS	0.523	105	82-120			.5mg/Kg	09/01/99	VMA
	LCSD	0.513	103		1.9	0-20	.5mg/Kg	09/01/99	VMA
Styrene	LCS	0.517	103	82-124			.5mg/Kg	09/01/99	VMA
	LCSD	0.514	103		0	0-20	.5mg/Kg	09/01/99	VMA
Bromoform	LCS	0.538	108	73-127			.5mg/Kg	09/01/99	VMA
	LCSD	0.513	103		4.7	0-20	.5mg/Kg	09/01/99	VMA
Isopropylbenzene (Cumene)	LCS	0.497	99.3	78-130			.5mg/Kg	09/01/99	VMA
	LCSD	0.5	99.9		.6	0-20	.5mg/Kg	09/01/99	VMA
Bromobenzene	LCS	0.556	111	85-121			.5mg/Kg	09/01/99	VMA
	LCSD	0.543	109		1.8	0-20	.5mg/Kg	09/01/99	VMA
1,1,2,2-Tetrachloroethane	LCS	0.618	124	72-135			.5mg/Kg	09/01/99	VMA
	LCSD	0.606	121		2.4	0-20	.5mg/Kg	09/01/99	VMA
1,2,3-Trichloropropane	LCS	0.574	115	67-141			.5mg/Kg	09/01/99	VMA
	LCSD	0.58	116		.87	0-20	.5mg/Kg	09/01/99	VMA
n-Propylbenzene	LCS	0.518	104	67-136			.5mg/Kg	09/01/99	VMA
	LCSD	0.51	102		1.9	0-20	.5mg/Kg	09/01/99	VMA
2-Chlorotoluene	LCS	0.56	112	74-138			.5mg/Kg	09/01/99	VMA
	LCSD	0.556	111		.9	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch VXX 5566 (65498)
Original
Matrix Soil/Solid

Prep Date 09/01/99 11:30
Analysis Method SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
4-Chlorotoluene	LCS	0.561	112	71-137			.5mg/Kg	09/01/99	VMA
	LCSD	0.547	109		2.7	0-20	.5mg/Kg	09/01/99	VMA
1,3,5-Trimethylbenzene	LCS	0.52	104	75-132			.5mg/Kg	09/01/99	VMA
	LCSD	0.522	104		0	0-20	.5mg/Kg	09/01/99	VMA
tert-Butylbenzene	LCS	0.48	96	68-134			.5mg/Kg	09/01/99	VMA
	LCSD	0.475	94.9		1.2	0-20	.5mg/Kg	09/01/99	VMA
1,2,4-Trimethylbenzene	LCS	0.535	107	79-131			.5mg/Kg	09/01/99	VMA
	LCSD	0.517	103		3.8	0-20	.5mg/Kg	09/01/99	VMA
sec-Butylbenzene	LCS	0.528	106	78-136			.5mg/Kg	09/01/99	VMA
	LCSD	0.51	102		3.8	0-20	.5mg/Kg	09/01/99	VMA
1,3-Dichlorobenzene	LCS	0.485	97	78-126			.5mg/Kg	09/01/99	VMA
	LCSD	0.508	102		5	0-20	.5mg/Kg	09/01/99	VMA
4-Isopropyltoluene	LCS	0.54	108	70-133			.5mg/Kg	09/01/99	VMA
	LCSD	0.522	104		3.8	0-20	.5mg/Kg	09/01/99	VMA
1,4-Dichlorobenzene	LCS	0.54	108	77-132			.5mg/Kg	09/01/99	VMA
	LCSD	0.524	105		2.8	0-20	.5mg/Kg	09/01/99	VMA
1,2-Dichlorobenzene	LCS	0.54	108	93-122			.5mg/Kg	09/01/99	VMA
	LCSD	0.532	106		1.9	0-20	.5mg/Kg	09/01/99	VMA
n-Butylbenzene	LCS	0.543	109	81-141			.5mg/Kg	09/01/99	VMA
	LCSD	0.543	109		0	0-20	.5mg/Kg	09/01/99	VMA

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	VXX 5566 (65498)
Original	
Matrix	Soil/Solid
Prep Date	09/01/99 11:30
Analysis Method	SW846-8260

QC results for Lab Check Standard [259527] - Lab Check Standard Duplicate [259528] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
1,2-Dibromo-3-chloropropane	LCS	0.582	116	60-144			.5mg/Kg	09/01/99	VMA
	LCSD	0.601	120		3.4	0-20	.5mg/Kg	09/01/99	VMA
1,2,4-Trichlorobenzene	LCS	0.567	113	86-129			.5mg/Kg	09/01/99	VMA
	LCSD	0.556	111		1.8	0-20	.5mg/Kg	09/01/99	VMA
Hexachlorobutadiene	LCS	0.541	108	80-152			.5mg/Kg	09/01/99	VMA
	LCSD	0.562	112		3.6	0-20	.5mg/Kg	09/01/99	VMA
Naphthalene	LCS	0.632	126	80-130			.5mg/Kg	09/01/99	VMA
	LCSD	0.641	128		1.6	0-20	.5mg/Kg	09/01/99	VMA
1,2,3-Trichlorobenzene	LCS	0.592	118	81-132			.5mg/Kg	09/01/99	VMA
	LCSD	0.581	116		1.7	0-20	.5mg/Kg	09/01/99	VMA

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SEP 23 1999

HARDING LAWSON
ASSOCIATES

CTE Environmental Services
Alaska Division
Laboratory Data Report

Project: 33360.4 Cape Romanzof Biocells

Client: Harding Lawson & Assoc

CTE Work Order: 994542

Contents:

Chain of Custody
Quality Control Summary Forms

Note:

Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the proper regulatory authority and/or CTE's Quality Assurance Program Plan.

Case Narrative

Customer: HARLAWP **Harding Lawson & Assoc**

Project: 994542 **33360.4 Cape Romanzof Biocells**

994542001 PS

DRO - Pattern consistent with middle distillate.

994542002 PS

DRO - Pattern consistent with middle distillate.

994542004 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO - Heavier hydrocarbons contributing to diesel range quantitation.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

994542005 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.
DRO - Heavier hydrocarbons contributing to diesel range quantitation.

994542006 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

994542007 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

994542008 PS

PAHSIM - Recovery for surrogate #1(204%) is biased high due to interference from non-target analytes. See dilution for recovery information.

994542009 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO - Heavier hydrocarbons contributing to diesel range quantitation.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Case Narrative

Customer: HARLAWP **Harding Lawson & Assoc**

Project: 994542 **33360.4 Cape Romanzof Biocells**

994542010 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994542011 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.
PAHSIM - Recovery for surrogate #3(46%) is biased low. The results are not significantly affected.

994542012 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994542013 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994542014 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994542015 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994542016 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Case Narrative

Customer: HARLAWP **Harding Lawson & Assoc**

Project: 994542 **33360.4 Cape Romanzof Biocells**

994542017 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994542018 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994542019 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994542020 PS

DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

994542021 PS

DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Pattern consistent with weathered middle distillate.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

258996 LCS

RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

258997 LCSD

RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

262571 CCV

PAHSIM - CCV rpd criteria for surrogate #1(39%) is biased high. The results are not significantly affected.

262570 IB

PAHSIM - Recovery for surrogate #1(121%) is biased high. The results are not significantly affected.

Harding Lawson Assoc
601 East 57th Place
Anchorage, AK 99518
907 / 563-8102
907 / 561-4574 FAX

994542

CHAIN OF CUSTODY FORM

Lab: CT&E

136 144

Samplers: Howard Hoen, Lorri Johnson

Project Number: 33360.4

Name/Location: Cape Romanzof Bluffs

Project Manager: Bryan Lund

Recorder: (Signature Required)

	SOURCE CODE	MATRIX: Water	MATRIX: Sediment	MATRIX: Soil	MATRIX: Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	AK 102/103 rec/DRO	PAH - sims 8270
1	49			X								99	08	24	1550	99RMZ0311SL						X	X	X
2	49			X								99	08	24	1610	99RMZ0312SL						X	X	X
3	49			X								99	08	24	1620	99RMZ0313SL						X	X	X
4	49			X								99	08	24	1635	99RMZ0314SL						X	X	X
5	49			X								99	08	24	1645	99RMZ0315SL						X	X	X
6	49			X								99	08	24	1800	99RMZ0316SL						X	X	X
7	49			X								99	08	24	1900	99RMZ0317SL						X	X	X
8	49			X								99	08	24	1325	99RMZ0318SL						X	X	X
9	49			X								99	08	25	0940	99RMZ0101SL						X	X	X
10	49			X								99	08	25	1000	99RMZ0102SL						X	X	X

ANALYSIS REQUESTED

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
9/27/99 9:05		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) Jana D. Lowell	DATE/TIME 9-27-99 0905
METHOD OF SHIPMENT		

6533

Laboratory Copy White — Project Office Copy Yellow — Field or Office Copy Pink

2.8°C

...ng Lawson Associat
... East 57th Place
Anchorage AK 99518
907 / 563 8102
907 / 561-4574 FAX

994542 AIN OF CUSTODY FORM

Lab: CT&E 2/2 136 145

Project Number: 33360.4
Name/Location: Cape Romanzof
Project Manager: Bryan Lund

Samplers: Howard Hoen, Lorei Johnson

Recorder: [signature] (Signature Required)

#	Source Code	Water	Sediment	Soil	Oil	Unpres.	H_2SO_4	HNO_3	Sample/Lab Number (Yr, Wk, Seq)	Yr	Mo	Dy	Time	Station Description/Notes	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	DRO/RRO AK102/103	PAH SIMS
11	49			X		1				99	08	25	1005	99RMZ0103SL							X	X
12	49			X		1				99	08	25	1010	99RMZ0104SL							X	
13	49			X		1				99	08	25	1020	99RMZ0105SL							X	
14	49			X		1				99	08	25	1040	99RMZ0106SL							X	
15	49			X		1				99	08	25	1110	99RMZ0107SL							X	
16	49			X		1				99	08	25	1120	99RMZ0108SL							X	
17	49			X		1				99	08	25	1140	99RMZ0109SL							X	
18	49			X		1				99	08	25	1145	99RMZ0110SL							X	
19	49			X		1				99	08	25	1330	99RMZ0111SL							X	
20	49			X		1				99	08	25	1335	99RMZ0112SL							X	
21	49			X		1				99	08	25	1350	99RMZ0113SL							X	

LAB NUMBER (Yr, Wk, Seq)	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 8/27/99 9:05		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) Tara D Howell	8-27-99 0905
METHOD OF SHIPMENT		

6533

Laboratory Copy White — Project Office Copy Yellow — Field or Office Copy Pink

3.8°C

994542

CT&E Environmental Services Inc.

SAMPLE RECEIPT FORM

CT&E WO#:

Yes	No		
	X	Are samples **RUSH**, priority, or *within 72 hrs* of **hold time**?	
	X	If yes, have you done *e-mail notification*?	
	X	Are samples *within 24 hrs* of **hold time** or **due date**?	
	X	If yes, have you *spoken with* Supervisor?	
	X	Are there any **problems** (e.g., ids, analyses)?	
X		Were samples preserved correctly and pH verified?	
	X	Has Project Manager been notified of problems?	
X		Is this an ACOE/AFCEE/ADEC project?	
X		Will a **data package** be required?	
	X	If this is for PWS, provide **PWSID**.	
	X	Is there a **quote** for this project?	
	X	Will **courier** charges apply?	

Due Date: 7-6-99
Received Date/Time: 8-27-99 0905
Cooler Temperature: 3.8°C
Sample Condition: (Good) Poor

Matrix of each Sample:

2	" "	-17-21
	" "	
	" "	
	" "	
2	Trip Blank	-22*
	MS/MSD	

Additional Sample Remarks:

_____ AK101s/_____ 8260s field pres'd?
_____ Field-filtered for dissolved_____?
_____ Lab-filter for dissolved_____?
_____ Ref Lab required?

Notes: * do not run trip blank (-22)

Completed by (sign): Tara Howell (print): Tara Howell

*** The following *must* be completed for *all* ACOE & AFCEE projects: ***

Yes	No		*Notes:*
X		Is cooler temperature 4 ± C?	3.8°C
		thermometer used:	CTE3
	X	Was there an airbill, etc? note #:	hand carry
X		Was cooler sealed with custody seals?	
		#/where?	2 on front
X		Were seals intact upon arrival?	
X		Was there a COC with cooler?	
X		Was the COC filled out properly?	
	X	Did the COC indicate ACOE/AFCEE project?	
X		Did the COC and samples correspond?	
X		Were samples screened with Geiger counter?	
X		Were all samples packed to prevent breakage?	
		packing material:	bubble wrap
X		Were all samples unbroken and clearly labelled?	
X		Were all samples sealed in separate plastic bags?	
	NA	Were all bottles for volatiles free of headspace?	
X		Were correct container/sample sizes submitted?	
		Was client notified of problems? (specify below)	

Individual contacted: _____ Phone/Fax #: _____
Date & Time: _____

# of each Container Received:

_____	950 ml amber	unpres'd
_____	950 ml amber	w/ HCl
_____	500 ml amber	w/ H2SO4
_____	1L cubies	unpres'd
_____	1L cubies	w/ HNO3
_____	1L cubies	w/ H2SO4
_____	1L cubies	w/ NaOH + ZnAc
_____	120 ml coli	bottles
_____	60 ml	Nalg
21	8 oz amber	unpres'd
_____	4 oz amber	unpres'd
1	4 oz w/ septa	w/ MeOH
_____	40 ml vials	w/ HCl
_____	Other (specify)	_____
_____	Other (specify)	_____

#/Log In Proofed by: _____

Form Number F004r2

136 146

136 147

CT&E Environmental Services Inc.
Laboratory Division

Laboratory Analysis Report

September 14, 1999

Bryan Lund
Harding Lawson & Assoc
601 East 57th Place
Anchorage, AK 99518

Client Name	Harding Lawson & Assoc
Project ID	33360.4 Cape Romanzof Biocells [994542]
Printed	September 14, 1999

Enclosed are the analytical results associated with the above project.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value that falls below PQL, but is greater than the MDL.
B - Indicates the analyte is found in the blank associated with the sample.
* - The analyte has exceeded allowable limits.
GT - Greater Than
D - Secondary Dilution
LT - Less Than
! - Surrogate out of range

CT&E Environmental Services Inc.

CT&E Ref.#	994542001	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 15:50
Client Sample ID	99RMZ0311SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J W Windebank

Sample Remarks:
DRO - Pattern consistent with middle distillate.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	86.0		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination								
Diesel Range Organics	1800	56.6	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC	252	93.3	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates								
5a Androstane <surr>	139		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	134		%	AK102/103	(50-150)	08/31/99	09/05/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994542002	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 16:10
Client Sample ID	99RMZ0312SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windebank

Sample Remarks:
DRO - Pattern consistent with middle distillate.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	85.0		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination								
Diesel Range Organics	3700	107	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC	262	176	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates								
5a Androstane <surr>	142		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	117		%	AK102/103	(50-150)	08/31/99	09/05/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994542003	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 16:20
Client Sample ID	99RMZ0313SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windlebank

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^								
Total Solids	87.5		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination								
Diesel Range Organics	2600	101	mg/Kg	AK102/103		08/31/99	09/03/99	MMP
Residual Range Organics GC	167 U	167	mg/Kg	AK102/103		08/31/99	09/03/99	MMP
Surrogates								
5a Androstane <surr>	128		%	AK102/103	(50-150)	08/31/99	09/03/99	
d-Triacontane <Surr>	121		%	AK102/103	(50-150)	08/31/99	09/03/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994542004	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 16:35
Client Sample ID	99RMZ0314SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windlebank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO - Heavier hydrocarbons contributing to diesel range quantitation.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		87.7		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		154	10.5	mg/Kg	AK102/103		08/31/99	09/03/99	MHP
Residual Range Organics GC		297	17.3	mg/Kg	AK102/103		08/31/99	09/03/99	MHP
Surrogates									
5a Androstane <surr>		134		%	AK102/103	(50-150)	08/31/99	09/03/99	
d-Triacontane <Surr>	!	251		%	AK102/103	(50-150)	08/31/99	09/03/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994542005	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 16:45
Client Sample ID	99RMZ0315SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J. Winslebank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.
DRO - Heavier hydrocarbons contributing to diesel range quantitation.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Total Solids		87.5		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		263	11.1	mg/Kg	AK102/103		08/31/99	09/03/99	MMP
Residual Range Organics GC		304	18.3	mg/Kg	AK102/103		08/31/99	09/03/99	MMP
Surrogates									
5a Androstane <surr>		143		%	AK102/103	(50-150)	08/31/99	09/03/99	
d-Triacontane <Surr>	!	235		%	AK102/103	(50-150)	08/31/99	09/03/99	

136 153

CT&E Environmental Services Inc.

CT&E Ref.#	994542006	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 18:00
Client Sample ID	99RMZ0316SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	JWindeback

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		86.8		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		1200	50.8	mg/Kg	AK102/103		08/31/99	09/03/99	MHP
Residual Range Organics GC		256	83.8	mg/Kg	AK102/103		08/31/99	09/03/99	MHP
Surrogates									
5a Androstane <surr>		145		%	AK102/103	(50-150)	08/31/99	09/03/99	
d-Triacontane <Surr>	!	152		%	AK102/103	(50-150)	08/31/99	09/03/99	

F-7021

CT&E Environmental Services Inc.

CT&E Ref.#	994542007	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 19:00
Client Sample ID	99RMZ0317SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J W Winslebank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		85.3		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		285	11.6	mg/Kg	AK102/103		08/31/99	09/03/99	MMP
Residual Range Organics GC		191	19.1	mg/Kg	AK102/103		08/31/99	09/03/99	MMP
Surrogates									
5a Androstane <surr>		137		%	AK102/103	(50-150)	08/31/99	09/03/99	
d-Triacontane <Surr>	!	174		%	AK102/103	(50-150)	08/31/99	09/03/99	

136 155

CT&E Environmental Services Inc.

CT&E Ref.#	994542008	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:25
Client Sample ID	99RMZ0318SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windebank

Sample Remarks:
PAHSIM - Recovery for surrogate #1(204%) is biased high due to interference from non-target analytes. See dilution for recovery information.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		85.2		%	SM18 2540G			08/31/99	MAH
PAH SIM									
Naphthalene		1160	180	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Acenaphthylene		180 U	180	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Acenaphthene		180 U	180	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Fluorene		180 U	180	ug/Kg	PAH SIM		09/01/99	09/13/99	KWM
Phenanthrene		46.9	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Anthracene		7.52	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Fluoranthene		31.2	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Pyrene		36.2	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo(a)Anthracene		10.0	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Chrysene		10.3	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[b]Fluoranthene		9.90	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[k]fluoranthene		3.66	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[a]pyrene		7.10	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Indeno[1,2,3-c,d] pyrene		4.19	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Dibenzo[a,h]anthracene		1.8 U	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[g,h,i]perylene		9.50	1.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Surrogates									
Naphthalene-d8 <surr/IS>	!	204		%	PAH SIM	(9-187)	09/01/99	09/12/99	
Acenaphthene-d10 <surr/IS>		67.1		%	PAH SIM	(21-179)	09/01/99	09/12/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994542008	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/24/99 13:25
Client Sample ID	99RMZ0318SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Chrysene-d12 <surr/IS>	74.3		%	PAH SIM	(46-154)	09/01/99	09/12/99	

136 157

CT&E Environmental Services Inc.

CT&E Ref.#	994542009	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 09:40
Client Sample ID	99RMZ0101SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By** J. Winebank	

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO - Heavier hydrocarbons contributing to diesel range quantitation.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		88.2		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		2530	204	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		6360	337	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>	!	487		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	2490		%	AK102/103	(50-150)	08/31/99	09/05/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994542010	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 10:00
Client Sample ID	99RMZ0102SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		78.9		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		4300	1090	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		11600	1800	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>	!	569		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	2520		%	AK102/103	(50-150)	08/31/99	09/05/99	
PAH SIM									
Naphthalene		3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Acenaphthylene		3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Acenaphthene		3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Fluorene		3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Phenanthrene		3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Anthracene		3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Fluoranthene		3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Pyrene		3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo(a)Anthracene		3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Chrysene		3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM

CT&E Environmental Services Inc.

CT&E Ref.#	994542010	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 10:00
Client Sample ID	99RMZ0102SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Benzo[b]Fluoranthene	3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[k]fluoranthene	3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[a]pyrene	3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Indeno[1,2,3-c,d] pyrene	3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Dibenzo[a,h]anthracene	3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo[g,h,i]perylene	3.8 U	3.8	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Surrogates								
Naphthalene-d8 <surr/IS>	44.6		%	PAH SIM	(9-187)	09/01/99	09/12/99	
Acenaphthene-d10 <surr/IS>	80.2		%	PAH SIM	(21-179)	09/01/99	09/12/99	
Chrysene-d12 <surr/IS>	46.3		%	PAH SIM	(46-154)	09/01/99	09/12/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994542011	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 10:05
Client Sample ID	99RMZ0103SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By** J. Windebank	

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.
PAHSIM - Recovery for surrogate #3(46%) is biased low. The results are not significantly affected.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		78.4		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		5720	1240	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		13300	2050	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>	!	637		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	2520		%	AK102/103	(50-150)	08/31/99	09/05/99	
PAH SIM									
Naphthalene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Acenaphthylene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Acenaphthene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Fluorene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Phenanthrene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Anthracene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Fluoranthene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Pyrene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM
Benzo(a)Anthracene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KWM

CT&E Environmental Services Inc.

CT&E Ref.#	994542011	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 10:05
Client Sample ID	99RMZ0103SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID			

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Chrysene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KM
Benzo[b]fluoranthene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KM
Benzo[k]fluoranthene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KM
Benzo[a]pyrene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KM
Indeno[1,2,3-c,d] pyrene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KM
Dibenzo[a,h]anthracene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KM
Benzo[g,h,i]perylene		4.0 U	4.0	ug/Kg	PAH SIM		09/01/99	09/12/99	KM
Surrogates									
Naphthalene-d8 <surr/IS>		38.7		%	PAH SIM	(9-187)	09/01/99	09/12/99	
Acenaphthene-d10 <surr/IS>		52.4		%	PAH SIM	(21-179)	09/01/99	09/12/99	
Chrysene-d12 <surr/IS>	!	45.8		%	PAH SIM	(46-154)	09/01/99	09/12/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994542012	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 10:10
Client Sample ID	99RMZ0104SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J. Winklebank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		85.1		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		2150	553	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		6900	912	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>	!	364		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	3300		%	AK102/103	(50-150)	08/31/99	09/05/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994542013	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 10:20
Client Sample ID	99RMZ0105SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Winslebank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		86.5		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		1620	218	mg/Kg	AK102/103		08/31/99	09/05/99	MHP
Residual Range Organics GC		4230	359	mg/Kg	AK102/103		08/31/99	09/05/99	MHP
Surrogates									
5a Androstane <surr>	!	198		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	1990		%	AK102/103	(50-150)	08/31/99	09/05/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994542014	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 10:40
Client Sample ID	99RMZ0106SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windlebank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		87.2		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		2530	562	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		8310	928	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>	!	302		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	3600		%	AK102/103	(50-150)	08/31/99	09/05/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994542015	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 11:10
Client Sample ID	99RMZ0107SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windeblank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		82.1		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		4450	1160	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		12100	1920	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>	!	486		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	2200		%	AK102/103	(50-150)	08/31/99	09/05/99	

CT&E Environmental Services Inc.

CT&E Ref.#	994542016	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 11:20
Client Sample ID	99RMZ0108SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Wmidebank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		87.0		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		3360	519	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		11300	856	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>	!	479		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	7990		%	AK102/103	(50-150)	08/31/99	09/05/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994542017	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 11:40
Client Sample ID	99RMZ0109SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windebank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		87.8		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		6180	554	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		18400	914	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>	!	428		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	1480		%	AK102/103	(50-150)	08/31/99	09/05/99	

F-701

CT&E Environmental Services Inc.

CT&E Ref.#	994542018	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 11:45
Client Sample ID	99RMZ0110SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windeblank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Total Solids		87.1		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		3250	531	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		11800	876	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>	!	575		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	2740		%	AK102/103	(50-150)	08/31/99	09/05/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994542019	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 13:30
Client Sample ID	99RMZ0111SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windlebank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		88.5		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		3980	529	mg/Kg	AK102/103		08/31/99	09/05/99	MNP
Residual Range Organics GC		13400	873	mg/Kg	AK102/103		08/31/99	09/05/99	MNP
Surrogates									
5a Androstane <surr>	!	466		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	1140		%	AK102/103	(50-150)	08/31/99	09/05/99	

F-7231

CT&E Environmental Services Inc.

CT&E Ref.#	994542020	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 13:35
Client Sample ID	99RMZ0112SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Widebank

Sample Remarks:
DRO/RRO - Pattern consistent with weathered middle distillate.
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Surrogate recoveries outside controls due to matrix interference.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		87.0		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		1580	501	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		5190	827	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>	!	193		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	1690		%	AK102/103	(50-150)	08/31/99	09/05/99	

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CT&E Environmental Services Inc.

CT&E Ref.#	994542021	**Client PO#**	Work Auth # 005
Client Name	Harding Lawson & Assoc	**Printed Date/Time**	09/14/99 16:31
Project Name/#	33360.4 Cape Romanzof Biocells	**Collected Date/Time**	08/25/99 13:50
Client Sample ID	99RMZ0113SL	**Received Date/Time**	08/27/99 09:05
Matrix	Soil/Solid	**Technical Director: Stephen C. Ede**	
Ordered By			
PWSID		**Released By**	J Windebank

Sample Remarks:
DRO/RRO - Pattern consistent with lube oil.
DRO/RRO - Pattern consistent with weathered middle distillate.
RRO - Surrogate recovery does not meet QC goals due to lube oil pattern.

Parameter		Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
^									
Total Solids		89.8		%	SM18 2540G			08/31/99	MAH
DRO/RRO Combination									
Diesel Range Organics		388	50.6	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Residual Range Organics GC		1520	83.5	mg/Kg	AK102/103		08/31/99	09/05/99	MMP
Surrogates									
5a Androstane <surr>		142		%	AK102/103	(50-150)	08/31/99	09/05/99	
d-Triacontane <Surr>	!	590		%	AK102/103	(50-150)	08/31/99	09/05/99	

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CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch SPT 2940 (65442)
Original Matrix Soil/Solid **Analysis Method** SM18 2540G

QC results affect the following production samples:

994542001	994542002	994542003	994542004	994542005
994542006	994542007	994542008	994542009	994542010
994542011	994542012	994542013	994542014	994542015
994542016	994542017	994542018	994542019	994542020

QC results for Method Blank [259164]

Run Instrument:

Parameter	Analyzed	Result	PQL	Units
Total Solids	08/31/99	100		%

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch SPT 2940 (65442)
Original 994542001
Matrix Soil/Solid

Analysis Method SM18 2540G

QC results affect the following production samples:

994542001	994542002	994542003	994542004	994542005
994542006	994542007	994542008	994542009	994542010
994542011	994542012	994542013	994542014	994542015
994542016	994542017	994542018	994542019	994542020

QC results for Duplicate [259165]

Parameter	Original Result	QC Result	RPD	RPD Limits	Analyzed	Instru ID
Total Solids	86	85.8	.24		08/31/99	

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch SPT 2937 (65436)
Original
Matrix Soil/Solid **Analysis Method** SM18 2540G

QC results affect the following production samples:

994542021

QC results for Method Blank [259148]

Run Instrument:

Parameter	Analyzed	Result	PQL	Units
Total Solids	08/31/99	99.9		%

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	SPT 2937 (65436)
Original	994336001
Matrix	Soil/Solid
Analysis Method	SM18 2540G

QC results affect the following production samples:

994542021

QC results for Duplicate [259149]

Parameter	Original Result	QC Result	RPD	RPD Limits	Analyzed	Instru ID
Total Solids	72.8	74.6	2.4		08/31/99	

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch XXX 5970 (65395)
Original
Matrix Soil/Solid

Prep Date 08/31/99 09:30
Analysis Method AK102/103

QC results affect the following production samples:

994542001	994542002	994542003	994542004	994542005
994542006	994542007	994542009	994542010	994542011
994542012	994542013	994542014	994542015	994542016
994542017	994542018	994542019	994542020	994542021

QC results for Method Blank [258995]

Run Instrument: HP 5890 Series II FID SV B F

Parameter	Analyzed	Result	PQL	Units
Diesel Range Organics	09/02/99	4.03 J	9.68	mg/Kg
Residual Range Organics GC	09/02/99	16.0 U	16.0	mg/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	XXX 5970 (65395)
Original	
Matrix	Soil/Solid
Prep Date	08/31/99 09:30
Analysis Method	AK102/103

QC results affect the following production samples:

994542001	994542002	994542003	994542004	994542005
994542006	994542007	994542009	994542010	994542011
994542012	994542013	994542014	994542015	994542016
994542017	994542018	994542019	994542020	994542021

QC results for Lab Check Standard [258996] - Lab Check Standard Duplicate [258997]

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Diesel Range Organics	LCS	177	112	60-120			159mg/Kg	09/02/99	SBF
	LCSD	172	116		3.5	0-20	159mg/Kg	09/02/99	SBF
Residual Range Organics GC	LCS	192	121	60-140			159mg/Kg	09/02/99	SBF
	LCSD	196	132		8.7	0-20	159mg/Kg	09/02/99	SBF

CT&E Environmental Services Inc.

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch XXX 5978 (65481)
Original
Matrix Soil/Solid

Prep Date 09/01/99 09:30
Analysis Method PAH SIM

QC results affect the following production samples:

994542008 994542010 994542011

QC results for Method Blank [259392]

Run Instrument: HP 5890 Series II MS2 SVOA

Parameter	Analyzed	Result	PQL	Units
Naphthalene	09/11/99	1.6 U	1.6	ug/Kg
Acenaphthylene	09/11/99	1.6 U	1.6	ug/Kg
Acenaphthene	09/11/99	1.6 U	1.6	ug/Kg
Fluorene	09/11/99	1.6 U	1.6	ug/Kg
Phenanthrene	09/11/99	1.6 U	1.6	ug/Kg
Anthracene	09/11/99	1.6 U	1.6	ug/Kg
Fluoranthene	09/11/99	1.6 U	1.6	ug/Kg
Pyrene	09/11/99	1.6 U	1.6	ug/Kg
Benzo(a)Anthracene	09/11/99	1.6 U	1.6	ug/Kg
Chrysene	09/11/99	1.6 U	1.6	ug/Kg
Benzo[b]Fluoranthene	09/11/99	1.6 U	1.6	ug/Kg
Benzo[k]fluoranthene	09/11/99	1.6 U	1.6	ug/Kg
Benzo[a]pyrene	09/11/99	1.6 U	1.6	ug/Kg
Indeno[1,2,3-c,d] pyrene	09/11/99	1.6 U	1.6	ug/Kg
Dibenzo[a,h]anthracene	09/11/99	1.6 U	1.6	ug/Kg
Benzo[g,h,i]perylene	09/11/99	1.6 U	1.6	ug/Kg

CT&E Environmental Services Inc.

Client	Harding Lawson & Assoc
Workorder	33360.4 Cape Romanzof Biocells
QC Batch	XXX 5978 (65481)
Original	
Matrix	Soil/Solid
Prep Date	09/01/99 09:30
Analysis Method	PAH SIM

QC results affect the following production samples:

994542008 994542010 994542011

QC results for Lab Check Standard [259393] - Lab Check Standard Duplicate [259394]

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Naphthalene	LCS	18.8	119	58-140			15.8ug/Kg	09/11/99	SOA
	LCSD	18.2	117		1.7	0-40	15.8ug/Kg	09/11/99	SOA
Acenaphthylene	LCS	16.2	103	52-120			15.8ug/Kg	09/11/99	SOA
	LCSD	15.8	102		.98	0-40	15.8ug/Kg	09/11/99	SOA
Acenaphthene	LCS	16.7	106	50-112			15.8ug/Kg	09/11/99	SOA
	LCSD	17.2	111		4.6	0-40	15.8ug/Kg	09/11/99	SOA
Fluorene	LCS	17.1	108	56-114			15.8ug/Kg	09/11/99	SOA
	LCSD	16.7	107		.93	0-40	15.8ug/Kg	09/11/99	SOA
Phenanthrene	LCS	15.5	98	38-124			15.8ug/Kg	09/11/99	SOA
	LCSD	14	89.8		8.7	0-40	15.8ug/Kg	09/11/99	SOA
Anthracene	LCS	11.9	75.3	44-149			15.8ug/Kg	09/11/99	SOA
	LCSD	9.16	58.9		24.4	0-40	15.8ug/Kg	09/11/99	SOA
Fluoranthene	LCS	15.1	95.8	42-139			15.8ug/Kg	09/11/99	SOA
	LCSD	13.7	88		8.5	0-40	15.8ug/Kg	09/11/99	SOA
Pyrene	LCS	16	102	45-137			15.8ug/Kg	09/11/99	SOA
	LCSD	14	90.2		12.3	0-40	15.8ug/Kg	09/11/99	SOA
Benzo(a)Anthracene	LCS	17.4	110	51-135			15.8ug/Kg	09/11/99	SOA
	LCSD	15.9	102		7.5	0-40	15.8ug/Kg	09/11/99	SOA

Client Harding Lawson & Assoc
Workorder 33360.4 Cape Romanzof Biocells

QC Batch XXX 5978 (65481)
Original
Matrix Soil/Solid

Prep Date 09/01/99 09:30
Analysis Method PAH SIM

QC results for Lab Check Standard [259393] - Lab Check Standard Duplicate [259394] (continued)

Parameter		QC Result	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analyzed	Instru ID
Chrysene	LCS	16.9	107	49-124			15.8ug/Kg	09/11/99	SOA
	LCSD	15.4	99.2		7.6	0-40	15.8ug/Kg	09/11/99	SOA
Benzo[b]Fluoranthene	LCS	16.9	107	40-125			15.8ug/Kg	09/11/99	SOA
	LCSD	15.6	100		6.8	0-40	15.8ug/Kg	09/11/99	SOA
Benzo[k]fluoranthene	LCS	18.4	117	45-137			15.8ug/Kg	09/11/99	SOA
	LCSD	18.7	120		2.5	0-40	15.8ug/Kg	09/11/99	SOA
Benzo[a]pyrene	LCS	14.7	93	49-130			15.8ug/Kg	09/11/99	SOA
	LCSD	10.8	69.3		29.2	0-40	15.8ug/Kg	09/11/99	SOA
Indeno[1,2,3-c,d] pyrene	LCS	17.2	109	42-128			15.8ug/Kg	09/11/99	SOA
	LCSD	17.4	112		2.7	0-40	15.8ug/Kg	09/11/99	SOA
Dibenzo[a,h]anthracene	LCS	17.3	110	69-150			15.8ug/Kg	09/11/99	SOA
	LCSD	16.9	108		1.8	0-40	15.8ug/Kg	09/11/99	SOA
Benzo[g,h,i]perylene	LCS	17.8	113	67-120			15.8ug/Kg	09/11/99	SOA
	LCSD	15.9	102		10.2	0-40	15.8ug/Kg	09/11/99	SOA

APPENDIX B

SESOIL INPUT FILES

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  1 Romanzof, Naphthalene
 -ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC     4.00    2.00.88E+07   62.00   0   0   1
 -D1,D2,D3,D4,NSUBL1 to NSUBL4          61.00  122.00  331.00  400.00  10  10  10  10
 -PH1,PH2,PH3,PH4                        0.00    0.00    0.00    0.00
 -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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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   0.00  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    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 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    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 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    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 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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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    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 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    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
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                **** 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S    1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
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  1 Romanzof, Fluorene
 -ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC      4.00    2.00.88E+07   62.00  0  0  1
 -D1,D2,D3,D4,NSUBL1 to NSUBL4           61.00  122.00  331.00  400.00 10 10 10 10
 -PH1,PH2,PH3,PH4                         0.00    0.00    0.00    0.00
 -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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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   0.00  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    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 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    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 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    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 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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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    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 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    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
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                **** 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S    1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
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  1 Romanzof, Fluoranthene
 -ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC      4.00    2.00.88E+07   62.00  0  0  1
 -D1,D2,D3,D4,NSUBL1 to NSUBL4           61.00  122.00  331.00  400.00 10 10 10 10
 -PH1,PH2,PH3,PH4                         0.00    0.00    0.00    0.00
 -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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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   0.00  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    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 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    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 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    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 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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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    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 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    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
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                **** 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S     1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
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  1 Romanzof, Benzo(a)pyrene
 -ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC      4.00    2.00.88E+07   62.00  0  0  1
 -D1,D2,D3,D4,NSUBL1 to NSUBL4           61.00  122.00  331.00  400.00 10 10 10 10
 -PH1,PH2,PH3,PH4                         0.00    0.00    0.00    0.00
 -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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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   0.00  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    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 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    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 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    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 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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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    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 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    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
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                **** 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S    1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
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  1 Romanzof, Naphthalene
 -ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC     4.00    2.00.88E+07   62.00  0  0  1
 -D1,D2,D3,D4,NSUBL1 to NSUBL4          61.00 122.00 331.00 400.00 10 10 10 10
 -PH1,PH2,PH3,PH4                        0.00   0.00   0.00   0.00
 -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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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   0.00  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    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 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    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 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    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 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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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    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 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    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
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                **** 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      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S     1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
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```
  1 Romanzof, Naphthalene
 -ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC     4.00    2.00.88E+07   62.00  0  0  1
 -D1,D2,D3,D4,NSUBL1 to NSUBL4          61.00  122.00  331.00  400.00 10 10 10 10
 -PH1,PH2,PH3,PH4                        0.00    0.00    0.00    0.00
 -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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1      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    0.00  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     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 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     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 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     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 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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1      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     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 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
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                **** 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S    1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
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  1 Romanzof, Naphthalene
 -ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC     4.00    2.00.88E+07   62.00  0  0  1
 -D1,D2,D3,D4,NSUBL1 to NSUBL4          61.00 122.00 331.00 400.00 10 10 10 10
 -PH1,PH2,PH3,PH4                        0.00   0.00   0.00   0.00
 -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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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   0.00  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    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 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    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 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    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 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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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    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 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    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
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                **** 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S     1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
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  1 Romanzof, Naphthalene
 -ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC     4.00    2.00.88E+07   62.00  0  1  1
 -D1,D2,D3,D4,NSUBL1 to NSUBL4          61.00 122.00 331.00 400.00 10 10 10 10
 -PH1,PH2,PH3,PH4                        0.00   0.00   0.00   0.00
 -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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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   0.00  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    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 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    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 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    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 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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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    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 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    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
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                **** 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
SUMMERS MODEL PARAMETERS FOLLOW (SATCON,HYDRA,THICKS,WIDTH,BACKCA)
       1000.0 .0020839.006400.0  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S    1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
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  1 Romanzof, Naphthalene
 -ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC     4.00    2.00.88E+07   62.00  0  0  1
 -D1,D2,D3,D4,NSUBL1 to NSUBL4          61.00 122.00 331.00 400.00 10 10 10 10
 -PH1,PH2,PH3,PH4                        0.00   0.00   0.00   0.00
 -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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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   0.00  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    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 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    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 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    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 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  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
ISRM1    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
ASL1     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    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 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    0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
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                **** 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S    1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
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1 Romanzof, Naphthalene

-ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC						4.00	2.00	8E+07	62.00	0	0	1
-D1,D2,D3,D4,NSUBL1 to NSUBL4						61.00	122.00	331.00	400.00	10	10	10 10
-PH1,PH2,PH3,PH4						0.00	0.00	0.00	0.00			
-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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ISRM1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ASL1	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	0.00	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	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 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	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 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	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 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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ISRM1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ASL1	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	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 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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                **** 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S    1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
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1 Romanzof, Naphthalene

-ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC					4.00	2.00	8.8E+07	62.00	0	0	1	
-D1,D2,D3,D4,NSUBL1 to NSUBL4					61.00	122.00	331.00	400.00	10	10	10	10
-PH1,PH2,PH3,PH4					0.00	0.00	0.00	0.00				
-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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ISRM1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ASL1	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	0.00	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	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 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	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 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	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 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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ISRM1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ASL1	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	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 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	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 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S    1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
```

1 Romanzof, Naphthalene

-ILYS,IYRS,AR,L,ISPILL,ISUMRS,ICONC					4.00	2.00	.88E+07	62.00	0	1	1	
-D1,D2,D3,D4,NSUBL1 to NSUBL4					61.00	122.00	331.00	400.00	10	10	10	10
-PH1,PH2,PH3,PH4					0.00	0.00	0.00	0.00				
-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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ISRM1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ASL1	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	0.00	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	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 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	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 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	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 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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ISRM1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ASL1	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	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 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	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 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     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
SUMMERS MODEL PARAMETERS FOLLOW (SATCON,HYDRA,THICKS,WIDTH,BACKCA)
       1000.0 .0020839.006400.0  0.00
INITIAL CONTAMINANT CONCENTRATIONS FOLLOW
MONTH IN YEAR 1 FOR LOADING CONC.'S    1.0
CONCIN110877.10877.10877.10877.10877.10877.10877.10877.10877.10877.
CONCIN2   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN3   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
CONCIN4   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
 999 END OF FILE
```

```
  1 Naphthalene
      - SL,DA,H,KOC,K                34.00    .066   .00041288.00    0.00
      - MWT,VAL,KNH,KBH,KAH          128.20   0.00    0.00    0.00    0.00
      - KDEL,KDES,SK,B,MWTLIG        .0063    .0063   0.00    0.00    0.00
999 END OF FILE
```

```
  1 Fluorene
      - SL,DA,H,KOC,K                1.98    .056 .000215012.00    0.00
      - MWT,VAL,KNH,KBH,KAH        166.22    0.00    0.00    0.00    0.00
      - KDEL,KDES,SK,B,MWTLIG       .00011 .00011    0.00    0.00    0.00
999 END OF FILE
```

```
  1 Fluoranthene
      - SL,DA,H,KOC,K                    .37    .049   .016941687.0    0.00
      - MWT,VAL,KNH,KBH,KAH            202.26   0.00    0.00    0.00    0.00
      - KDEL,KDES,SK,B,MWTLIG          .00016 .00016    0.00    0.00    0.00
999 END OF FILE
```

```
  1 Benzo(a)pyrene
      - SL,DA,H,KOC,K                  3.00    .043.000002398107.    0.00
      - MWT,VAL,KNH,KBH,KAH          252.32    0.00    0.00    0.00    0.00
      - KDEL,KDES,SK,B,MWTLIG         .00013 .00013    0.00    0.00    0.00
999 END OF FILE
```

```
  1 Naphthalene
      - SL,DA,H,KOC,K                34.00    .066   .00041288.00    0.00
      - MWT,VAL,KNH,KBH,KAH          128.20   0.00    0.00    0.00    0.00
      - KDEL,KDES,SK,B,MWTLIG          .0063  .0063   0.00    0.00    0.00
999 END OF FILE
```

```
  1 Naphthalene
      - SL,DA,H,KOC,K                  34.00    .066   .00041288.00    0.00
      - MWT,VAL,KNH,KBH,KAH           128.20    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
```

136 212

```
  1 Naphthalene
      - SL,DA,H,KOC,K                34.00    .066   .00041288.00    0.00
      - MWT,VAL,KNH,KBH,KAH          128.20   0.00    0.00    0.00    0.00
      - KDEL,KDES,SK,B,MWTLIG          .063   .063    0.00    0.00    0.00
999 END OF FILE
```

```
  1 Naphthalene
      - SL,DA,H,KOC,K                34.00    .066   .0004 128.80    0.00
      - MWT,VAL,KNH,KBH,KAH         128.20    0.00    0.00   0.00    0.00
      - KDEL,KDES,SK,B,MWTLIG         .0063   .0063   0.00   0.00    0.00
999 END OF FILE
```

```
  1 Naphthalene
      - SL,DA,H,KOC,K                34.00    .066   .000412880.0    0.00
      - MWT,VAL,KNH,KBH,KAH          128.20   0.00    0.00    0.00    0.00
      - KDEL,KDES,SK,B,MWTLIG        .0063    .0063   0.00    0.00    0.00
999 END OF FILE
```

```
  1 Naphthalene
      - SL,DA,H,KOC,K                 34.00    .066   .00041288.00    0.00
      - MWT,VAL,KNH,KBH,KAH          128.20    0.00    0.00    0.00    0.00
      - KDEL,KDES,SK,B,MWTLIG          .0063   .0063   0.00    0.00    0.00
999 END OF FILE
```

```
  1 Naphthalene
      - SL,DA,H,KOC,K                34.00    .066   .00041288.00    0.00
      - MWT,VAL,KNH,KBH,KAH          128.20   0.00    0.00    0.00    0.00
      - KDEL,KDES,SK,B,MWTLIG        .0063    .0063   0.00    0.00    0.00
999 END OF FILE
```

```
  1 Naphthalene
      - SL,DA,H,KOC,K                34.00    .066   .0004 128.80    0.00
      - MWT,VAL,KNH,KBH,KAH         128.20    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
```

136 218

```
   1 Cape Romanzof                                                  1
       ****  YEAR 1  ****
TA       0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP       .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM      6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR       .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN       6.90   .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

```
   1 Cape Romanzof                                                  1
       ****  YEAR 1  ****
TA       0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP      .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM      6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR       .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN       6.90  .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

```
   1 Cape Romanzof                                                    1
       ****  YEAR 1  ****
TA        0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S         0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A         0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP       .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM       6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR        .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN        6.90   .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

```
   1 Cape Romanzof                                                  1
       ****  YEAR 1  ****
TA       0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP      .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM      6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR       .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN       6.90   .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

```
   1 Cape Romanzof                                                  1
       ****  YEAR 1  ****
TA       0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP      .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM      6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR       .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN       6.90  .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

```
   1 Cape Romanzof                                                  1
       ****  YEAR 1  ****
TA        0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S         0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A         0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP       .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM       6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR        .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN        6.90   .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

```
   1 Cape Romanzof                                                    1
       ****  YEAR 1  ****
TA        0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S         0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A         0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP       .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM       6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR        .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN        6.90   .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

```
   1 Cape Romanzof                                                  1
       ****  YEAR 1  ****
TA       0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP      .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM      6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR       .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN       6.90  .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

```
   1 Cape Romanzof                                                  1
       ****  YEAR 1  ****
TA       0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP      .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM      6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR       .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN       6.90   .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

```
   1 Cape Romanzof                                                  1
       ****  YEAR 1  ****
TA       0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP       .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM      6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR       .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN       6.90   .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

136 228

```
   1 Cape Romanzof                                                    1
       ****  YEAR 1  ****
TA       0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP       .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM      6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR       .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN       6.90   .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

```
   1 Cape Romanzof                                                  1
       ****  YEAR 1  ****
TA       0.10 -5.00-10.33-10.39-12.39 -9.44 -6.06  1.56  6.56  9.50  9.44  6.44
NN       0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
S        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
A        0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
REP      .034.30E-3.30E-3.30E-3.30E-3.30E-3.30E-3   .23   .13   .22   .30   .23
MPM      6.02  .010  .010  .010  .010  .010  .010 21.20  5.44  7.42 12.19 11.79
MTR       .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30   .30
MN       6.90  .10   .10   .10   .10   .10   .10 23.30  6.20  7.30 10.20 10.80
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
```

136 230

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                1.76.12E-06   9.40     .30     .30
      -  CEC,FRN                     0.00    1.00
999 END OF FILE
```

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                1.76.12E-06   9.40     .30     .30
      -  CEC,FRN                     0.00    1.00
999 END OF FILE
```

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                1.76.12E-06   9.40     .30     .30
      -  CEC,FRN                     0.00   1.00
999 END OF FILE
```

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                1.76.12E-06   9.40     .30     .30
      -  CEC,FRN                     0.00   1.00
999 END OF FILE
```

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                1.76.12E-06   9.40     .30     .30
      -  CEC,FRN                     0.00   1.00
999 END OF FILE
```

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                  1.76.12E-06   9.40     .30     .30
      -  CEC,FRN                       0.00    1.00
999 END OF FILE
```

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                1.76.12E-06   9.40     .30     .30
      -  CEC,FRN                     0.00   1.00
999 END OF FILE
```

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                1.76.12E-06   9.40     .30     .30
      -  CEC,FRN                     0.00    1.00
999 END OF FILE
```

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC          1.76.12E-06   9.40     .30     .30
      -  CEC,FRN               0.00   1.00
999 END OF FILE
```

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                1.76.12E-07   9.40     .30     .30
      -  CEC,FRN                     0.00   1.00
999 END OF FILE
```

```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                1.76.000001   9.40     .30     .30
      -  CEC,FRN                     0.00   1.00
999 END OF FILE
```

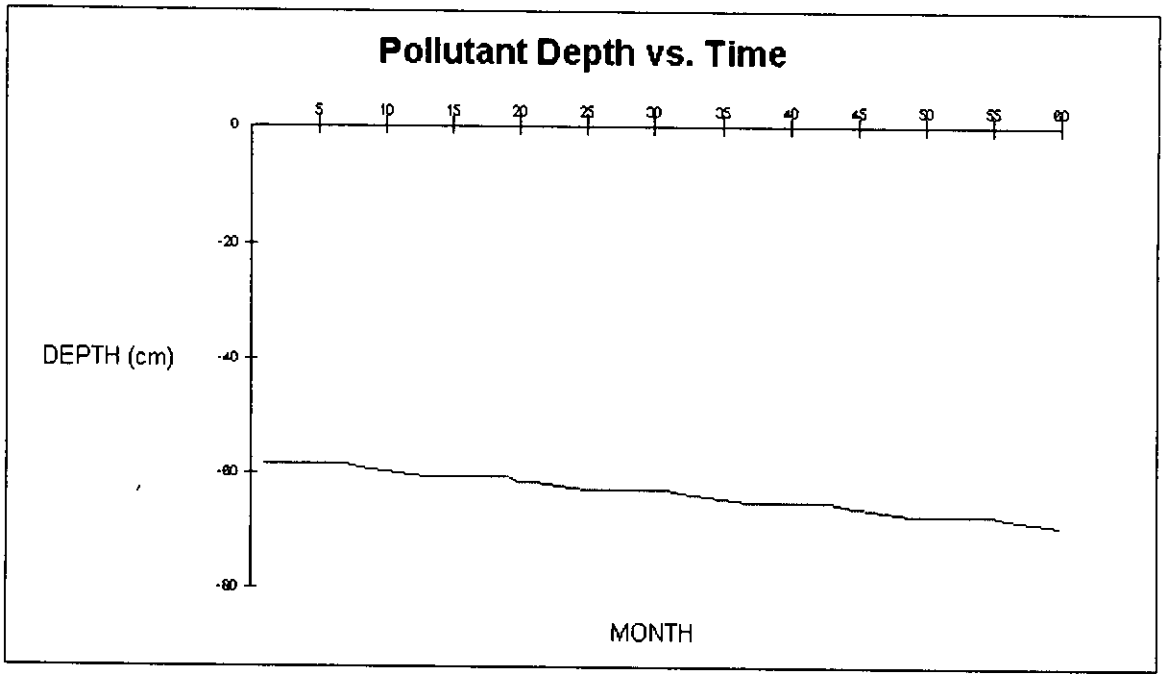
```
  1 SANDY GRAVEL
      -  RS,K1,C,N,OC                1.76.12E-06   9.40     .30     .30
      -  CEC,FRN                     0.00    1.00
999 END OF FILE
```

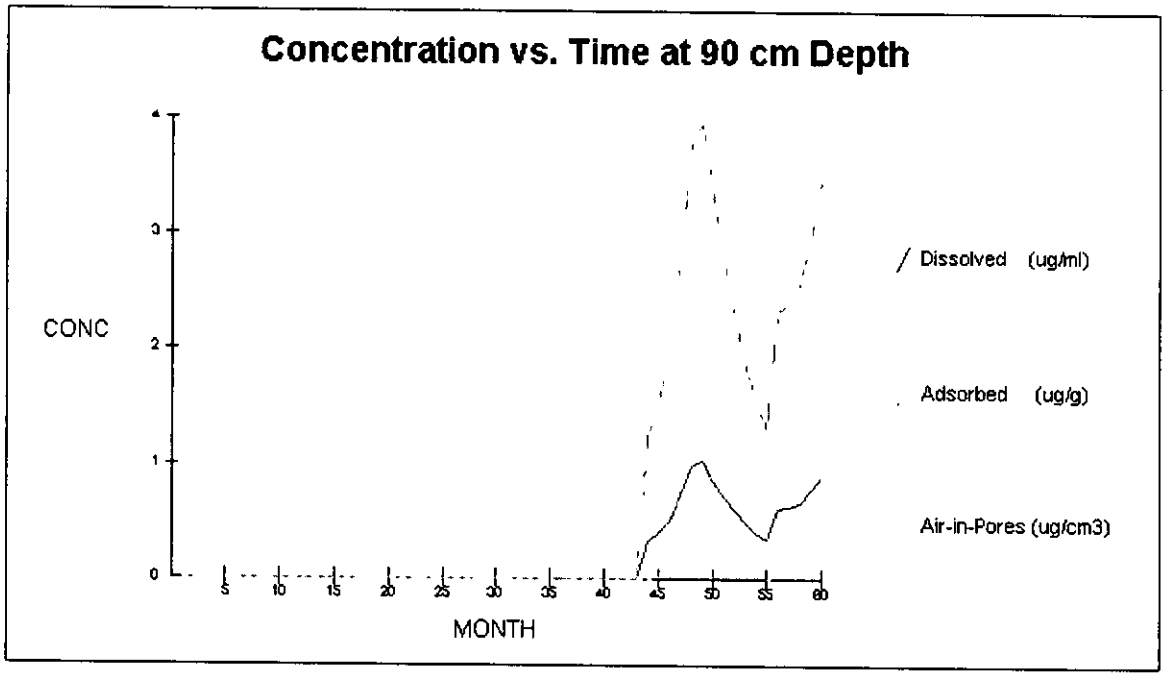
APPENDIX C

SESOIL OUTPUT FILES

Naphthalene

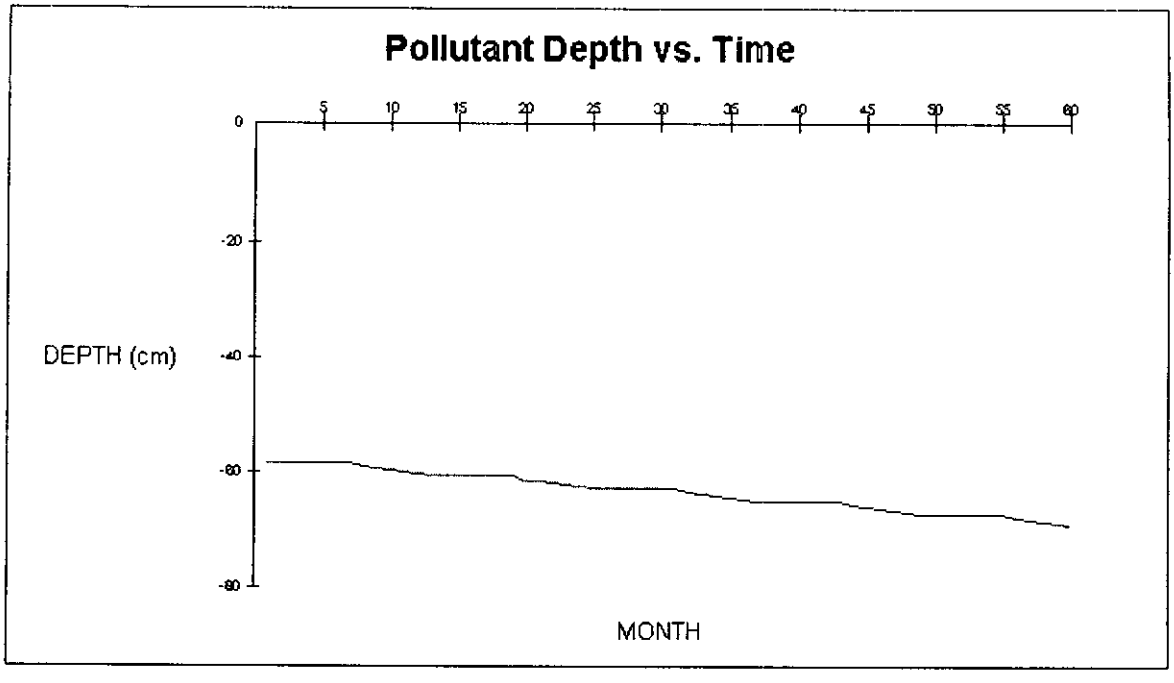
File: SSOUT010 REP
Pollutant Load: 6,180 mg/kg

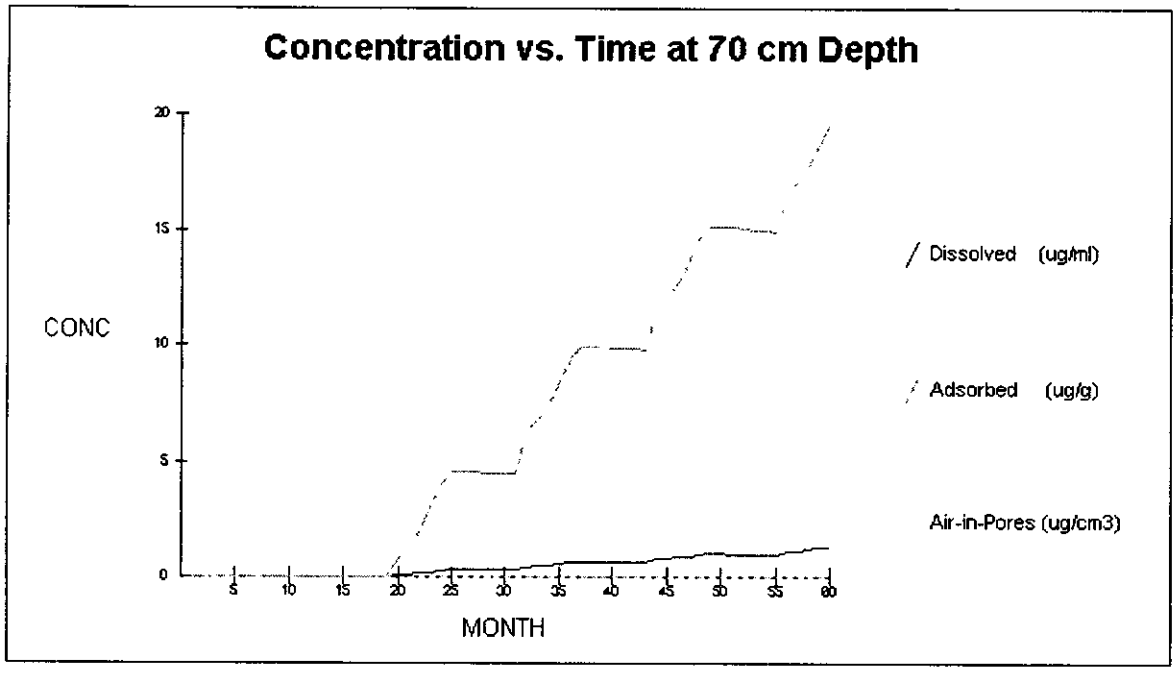




Fluorene

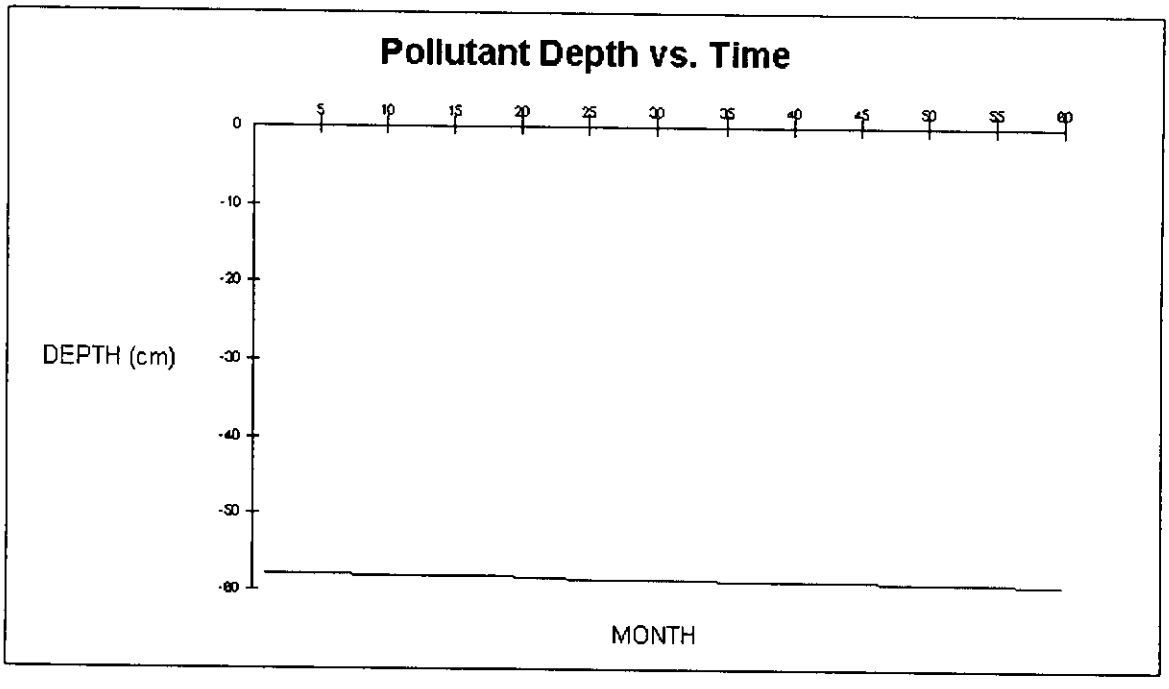
File: SSOUT011.REP
Pollutant Load. 6,180 mg/kg

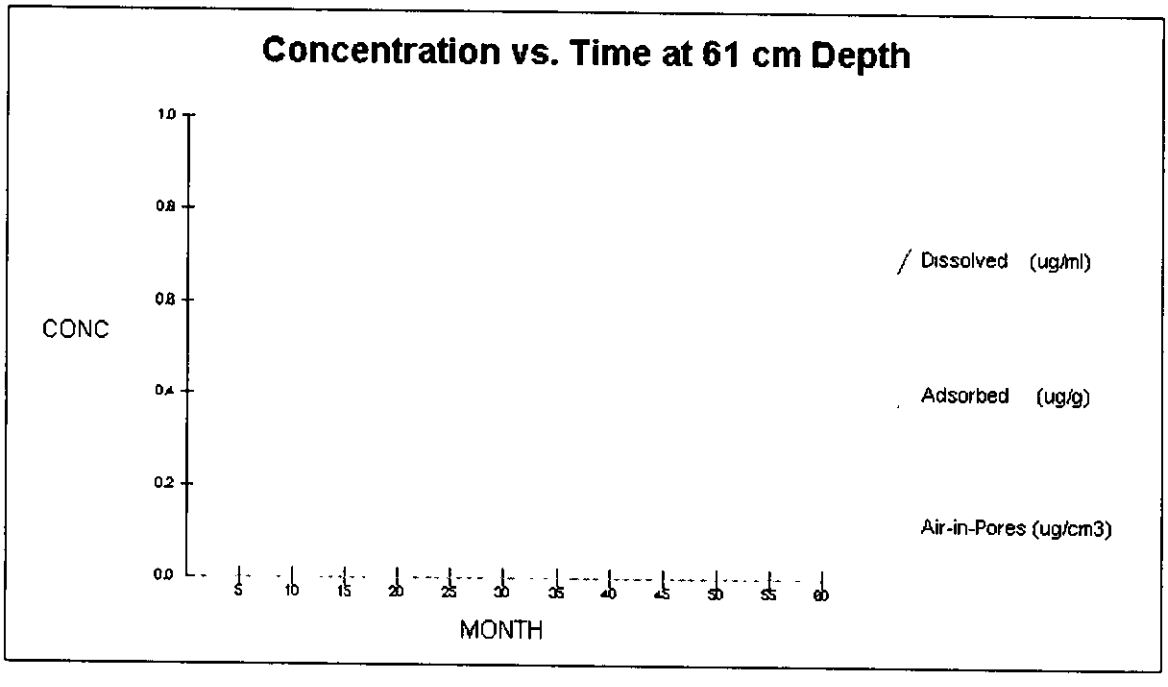




Fluoranthene

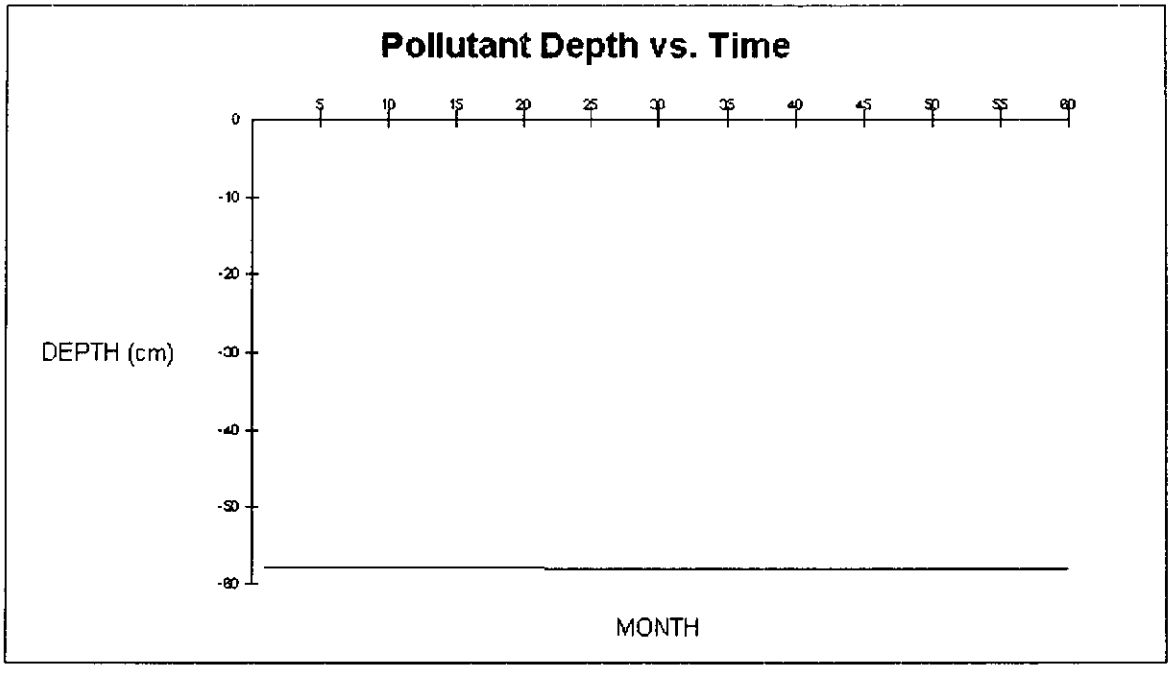
File: SSOUT012.REP
Pollutant Load: 6,180 mg/kg

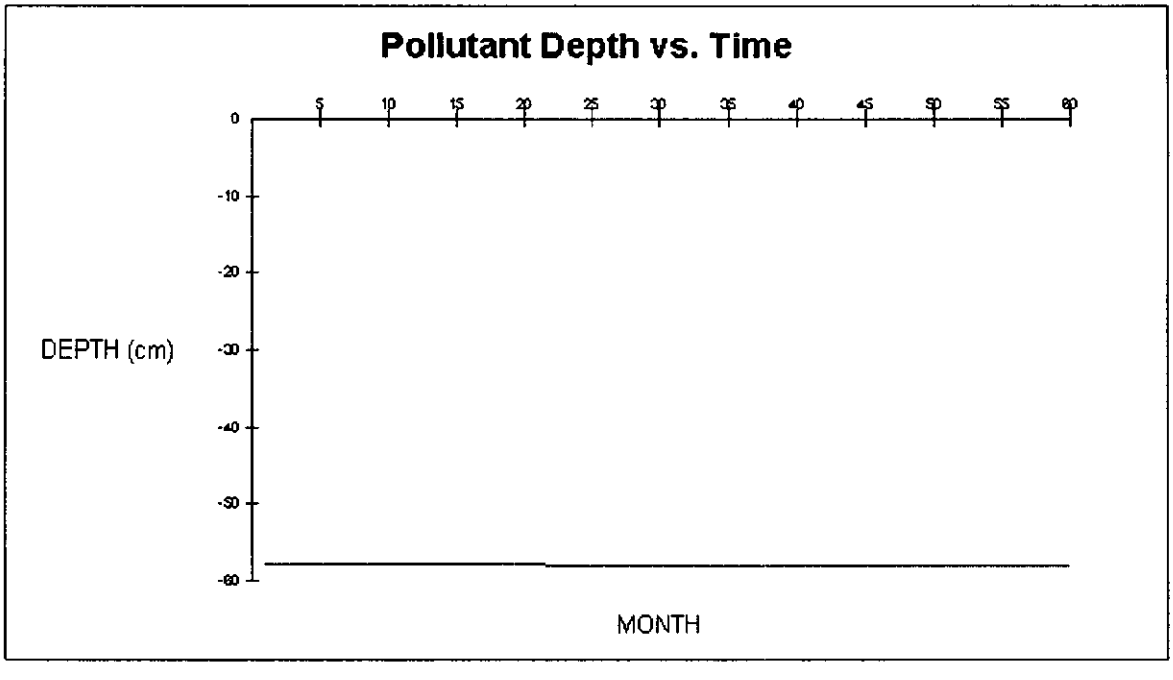




Benzo(a)pyrene

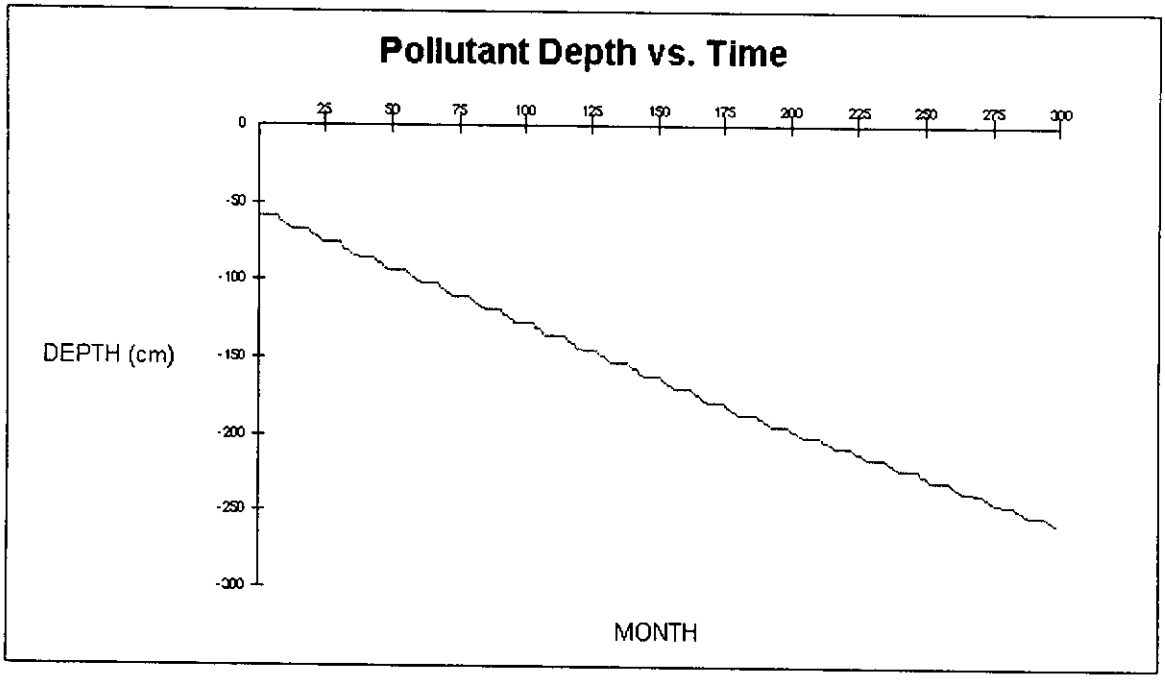
File: SSOUT013.REP
Pollutant Load: 6,180 mg/kg

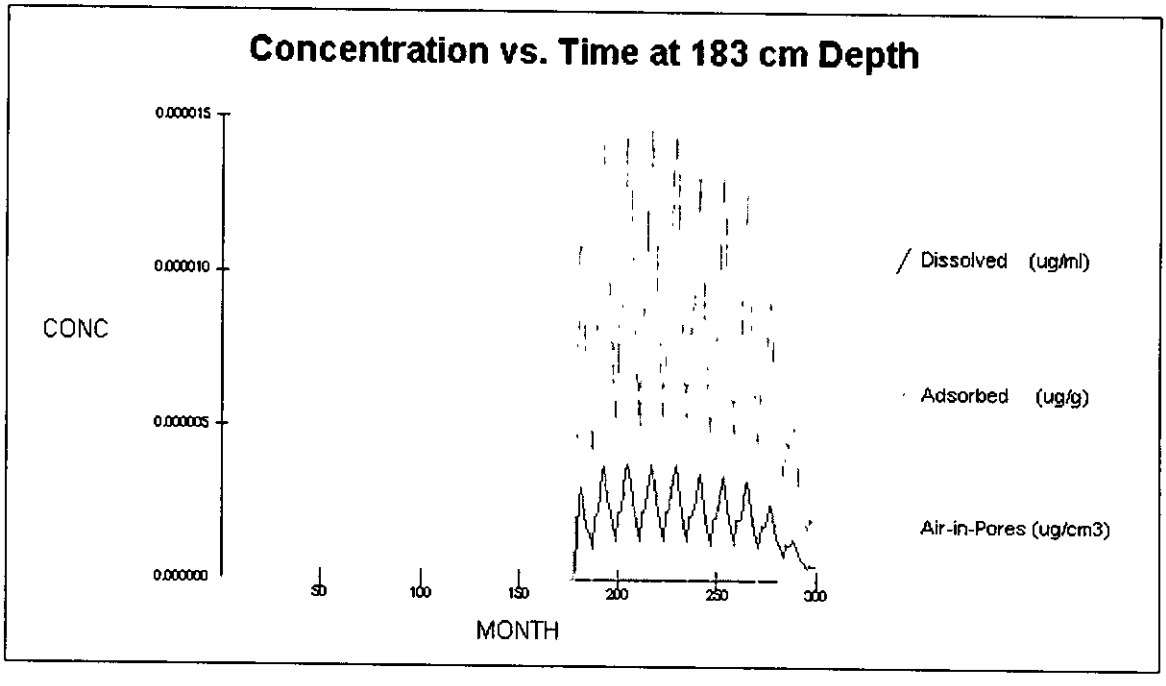




Naphthalene

File: SSOUT014.REP
Pollutant Load. 6,180 mg/kg

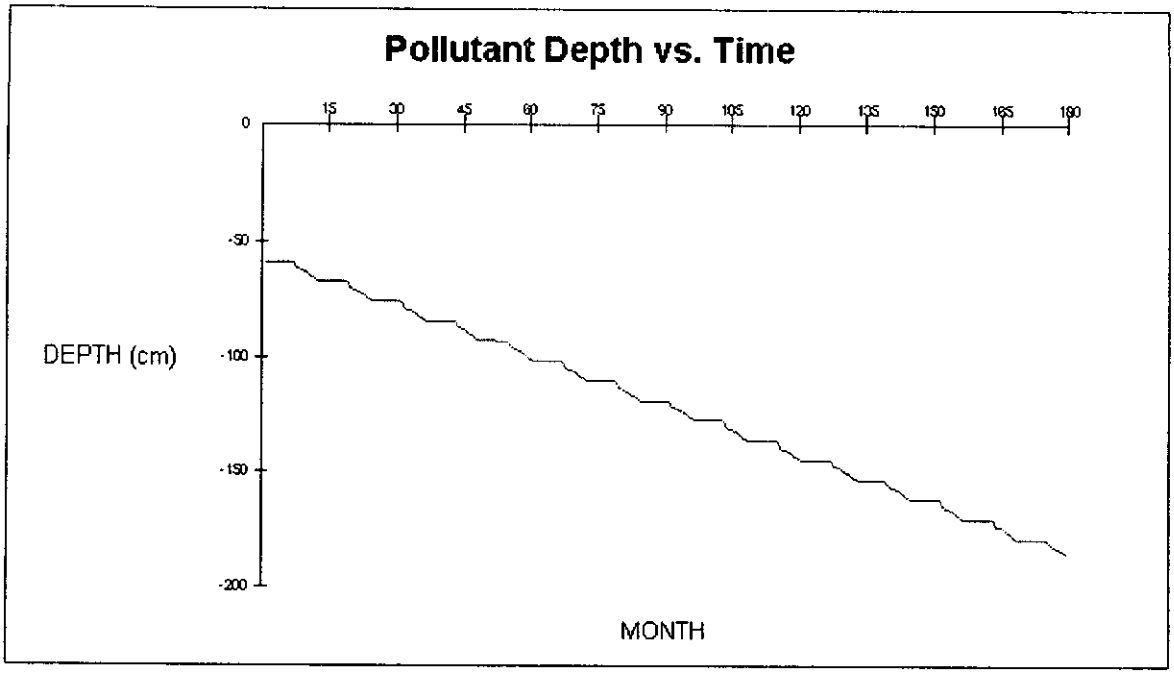


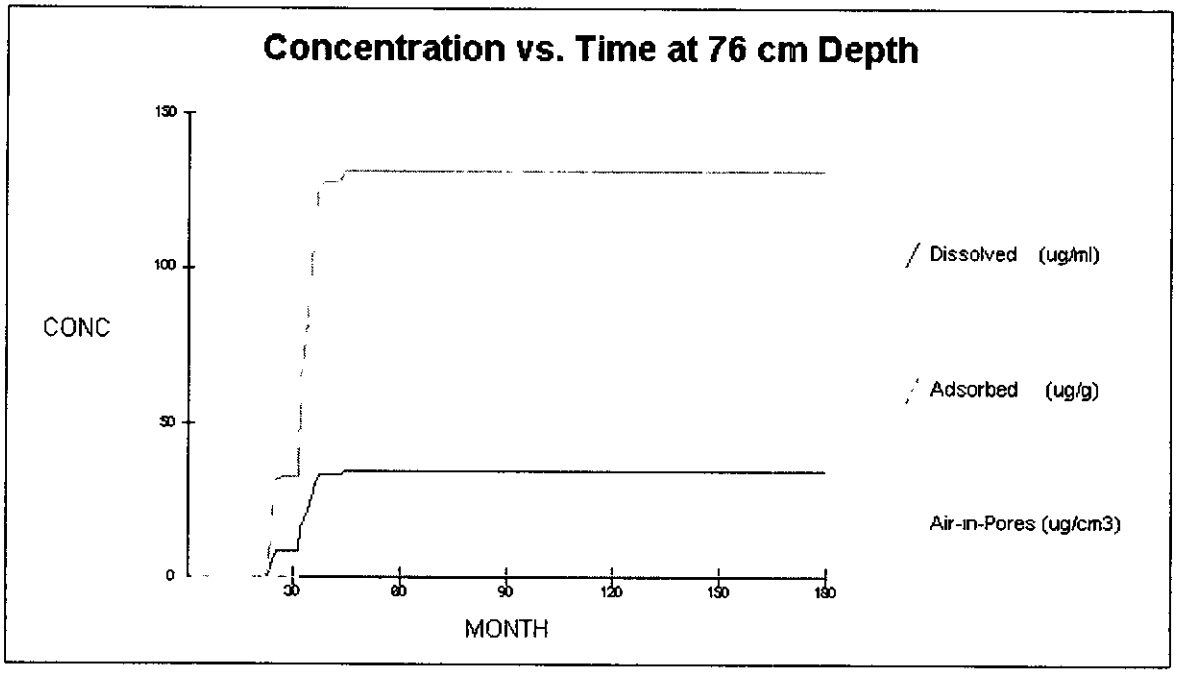


Naphthalene

File: SSOUT015.REP

Pollutant Load: 6,180 mg/kg, Biodegradation rate: 0

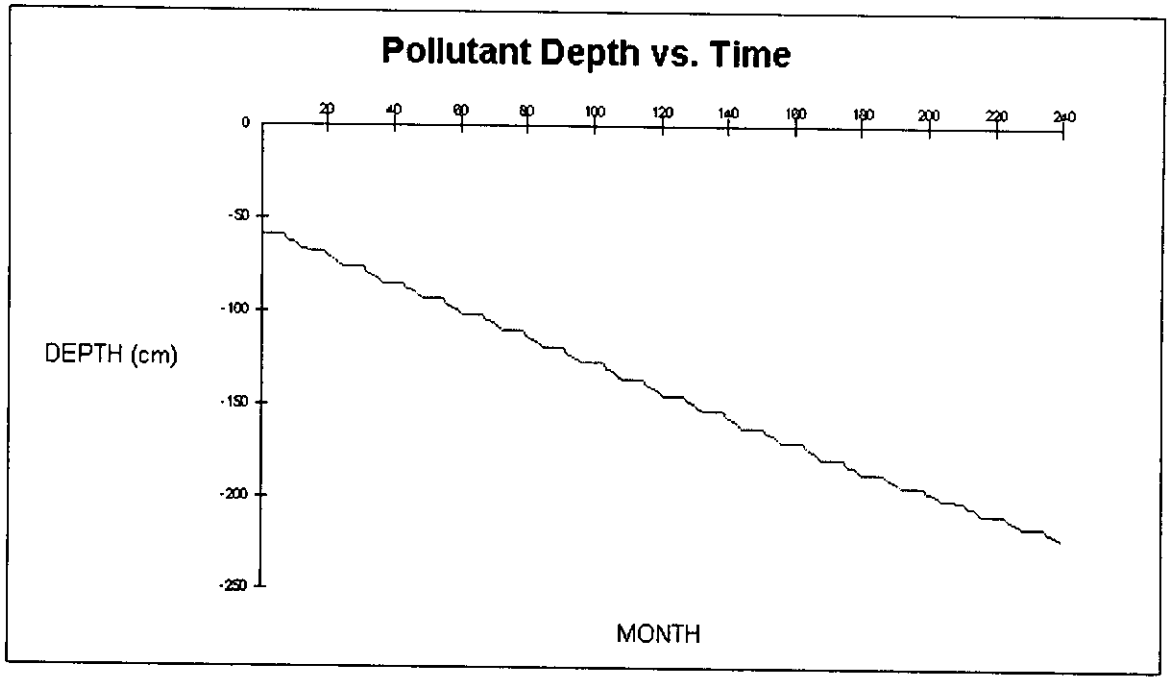


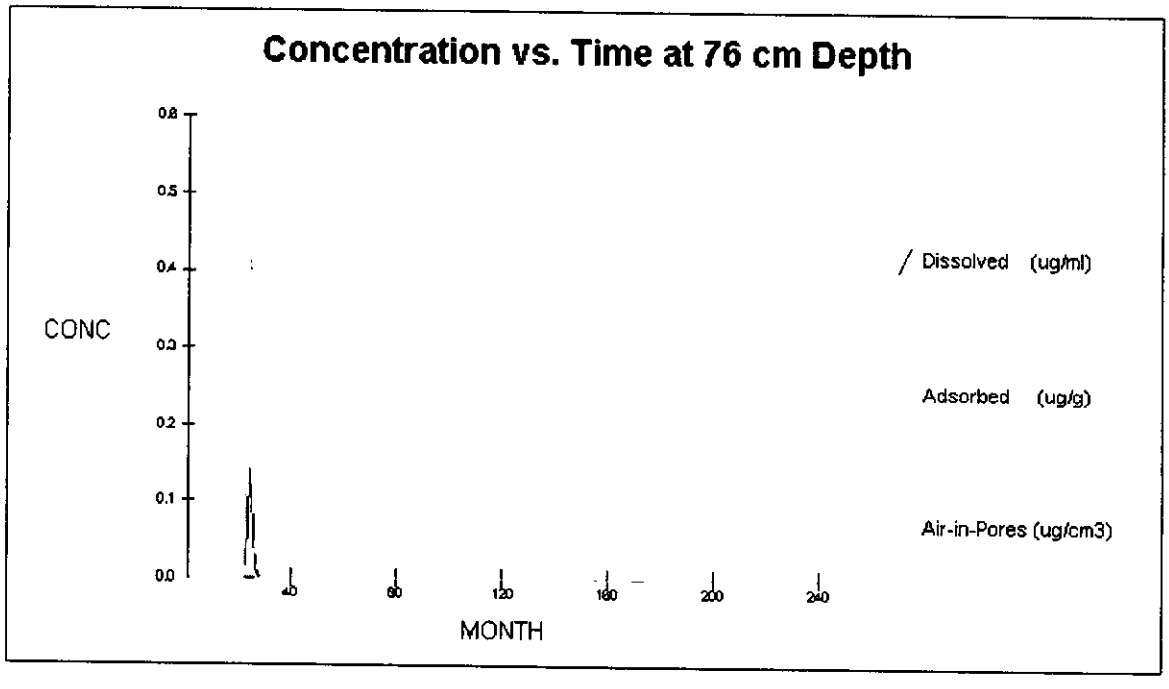


Naphthalene

File SSOUT016 REP

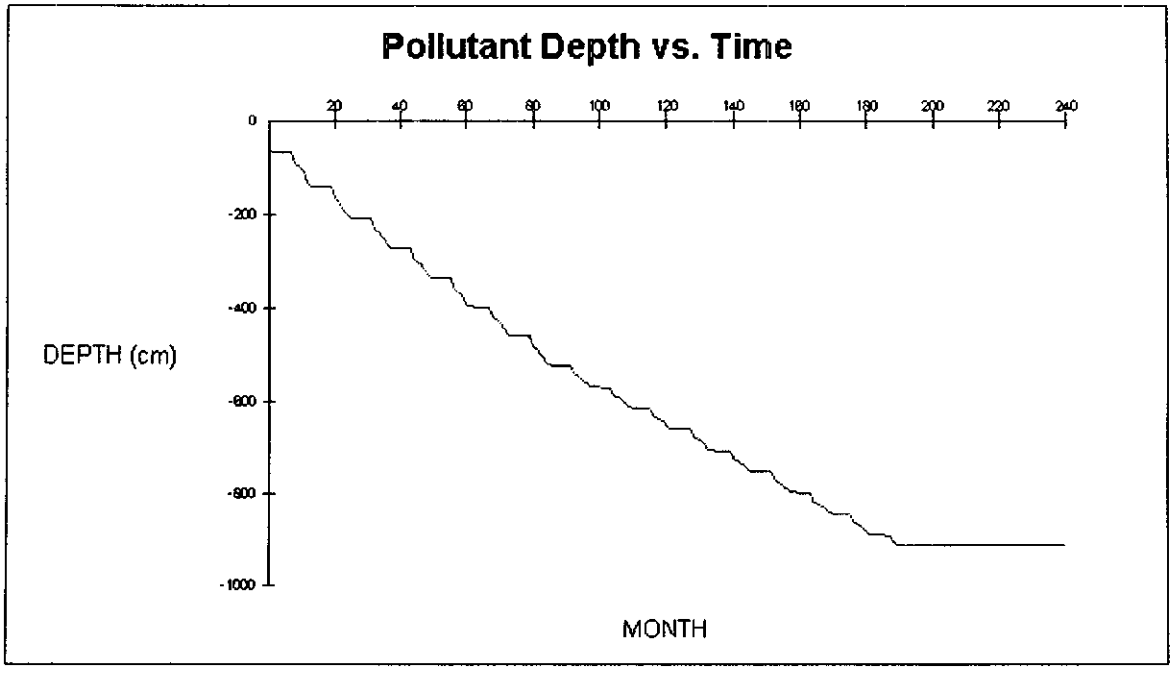
Pollutant Load 6,180 mg/kg, Biodegradation rate. 0.063/day

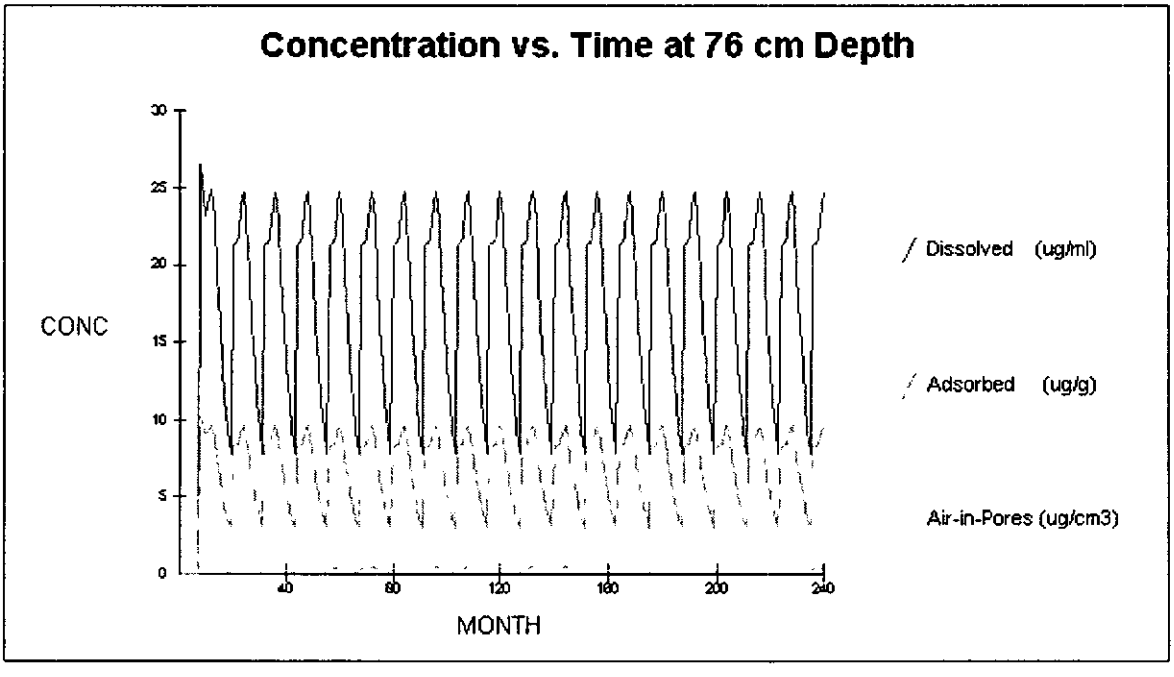




Naphthalene

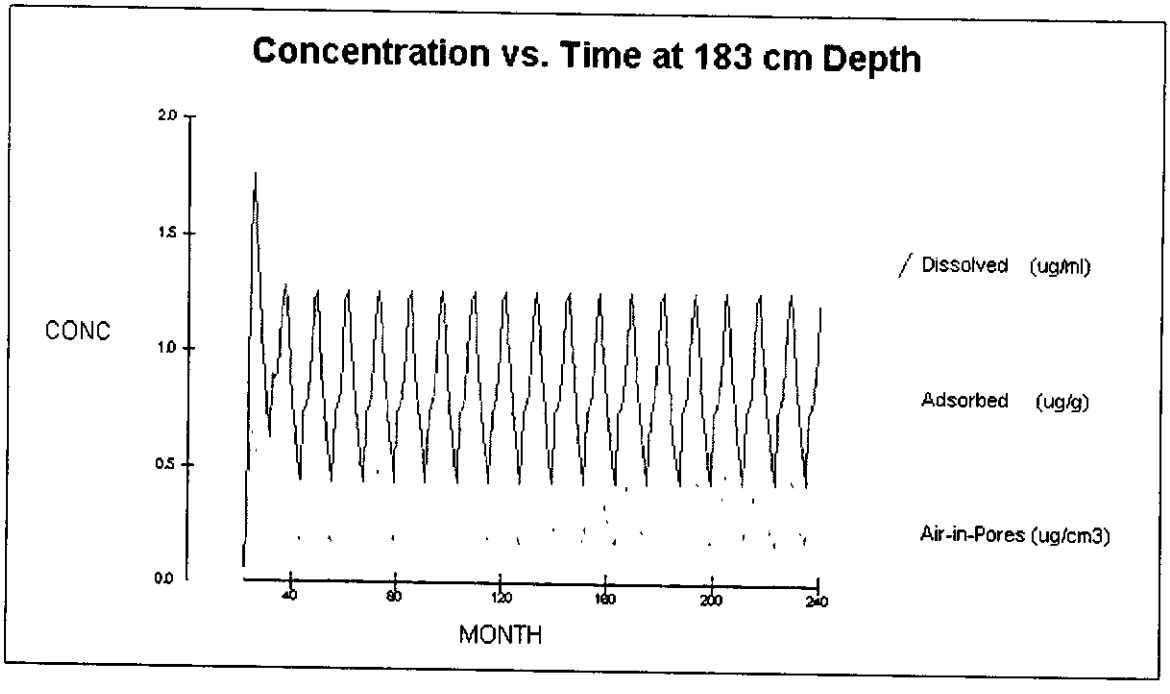
File: SSOUT017 REP
Pollutant Load: 6,180 mg/kg, Biodegradation rate: 0.0063/day
Koc 128.8 (equivalent to xylene)

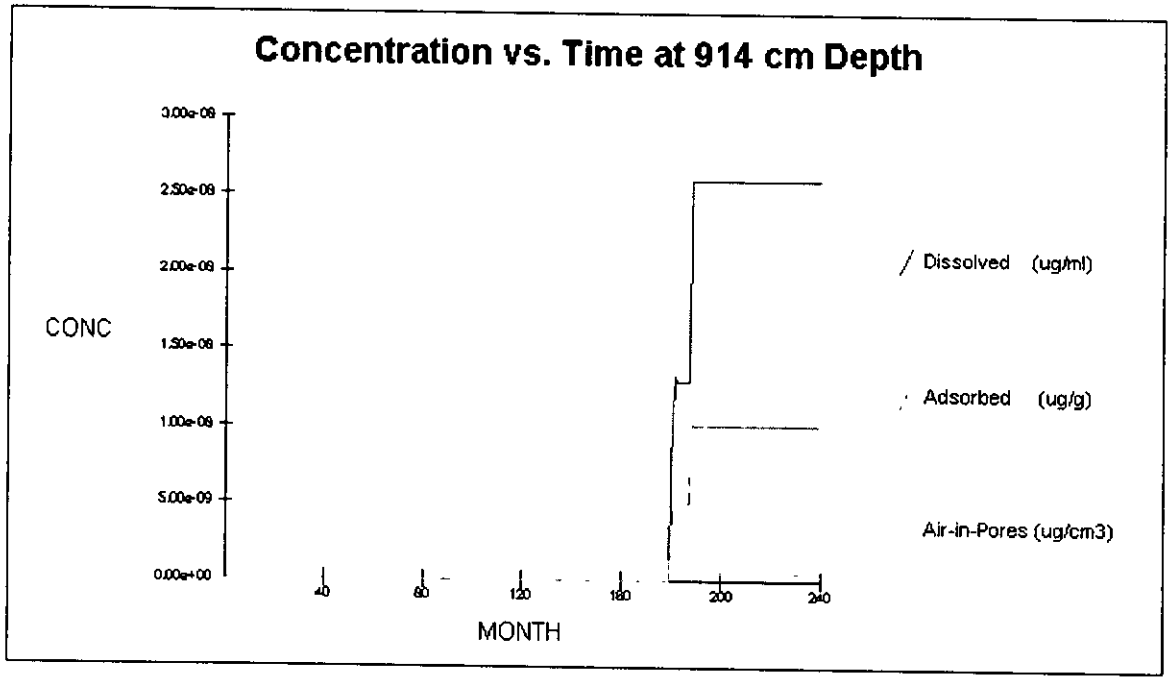




Naphthalene

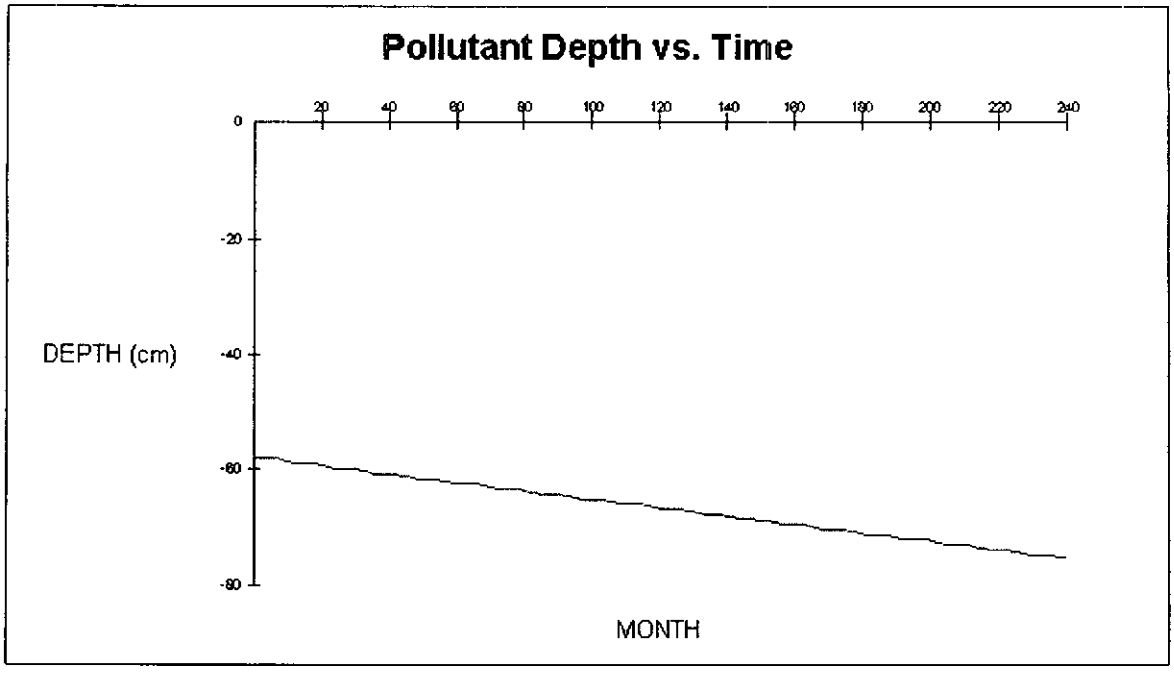
File. SSOUT017 REP (continued)
Pollutant Load: 6,180 mg/kg, Biodegradation rate: 0 0063/day
Koc. 128.8 (equivalent to xylene)

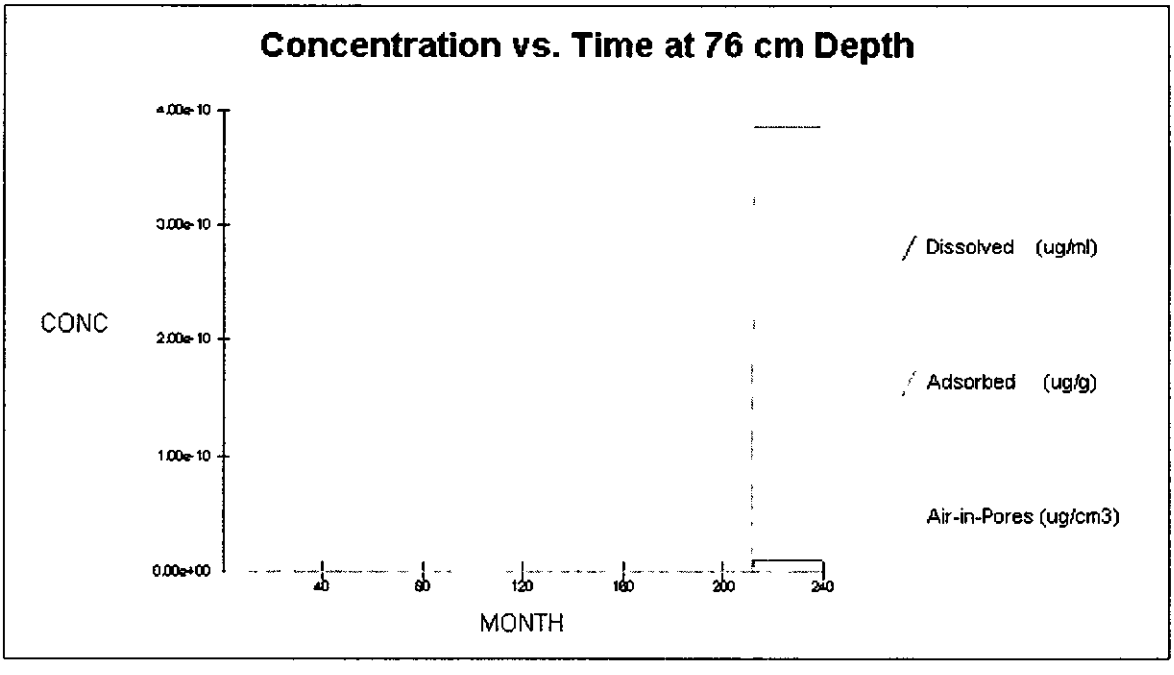




Naphthalene

File. SSOUT018.REP
Pollutant Load: 6,180 mg/kg, Biodegradation rate. 0.0063/day
Koc: 12,880 (same order of magnitude as fluoranthene)

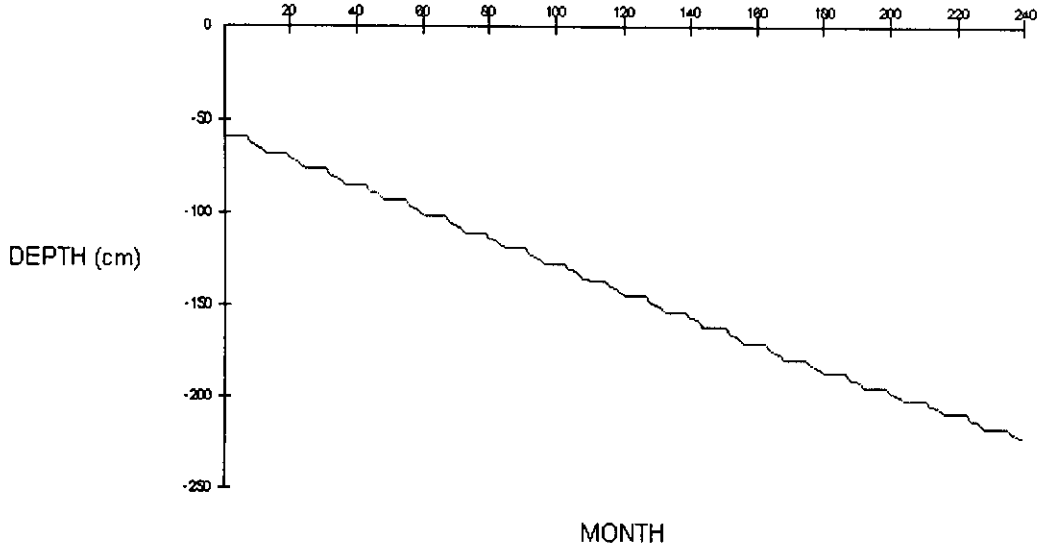




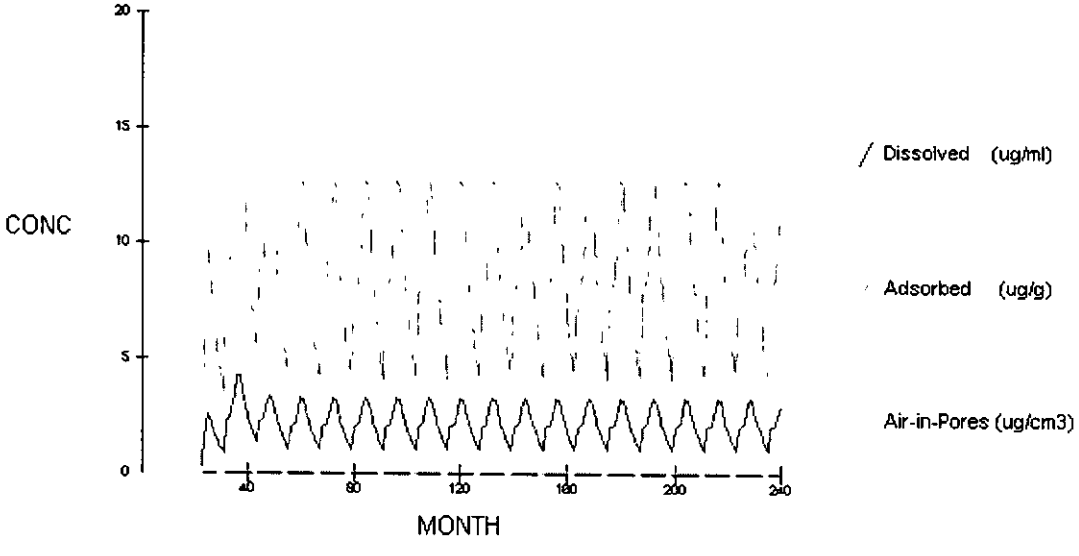
Naphthalene

File SSOUT020.REP
Pollutant Load. 6,180 mg/kg, Biodegradation rate: 0.0063/day
Koc 1280, Intrinsic Permeability 1.2x10-6

Pollutant Depth vs. Time

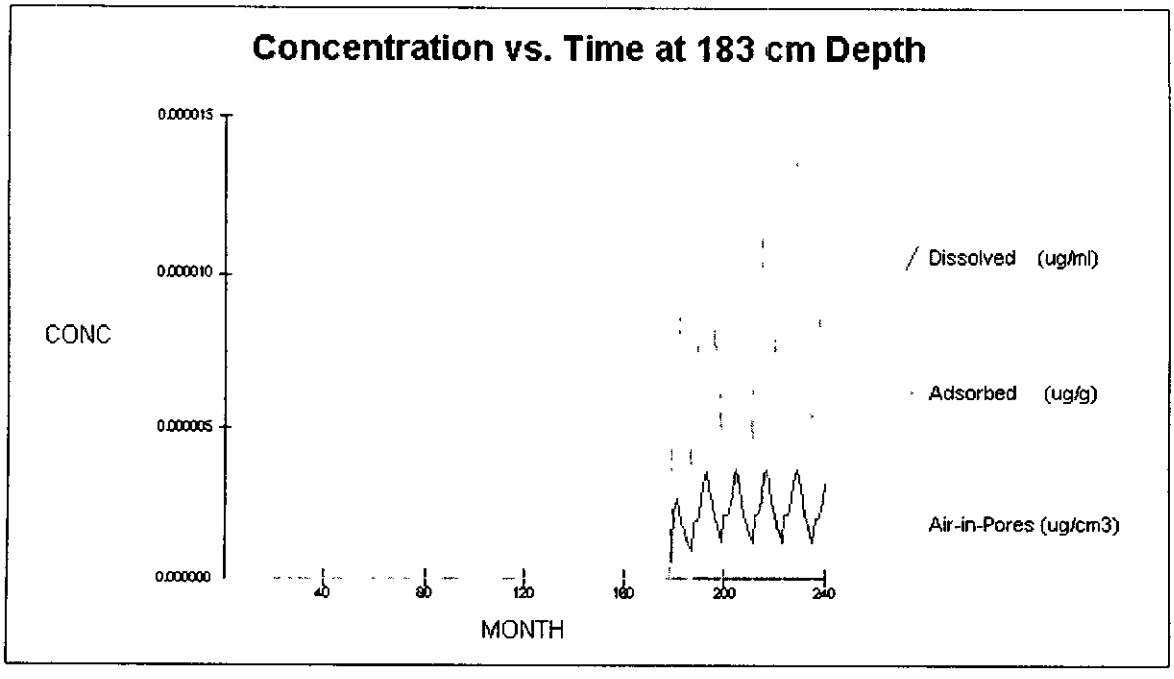


Concentration vs. Time at 76 cm Depth



Naphthalene

File: SSOUT020 REP (continued)
Pollutant Load: 6,180 mg/kg, Biodegradation rate 0.0063/day
Koc: 1280, Intrinsic Permeability 1.2x10-6

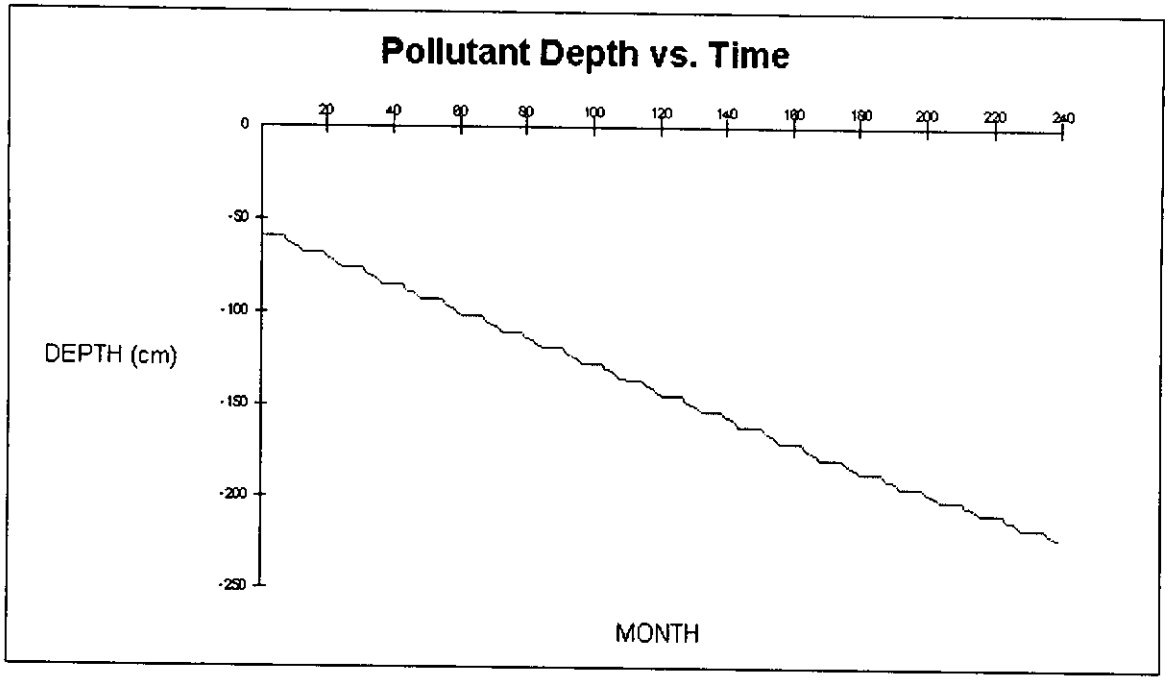


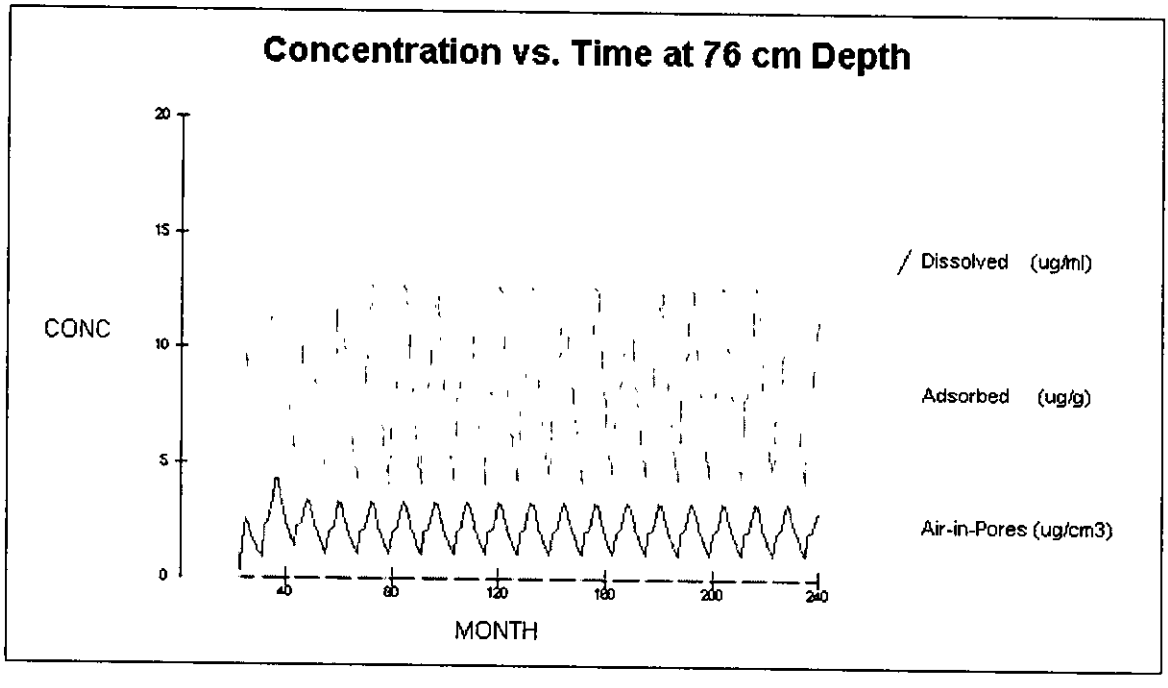
Naphthalene

File: SSOUT020.REP

Pollutant Load: 6,180 mg/kg, Biodegradation rate: 0.0063/day

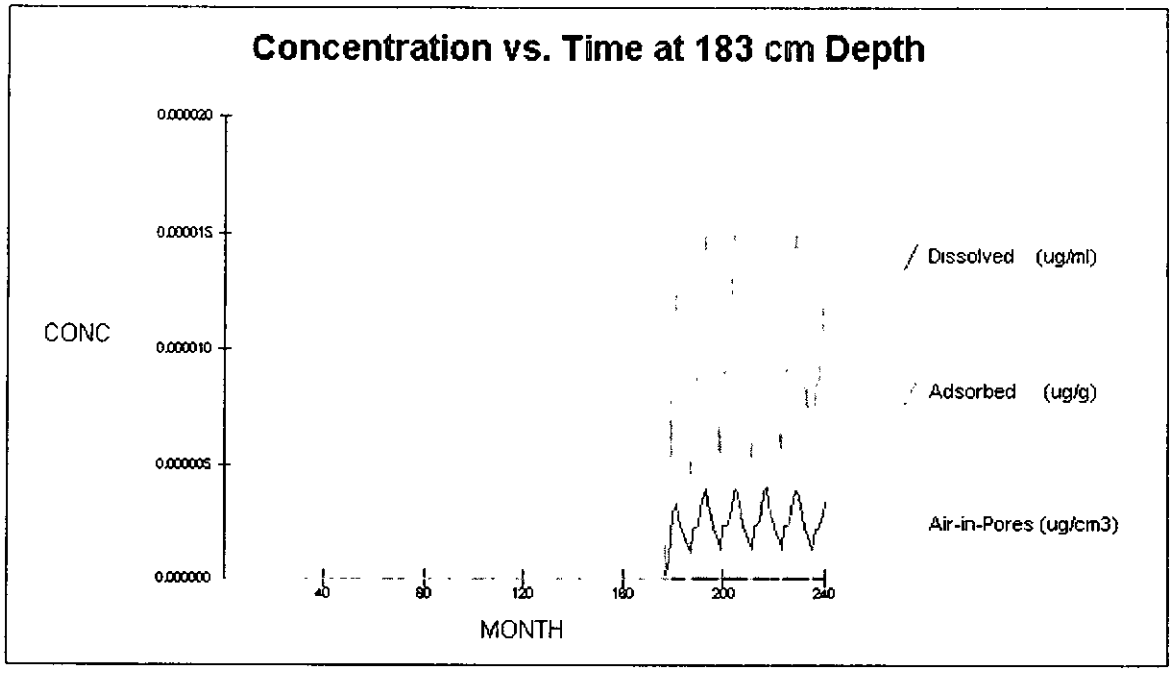
Koc. 1280, Intrinsic Permeability 1.2x10-6





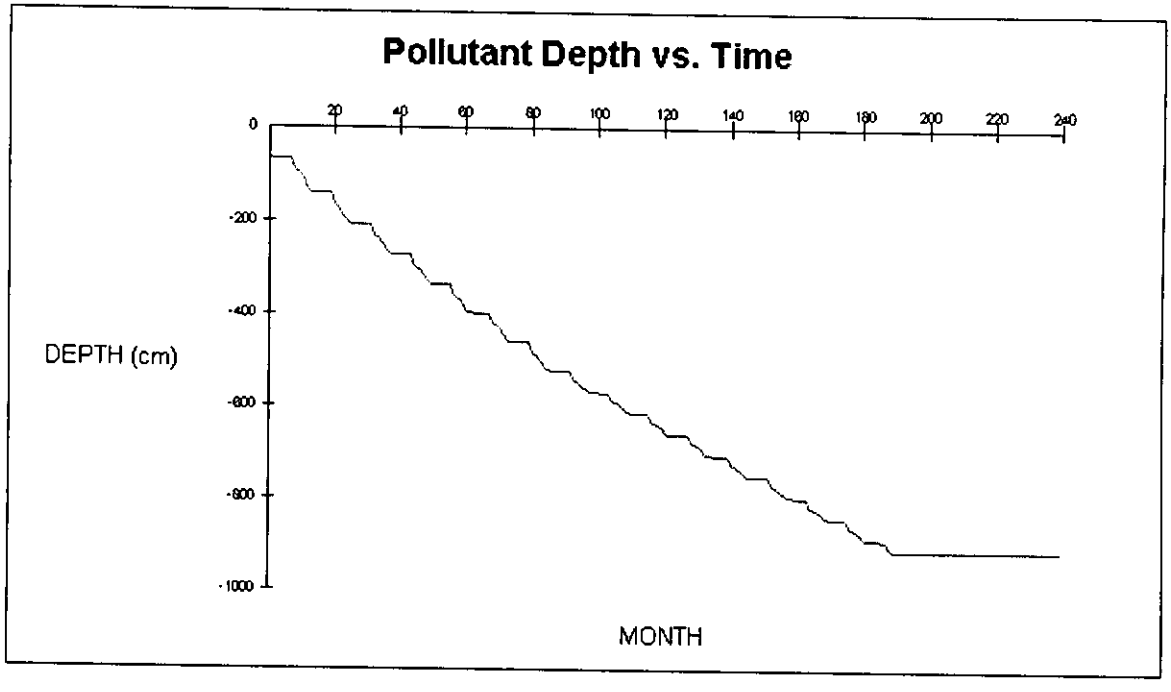
Naphthalene

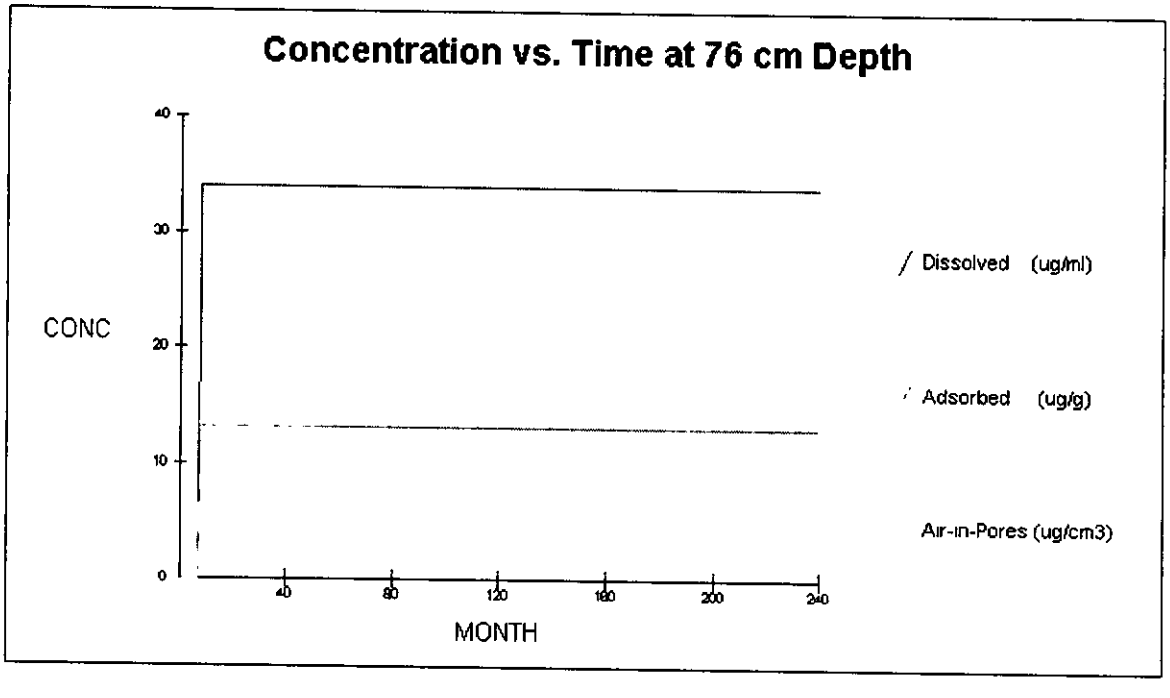
File: SSOUT020.REP (continued)
Pollutant Load: 6,180 mg/kg, Biodegradation rate 0.0063/day
Koc: 1280, Intrinsic Permeability 1.2x10-6



Worst Case Scenario

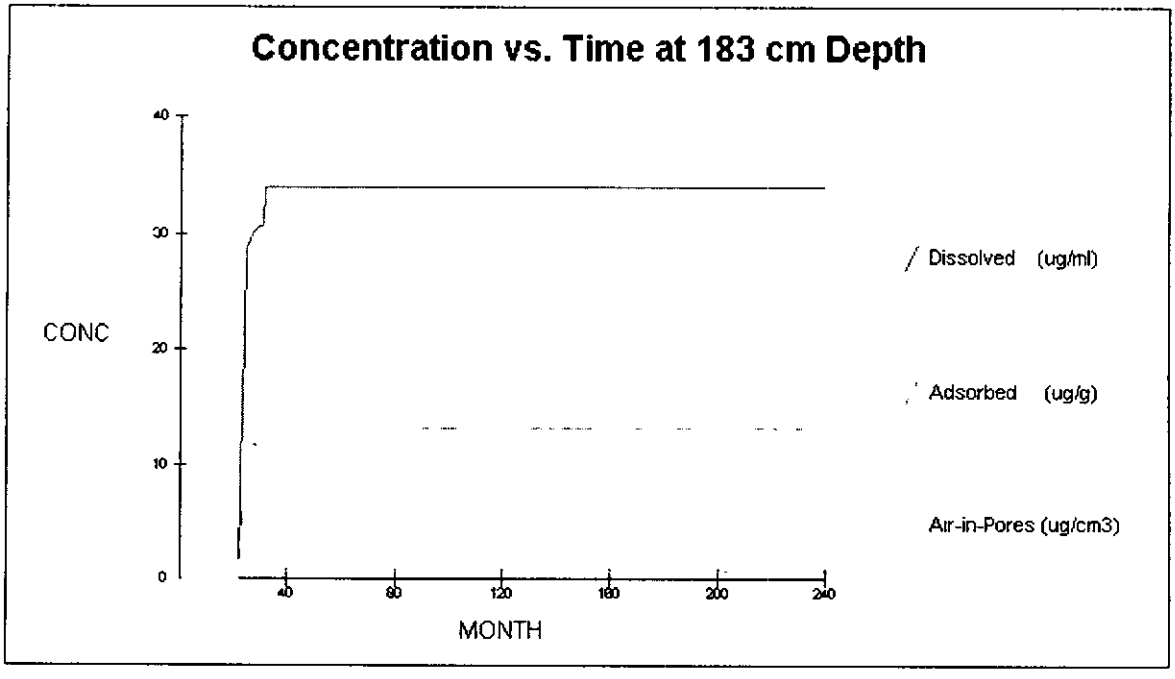
File: SSOUT021 REP
Pollutant Load: 6,180 mg/kg, Biodegradation rate: 0/day
Koc. 128.0, Intrinsic Permeability 1.2x10-7

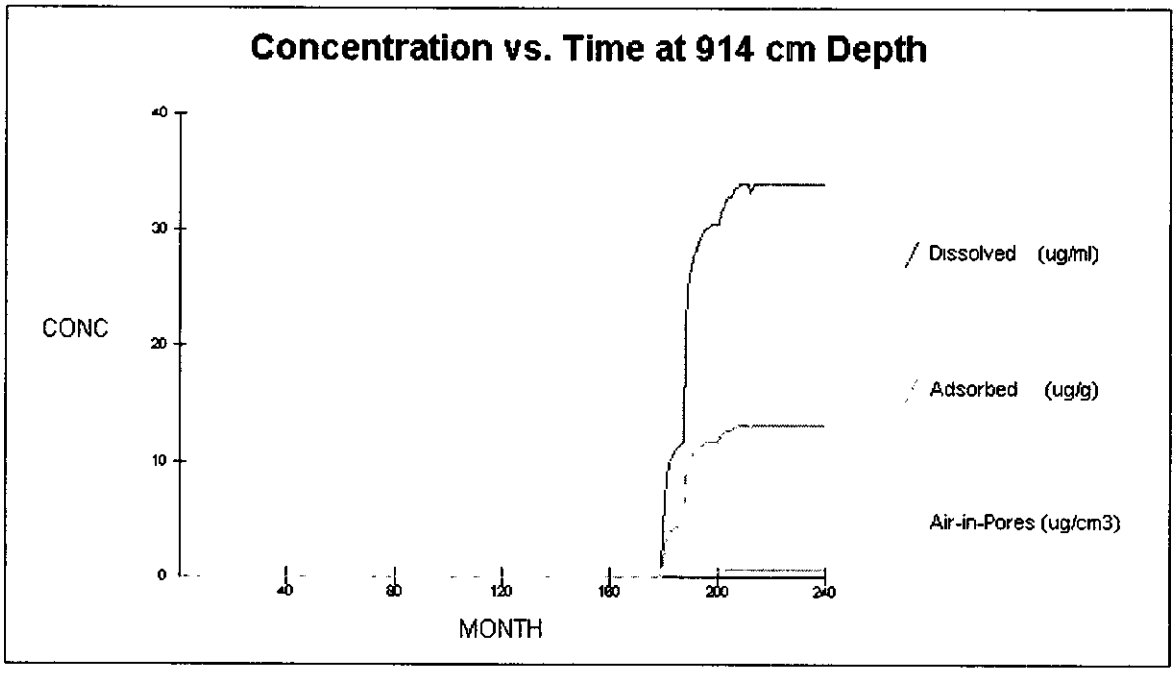




Worst Case Scenario

File: SSOUT021.REP
Pollutant Load 6,180 mg/kg, Biodegradation rate: 0/day
Koc 128.0, Intrinsic Permeability 1 2x10-7





SESOIL MODEL RUN #10 OUTPUT
SSOUTO10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*****
*****
***** SESOIL-84    SEASONAL CYCLES OF WATER, SEDIMENT, AND POLLUTANTS IN SOIL ENVIRONMENTS
*****
***** DEVELOPERS   M. BONAZOUNTAS,ARTHUR D. LITTLE INC.  ,(617)864-5770,X5871
*****             J  WAGNER     ,DIS/ADLPIPE, INC       ,(617)492-1991,X5820
*****
***** MODIFIED EXTENSIVELY BY,
***** D.M. HETRICK
***** OAK RIDGE NATIONAL LABORATORY
***** (615) 576-7556
***** VERSION   -  JANUARY 1995
*****
```

****** MONTHLY SESOIL MODEL OPERATION ******
MONTHLY SITE SPECIFIC SIMULATION

REGION : Cape Romanzof
SOIL TYPE : SANDY GRAVEL
COMPOUND : Naphthalene
WASHLOAD DATA :
APPLICATION AREA: Romanzof, Naphthalene

GENERAL INPUT PARAMETERS

-- SOIL INPUT PARAMETERS --

SOIL DENSITY (G/CM**3):	1.76
INTRINSIC PERMEABILITY (CM**2):	.120E-06
DISCONNECTEDNESS INDEX (-):	9.40
POROSITY (-):	.300
ORGANIC CARBON CONTENT (%):	.300
CATION EXCHANGE CAPACITY (MILLI EQ./100G DRY SOIL):	.000
FREUNDLICH EXPONENT (-):	1.00

1

-- CHEMICAL INPUT PARAMETERS --

SOLUBILITY (UG/ML):	34.0
DIFFUSION COEFFICIENT IN AIR (CM**2/SEC):	.660E-01
HENRYS LAW CONSTANT (M**3-ATM/MOLE):	.400E-03
ADSORPTION COEFFICIENT ON ORGANIC CARBON(KOC):	.129E+04
ADSORPTION COEFFICIENT ON SOIL (K):	.000
MOLECULAR WEIGHT (G/MOL):	128
VALENCE (-):	.000
NEUTRAL HYDROLYSIS CONSTANT (/DAY).	.000
BASE HYDROLYSIS CONSTANT (L/MOL-DAY):	.000
ACID HYDROLYSIS CONSTANT (L/MOL-DAY):	.000
DEGRADATION RATE IN MOISTURE (/DAY):	.630E-02
DEGRADATION RATE ON SOIL (/DAY):	.630E-02
LIGAND-POLLUTANT STABILITY CONSTANT (-):	.000
NO. MOLES LIGAND/MOLE POLLUTANT (-):	000
LIGAND MOLECULAR WEIGHT (G/MOL):	.000

-- APPLICATION INPUT PARAMETERS --

NUMBER OF SOIL LAYERS:	4			
YEARS TO BE SIMULATED:	5			
AREA (CM**2):	0.880E+07			
APPLICATION AREA LATITUDE (DEG.):	62.0			
SPILL (1) OR STEADY APPLICATION (0):	0			
MODIFIED SUMMERS MODEL USED (1) OR NOT (0) FOR GWR. CONC :	0			
INITIAL CHEMICAL CONCENTRATIONS GIVEN (1) OR NOT GIVEN (0)	1			
DEPTHS (CM):	61.	0.12E+03	0.33E+03	0.40E+03
NUMBER OF SUBLAYERS/LAYER	10	10	10	10
PH (CM):	0.00	0.00	0.00	0.00

INTRINSIC PERMEABILITIES (CM**2):	0 00	0.00	0 00	0 00
KDEL RATIOS (-)·	1 0	1.0	1 0	
KDES RATIOS (-).	1 0	1.0	1 0	
OC RATIOS (-):	1.0	1.0	1 0	
CEC RATIOS (-)	1.0	1.0	1.0	
FRN RATIOS(-)	1 0	1 0	1 0	
ADS RATIOS(-)·	1 0	1 0	1 0	

1

YEAR - 1 MONTHLY INPUT PARAMETERS

-- CLIMATIC INPUT PARAMETERS --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TEMP. (DEG C)	0.100	-5.000	-10.330	-10.390	-12.390	-9.440	-6.060	1 560	6 560	9.500	9.440	6 440
CLOUD CVR (FRAC.)	0.000	0.000	0 000	0.000	0.000	0.000	0.000	0 000	0 000	0.000	0.000	0.000
REL. HUM.(FRAC.)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0 000	0.000	0.000	0 000
ALBEDO (-)	0 000	0.000	0 000	0 000	0.000	0 000	0.000	0.000	0.000	0.000	0.000	0 000
EVAPOT. (CM/DAY)	0.034	0 000	0.000	0 000	0.000	0.000	0 000	0.230	0.130	0.220	0.300	0 230
PRECIP. (CM)	6 020	0.010	0.010	0.010	0.010	0.010	0 010	21.200	5.440	7 420	12.190	11.790
M.TIME RAIN(DAYS)	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0 300	0.300	0.300
M. STORM NO. (-)	6.900	0.100	0.100	0.100	0.100	0.100	0.100	23.300	6.200	7 300	10.200	10.800
M. SEASON (DAYS)	30.400	30.400	30.400	30.400	30.400	30.400	30.400	30.400	30.400	30.400	30.400	30 400

INITIAL POLLUTANT CONCENTRATIONS IN UG/ML,INPUT FOR MONTH 1 OF YEAR 1

LAYER 1:

SUBLAYER	1	2	3	4	5	6	7	8	9	10
INITIAL CONC. (UG/ML)	1.09E+04	1.09E+04	1.09E+04	1.09E+04	1.09E+04	1.09E+04	1 09E+04	1.09E+04	1.09E+04	1.09E+04

LAYER 2:

SUBLAYER	1	2	3	4	5	6	7	8	9	10
INITIAL CONC. (UG/ML)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

LAYER 3:

SUBLAYER	1	2	3	4	5	6	7	8	9	10
INITIAL CONC. (UG/ML)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0 00E+00

LAYER 4:

SUBLAYER	1	2	3	4	5	6	7	8	9	10
INITIAL CONC. (UG/ML)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

-- POLLUTANT INPUT PARAMETERS --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
POL. INP-1 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TRNSFORMD-1 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SINKS-1 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
LIG.INPUT-1 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VOLATILIZATION MULT.-1	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
SURFACE RUNOFF MULT.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
POL. IN RAIN (FRAC-SL)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
POL. INP-2 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TRNSFORMD-2 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SINKS-2 (UG/CM**2)	0 00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
LIG.INPUT-2 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0 00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VOLATILIZATION MULT.-2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
POL. INP-3 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TRNSFORMD-3 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SINKS-3 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
LIG.INPUT-3 (UG/CM**2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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VOLATILIZATION MULT.-3 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00 0 00E+00 0 00E+00 0 00E+00 0 00E+00 0 00E+00 0 00E+00

POL. INP-L (UG/CM**2)  0.00E+00 0 00E+00 0 00E+00 0 00E+00 0 00E+00 0 00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00 0 00E+00 0 00E+00
TRNSFORMD-L (UG/CM**2) 0.00E+00 0 00E+00 0.00E+00 0.00E+00 0 00E+00 0 00E+00 0 00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00
SINKS-L (UG/CM**2)     0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0 00E+00 0.00E+00 0.00E+00 0 00E+00 0 00E+00 0 00E+00 0 00E+00
LIG.INPUT-L (UG/CM**2) 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0 00E+00 0 00E+00 0 00E+00 0.00E+00 0 00E+00 0 00E+00 0 00E+00 0 00E+00
VOLATILIZATION MULT.-L 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0 00E+00 0.00E+00 0.00E+00 0 00E+00 0 00E+00 0 00E+00
     1
     YEAR -   2    MONTHLY INPUT PARAMETERS
     ********    ************************

     -- CLIMATIC INPUT PARAMETERS ARE SAME AS LAST YEAR


     -- POLLUTANT INPUT PARAMETERS --

                          OCT       NOV       DEC       JAN       FEB       MAR       APR       MAY       JUN       JUL       AUG       SEP

POL  INP-1 (UG/CM**2)  0.00E+00 0 00E+00 0 00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
TRNSFORMD-1 (UG/CM**2) 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00
SINKS-1 (UG/CM**2)     0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
LIG.INPUT-1 (UG/CM**2) 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0 00E+00 0.00E+00 0 00E+00
VOLATILIZATION MULT.-1 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
SURFACE RUNOFF MULT.   0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
POL. IN RAIN (FRAC-SL) 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00

POL. INP-2 (UG/CM**2)  0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0 00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00
TRNSFORMD-2 (UG/CM**2) 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00 0.00E+00 0 00E+00
SINKS-2 (UG/CM**2)     0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0 00E+00 0.00E+00 0.00E+00
LIG.INPUT-2 (UG/CM**2) 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
VOLATILIZATION MULT.-2 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00

POL. INP-3 (UG/CM**2)  0.00E+00 0 00E+00 0 00E+00 0.00E+00 0.00E+00 0 00E+00 0 00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00
TRNSFORMD-3 (UG/CM**2) 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
SINKS-3 (UG/CM**2)     0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00 0.00E+00
LIG.INPUT-3 (UG/CM**2) 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00
VOLATILIZATION MULT.-3 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0 00E+00

POL. INP-L (UG/CM**2)  0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
TRNSFORMD-L (UG/CM**2) 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
SINKS-L (UG/CM**2)     0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
LIG.INPUT-L (UG/CM**2) 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
VOLATILIZATION MULT.-L 0 00E+00 0 00E+00 0.00E+00 0 00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
     1
     YEAR -   3    MONTHLY INPUT PARAMETERS
     ********    ************************

     -- CLIMATIC INPUT PARAMETERS ARE SAME AS LAST YEAR

     -- POLLUTANT INPUT PARAMETERS ARE SAME AS LAST YEAR
     1
     YEAR -   4    MONTHLY INPUT PARAMETERS
     ********    ************************

     -- CLIMATIC INPUT PARAMETERS ARE SAME AS LAST YEAR

     -- POLLUTANT INPUT PARAMETERS ARE SAME AS LAST YEAR
     1
     YEAR -   5    MONTHLY INPUT PARAMETERS
     ********    ************************

     -- CLIMATIC INPUT PARAMETERS ARE SAME AS LAST YEAR

     -- POLLUTANT INPUT PARAMETERS ARE SAME AS LAST YEAR

**** WARNING (MONTH 8) - PROBLEM IN HYDRO CYCLE: BETA GREATER THAN 0.5
     RAINFALL MAY NOT FOLLOW POISSON DISTRIBUTION
     1
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YEAR - 1 MONTHLY RESULTS (OUTPUT)

-- HYDROLOGIC CYCLE COMPONENTS --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MOIS IN L1 (%)	12 463	10.993	10.333	9 883	9.583	9 343	9 103	13.603	11.683	10.753	11 353	12.103
MOIS. BELOW L1 (%)	12 463	10.993	10.333	9 883	9 583	9.343	9 103	13.603	11.683	10.753	11 353	12.103
PRECIPATION (CM)	6.042	0.034	0.031	0 012	0 039	0.034	0.012	21.105	5.494	7 484	12.079	11.736
NET INFILT (CM)	6.042	0.034	0.031	0.012	0.039	0.034	0 012	21.105	5.494	7 484	12.079	11.736
EVAPOTRANS (CM)	1.034	0.009	0.009	0.009	0 009	0.009	0.009	6.992	3.952	6 688	9.120	6.992
MOIS. RETEN (CM)	0.526	-1.120	-0.503	-0.343	-0.228	-0.183	-0 183	3.427	-1.462	-0.708	0.457	0.571
SUR. RUNOFF (CM)	0 000	0.000	0 000	0.000	0.000	0.000	0 000	0.000	0.000	0 000	0.000	0 000
GRW RUNOFF (CM)	4.483	1.145	0.525	0.345	0.258	0.208	0.186	10.686	3.004	1.505	2.502	4.173
YIELD (CM)	4.483	1.145	0.525	0.345	0.258	0.208	0.186	10.686	3 004	1.505	2.502	4.173
PAU/MPA (GZU)	1.004	3.419	3.107	1.155	3.894	3.400	1 193	0.996	1 010	1.009	0.991	0.995
PA/MPA (GZ)	1.004	3.419	3.107	1.155	3.894	3.400	1 193	0.996	1.010	1 009	0.991	0.995

1 -- POLLUTANT MASS INPUT TO COLUMN (UG) - INCLUDES INITIAL POLLUTANT CONCENTRATIONS --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
PRECIP.	0.000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LOAD UPPER	5.839E+12	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LOAD ZONE 2	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00
LOAD ZONE 3	0 000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LOAD LOWER	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTAL INPUT	5.839E+12	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

0 -- POLLUTANT MASS DISTRIBUTION IN COLUMN (UG) -- NOTE: IF COMPONENT IS ZERO EACH MONTH, IT IS NOT PRINTED

UPPER SOIL ZONE:

SUBLAYER 1

VOLATILIZED	5.000E+09	6.666E+09	7.623E+09	8.072E+09	8.521E+09	8.796E+09	9.195E+09	3.978E+09	5.646E+09	6 507E+09	5.856E+09	5.153E+09
DEGRAD MOIS	4.299E+07	3.792E+07	3.564E+07	3.409E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.275E+08	2.006E+08	1.886E+08	1.804E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.686E+06	6.282E+06	6.635E+06	6.664E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	5.620E+11	5.530E+11	5.430E+11	5.326E+11	5.216E+11	5.105E+11	4.989E+11	4.861E+11	4.765E+11	4.654E+11	4.536E+11	4.425E+11

SUBLAYER 2

DEGRAD MOIS	4.299E+07	3.792E+07	3.564E+07	3.409E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.275E+08	2.006E+08	1.886E+08	1.804E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.686E+06	6.282E+06	6 635E+06	6.664E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	5.688E+11	5.665E+11	5.641E+11	5.617E+11	5.594E+11	5.570E+11	5.546E+11	5 522E+11	5.498E+11	5.475E+11	5.451E+11	5.427E+11

SUBLAYER 3

DEGRAD MOIS	4.299E+07	3.792E+07	3.564E+07	3.409E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.275E+08	2.006E+08	1.886E+08	1.804E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.686E+06	6.282E+06	6.635E+06	6.664E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5 956E+06	5.771E+06	5.589E+06
PURE PHASE	5.688E+11	5.665E+11	5.641E+11	5.617E+11	5.594E+11	5.570E+11	5.546E+11	5.522E+11	5.498E+11	5.475E+11	5.451E+11	5.427E+11

SUBLAYER 4

DEGRAD MOIS 4 299E+07 3.792E+07 3.564E+07 3.409E+07 3 306E+C7 3.223E+07 3 140E+07 4.692E+07 4.030E+07 3.709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2 346E+09 2 346E+09 2.346E+09 2.346E+09 2 346E+09 2 346E+09 2 346E+09 2 346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.275E+08 2 006E+08 1.886E+08 1 804E+08 1.749E+08 1 705E+08 1 661E+08 2.483E+08 2.132E+08 1 963E+08 2 072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1 241E+10 1 241E+10 1.241E+10 1.241E+10 1 241E+10 1 241E+10 1.241E+10 1.241E+10 1 241E+10 1 241E+10
IN SOIL AIR 5.686E+06 6.282E+06 6.635E+06 6.664E+06 6.796E+06 6.827E+06 6 946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 5 688E+11 5.665E+11 5.641E+11 5.617E+11 5.594E+11 5 570E+11 5 546E+11 5 522E+11 5 498E+11 5.475E+11 5 451E+11 5.427E+11

SUBLAYER 5

DEGRAD MOIS 4 299E+07 3 792E+07 3.564E+07 3.409E+07 3 306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3 709E+07 3 916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2 346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.275E+08 2.006E+08 1.886E+08 1.804E+08 1.749E+08 1 705E+08 1 661E+08 2.483E+08 2 132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1 241E+10 1 241E+10 1.241E+10 1 241E+10 1.241E+10 1 241E+10 1 241E+10
IN SOIL AIR 5 686E+06 6.282E+06 6.635E+06 6 664E+06 6.796E+06 6 827E+06 6 946E+06 5 292E+06 5.801E+06 5.956E+06 5.771E+06 5 589E+06
PURE PHASE 5 688E+11 5 665E+11 5.641E+11 5.617E+11 5.594E+11 5.570E+11 5 546E+11 5.522E+11 5.498E+11 5 475E+11 5 451E+11 5.427E+11

SUBLAYER 6

DEGRAD MOIS 4.299E+07 3.792E+07 3.564E+07 3 409E+07 3.306E+07 3 223E+07 3 140E+07 4.692E+07 4.030E+07 3.709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2 346E+09 2 346E+09 2 346E+09 2.346E+09
IN SOIL MOI 2.275E+08 2.006E+08 1.886E+08 1.804E+08 1.749E+08 1.705E+08 1.661E+08 2 483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1 241E+10 1 241E+10 1 241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.686E+06 6 282E+06 6.635E+06 6 664E+06 6.796E+06 6.827E+06 6 946E+06 5 292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 5.688E+11 5.665E+11 5.641E+11 5.617E+11 5 594E+11 5.570E+11 5.546E+11 5.522E+11 5.498E+11 5.475E+11 5.451E+11 5.427E+11

SUBLAYER 7

DEGRAD MOIS 4.299E+07 3.792E+07 3.564E+07 3.409E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3 709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2 346E+09
IN SOIL MOI 2.275E+08 2.006E+08 1.886E+08 1 804E+08 1.749E+08 1.705E+08 1.661E+08 2 483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.686E+06 6.282E+06 6.635E+06 6.664E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 5.688E+11 5.665E+11 5.641E+11 5.617E+11 5.594E+11 5.570E+11 5.546E+11 5.522E+11 5.498E+11 5.475E+11 5.451E+11 5.427E+11

SUBLAYER 8

DEGRAD MOIS 4.299E+07 3.792E+07 3.564E+07 3.409E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3.709E+07 3.916E+07 4 175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09
IN SOIL MOI 2.275E+08 2.006E+08 1.886E+08 1.804E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2 209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.686E+06 6.282E+06 6.635E+06 6.664E+06 6.796E+06 6.827E+06 6 946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 5.688E+11 5.665E+11 5.641E+11 5.617E+11 5 594E+11 5.570E+11 5 546E+11 5 522E+11 5.498E+11 5.475E+11 5.451E+11 5.427E+11

SUBLAYER 9

DEGRAD MOIS 4.299E+07 3.792E+07 3.564E+07 3.409E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3.709E+07 3 916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.275E+08 2.006E+08 1.886E+08 1.804E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.686E+06 6.282E+06 6.635E+06 6.664E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 5.688E+11 5.665E+11 5.641E+11 5.617E+11 5.594E+11 5.570E+11 5.546E+11 5.522E+11 5.498E+11 5.475E+11 5.451E+11 5.427E+11

SUBLAYER 10

DEGRAD MOIS 4.299E+07 3.792E+07 3.564E+07 3.409E+07 3.306E+07 3.223E+07 3.140E+07 4 692E+07 4.030E+07 3 709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.275E+08 2.006E+08 1.886E+08 1 804E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1 963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1 241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.686E+06 6.282E+06 6 635E+06 6 664E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 5.706E+11 5.683E+11 5.659E+11 5.636E+11 5.612E+11 5.589E+11 5.565E+11 5.583E+11 5.560E+11 5.536E+11 5.512E+11 5.489E+11

SOIL ZONE 2:

SUBLAYER 1

DEGRAD MOIS 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 1.106E+06 7.608E+06 1.082E+07 1.738E+07 2.551E+07
DEGRAD SOIL 0.000E+00 0 000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 5.527E+07 4.428E+08 6.840E+08 1.041E+09 1.433E+09
IN SOIL MOI 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 3.481E+07 4.928E+07 6.759E+07 1.101E+08 1.505E+08
ADS ON SOIL 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 1.740E+09 2.869E+09 4.275E+09 6.595E+09 8.456E+09
IN SOIL AIR 0 000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 7.419E+05 1.341E+06 2.051E+06 3.066E+06 3.807E+06

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

SOIL ZONE 3:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

LOWER SOIL ZONE:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

-- POLLUTANT CONCENTRATIONS (UG/ML) OR (UG/G) -- NOTE IF CONCENTRATIONS ARE ZERO FOR EACH MONTH, THEY ARE NOT PRINTED --

UPPER SOIL ZONE·

SUBLAYER 1

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1 000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1 314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6 171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1.047E+04	1.030E+04	1.012E+04	9 921E+03	9.718E+03	9.509E+03	9.294E+03	9.056E+03	8.877E+03	8 670E+03	8.449E+03	8.244E+03

SUBLAYER 2

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6 201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1.060E+04	1.055E+04	1.051E+04	1.046E+04	1.042E+04	1.038E+04	1.033E+04	1.029E+04	1 024E+04	1.020E+04	1.015E+04	1.011E+04

SUBLAYER 3

MOISTURE	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1.060E+04	1.055E+04	1.051E+04	1.046E+04	1.042E+04	1.038E+04	1.033E+04	1.029E+04	1.024E+04	1.020E+04	1.015E+04	1.011E+04

SUBLAYER 4

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5 765E-01	5.817E-01
PURE PHASE	1.060E+04	1.055E+04	1.051E+04	1 046E+04	1.042E+04	1.038E+04	1.033E+04	1.029E+04	1.024E+04	1.020E+04	1.015E+04	1.011E+04

SUBLAYER 5

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1.060E+04	1.055E+04	1.051E+04	1.046E+04	1.042E+04	1.038E+04	1.033E+04	1.029E+04	1.024E+04	1.020E+04	1.015E+04	1.011E+04

SUBLAYER 6

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1.060E+04	1.055E+04	1.051E+04	1.046E+04	1.042E+04	1.038E+04	1.033E+04	1.029E+04	1.024E+04	1.020E+04	1.015E+04	1.011E+04

SUBLAYER 7

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	
%SOLUBILITY	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1.060E+04	1.055E+04	1.051E+04	1 046E+04	1.042E+04	1.038E+04	1.033E+04	1.029E+04	1.024E+04	1.020E+04	1.015E+04	1.011E+04

SUBLAYER 8

MOISTURE	3 400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3 400E+01	3 400E+01	3.400E+01	3 400E+01	3 400E+01	3 400E+01	3 400E+01
%SOLUBILITY	1 000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1 000E+02	1 000E+02	1 000E+02
ADSORBED	1.314E+02	1 314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6 040E-01	6 157E-01	6.285E-01	6.171E-01	6.201E-01	6 157E-01	6 192E-01	6 012E-01	5 900E-01	5 764E-01	5 765E-01	5.817E-01
PURE PHASE	1 060E+04	1.055E+04	1 051E+04	1 046E+04	1.042E+04	1 038E+04	1.033E+04	1.029E+04	1 024E+04	1 020E+04	1.015E+04	1.011E+04

SUBLAYER 9

MOISTURE	3 400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3 400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02
ADSORBED	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1.314E+02	1 314E+02	1.314E+02
SOIL AIR	6 040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6 192E-01	6 012E-01	5.900E-01	5.764E-01	5 765E-01	5.817E-01
PURE PHASE	1.060E+04	1 055E+04	1.051E+04	1.046E+04	1.042E+04	1.038E+04	1.033E+04	1 029E+04	1.024E+04	1.020E+04	1 015E+04	1 011E+04

SUBLAYER 10

MOISTURE	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1 000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02
ADSORBED	1 314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1 314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6 285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5 900E-01	5.764E-01	5 765E-01	5.817E-01
PURE PHASE	1.063E+04	1 059E+04	1.054E+04	1.050E+04	1 045E+04	1.041E+04	1.037E+04	1.040E+04	1 036E+04	1 031E+04	1.027E+04	1.022E+04

SOIL ZONE 2:

SUBLAYER 1

MOISTURE	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2 383E+00	3.929E+00	5.855E+00	9 033E+00	1.158E+01
%SOLUBILITY	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.010E+00	1.156E+01	1.722E+01	2.657E+01	3.406E+01
ADSORBED	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.209E+00	1.518E+01	2.262E+01	3.490E+01	4.475E+01
SOIL AIR	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	4.214E-02	6.818E-02	9.926E-02	1.532E-01	1.982E-01

SOIL ZONE 3:

LOWER SOIL ZONE.

POL DEP CM	5.881E+01	5.882E+01	5.883E+01	5.883E+01	5.884E+01	5.885E+01	5.885E+01	6.180E+01	6.255E+01	6.351E+01	6.508E+01	6.662E+01

1 YEAR - 1 ANNUAL SUMMARY REPORT

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-- TOTAL INPUTS (UG) --

UPPER SOIL ZONE	5.839E+12
SOIL ZONE 2	0.000E+00
SOIL ZONE 3	0.000E+00
LOWER SOIL ZONE	0.000E+00

-- HYDROLOGIC CYCLE COMPONENTS --

AVERAGE SOIL MOISTURE ZONE 1 (%)	10.933
AVERAGE SOIL MOISTURE BELOW ZONE 1 (%)	10.933
TOTAL PRECIPITATION (CM)	64.102
TOTAL INFILTRATION (CM)	64.102
TOTAL EVAPOTRANSPIRATION (CM)	34 832
TOTAL SURFACE RUNOFF (CM)	0.000
TOTAL GRW RUNOFF (CM)	29.018
TOTAL MOISTURE RETENTION (CM)	0.251
TOTAL YIELD (CM)	29.018

10.8 % SOIL MOISTURE MEASURED AT SITE

0 -- POLLUTANT MASS DISTRIBUTION IN COLUMN (UG) -- NOTE: IF COMPONENT IS ZERO EACH MONTH, IT IS NOT PRINTED

FOR FINAL MASS IN SOIL MOI., ADS. ON SOIL, SOIL AIR, IMMOBIL CEC, COMPLEXED, AND PURE PHASE FOR EACH SUBLAYER, SEE ABOVE (MONTH SEP)

UPPER SOIL ZONE:

SUBLAYER 1

TOTAL VOLATILIZED	8 101E+10
TOTAL DEGRADED (MOISTURE)	4.526E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 2

TOTAL DEGRADED (MOISTURE) 4.526E+08
TOTAL DEGRADED (SOIL) 2 815E+10

SUBLAYER 3

TOTAL DEGRADED (MOISTURE) 4.526E+08
TOTAL DEGRADED (SOIL) 2 815E+10

SUBLAYER 4

TOTAL DEGRADED (MOISTURE) 4 526E+08
TOTAL DEGRADED (SOIL) 2 815E+10

SUBLAYER 5

TOTAL DEGRADED (MOISTURE) 4.526E+08
TOTAL DEGRADED (SOIL) 2 815E+10

SUBLAYER 6

TOTAL DEGRADED (MOISTURE) 4.526E+08
TOTAL DEGRADED (SOIL) 2.815E+10

SUBLAYER 7

TOTAL DEGRADED (MOISTURE) 4.526E+08
TOTAL DEGRADED (SOIL) 2.815E+10

SUBLAYER 8

TOTAL DEGRADED (MOISTURE) 4.526E+08
TOTAL DEGRADED (SOIL) 2.815E+10

SUBLAYER 9

TOTAL DEGRADED (MOISTURE) 4.526E+08
TOTAL DEGRADED (SOIL) 2.815E+10

SUBLAYER 10

TOTAL DEGRADED (MOISTURE) 4 526E+08
TOTAL DEGRADED (SOIL) 2.815E+10

SOIL ZONE 2:

SUBLAYER 1

TOTAL DEGRADED (MOISTURE) 6.241E+07
TOTAL DEGRADED (SOIL) 3.656E+09

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

SOIL ZONE 3.

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

LOWER SOIL ZONE

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

1 -- AVERAGE POLLUTANT CONCENTRATIONS -- NOTE: ONLY NON-ZERO VALUES ARE PRINTED --

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UPPER SOIL ZONE:

SUBLAYER 1

SOIL MOISTURE (UG/ML) 3.400E+01

	ADSORBED SOIL (UG/G)	1 314E+02
	SOIL AIR (UG/ML)	6 039E-01
	PURE PHASE (UG/ML)	9 385E+03

SUBLAYER 2

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	1.035E+04

SUBLAYER 3

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	1.035E+04

SUBLAYER 4

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	1.035E+04

SUBLAYER 5

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	1.035E+04

SUBLAYER 6

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	1.035E+04

SUBLAYER 7

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	1.035E+04

SUBLAYER 8

SOIL MOISTURE (UG/ML)	3 400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6 039E-01
PURE PHASE (UG/ML)	1.035E+04

SUBLAYER 9

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1 314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	1.035E+04

SUBLAYER 10

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	1 042E+04

SOIL ZONE 2:

SUBLAYER 1

SOIL MOISTURE (UG/ML)	2.732E+00
ADSORBED SOIL (UG/G)	1.056E+01
SOIL AIR (UG/ML)	4.674E-02

SOIL ZONE 3:

LOWER SOIL ZONE

MAX POLL DEPTH (M) 6 662E-01

**** WARNING (MONTH 8) - PROBLEM IN HYDRO CYCLE: BETA GREATER THAN 0 5
RAINFALL MAY NOT FOLLOW POISSON DISTRIBUTION
1

YEAR - 2 MONTHLY RESULTS (OUTPUT)

-- HYDROLOGIC CYCLE COMPONENTS --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MOIS. IN L1 (%)	12.523	11.023	10.363	9.913	9.583	9.343	9.103	13.603	11.683	10.753	11.353	12 103
MOIS. BELOW L1 (%)	12.523	11.023	10.363	9.913	9.583	9.343	9.103	13.603	11.683	10.753	11.353	12 103
PRECIPATION (CM)	6.043	0.041	0.046	0.022	0.016	0.034	0.012	21.105	5.494	7.484	12.079	11 736
NET INFILT. (CM)	6.043	0.041	0.046	0.022	0.016	0.034	0.012	21.105	5.494	7.484	12.079	11.736
EVAPOTRANS. (CM)	1.034	0 009	0.009	0.009	0.009	0.009	0.009	6.992	3.952	6 688	9 120	6.992
MOIS. RETEN (CM)	0.320	-1.142	-0.503	-0.343	-0.251	-0.183	-0.183	3.427	-1.462	-0.708	0.457	0.571
SUR RUNOFF (CM)	0.000	0 000	0.000	0.000	0 000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRW RUNOFF (CM)	4.690	1.174	0.539	0.355	0.258	0.208	0 186	10.686	3.004	1 505	2.502	4.173
YIELD (CM)	4.690	1.174	0.539	0.355	0 258	0.208	0.186	10.686	3.004	1.505	2.502	4.173
PAU/MPA (GZU)	1.004	4.105	4.557	2.153	1 609	3.400	1.193	0.996	1.010	1.009	0.991	0.995
PA/MPA (GZ)	1.004	4.105	4.557	2.153	1.609	3.400	1.193	0.996	1.010	1.009	0.991	0.995

1 -- POLLUTANT MASS INPUT TO COLUMN (UG) --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
PRECIP.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LOAD UPPER	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LOAD ZONE 2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LOAD ZONE 3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LOAD LOWER	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTAL INPUT	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00

0 -- POLLUTANT MASS DISTRIBUTION IN COLUMN (UG) -- NOTE: IF COMPONENT IS ZERO EACH MONTH, IT IS NOT PRINTED

UPPER SOIL ZONE:

SUBLAYER 1

VOLATILIZED	4.943E+09	6.631E+09	7.585E+09	8.031E+09	8.521E+09	8.796E+09	9.195E+09	3.978E+09	5.646E+09	6.507E+09	5.856E+09	5.153E+09
DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1 241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	4.334E+11	4.244E+11	4.144E+11	4 040E+11	3.931E+11	3.819E+11	3.703E+11	3.576E+11	3.480E+11	3.369E+11	3.250E+11	3.140E+11

SUBLAYER 2

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3 709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2 483E+08	2.132E+08	1 963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10

IN SOIL AIR 5 667E+06 6 272E+06 6 625E+06 6 654E+06 6 796E+06 6 827E+06 6 946E+06 5 292E+06 5.801E+06 5 956E+06 5 771E+06 5 589E+06
PURE PHASE 5.403E+11 5.380E+11 5 356E+11 5.332E+11 5.308E+11 5 285E+11 5.261E+11 5 236E+11 5 213E+11 5 189E+11 5 166E+11 5 142E+11

SUBLAYER 3

DEGRAD MOIS 4 320E+07 3 803E+07 3 575E+07 3 420E+07 3 306E+07 3.223E+07 3 140E+07 4 692E+07 4 030E+07 3 709E+07 3 916E+07 4 175E+07
DEGRAD SOIL 2 346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2 346E+09 2 346E+09 2.346E+09 2 346E+09 2 346E+09 2 346E+09 2.346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1 891E+08 1 809E+08 1.749E+08 1 705E+08 1 661E+08 2 483E+08 2.132E+08 1 963E+08 2 072E+08 2.209E+08
ADS ON SOIL 1 241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6 272E+06 6.625E+06 6 654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5 801E+06 5.956E+06 5.771E+06 5 589E+06
PURE PHASE 5 403E+11 5.380E+11 5 356E+11 5 332E+11 5 308E+11 5.285E+11 5.261E+11 5.236E+11 5 213E+11 5.189E+11 5 166E+11 5 142E+11

SUBLAYER 4

DEGRAD MOIS 4 320E+07 3.803E+07 3 575E+07 3.420E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4 030E+07 3.709E+07 3.916E+07 4 175E+07
DEGRAD SOIL 2 346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1 891E+08 1.809E+08 1.749E+08 1.705E+08 1 661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1 241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1 241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6.272E+06 6 625E+06 6 654E+06 6 796E+06 6 827E+06 6 946E+06 5.292E+06 5.801E+06 5 956E+06 5.771E+06 5 589E+06
PURE PHASE 5 403E+11 5.380E+11 5.356E+11 5.332E+11 5.308E+11 5 285E+11 5.261E+11 5 236E+11 5.213E+11 5.189E+11 5 166E+11 5.142E+11

SUBLAYER 5

DEGRAD MOIS 4.320E+07 3.803E+07 3.575E+07 3 420E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3.709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2 346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1.891E+08 1.809E+08 1.749E+08 1.705E+08 1.661E+08 2 483E+08 2 132E+08 1.963E+08 2.072E+08 2 209E+08
ADS ON SOIL 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6.272E+06 6 625E+06 6 654E+06 6 796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5 956E+06 5.771E+06 5.589E+06
PURE PHASE 5 403E+11 5.380E+11 5.356E+11 5.332E+11 5.308E+11 5.285E+11 5.261E+11 5.236E+11 5.213E+11 5.189E+11 5.166E+11 5.142E+11

SUBLAYER 6

DEGRAD MOIS 4.320E+07 3.803E+07 3.575E+07 3 420E+07 3 306E+07 3.223E+07 3.140E+07 4.692E+07 4 030E+07 3.709E+07 3 916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1.891E+08 1.809E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1 963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1 241E+10
IN SOIL AIR 5 667E+06 6.272E+06 6.625E+06 6.654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 5.403E+11 5.380E+11 5.356E+11 5.332E+11 5.308E+11 5.285E+11 5 261E+11 5.236E+11 5.213E+11 5.189E+11 5.166E+11 5.142E+11

SUBLAYER 7

DEGRAD MOIS 4.320E+07 3.803E+07 3.575E+07 3.420E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3 709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1.891E+08 1.809E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1 241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6.272E+06 6.625E+06 6.654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5 771E+06 5.589E+06
PURE PHASE 5.403E+11 5.380E+11 5.356E+11 5.332E+11 5 308E+11 5.285E+11 5.261E+11 5.236E+11 5.213E+11 5.189E+11 5.166E+11 5.142E+11

SUBLAYER 8

DEGRAD MOIS 4 320E+07 3.803E+07 3 575E+07 3.420E+07 3.306E+07 3.223E+07 3.140E+07 4 692E+07 4.030E+07 3.709E+07 3.916E+07 4 175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1.891E+08 1.809E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6.272E+06 6.625E+06 6.654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 5.403E+11 5.380E+11 5.356E+11 5.332E+11 5.308E+11 5.285E+11 5.261E+11 5.236E+11 5.213E+11 5.189E+11 5.166E+11 5.142E+11

SUBLAYER 9

DEGRAD MOIS 4.320E+07 3.803E+07 3.575E+07 3.420E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3.709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1.891E+08 1.809E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1 241E+10
IN SOIL AIR 5.667E+06 6.272E+06 6.625E+06 6.654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 5.403E+11 5.380E+11 5.356E+11 5.332E+11 5.308E+11 5.285E+11 5.261E+11 5.236E+11 5.213E+11 5.189E+11 5.166E+11 5.142E+11

SUBLAYER 10

DEGRAD MOIS 4.320E+07 3.803E+07 3.575E+07 3.420E+07 3 306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3.709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1.891E+08 1.809E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6.272E+06 6 625E+06 6.654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5 956E+06 5.771E+06 5.589E+06
PURE PHASE 5.465E+11 5.441E+11 5.417E+11 5.394E+11 5.370E+11 5.346E+11 5.322E+11 5 298E+11 5.274E+11 5.251E+11 5.227E+11 5.203E+11

SOIL ZONE 2:

SUBLAYER 1

DEGRAD MOIS	2.967E+07	2 401E+07	1.879E+07	1 494E+07	1.200E+07	9 720E+06	7 871E+06	2.063E+07	2.546E+07	2.444E+07	2 909E+07	3 278E+07
DEGRAD SOIL	1.611E+09	1 481E+09	1 233E+09	1 025E+09	8 514E+08	7 075E+08	5 880E+08	1.032E+09	1.482E+09	1 546E+09	1.742E+09	1.842E+09
IN SOIL MOI	1 582E+08	1.161E+08	9 079E+07	7.216E+07	5.793E+07	4 697E+07	3 801E+07	1.555E+08	1.354E+08	1 333E+08	1.613E+08	1 749E+08
ADS ON SOIL	8 588E+09	7 160E+09	5.958E+09	4.950E+09	4.111E+09	3 419E+09	2.839E+09	7.774E+09	7.881E+09	8 432E+09	9.661E+09	9 825E+09
IN SOIL AIR	3 921E+06	3 619E+06	3 180E+06	2 654E+06	2 251E+06	1.880E+06	1.589E+06	3 315E+06	3.683E+06	4 046E+06	4.492E+06	4 424E+06

SUBLAYER 2

DEGRAD MOIS	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0 000E+00	0.000E+00	0.000E+00	1 987E+05	3 229E+06
DEGRAD SOIL	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0.000E+00	0.000E+00	1 190E+07	1 814E+08
IN SOIL MOI	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0.000E+00	6 264E+06	2 629E+07
ADS ON SOIL	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0.000E+00	3 752E+08	1.477E+09
IN SOIL AIR	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	1 745E+05	6.652E+05

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

SOIL ZONE 3:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

LOWER SOIL ZONE:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

-- POLLUTANT CONCENTRATIONS (UG/ML) OR (UG/G) -- NOTE: IF CONCENTRATIONS ARE ZERO FOR EACH MONTH, THEY ARE NOT PRINTED --

UPPER SOIL ZONE:

SUBLAYER 1

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5 817E-01
PURE PHASE	8.073E+03	7.905E+03	7.720E+03	7.526E+03	7.323E+03	7.114E+03	6.899E+03	6.662E+03	6.482E+03	6 275E+03	6.055E+03	5 849E+03

SUBLAYER 2

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1.007E+04	1.002E+04	9.977E+03	9.933E+03	9.889E+03	9.845E+03	9.800E+03	9.755E+03	9.711E+03	9.667E+03	9.623E+03	9.578E+03

SUBLAYER 3

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1.007E+04	1.002E+04	9.977E+03	9.933E+03	9.889E+03	9.845E+03	9.800E+03	9 755E+03	9.711E+03	9.667E+03	9.623E+03	9.578E+03

SUBLAYER 4

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1.007E+04	1.002E+04	9.977E+03	9.933E+03	9.889E+03	9.845E+03	9.800E+03	9.755E+03	9.711E+03	9.667E+03	9.623E+03	9.578E+03

SUBLAYER 5

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1 007E+04	1.002E+04	9.977E+03	9.933E+03	9.889E+03	9.845E+03	9.800E+03	9.755E+03	9.711E+03	9.667E+03	9.623E+03	9.578E+03

SUBLAYER 6

MOISTURE	3.400E+01	3 400E+01	3 400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E-01	3 400E+01	3 400E+01	3.400E+01	3 400E+01	3 400E+01
%SOLUBILITY	1 000E+02	1.000E+02	1 000E+02	1.000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02
ADSORBED	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1.314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1.314E+02
SOIL AIR	6 040E-01	6 157E-01	6 285E-01	6 171E-01	6 201E-01	6.157E-01	6 192E-01	6.012E-01	5 900E-01	5 764E-01	5 765E-01	5 817E-01
PURE PHASE	1 007E+04	1 002E+04	9.977E+03	9 933E+03	9 889E+03	9.845E+03	9 800E+03	9 755E+03	9 711E+03	9 667E+03	9 623E+03	9 578E+03

SUBLAYER 7

MOISTURE	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3 400E+01
%SOLUBILITY	1.000E+02	1 000E+02	1.000E+02	1 000E+02	1 000E+02	1.000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1.000E+02
ADSORBED	1 314E+02	1.314E+02	1 314E+02	1.314E+02	1 314E+02	1.314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1.314E+02	1.314E+02
SOIL AIR	6 040E-01	6 157E-01	6.285E-01	6.171E-01	6.201E-01	6 157E-01	6 192E-01	6.012E-01	5.900E-01	5 764E-01	5.765E-01	5 817E-01
PURE PHASE	1.007E+04	1 002E+04	9.977E+03	9.933E+03	9.889E+03	9.845E+03	9 800E+03	9 755E+03	9.711E+03	9 667E+03	9.623E+03	9 578E+03

SUBLAYER 8

MOISTURE	3 400E+01	3.400E+01	3 400E+01	3 400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	
%SOLUBILITY	1.000E+02	1.000E+02	1 000E+02	1 000E+02	1 000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1 000E+02	1.000E+02	1 000E+02
ADSORBED	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6 157E-01	6.285E-01	6.171E-01	6 201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5 764E-01	5.765E-01	5.817E-01
PURE PHASE	1 007E+04	1.002E+04	9.977E+03	9.933E+03	9 889E+03	9.845E+03	9.800E+03	9.755E+03	9.711E+03	9.667E+03	9.623E+03	9 578E+03

SUBLAYER 9

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1.007E+04	1.002E+04	9.977E+03	9.933E+03	9.889E+03	9.845E+03	9 800E+03	9.755E+03	9.711E+03	9.667E+03	9.623E+03	9.578E+03

SUBLAYER 10

MOISTURE	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	
%SOLUBILITY	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1 314E+02	1.314E+02
SOIL AIR	6.040E-01	6 157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	1 018E+04	1.014E+04	1.009E+04	1.005E+04	1.000E+04	9.959E+03	9.915E+03	9.869E+03	9.826E+03	9.782E+03	9.737E+03	9.693E+03

SOIL ZONE 2.

SUBLAYER 1

MOISTURE	1.176E+01	9.807E+00	8.160E+00	6.780E+00	5.631E+00	4.683E+00	3.889E+00	1.065E+01	1.079E+01	1.155E+01	1.323E+01	1.346E+01
%SOLUBILITY	3.460E+01	2.884E+01	2.400E+01	1.994E+01	1.656E+01	1.377E+01	1.144E+01	3.132E+01	3.175E+01	3.397E+01	3.892E+01	3.958E+01
ADSORBED	4.545E+01	3.790E+01	3.153E+01	2.620E+01	2.176E+01	1.809E+01	1.503E+01	4.114E+01	4.171E+01	4.462E+01	5.113E+01	5.200E+01
SOIL AIR	2.090E-01	1.776E-01	1 508E-01	1.231E-01	1.027E-01	8.479E-02	7.083E-02	1.883E-01	1.873E-01	1.958E-01	2.244E-01	2.303E-01

SUBLAYER 2

MOISTURE	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.139E-01	2.024E+00
%SOLUBILITY	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.512E+00	5.952E+00
ADSORBED	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.986E+00	7.819E+00
SOIL AIR	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.715E-03	3.462E-02

SOIL ZONE 3:

LOWER SOIL ZONE:

POL DEP CM	6.747E+01	6.750E+01	6.751E+01	6.752E+01	6.753E+01	6.754E+01	6.754E+01	7.039E+01	7.113E+01	7.210E+01	7.366E+01	7.521E+01

1 YEAR - 2 ANNUAL SUMMARY REPORT

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-- TOTAL INPUTS (UG) --

UPPER SOIL ZONE	0.000E+00
SOIL ZONE 2	0.000E+00
SOIL ZONE 3	0.000E+00
LOWER SOIL ZONE	0.000E+00

-- HYDROLOGIC CYCLE COMPONENTS --

AVERAGE SOIL MOISTURE ZONE 1 %)	10 946
AVERAGE SOIL MOISTURE BELOW ZONE 1 %)	10.946
TOTAL PRECIPITATION (CM)	64 111
TOTAL INFILTRATION (CM)	64.111
TOTAL EVAPOTRANSPIRATION (CM)	34 832
TOTAL SURFACE RUNOFF (CM)	0 000
TOTAL GRW RUNOFF (CM)	29 279
TOTAL MOISTURE RETENTION (CM)	0 000
TOTAL YIELD (CM)	29.279

0 -- POLLUTANT MASS DISTRIBUTION IN COLUMN (UG) -- NOTE IF COMPONENT IS ZERO EACH MONTH, IT IS NOT PRINTED

FOR FINAL MASS IN SOIL MOI., ADS. ON SOIL, SOIL AIR, IMMOBIL CEC, COMPLEXED, AND PURE PHASE FOR EACH SUBLAYER, SEE ABOVE (MONTH SEP)

UPPER SOIL ZONE:

SUBLAYER 1

TOTAL VOLATILIZED	8.084E+10
TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 2

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 3

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 4

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 5

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 6

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 7

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 8

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2 815E+10

SUBLAYER 9

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 10

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SOIL ZONE 2:

SUBLAYER 1

TOTAL DEGRADED (MOISTURE)	2.494E+08
TOTAL DEGRADED (SOIL)	1.514E+10

SUBLAYER 2

TOTAL DEGRADED (MOISTURE) 3.428E+06
TOTAL DEGRADED (SOIL) 1.933E+08

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

SOIL ZONE 3:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

LOWER SOIL ZONE:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

1 -- AVERAGE POLLUTANT CONCENTRATIONS -- NOTE: ONLY NON-ZERO VALUES ARE PRINTED --

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UPPER SOIL ZONE:

SUBLAYER 1

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	6.990E+03

SUBLAYER 2

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.822E+03

SUBLAYER 3

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.822E+03

SUBLAYER 4

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.822E+03

SUBLAYER 5

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.822E+03

SUBLAYER 6

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.822E+03

SUBLAYER 7

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.822E+03

SUBLAYER 8

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02

SOIL AIR (UG/ML) 6.039E-01
PURE PHASE (UG/ML) 9.822E+03

SUBLAYER 9

SOIL MOISTURE (UG/ML) 3.400E+01
ADSORBED SOIL (UG/G) 1.314E+02
SOIL AIR (UG/ML) 6.039E-01
PURE PHASE (UG/ML) 9.822E+03

SUBLAYER 10

SOIL MOISTURE (UG/ML) 3.400E+01
ADSORBED SOIL (UG/G) 1.314E+02
SOIL AIR (UG/ML) 6.039E-01
PURE PHASE (UG/ML) 9.937E+03

SOIL ZONE 2:

SUBLAYER 1

SOIL MOISTURE (UG/ML) 9.199E+00
ADSORBED SOIL (UG/G) 3.555E+01
SOIL AIR (UG/ML) 1.621E-01

SUBLAYER 2

SOIL MOISTURE (UG/ML) 2.115E-01
ADSORBED SOIL (UG/G) 8.171E-01
SOIL AIR (UG/ML) 3.612E-03

SOIL ZONE 3:

LOWER SOIL ZONE:

MAX. POLL. DEPTH (M) 7.521E-01

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YEAR - 3 MONTHLY RESULTS (OUTPUT)

-- HYDROLOGIC CYCLE COMPONENTS --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MOIS. IN L1 (%)	12.523	11.023	10.363	9.913	9.583	9.343	9.103	13.603	11.683	10 753	11.353	12.103
MOIS. BELOW L1 (%)	12.523	11.023	10.363	9.913	9.583	9.343	9.103	13.603	11.683	10.753	11.353	12.103
PRECIPATION (CM)	6.043	0.041	0.046	0.022	0.016	0.034	0.012	21.105	5.494	7 484	12.079	11.736
NET INFILT. (CM)	6.043	0.041	0.046	0.022	0.016	0.034	0.012	21.105	5.494	7 484	12.079	11.736
EVAPOTRANS. (CM)	1.034	0.009	0.009	0.009	0.009	0.009	0.009	6.992	3.952	6.688	9.120	6.992
MOIS. RETEN (CM)	0.320	-1.142	-0.503	-0.343	-0.251	-0.183	-0.183	3.427	-1.462	-0.708	0.457	0.571
SUR. RUNOFF (CM)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRW. RUNOFF (CM)	4.690	1.174	0.539	0.355	0.258	0.208	0.186	10.686	3.004	1.505	2.502	4.173
YIELD (CM)	4.690	1.174	0.539	0.355	0.258	0.208	0.186	10.686	3.004	1.505	2.502	4.173
PAU/MPA (GZU)	1.004	4.105	4.557	2.153	1.609	3.400	1.193	0.996	1.010	1.009	0.991	0.995
PA/MPA (GZ)	1.004	4.105	4.557	2.153	1.609	3.400	1.193	0.996	1.010	1.009	0.991	0.995

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-- POLLUTANT MASS INPUT TO COLUMN (UG) --

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

PRECIP	0 000E+00	0 000E+00	0.000E+00	0.000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00
LOAD UPPER	0 000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00
LOAD ZONE 2	0 000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0.000E+00
LOAD ZONE 3	0.000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00
LOAD LOWER	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00
TOTAL INPUT	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00

0 -- POLLUTANT MASS DISTRIBUTION IN COLUMN (UG) -- NOTE IF COMPONENT IS ZERO EACH MONTH, IT IS NOT PRINTED

UPPER SOIL ZONE:

SUBLAYER 1

VOLATILIZED	4.943E+09	6.631E+09	7.585E+09	8.031E+09	8.521E+09	8.796E+09	9.195E+09	3.978E+09	5.646E+09	6 507E+09	5.856E+09	5 153E+09
DEGRAD MOIS	4 320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4 692E+07	4 030E+07	3 709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2 346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2 483E+08	2 132E+08	1.963E+08	2 072E+08	2 209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1 241E+10	1 241E+10	1 241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5 667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6 946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	3.048E+11	2.958E+11	2.858E+11	2 754E+11	2 645E+11	2 533E+11	2 418E+11	2.290E+11	2.194E+11	2 083E+11	1 964E+11	1.854E+11

SUBLAYER 2

DEGRAD MOIS	4.320E+07	3 803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1 963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1 241E+10	1 241E+10	1.241E+10	1.241E+10	1 241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6 796E+06	6 827E+06	6.946E+06	5.292E+06	5.801E+06	5 956E+06	5.771E+06	5.589E+06
PURE PHASE	5.118E+11	5 094E+11	5.070E+11	5.047E+11	5.023E+11	4.999E+11	4.976E+11	4 951E+11	4.928E+11	4.904E+11	4.880E+11	4.856E+11

SUBLAYER 3

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3 916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1 891E+08	1.809E+08	1 749E+08	1 705E+08	1 661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1 241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5 956E+06	5.771E+06	5.589E+06
PURE PHASE	5.118E+11	5.094E+11	5.070E+11	5.047E+11	5.023E+11	4.999E+11	4.976E+11	4.951E+11	4.928E+11	4.904E+11	4.880E+11	4.856E+11

SUBLAYER 4

DEGRAD MOIS	4.320E+07	3 803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3 916E+07	4 175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2 346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1 705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2 072E+08	2 209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1 241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	5.118E+11	5.094E+11	5.070E+11	5.047E+11	5.023E+11	4.999E+11	4.976E+11	4.951E+11	4 928E+11	4.904E+11	4.880E+11	4 856E+11

SUBLAYER 5

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1 241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6 946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	5.118E+11	5.094E+11	5.070E+11	5.047E+11	5.023E+11	4.999E+11	4.976E+11	4.951E+11	4.928E+11	4.904E+11	4.880E+11	4.856E+11

SUBLAYER 6

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5 771E+06	5.589E+06
PURE PHASE	5.118E+11	5.094E+11	5.070E+11	5.047E+11	5.023E+11	4.999E+11	4.976E+11	4.951E+11	4.928E+11	4.904E+11	4.880E+11	4.856E+11

SUBLAYER 7

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3 306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2 072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5 667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	5.118E+11	5.094E+11	5.070E+11	5.047E+11	5.023E+11	4.999E+11	4.976E+11	4.951E+11	4.928E+11	4.904E+11	4.880E+11	4.856E+11

SUBLAYER 8

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	5.118E+11	5.094E+11	5.070E+11	5.047E+11	5.023E+11	4.999E+11	4.976E+11	4.951E+11	4.928E+11	4.904E+11	4.880E+11	4.856E+11

SUBLAYER 9

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	5.118E+11	5.094E+11	5.070E+11	5.047E+11	5.023E+11	4.999E+11	4.976E+11	4.951E+11	4.928E+11	4.904E+11	4.880E+11	4.856E+11

SUBLAYER 10

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	5.179E+11	5.156E+11	5.132E+11	5.108E+11	5.084E+11	5.061E+11	5.037E+11	5.012E+11	4.989E+11	4.965E+11	4.942E+11	4.918E+11

SOIL ZONE 2:

SUBLAYER 1

DEGRAD MOIS	3.287E+07	2.547E+07	1.990E+07	1.581E+07	1.269E+07	1.027E+07	8.315E+06	1.921E+07	2.187E+07	2.036E+07	2.347E+07	2.768E+07
DEGRAD SOIL	1.785E+09	1.571E+09	1.306E+09	1.085E+09	9.005E+08	7.478E+08	6.211E+08	9.604E+08	1.273E+09	1.287E+09	1.406E+09	1.555E+09
IN SOIL MOI	1.680E+08	1.230E+08	9.613E+07	7.635E+07	6.126E+07	4.963E+07	4.014E+07	1.358E+08	1.147E+08	1.094E+08	1.315E+08	1.518E+08
ADS ON SOIL	9.120E+09	7.590E+09	6.308E+09	5.237E+09	4.347E+09	3.613E+09	2.999E+09	6.788E+09	6.677E+09	6.919E+09	7.877E+09	8.530E+09
IN SOIL AIR	4.164E+06	3.836E+06	3.367E+06	2.808E+06	2.380E+06	1.987E+06	1.678E+06	2.894E+06	3.121E+06	3.320E+06	3.662E+06	3.841E+06

SUBLAYER 2

DEGRAD MOIS	5.798E+06	5.110E+06	4.009E+06	3.191E+06	2.563E+06	2.075E+06	1.679E+06	4.035E+06	5.448E+06	5.508E+06	7.067E+06	9.431E+06
DEGRAD SOIL	3.149E+08	3.153E+08	2.630E+08	2.189E+08	1.818E+08	1.511E+08	1.254E+08	2.017E+08	3.171E+08	3.484E+08	4.233E+08	5.299E+08
IN SOIL MOI	3.360E+07	2.474E+07	1.938E+07	1.541E+07	1.237E+07	1.002E+07	8.106E+06	3.234E+07	2.966E+07	3.078E+07	4.205E+07	5.464E+07
ADS ON SOIL	1.825E+09	1.527E+09	1.272E+09	1.057E+09	8.781E+08	7.296E+08	6.055E+08	1.617E+09	1.727E+09	1.947E+09	2.519E+09	3.070E+09
IN SOIL AIR	8.331E+05	7.714E+05	6.789E+05	5.668E+05	4.808E+05	4.013E+05	3.389E+05	6.893E+05	8.069E+05	9.340E+05	1.171E+06	1.382E+06

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

SOIL ZONE 3:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

LOWER SOIL ZONE:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

-- POLLUTANT CONCENTRATIONS (UG/ML) OR (UG/G) -- NOTE: IF CONCENTRATIONS ARE ZERO FOR EACH MONTH, THEY ARE NOT PRINTED --

UPPER SOIL ZONE·

SUBLAYER 1

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	5.678E+03	5.511E+03	5.325E+03	5.131E+03	4.928E+03	4.720E+03	4.504E+03	4.267E+03	4.087E+03	3.880E+03	3.660E+03	3.454E+03

SUBLAYER 2

MOISTURE	3.400E+01	3 400E+01	3 400E+01	3 400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01	3 400E+01
%SOLUBILITY	1.000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1.000E+02	1 000E+02	1.000E-02	1.000E+02	1 000E+02	1 000E+02	1 000E+02
ADSORBED	1.314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1.314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02
SOIL AIR	6.040E-01	6 157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6 192E-01	6 012E-01	5 900E-01	5 764E-01	5 765E-01	5 817E-01
PURE PHASE	9.534E+03	9 490E+03	9.446E+03	9.401E+03	9 357E+03	9.313E+03	9 269E+03	9 223E+03	9 179E+03	9 136E+03	9 091E+03	9 047E+03

SUBLAYER 3

MOISTURE	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1 000E+02	1 000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1 000E+02
ADSORBED	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02
SOIL AIR	6.040E-01	6 157E-01	6 285E-01	6 171E-01	6 201E-01	6.157E-01	6 192E-01	6.012E-01	5.900E-01	5 764E-01	5 765E-01	5 817E-01
PURE PHASE	9.534E+03	9 490E+03	9 446E+03	9.401E+03	9 357E+03	9.313E+03	9 269E+03	9 223E+03	9.179E+03	9.136E+03	9.091E+03	9 047E+03

SUBLAYER 4

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1 000E+02	1.000E+02	1.000E+02	1 000E+02
ADSORBED	1.314E+02	1.314E+02	1 314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6 040E-01	6.157E-01	6.285E-01	6 171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	9.534E+03	9.490E+03	9 446E+03	9.401E+03	9.357E+03	9.313E+03	9.269E+03	9.223E+03	9.179E+03	9.136E+03	9.091E+03	9.047E+03

SUBLAYER 5

MOISTURE	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5 765E-01	5.817E-01
PURE PHASE	9.534E+03	9.490E+03	9 446E+03	9.401E+03	9.357E+03	9.313E+03	9.269E+03	9.223E+03	9.179E+03	9.136E+03	9 091E+03	9 047E+03

SUBLAYER 6

MOISTURE	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5 765E-01	5.817E-01
PURE PHASE	9.534E+03	9.490E+03	9.446E+03	9.401E+03	9.357E+03	9.313E+03	9 269E+03	9.223E+03	9.179E+03	9.136E+03	9.091E+03	9.047E+03

SUBLAYER 7

MOISTURE	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	9.534E+03	9.490E+03	9.446E+03	9 401E+03	9 357E+03	9.313E+03	9.269E+03	9.223E+03	9.179E+03	9 136E+03	9.091E+03	9 047E+03

SUBLAYER 8

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6 157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	9.534E+03	9.490E+03	9 446E+03	9.401E+03	9.357E+03	9.313E+03	9.269E+03	9.223E+03	9.179E+03	9.136E+03	9.091E+03	9.047E+03

SUBLAYER 9

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E-02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	9.534E+03	9.490E+03	9.446E+03	9.401E+03	9.357E+03	9.313E+03	9.269E+03	9.223E+03	9.179E+03	9.136E+03	9.091E+03	9.047E-03

SUBLAYER 10

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	
SOIL AIR	6 040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	9 648E+03	9.604E+03	9.560E+03	9.516E+03	9.472E+03	9.428E+03	9.383E+03	9.338E+03	9 294E+03	9.250E+03	9.206E+03	9.161E+03

SOIL ZONE 2:

SUBLAYER 1

MOISTURE	1.249E+01	1.040E+01	8.640E+00	7.173E+00	5.954E+00	4.948E+00	4.107E+00	9.297E+00	9.146E+00	9.477E+00	1.079E+01	1.168E+01
%SOLUBILITY	3.674E+01	3.058E+01	2.541E+01	2 110E+01	1.751E+01	1.455E+01	1.208E+01	2.734E+01	2.690E+01	2.787E+01	3 173E+01	3.436E+01

ADSORBED 4 827E+01 4 017E+01 3.338E+01 2 772E+01 2.301E+01 1 912E+01 1.587E+01 3 592E+01 3 534E+01 3.662E+01 4 169E+01 4 514E+01
SOIL AIR 2.219E 01 1.883E-01 1 597E-01 1 302E-01 1 086E-01 8 960E-02 7 481E-02 1 644E-01 1 587E-01 1 607E-01 1.829E-01 1.999E-01

SUBLAYER 2

MOISTURE 2 499E+00 2 091E+00 1 742E+00 1.448E+00 1.203E+00 9 993E-01 8 293E-01 2.214E+00 2.365E+00 2 666E+00 3.450E+00 4.205E+00
%SOLUBILITY 7.351E+00 6 149E+00 5 124E+00 4.259E+00 3.537E+00 2 939E+00 2.439E+00 6.513E+00 6 955E+00 7 842E+00 1.015E+01 1.237E+01
ADSORBED 9.657E+00 8.079E+00 6.732E+00 5 596E+00 4 647E+00 3.861E+00 3.205E+00 8.556E+00 9 138E+00 1 030E+01 1.333E+01 1.625E+01
SOIL AIR 4.440E-02 3.786E-02 3.220E-02 2 628E-02 2 193E-02 1 810E-02 1.510E-02 3.916E-02 4 104E-02 4 520E-02 5 850E-02 7 195E-02

SOIL ZONE 3·

LOWER SOIL ZONE

POL DEP CM 7.606E+01 7.608E+01 7.610E+01 7 611E+01 7.612E+01 7 612E+01 7.613E+01 7.897E+01 7 972E+01 8 068E+01 8 224E+01 8 379E+01

1 YEAR - 3 ANNUAL SUMMARY REPORT

-- TOTAL INPUTS (UG) --

UPPER SOIL ZONE	0.000E+00
SOIL ZONE 2	0.000E+00
SOIL ZONE 3	0.000E+00
LOWER SOIL ZONE	0.000E+00

-- HYDROLOGIC CYCLE COMPONENTS --

AVERAGE SOIL MOISTURE ZONE 1 (%)	10.946
AVERAGE SOIL MOISTURE BELOW ZONE 1 (%)	10.946
TOTAL PRECIPITATION (CM)	64.111
TOTAL INFILTRATION (CM)	64.111
TOTAL EVAPOTRANSPIRATION (CM)	34.832
TOTAL SURFACE RUNOFF (CM)	0.000
TOTAL GRW RUNOFF (CM)	29.279
TOTAL MOISTURE RETENTION (CM)	0.000
TOTAL YIELD (CM)	29.279

0 -- POLLUTANT MASS DISTRIBUTION IN COLUMN (UG) -- NOTE: IF COMPONENT IS ZERO EACH MONTH, IT IS NOT PRINTED

FOR FINAL MASS IN SOIL MOI., ADS. ON SOIL, SOIL AIR, IMMOBIL CEC, COMPLEXED, AND PURE PHASE FOR EACH SUBLAYER, SEE ABOVE (MONTH SEP)

UPPER SOIL ZONE:

SUBLAYER 1

TOTAL VOLATILIZED	8.084E+10
TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 2

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 3

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 4

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 5

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 6

TOTAL DEGRADED (MOISTURE) 4 531E+08
TOTAL DEGRADED (SOIL 2 815E+10

SUBLAYER 7

TOTAL DEGRADED (MOISTURE) 4 531E+08
TOTAL DEGRADED (SOIL) 2.815E+10

SUBLAYER 8

TOTAL DEGRADED (MOISTURE) 4.531E+08
TOTAL DEGRADED (SOIL) 2.815E+10

SUBLAYER 9

TOTAL DEGRADED (MOISTURE) 4 531E+08
TOTAL DEGRADED (SOIL) 2.815E+10

SUBLAYER 10

TOTAL DEGRADED (MOISTURE) 4.531E+08
TOTAL DEGRADED (SOIL) 2.815E+10

SOIL ZONE 2:

SUBLAYER 1

TOTAL DEGRADED (MOISTURE) 2.379E+08
TOTAL DEGRADED (SOIL) 1.450E+10

SUBLAYER 2

TOTAL DEGRADED (MOISTURE) 5.591E+07
TOTAL DEGRADED (SOIL) 3.391E+09

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

SOIL ZONE 3:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

LOWER SOIL ZONE:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

1 -- AVERAGE POLLUTANT CONCENTRATIONS -- NOTE: ONLY NON-ZERO VALUES ARE PRINTED --

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UPPER SOIL ZONE:

SUBLAYER 1

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	4.595E+03

SUBLAYER 2

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.291E+03

SUBLAYER 3

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.291E+03

SUBLAYER 4

SOIL MOISTURE (UG/ML)	3.400E+01

ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.291E+03

SUBLAYER 5

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.291E+03

SUBLAYER 6

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.291E+03

SUBLAYER 7

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.291E+03

SUBLAYER 8

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.291E+03

SUBLAYER 9

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.291E+03

SUBLAYER 10

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	9.405E+03

SOIL ZONE 2:

SUBLAYER 1

SOIL MOISTURE (UG/ML)	8.675E+00
ADSORBED SOIL (UG/G)	3.352E+01
SOIL AIR (UG/ML)	1.533E-01

SUBLAYER 2

SOIL MOISTURE (UG/ML)	2.143E+00
ADSORBED SOIL (UG/G)	8.279E+00
SOIL AIR (UG/ML)	3.764E-02

SOIL ZONE 3:

LOWER SOIL ZONE

MAX. POLL. DEPTH (M)	8.379E-01

1

YEAR - 4 MONTHLY RESULTS (OUTPUT)

-- HYDROLOGIC CYCLE COMPONENTS --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MOIS. IN L1 (%)	12.523	11.023	10.363	9 913	9 583	9 343	9.103	13.603	11.683	10 753	11 353	12.103
MOIS. BELOW L1 (%)	12.523	11.023	10.363	9.913	9 583	9 343	9.103	13 603	11 683	10.753	11 353	12.103
PRECIPATION (CM)	6 043	0 041	0.046	0 022	0 016	0.034	0.012	21 105	5 494	7.484	12 079	11.736
NET INFILT (CM)	6.043	0 041	0.046	0.022	0.016	0.034	0.012	21.105	5.494	7.484	12.079	11.736
EVAPOTRANS (CM)	1.034	0 009	0 009	0 009	0.009	0.009	0 009	6 992	3 952	6.688	9.120	6.992
MOIS RETEN (CM)	0.320	-1.142	-0.503	-0.343	-0 251	-0 183	-0 183	3 427	-1 462	-0 708	0 457	0.571
SUR. RUNOFF (CM)	0.000	0.000	0.000	0.000	0.000	0 000	0.000	0.000	0.000	0 000	0.000	0.000
GRW RUNOFF (CM)	4.690	1.174	0 539	0.355	0 258	0 208	0.186	10.686	3.004	1 505	2.502	4 173
YIELD (CM)	4.690	1.174	0.539	0.355	0 258	0.208	0.186	10.686	3.004	1.505	2.502	4.173
PAU/MPA (GZU)	1.004	4.105	4.557	2.153	1.609	3.400	1.193	0.996	1 010	1.009	0.991	0.995
PA/MPA (GZ)	1 004	4.105	4.557	2.153	1.609	3.400	1 193	0.996	1 010	1 009	0 991	0.995

1 -- POLLUTANT MASS INPUT TO COLUMN (UG) --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
PRECIP.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00
LOAD UPPER	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0 000E+00
LOAD ZONE 2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0 000E+00
LOAD ZONE 3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LOAD LOWER	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTAL INPUT	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

0 -- POLLUTANT MASS DISTRIBUTION IN COLUMN (UG) -- NOTE: IF COMPONENT IS ZERO EACH MONTH, IT IS NOT PRINTED

UPPER SOIL ZONE:

SUBLAYER 1

VOLATILIZED	4.943E+09	6.631E+09	7.585E+09	8.031E+09	8.521E+09	8.796E+09	9.195E+09	3.978E+09	5.646E+09	6.507E+09	5.856E+09	5.153E+09
DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3 916E+07	4 175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1 661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2 209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1 241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	1.763E+11	1.673E+11	1.573E+11	1.469E+11	1.360E+11	1.248E+11	1.132E+11	1.005E+11	9.084E+10	7.974E+10	6.789E+10	5.684E+10

SUBLAYER 2

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3 223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1 705E+08	1 661E+08	2.483E+08	2 132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	4.832E+11	4 809E+11	4.785E+11	4.761E+11	4.738E+11	4.714E+11	4.690E+11	4.666E+11	4.642E+11	4.619E+11	4.595E+11	4.571E+11

SUBLAYER 3

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1 241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6 946E+06	5.292E+06	5 801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	4.832E+11	4 809E+11	4.785E+11	4.761E+11	4.738E+11	4.714E+11	4.690E+11	4.666E+11	4.642E+11	4.619E+11	4.595E+11	4.571E+11

SUBLAYER 4

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10

IN SOIL AIR 5.667E+06 6.272E+06 6 625E+06 6 654E+06 6.795E+06 6.827E+06 6.946E+06 5 292E+06 5 801E+06 5 956E+06 5 771E+06 5 589E+06
PURE PHASE 4.832E+11 4 809E+11 4.785E+11 4 761E+11 4 738E+11 4 714E+11 4 690E+11 4 666E+11 4 642E+11 4 619E+11 4 595E+11 4.571E+11

SUBLAYER 5

DEGRAD MOIS 4.320E+07 3 803E+07 3 575E+07 3.420E+07 3 306E+07 3.223E+07 3 140E+07 4.692E+07 4.030E+07 3.709E+07 3 916E-07 4 175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2 346E+09 2 346E+09 2 346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2 346E+09
IN SOIL MOI 2 286E+08 2 012E+08 1.891E+08 1.809E+08 1 749E+08 1.705E+08 1 661E+08 2.483E+08 2.132E+08 1 963E+08 2 072E+08 2 209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1 241E+10 1.241E+10 1 241E+10 1 241E+10 1.241E+10 1 241E+10 1 241E+10
IN SOIL AIR 5 667E+06 6 272E+06 6.625E+06 6 654E+06 6.796E+06 6 827E+06 6.946E+06 5.292E+06 5 801E+06 5.956E+06 5.771E+06 5 589E+06
PURE PHASE 4.832E+11 4 809E+11 4 785E+11 4.761E+11 4 738E+11 4.714E+11 4.690E+11 4 666E+11 4 642E+11 4.619E+11 4 595E+11 4.571E+11

SUBLAYER 6

DEGRAD MOIS 4 320E+07 3.803E+07 3 575E+07 3 420E+07 3 306E+07 3 223E+07 3 140E+07 4 692E+07 4 030E+07 3.709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2 346E+09 2 346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09
IN SOIL MOI 2.286E+08 2 012E+08 1 891E+08 1.809E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2 072E+08 2 209E+08
ADS ON SOIL 1.241E+10 1 241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5 667E+06 6.272E+06 6.625E+06 6 654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 4.832E+11 4 809E+11 4.785E+11 4.761E+11 4.738E+11 4.714E+11 4.690E+11 4 666E+11 4.642E+11 4.619E+11 4.595E+11 4.571E+11

SUBLAYER 7

DEGRAD MOIS 4.320E+07 3 803E+07 3.575E+07 3.420E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4 030E+07 3.709E+07 3.916E+07 4 175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1 891E+08 1.809E+08 1.749E+08 1.705E+08 1 661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2 209E+08
ADS ON SOIL 1.241E+10 1 241E+10 1.241E+10 1 241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6 272E+06 6.625E+06 6.654E+06 6.796E+06 6 827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5 771E+06 5.589E+06
PURE PHASE 4.832E+11 4 809E+11 4.785E+11 4.761E+11 4.738E+11 4.714E+11 4.690E+11 4.666E+11 4.642E+11 4.619E+11 4.595E+11 4.571E+11

SUBLAYER 8

DEGRAD MOIS 4.320E+07 3 803E+07 3.575E+07 3.420E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4 030E+07 3.709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1.891E+08 1.809E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6.272E+06 6 625E+06 6 654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 4.832E+11 4 809E+11 4.785E+11 4.761E+11 4.738E+11 4.714E+11 4.690E+11 4.666E+11 4.642E+11 4.619E+11 4.595E+11 4.571E+11

SUBLAYER 9

DEGRAD MOIS 4.320E+07 3.803E+07 3.575E+07 3.420E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3.709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1.891E+08 1.809E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6.272E+06 6.625E+06 6.654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 4.832E+11 4.809E+11 4.785E+11 4.761E+11 4.738E+11 4.714E+11 4.690E+11 4.666E+11 4.642E+11 4.619E+11 4.595E+11 4 571E+11

SUBLAYER 10

DEGRAD MOIS 4.320E+07 3 803E+07 3.575E+07 3.420E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3.709E+07 3.916E+07 4.175E+07
DEGRAD SOIL 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1.891E+08 1.809E+08 1.749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6.272E+06 6.625E+06 6.654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 4.894E+11 4.870E+11 4.847E+11 4.823E+11 4.799E+11 4.775E+11 4.752E+11 4.727E+11 4.704E+11 4.680E+11 4.656E+11 4.633E+11

SOIL ZONE 2

SUBLAYER 1

DEGRAD MOIS 2.891E+07 2.268E+07 1.773E+07 1.409E+07 1.131E+07 9.163E+06 7.417E+06 1.823E+07 2.127E+07 1.993E+07 2.313E+07 2.742E+07
DEGRAD SOIL 1.570E+09 1.399E+09 1.164E+09 9.669E+08 8.028E+08 6.669E+08 5.541E+08 9.113E+08 1 238E+09 1.260E+09 1.385E+09 1.540E+09
IN SOIL MOI 1.495E+08 1.096E+08 8.566E+07 6.805E+07 5.462E+07 4.427E+07 3.582E+07 1.316E+08 1.119E+08 1.074E+08 1.300E+08 1.506E+08
ADS ON SOIL 8.120E+09 6.761E+09 5.621E+09 4 669E+09 3.876E+09 3.222E+09 2.676E+09 6.578E+09 6.513E+09 6.794E+09 7.786E+09 8.464E+09
IN SOIL AIR 3.707E+06 3 417E+06 3.000E+06 2.503E+06 2.122E+06 1.772E+06 1.497E+06 2.804E+06 3.044E+06 3.260E+06 3.620E+06 3.811E+06

SUBLAYER 2

DEGRAD MOIS 1.069E+07 8.585E+06 6.714E+06 5.335E+06 4.280E+06 3.462E+06 2.798E+06 4.950E+06 5.388E+06 5.098E+06 6.101E+06 7.691E+06
DEGRAD SOIL 5.806E+08 5.296E+08 4.406E+08 3.660E+08 3.037E+08 2 520E+08 2.090E+08 2.475E+08 3.136E+08 3.224E+08 3.655E+08 4.321E+08
IN SOIL MOI 5.656E+07 4.149E+07 3.243E+07 2.575E+07 2.065E+07 1.671E+07 1.350E+07 3.316E+07 2.845E+07 2.767E+07 3.522E+07 4.362E+07
ADS ON SOIL 3.071E+09 2.560E+09 2.128E+09 1.767E+09 1.466E+09 1.216E+09 1.009E+09 1.658E+09 1.656E+09 1.750E+09 2.110E+09 2.451E+09
IN SOIL AIR 1.402E+06 1.294E+06 1.136E+06 9.470E+05 8.026E+05 6.690E+05 5.645E+05 7.068E+05 7.740E+05 8.397E+05 9.808E+05 1.103E+06

SUBLAYER 3

DEGRAD MOIS 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 3.398E-05 8.568E+05 9.864E+05 1.431E+06 2.115E+06
DEGRAD SOIL 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 1.698E-07 4.987E+07 6.238E+07 8.572E+07 1.188E+08
IN SOIL MOI 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 4.695E+06 4.963E+06 5.804E+06 8.970E+06 1.275E+07
ADS ON SOIL 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 2.347E+08 2.889E+08 3.670E+08 5.373E+08 7.165E+08
IN SOIL AIR 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 1.001E+05 1.350E+05 1.761E+05 2.498E+05 3.226E+05

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

SOIL ZONE 3·

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

LOWER SOIL ZONE·

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

-- POLLUTANT CONCENTRATIONS (UG/ML) OR (UG/G) -- NOTE IF CONCENTRATIONS ARE ZERO FOR EACH MONTH, THEY ARE NOT PRINTED --

UPPER SOIL ZONE:

SUBLAYER 1

MOISTURE	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6 201E-01	6.157E-01	6 192E-01	6 012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	3.283E+03	3.116E+03	2.930E+03	2.736E+03	2.533E+03	2.325E+03	2.109E+03	1.872E+03	1.692E+03	1.485E+03	1.265E+03	1.059E+03

SUBLAYER 2

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6 157E-01	6 285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6 012E-01	5.900E-01	5 764E-01	5.765E-01	5.817E-01
PURE PHASE	9.002E+03	8.958E+03	8.914E+03	8.870E+03	8.826E+03	8.781E+03	8.737E+03	8 692E+03	8.648E+03	8.604E+03	8.560E+03	8.515E+03

SUBLAYER 3

MOISTURE	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5 764E-01	5.765E-01	5.817E-01
PURE PHASE	9.002E+03	8.958E+03	8.914E+03	8.870E+03	8.826E+03	8.781E+03	8.737E+03	8.692E+03	8.648E+03	8.604E+03	8.560E+03	8.515E+03

SUBLAYER 4

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1 000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5 765E-01	5.817E-01
PURE PHASE	9.002E+03	8.958E+03	8.914E+03	8.870E+03	8.826E+03	8 781E+03	8.737E+03	8.692E+03	8.648E+03	8.604E+03	8.560E+03	8.515E+03

SUBLAYER 5

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	9 002E+03	8 958E+03	8.914E+03	8.870E+03	8.826E+03	8.781E+03	8.737E+03	8.692E+03	8.648E+03	8.604E+03	8.560E+03	8.515E+03

SUBLAYER 6

MOISTURE	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6 157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5 765E-01	5.817E-01
PURE PHASE	9.002E+03	8.958E+03	8.914E+03	8.870E+03	8.826E+03	8.781E+03	8.737E+03	8.692E+03	8.648E+03	8.604E+03	8.560E+03	8.515E+03

SUBLAYER 7

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02

ADSORBED	1 314E+02	1 314E+02	1.314E+02	1 314E+02	1 314E+02	1 314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6 040E-01	6.157E-01	6 285E-01	6.171E-01	6 201E 01	6.157E-01	6.192E-01	6 012E C1	5.900E-01	5 764E-01	5.765E-01	5 817E-01
PURE PHASE	9.002E+03	8.958E+03	8.914E+03	8 870E+03	8 826E+03	8 781E+03	8.737E+03	8 692E+03	8.648E+03	8 604E+03	8 560E+03	8 515E+03

SUBLAYER 8

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01	3 400E+01	3 400E+01
%SOLUBILITY	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1.000E+02	1 000E+02	1 000E+02	1 000E+02
ADSORBED	1 314E+02	1.314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02
SOIL AIR	6 040E-01	6.157E-01	6 285E-01	6 171E-01	6 201E-01	6.157E-01	6.192E-01	6 012E-01	5 900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	9 002E+03	8.958E+03	8.914E+03	8.870E+03	8 826E+03	8.781E+03	8.737E+03	8 692E+03	8 648E+03	8.604E+03	8.560E+03	8.515E+03

SUBLAYER 9

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6 285E-01	6.171E-01	6 201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	9.002E+03	8.958E+03	8.914E+03	8.870E+03	8.826E+03	8.781E+03	8.737E+03	8.692E+03	8.648E+03	8 604E+03	8.560E+03	8.515E+03

SUBLAYER 10

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6 171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	9.117E+03	9.073E+03	9.029E+03	8.984E+03	8 940E+03	8.896E+03	8.852E+03	8 806E+03	8 762E+03	8.719E+03	8.674E+03	8.630E+03

SOIL ZONE 2

SUBLAYER 1

MOISTURE	1.112E+01	9.261E+00	7.699E+00	6.394E+00	5.309E+00	4.413E+00	3.665E+00	9.009E+00	8.921E+00	9.306E+00	1.066E+01	1.159E+01
%SOLUBILITY	3.271E+01	2.724E+01	2.264E+01	1.881E+01	1.561E+01	1.298E+01	1.078E+01	2.650E+01	2.624E+01	2.737E+01	3.136E+01	3.410E+01
ADSORBED	4.297E+01	3.578E+01	2.975E+01	2.471E+01	2 051E+01	1.705E+01	1.416E+01	3.481E+01	3.447E+01	3.596E+01	4.121E+01	4.479E+01
SOIL AIR	1.976E-01	1 677E-01	1.423E-01	1.161E-01	9.683E-02	7.992E-02	6.674E-02	1.593E-01	1.548E-01	1.578E-01	1.808E-01	1.984E-01

SUBLAYER 2

MOISTURE	4.206E+00	3.506E+00	2.915E+00	2.420E+00	2 007E+00	1.666E+00	1.382E+00	2.270E+00	2.268E+00	2.397E+00	2.889E+00	3.357E+00
%SOLUBILITY	1.237E+01	1.031E+01	8 573E+00	7.117E+00	5.904E+00	4.900E+00	4.063E+00	6.678E+00	6.672E+00	7.050E+00	8.498E+00	9.872E+00
ADSORBED	1.625E+01	1.355E+01	1 126E+01	9.349E+00	7 757E+00	6.437E+00	5.338E+00	8.773E+00	8.765E+00	9 262E+00	1.116E+01	1 297E+01
SOIL AIR	7.473E-02	6.350E-02	5.388E-02	4.392E-02	3.661E-02	3.017E-02	2.516E-02	4.015E-02	3.936E-02	4.064E-02	4.899E-02	5.743E-02

SUBLAYER 3

MOISTURE	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	3.214E-01	3.957E-01	5.027E-01	7.359E-01	9.813E-01
%SOLUBILITY	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.454E-01	1.164E+00	1.479E+00	2.164E+00	2.886E+00
ADSORBED	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.242E+00	1.529E+00	1 942E+00	2 844E+00	3.792E+00
SOIL AIR	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.684E-03	6.866E-03	8.523E-03	1.248E-02	1.679E-02

SOIL ZONE 3:

LOWER SOIL ZONE:

POL DEP CM	8.464E+01	8.467E+01	8 468E+01	8.469E+01	8.470E+01	8.471E+01	8.471E+01	8.755E+01	8.830E+01	8.927E+01	9.083E+01	9.238E+01

1 YEAR - 4 ANNUAL SUMMARY REPORT

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-- TOTAL INPUTS (UG) --

UPPER SOIL ZONE	0.000E+00
SOIL ZONE 2	0.000E+00
SOIL ZONE 3	0.000E+00
LOWER SOIL ZONE	0.000E+00

-- HYDROLOGIC CYCLE COMPONENTS --

AVERAGE SOIL MOISTURE ZONE 1 (%)	10.946
AVERAGE SOIL MOISTURE BELOW ZONE 1 (%)	10.946
TOTAL PRECIPITATION (CM)	64.111
TOTAL INFILTRATION (CM)	64.111

TOTAL EVAPOTRANSPIRATION (CM)	34.832
TOTAL SURFACE RUNOFF (CM)	0 000
TOTAL GRW RUNOFF (CM)	29.279
TOTAL MOISTURE RETENTION (CM)	0.000
TOTAL YIELD (CM)	29.279

0 -- POLLUTANT MASS DISTRIBUTION IN COLUMN (UG) -- NOTE. IF COMPONENT IS ZERO EACH MONTH, IT IS NOT PRINTED

FOR FINAL MASS IN SOIL MOI., ADS ON SOIL, SOIL AIR, IMMOBIL CEC, COMPLEXED, AND PURE PHASE FOR EACH SUBLAYER, SEE ABOVE (MONTH SEP)

UPPER SOIL ZONE

SUBLAYER 1

TOTAL VOLATILIZED	8.084E+10
TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 2

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 3

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 4

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 5

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 6

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 7

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 8

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 9

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 10

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SOIL ZONE 2:

SUBLAYER 1

TOTAL DEGRADED (MOISTURE)	2.213E+08
TOTAL DEGRADED (SOIL)	1.346E+10

SUBLAYER 2

TOTAL DEGRADED (MOISTURE)	7.109E+07
TOTAL DEGRADED (SOIL)	4 363E+09

SUBLAYER 3

TOTAL DEGRADED (MOISTURE 5 729E+06
TOTAL DEGRADED (SOIL) 3 338E+08

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

SOIL ZONE 3:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

LOWER SOIL ZONE:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

1 -- AVERAGE POLLUTANT CONCENTRATIONS -- NOTE ONLY NON-ZERO VALUES ARE PRINTED --

UPPER SOIL ZONE:

SUBLAYER 1

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6 039E-01
PURE PHASE (UG/ML)	2.200E+03

SUBLAYER 2

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1 314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.759E+03

SUBLAYER 3

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1 314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.759E+03

SUBLAYER 4

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.759E+03

SUBLAYER 5

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.759E+03

SUBLAYER 6

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.759E+03

SUBLAYER 7

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.759E+03

SUBLAYER 8

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.759E+03

SUBLAYER 9

SOIL MOISTURE (UG/ML)	3 400E+01
ADSORBED SOIL (UG/G)	1 314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.759E+03

SUBLAYER 10

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8 874E+03

SOIL ZONE 2:

SUBLAYER 1

SOIL MOISTURE (UG/ML)	8 113E+00
ADSORBED SOIL (UG/G)	3.135E+01
SOIL AIR (UG/ML)	1.432E-01

SUBLAYER 2

SOIL MOISTURE (UG/ML)	2 607E+00
ADSORBED SOIL (UG/G)	1.007E+01
SOIL AIR (UG/ML)	4.621E-02

SUBLAYER 3

SOIL MOISTURE (UG/ML)	2.448E-01
ADSORBED SOIL (UG/G)	9.457E-01
SOIL AIR (UG/ML)	4.195E-03

SOIL ZONE 3:

LOWER SOIL ZONE:

MAX. POLL. DEPTH (M)	9.238E-01

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YEAR - 5 MONTHLY RESULTS (OUTPUT)

-- HYDROLOGIC CYCLE COMPONENTS --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MOIS. IN L1 (%)	12.523	11.023	10.363	9.913	9.583	9.343	9.103	13.603	11.683	10.753	11.353	12.103
MOIS. BELOW L1 (%)	12.523	11.023	10.363	9.913	9.583	9.343	9.103	13.603	11.683	10.753	11.353	12 103
PRECIPATION (CM)	6.043	0.041	0.046	0.022	0.016	0.034	0.012	21.105	5.494	7.484	12.079	11.736
NET INFILT. (CM)	6.043	0.041	0.046	0.022	0.016	0.034	0.012	21 105	5.494	7.484	12.079	11.736
EVAPOTRANS. (CM)	1.034	0.009	0.009	0.009	0.009	0.009	0.009	6.992	3.952	6.688	9.120	6.992
MOIS. RETEN (CM)	0.320	-1.142	-0.503	-0.343	-0.251	-0.183	-0.183	3 427	-1.462	-0.708	0.457	0.571
SUR. RUNOFF (CM)	0.000	0.000	0 000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRW. RUNOFF (CM)	4 690	1.174	0.539	0.355	0.258	0.208	0.186	10.686	3.004	1.505	2.502	4.173
YIELD (CM)	4.690	1.174	0.539	0.355	0.258	0.208	0.186	10.686	3.004	1.505	2.502	4.173
PAU/MPA (GZU)	1.004	4 105	4.557	2.153	1.609	3.400	1.193	0.996	1.010	1.009	0.991	0.995
PA/MPA (GZ)	1.004	4.105	4.557	2.153	1.609	3.400	1.193	0.996	1.010	1.009	0.991	0.995

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-- POLLUTANT MASS INPUT TO COLUMN (UG) --

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
PRECIP	0.000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0.000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00
LOAD UPPER	0.000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00
LOAD ZONE 2	0.000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0.000E+00
LOAD ZONE 3	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0 000E+00	0.000E+00
LOAD LOWER	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0.000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00	0 000E+00
TOTAL INPUT	0.000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0.000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00

0 -- POLLUTANT MASS DISTRIBUTION IN COLUMN (UG) -- NOTE: IF COMPONENT IS ZERO EACH MONTH, IT IS NOT PRINTED

UPPER SOIL ZONE:

SUBLAYER 1

VOLATILIZED	4.943E+09	6.631E+09	7 585E+09	8.031E+09	8 521E+09	8 390E+09	5.501E+09	1.539E+09	1.894E+09	2.337E+09	2.044E+09	1.703E+09
DEGRAD MOIS	4 320E+07	3.803E+07	3.575E+07	3.420E+07	3 306E+07	3 074E+07	1.879E+07	1.816E+07	1.352E+07	1.332E+07	1.367E+07	1.380E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 237E+09	1.404E+09	9.078E+08	7.871E+08	8.425E+08	8.189E+08	7 754E+08
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1 749E+08	1 311E+08	8.400E+07	7 764E+07	7.489E+07	7.153E+07	7.035E+07	7.168E+07
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1 241E+10	9 542E+09	6.275E+09	3 881E+09	4.359E+09	4.524E+09	4.214E+09	4.027E+09
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6 796E+06	5.248E+06	3.512E+06	1 655E+06	2.037E+06	2.171E+06	1 959E+06	1.813E+06
PURE PHASE	4.770E+10	3.869E+10	2.872E+10	1.831E+10	7.414E+09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

SUBLAYER 2

DIFFUSED UP	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0.000E+00	4.066E+08	3.694E+09	2.438E+09	3.752E+09	4.170E+09	3.812E+09	3.450E+09
DEGRAD MOIS	4 320E+07	3.803E+07	3.575E+07	3 420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3 916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2 346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1 891E+08	1 809E+08	1.749E+08	1.705E+08	1 661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1 241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6 946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	4.547E+11	4.523E+11	4.500E+11	4.476E+11	4.452E+11	4.424E+11	4 364E+11	4.276E+11	4.204E+11	4.125E+11	4.040E+11	3.958E+11

SUBLAYER 3

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3 306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1 241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	4.547E+11	4.523E+11	4.500E+11	4.476E+11	4.452E+11	4 429E+11	4.405E+11	4.380E+11	4.357E+11	4.333E+11	4.309E+11	4.286E+11

SUBLAYER 4

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	4.547E+11	4.523E+11	4.500E+11	4.476E+11	4.452E+11	4.429E+11	4.405E+11	4 380E+11	4.357E+11	4.333E+11	4.309E+11	4.286E+11

SUBLAYER 5

DEGRAD MOIS	4.320E+07	3 803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4 692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2 012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6.796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	4.547E+11	4.523E+11	4.500E+11	4.476E+11	4.452E+11	4.429E+11	4.405E+11	4.380E+11	4.357E+11	4.333E+11	4.309E+11	4.286E+11

SUBLAYER 6

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3.420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3.709E+07	3.916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1 749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08
ADS ON SOIL	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1.241E+10	1 241E+10	1.241E+10	1.241E+10
IN SOIL AIR	5.667E+06	6.272E+06	6.625E+06	6.654E+06	6 796E+06	6.827E+06	6.946E+06	5.292E+06	5.801E+06	5.956E+06	5.771E+06	5.589E+06
PURE PHASE	4.547E+11	4.523E+11	4.500E+11	4.476E+11	4.452E+11	4.429E+11	4.405E+11	4.380E+11	4.357E+11	4.333E+11	4.309E+11	4.286E+11

SUBLAYER 7

DEGRAD MOIS	4.320E+07	3.803E+07	3.575E+07	3 420E+07	3.306E+07	3.223E+07	3.140E+07	4.692E+07	4.030E+07	3 709E+07	3 916E+07	4.175E+07
DEGRAD SOIL	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2 346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09	2.346E+09
IN SOIL MOI	2.286E+08	2.012E+08	1.891E+08	1.809E+08	1.749E+08	1.705E+08	1.661E+08	2.483E+08	2.132E+08	1.963E+08	2.072E+08	2.209E+08

ADS ON SOIL 1 241E+10 1.241E+10 1 241E+10 1.241E+10 1 241E+10 1 241E+10 1 241E+10 1 241E+10 1 241E+10 1.241E+10 1 241E+10 1.241E+10
IN SOIL AIR 5 667E+06 6 272E+06 6 625E+06 6 654E+06 6 796E+06 6.827E+06 6 946E+06 5 292E+06 5 801E+06 5.956E+06 5 771E+06 5 589E+06
PURE PHASE 4.547E+11 4 523E+11 4 500E+11 4 476E+11 4 452E+11 4.429E+11 4 405E+11 4 380E+11 4 357E+11 4 333E+11 4 309E+11 4 286E+11

SUBLAYER 8

DEGRAD MOIS 4.320E+07 3 803E+07 3 575E+07 3 420E+07 3.306E+07 3 223E+07 3.140E+07 4 692E+07 4 030E+07 3 709E+07 3 916E+07 4.175E+07
DEGRAD SOIL 2 346E+09 2 346E+09 2 346E+09 2 346E+09 2 346E+09 2 346E+09 2.346E+09 2 346E+09 2.346E+09 2 346E+09 2 346E+09 2 346E+09
IN SOIL MOI 2 286E+08 2.012E+08 1 891E+08 1 809E+08 1 749E+08 1.705E+08 1.661E+08 2 483E+08 2 132E+08 1 963E+08 2 072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1.241E+10 1 241E+10 1 241E+10 1 241E+10 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1 241E+10 1.241E+10
IN SOIL AIR 5 667E+06 6.272E+06 6.625E+06 6 654E+06 6 796E+06 6.827E+06 6 946E+06 5 292E+06 5 801E+06 5 956E+06 5 771E+06 5.589E+06
PURE PHASE 4.547E+11 4.523E+11 4 500E+11 4.476E+11 4 452E+11 4.429E+11 4.405E+11 4 380E+11 4 357E+11 4.333E+11 4.309E+11 4.286E+11

SUBLAYER 9

DEGRAD MOIS 4.320E+07 3.803E+07 3.575E+07 3.420E+07 3.306E+07 3 223E+07 3 140E+07 4.692E+07 4.030E+07 3 709E+07 3.916E+07 4 175E+07
DEGRAD SOIL 2.346E+09 2 346E+09 2.346E+09 2 346E+09 2.346E+09 2 346E+09 2 346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09
IN SOIL MOI 2 286E+08 2.012E+08 1.891E+08 1.809E+08 1.749E+08 1 705E+08 1.661E+08 2.483E+08 2.132E+08 1 963E+08 2.072E+08 2 209E+08
ADS ON SOIL 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1 241E+10
IN SOIL AIR 5.667E+06 6.272E+06 6 625E+06 6.654E+06 6.796E+06 6 827E+06 6.946E+06 5 292E+06 5 801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 4 547E+11 4.523E+11 4 500E+11 4.476E+11 4.452E+11 4 429E+11 4 405E+11 4 380E+11 4 357E+11 4 333E+11 4 309E+11 4.286E+11

SUBLAYER 10

DEGRAD MOIS 4.320E+07 3.803E+07 3.575E+07 3.420E+07 3.306E+07 3.223E+07 3.140E+07 4.692E+07 4.030E+07 3.709E+07 3.916E+07 4 175E+07
DEGRAD SOIL 2.346E+09 2 346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2 346E+09 2.346E+09 2.346E+09 2.346E+09 2.346E+09 2 346E+09
IN SOIL MOI 2.286E+08 2.012E+08 1.891E+08 1.809E+08 1 749E+08 1.705E+08 1.661E+08 2.483E+08 2.132E+08 1.963E+08 2.072E+08 2.209E+08
ADS ON SOIL 1.241E+10 1 241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10 1.241E+10
IN SOIL AIR 5.667E+06 6 272E+06 6.625E+06 6 654E+06 6.796E+06 6.827E+06 6.946E+06 5.292E+06 5.801E+06 5.956E+06 5.771E+06 5.589E+06
PURE PHASE 4.609E+11 4.585E+11 4.561E+11 4 538E+11 4.514E+11 4.490E+11 4.466E+11 4.442E+11 4.418E+11 4.395E+11 4.371E+11 4.347E+11

SOIL ZONE 2:

SUBLAYER 1

DEGRAD MOIS 2.871E+07 2.254E+07 1.762E+07 1.401E+07 1.124E+07 9.106E+06 7.372E+06 1.818E+07 2.124E+07 1.991E+07 2.311E+07 2.740E+07
DEGRAD SOIL 1.559E+09 1 391E+09 1.156E+09 9.609E+08 7.978E+08 6.628E+08 5.507E+08 9.088E+08 1.236E+09 1.259E+09 1.384E+09 1.540E+09
IN SOIL MOI 1.486E+08 1 089E+08 8.513E+07 6 763E+07 5.428E+07 4.400E+07 3.560E+07 1.314E+08 1.118E+08 1.073E+08 1 299E+08 1.506E+08
ADS ON SOIL 8.069E+09 6.719E+09 5.586E+09 4 640E+09 3.852E+09 3.202E+09 2.659E+09 6.567E+09 6.505E+09 6.788E+09 7.781E+09 8.461E+09
IN SOIL AIR 3.684E+06 3.396E+06 2.982E+06 2.487E+06 2.109E+06 1.761E+06 1.488E+06 2.800E+06 3.040E+06 3.257E+06 3.618E+06 3.810E+06

SUBLAYER 2

DEGRAD MOIS 8.441E+06 6.708E+06 5.244E+06 4.165E+06 3.341E+06 2.702E+06 2.184E+06 4.104E+06 4.849E+06 4.714E+06 5.797E+06 7.454E+06
DEGRAD SOIL 4.584E+08 4.138E+08 3.441E+08 2.857E+08 2.371E+08 1 967E+08 1.631E+08 2.051E+08 2.823E+08 2.981E+08 3.473E+08 4.188E+08
IN SOIL MOI 4.420E+07 3.241E+07 2.532E+07 2.010E+07 1.612E+07 1 304E+07 1.054E+07 2 941E+07 2.593E+07 2.589E+07 3.384E+07 4.254E+07
ADS ON SOIL 2.400E+09 2.000E+09 1.662E+09 1.379E+09 1.144E+09 9.492E+08 7.871E+08 1 470E+09 1.509E+09 1.637E+09 2.027E+09 2 390E+09
IN SOIL AIR 1.096E+06 1 010E+06 8.869E+05 7.393E+05 6.264E+05 5.221E+05 4.405E+05 6.268E+05 7.054E+05 7.856E+05 9.425E+05 1.076E+06

SUBLAYER 3

DEGRAD MOIS 2.551E+06 2.090E+06 1.637E+06 1.301E+06 1.044E+06 8.452E+05 6 834E+05 1.265E+06 1.446E+06 1 403E+06 1.635E+06 2.038E+06
DEGRAD SOIL 1.385E+08 1.290E+08 1.074E+08 8.927E+07 7 411E+07 6.152E+07 5 105E+07 6.323E+07 8.419E+07 8.876E+07 9.796E+07 1.145E+08
IN SOIL MOI 1.376E+07 1.011E+07 7 909E+06 6.283E+06 5.041E+06 4.081E+06 3.298E+06 8.795E+06 7.728E+06 7 603E+06 9.317E+06 1.164E+07
ADS ON SOIL 7.473E+08 6.238E+08 5.190E+08 4.310E+08 3.577E+08 2.970E+08 2.464E+08 4.397E+08 4.498E+08 4.808E+08 5.581E+08 6.539E+08
IN SOIL AIR 3.412E+05 3.152E+05 2.770E+05 2.311E+05 1.959E+05 1.634E+05 1.379E+05 1.875E+05 2.102E+05 2.307E+05 2.595E+05 2.945E+05

SUBLAYER 4

DEGRAD MOIS 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 4.565E+03 1.302E+05 3 387E+05
DEGRAD SOIL 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 2.887E+05 7.797E+06 1.903E+07
IN SOIL MOI 0.000E+00 0 000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 1.599E+05 1.172E+06 2.305E+06
ADS ON SOIL 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 1.011E+07 7.022E+07 1.295E+08
IN SOIL AIR 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 4.852E+03 3.265E+04 5.831E+04

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

SOIL ZONE 3:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

LOWER SOIL ZONE:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

-- POLLUTANT CONCENTRATIONS (UG/ML) OR (UG/G) -- NOTE IF CONCENTRATIONS ARE ZERO FOR EACH MONTH, THEY ARE NOT PRINTED --

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UPPER SOIL ZONE.

SUBLAYER 1

MOISTURE	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01	2 614E+01	1 719E+01	1 063E+01	1 194E+01	1 239E+01	1.154E+01	1 103E+01
%SOLUBILITY	1 000E+02	1.000E+02	1 000E+02	1.000E+02	1 000E+02	7 688E+01	5.056E+01	3 127E+01	3.512E+01	3 645E+01	3 395E+01	3 245E+01
ADSORBED	1 314E+02	1 314E+02	1 314E+02	1 314E+02	1.314E+02	1 010E+02	6 642E+01	4 108E+01	4.614E+01	4 788E+01	4.460E+01	4.263E+01
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6 171E-01	6.201E-01	4 733E-01	3.131E-01	1.880E-01	2 072E-01	2 101E-01	1 957E-01	1.888E-01
PURE PHASE	8.885E+02	7.208E+02	5.351E+02	3 412E+02	1.381E+02	0 000E+00	0.000E+00	0 000E+00	0 000E+00	0.000E+00	0 000E+00	0 000E+00

SUBLAYER 2

MOISTURE	3.400E+01	3 400E+01	3 400E+01	3.400E+01	3 400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01
%SOLUBILITY	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02	1 000E+02
ADSORBED	1.314E+02	1 314E+02	1 314E+02	1.314E+02	1 314E+02	1 314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1 314E+02
SOIL AIR	6 040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6 012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	8.471E+03	8.427E+03	8.383E+03	8.338E+03	8.294E+03	8 242E+03	8.129E+03	7.966E+03	7.832E+03	7 684E+03	7 525E+03	7 373E+03

SUBLAYER 3

MOISTURE	3.400E+01	3.400E+01	3 400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3 400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1 000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1 314E+02	1 314E+02
SOIL AIR	6.040E-01	6 157E-01	6.285E-01	6.171E-01	6.201E-01	6 157E-01	6.192E-01	6 012E-01	5.900E-01	5 764E-01	5 765E-01	5 817E-01
PURE PHASE	8.471E+03	8 427E+03	8.383E+03	8.338E+03	8.294E+03	8.250E+03	8.206E+03	8.160E+03	8.116E+03	8.072E+03	8.028E+03	7.984E+03

SUBLAYER 4

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1 314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6 157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5 765E-01	5 817E-01
PURE PHASE	8 471E+03	8.427E+03	8.383E+03	8.338E+03	8 294E+03	8.250E+03	8.206E+03	8.160E+03	8.116E+03	8.072E+03	8 028E+03	7 984E+03

SUBLAYER 5

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	8.471E+03	8.427E+03	8.383E+03	8.338E+03	8.294E+03	8.250E+03	8.206E+03	8.160E+03	8.116E+03	8.072E+03	8.028E+03	7.984E+03

SUBLAYER 6

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1 000E+02	1 000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6 171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	8.471E+03	8.427E+03	8.383E+03	8.338E+03	8.294E+03	8.250E+03	8.206E+03	8.160E+03	8.116E+03	8.072E+03	8.028E+03	7.984E+03

SUBLAYER 7

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1 314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	8.471E+03	8.427E+03	8.383E+03	8 338E+03	8.294E+03	8.250E+03	8.206E+03	8.160E+03	8.116E+03	8.072E+03	8.028E+03	7.984E+03

SUBLAYER 8

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1 000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6 157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	8.471E+03	8.427E+03	8.383E+03	8.338E+03	8.294E+03	8.250E+03	8.206E+03	8.160E+03	8.116E+03	8.072E+03	8.028E+03	7.984E+03

SUBLAYER 9

MOISTURE	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01	3.400E+01	3 400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6 157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5 764E-01	5.765E-01	5.817E-01
PURE PHASE	8.471E+03	8.427E+03	8.383E+03	8.338E+03	8.294E+03	8.250E+03	8.206E+03	8.160E+03	8.116E+03	8.072E+03	8.028E+03	7 984E+03

SUBLAYER 10

MOISTURE	3.400E+01	3.400E+01	3.400E-01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01	3.400E+01
%SOLUBILITY	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02	1.000E+02
ADSORBED	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02	1.314E+02
SOIL AIR	6.040E-01	6.157E-01	6.285E-01	6.171E-01	6.201E-01	6.157E-01	6.192E-01	6.012E-01	5.900E-01	5.764E-01	5.765E-01	5.817E-01
PURE PHASE	8.585E+03	8.541E+03	8.497E+03	8.453E+03	8.409E+03	8.364E+03	8.320E+03	8.275E+03	8.231E+03	8.187E+03	8.143E+03	8.098E+03

SOIL ZONE 2

SUBLAYER 1

MOISTURE	1.105E+01	9.203E+00	7.651E+00	6.355E+00	5.276E+00	4.386E+00	3.642E+00	8.994E+00	8.910E+00	9.297E+00	1.066E+01	1.159E+01
%SOLUBILITY	3.251E+01	2.707E+01	2.250E+01	1.869E+01	1.552E+01	1.290E+01	1.071E+01	2.645E+01	2.621E+01	2.734E+01	3.135E+01	3.408E+01
ADSORBED	4.271E+01	3.556E+01	2.957E+01	2.455E+01	2.039E+01	1.695E+01	1.407E+01	3.475E+01	3.443E+01	3.592E+01	4.118E+01	4.478E+01
SOIL AIR	1.963E-01	1.667E-01	1.414E-01	1.153E-01	9.623E-02	7.943E-02	6.633E-02	1.591E-01	1.546E-01	1.576E-01	1.807E-01	1.983E-01

SUBLAYER 2

MOISTURE	3.288E+00	2.739E+00	2.276E+00	1.889E+00	1.567E+00	1.300E+00	1.078E+00	2.014E+00	2.067E+00	2.242E+00	2.776E+00	3.274E+00
%SOLUBILITY	9.670E+00	8.055E+00	6.694E+00	5.556E+00	4.609E+00	3.824E+00	3.171E+00	5.923E+00	6.080E+00	6.595E+00	8.166E+00	9.629E+00
ADSORBED	1.270E+01	1.058E+01	8.794E+00	7.299E+00	6.055E+00	5.024E+00	4.166E+00	7.781E+00	7.988E+00	8.665E+00	1.073E+01	1.265E+01
SOIL AIR	5.841E-02	4.960E-02	4.207E-02	3.428E-02	2.858E-02	2.354E-02	1.963E-02	3.561E-02	3.587E-02	3.802E-02	4.708E-02	5.601E-02

SUBLAYER 3

MOISTURE	1.024E+00	8.544E-01	7.108E-01	5.904E-01	4.900E-01	4.068E-01	3.374E-01	6.022E-01	6.161E-01	6.586E-01	7.644E-01	8.957E-01
%SOLUBILITY	3.010E+00	2.513E+00	2.091E+00	1.736E+00	1.441E+00	1.196E+00	9.925E-01	1.771E+00	1.812E+00	1.937E+00	2.248E+00	2.634E+00
ADSORBED	3.955E+00	3.301E+00	2.747E+00	2.281E+00	1.893E+00	1.572E+00	1.304E+00	2.327E+00	2.381E+00	2.545E+00	2.954E+00	3.461E+00
SOIL AIR	1.818E-02	1.547E-02	1.314E-02	1.072E-02	8.937E-03	7.366E-03	6.146E-03	1.065E-02	1.069E-02	1.117E-02	1.296E-02	1.532E-02

SUBLAYER 4

MOISTURE	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.385E-02	9.617E-02	1.774E-01
%SOLUBILITY	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.073E-02	2.829E-01	5.217E-01
ADSORBED	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.351E-02	3.716E-01	6.853E-01
SOIL AIR	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.348E-04	1.631E-03	3.035E-03

SOIL ZONE 3:

LOWER SOIL ZONE:

POL DEP CM	9.322E+01	9.325E+01	9.327E+01	9.328E+01	9.329E+01	9.329E+01	9.330E+01	9.614E+01	9.689E+01	9.785E+01	9.941E+01	1.010E+02

1 YEAR - 5 ANNUAL SUMMARY REPORT

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-- TOTAL INPUTS (UG) --

UPPER SOIL ZONE	0.000E+00
SOIL ZONE 2	0.000E+00
SOIL ZONE 3	0.000E+00
LOWER SOIL ZONE	0.000E+00

-- HYDROLOGIC CYCLE COMPONENTS --

AVERAGE SOIL MOISTURE ZONE 1 (%)	10.946
AVERAGE SOIL MOISTURE BELOW ZONE 1 (%)	10.946
TOTAL PRECIPITATION (CM)	64.111
TOTAL INFILTRATION (CM)	64.111
TOTAL EVAPOTRANSPIRATION (CM)	34.832
TOTAL SURFACE RUNOFF (CM)	0.000
TOTAL GRW RUNOFF (CM)	29.279
TOTAL MOISTURE RETENTION (CM)	0.000
TOTAL YIELD (CM)	29.279

0 -- POLLUTANT MASS DISTRIBUTION IN COLUMN (UG) -- NOTE: IF COMPONENT IS ZERO EACH MONTH, IT IS NOT PRINTED

FOR FINAL MASS IN SOIL MOI., ADS. ON SOIL, SOIL AIR, IMMOBIL CEC, COMPLEXED, AND PURE PHASE FOR EACH SUBLAYER, SEE ABOVE (MONTH SEP)

UPPER SOIL ZONE:

SUBLAYER 1

TOTAL VOLATILIZED	5 912E+10
TOTAL DEGRADED (MOISTURE)	3 062E+08
TOTAL DEGRADED (SOIL)	1 950E+10

SUBLAYER 2

TOTAL DIFFUSED (UP)	2 172E+10
TOTAL DEGRADED (MOISTURE)	4 531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 3

TOTAL DEGRADED (MOISTURE)	4 531E+08
TOTAL DEGRADED (SOIL)	2 815E+10

SUBLAYER 4

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 5

TOTAL DEGRADED (MOISTURE)	4 531E+08
TOTAL DEGRADED (SOIL)	2 815E+10

SUBLAYER 6

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 7

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2 815E+10

SUBLAYER 8

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 9

TOTAL DEGRADED (MOISTURE)	4.531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SUBLAYER 10

TOTAL DEGRADED (MOISTURE)	4 531E+08
TOTAL DEGRADED (SOIL)	2.815E+10

SOIL ZONE 2:

SUBLAYER 1

TOTAL DEGRADED (MOISTURE)	2.205E+08
TOTAL DEGRADED (SOIL)	1.341E+10

SUBLAYER 2

TOTAL DEGRADED (MOISTURE)	5.970E+07
TOTAL DEGRADED (SOIL)	3.650E+09

SUBLAYER 3

TOTAL DEGRADED (MOISTURE)	1.794E+07
TOTAL DEGRADED (SOIL)	1.100E+09

SUBLAYER 4

TOTAL DEGRADED (MOISTURE)	4.735E+05
TOTAL DEGRADED (SOIL)	2.712E+07

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

SOIL ZONE 3:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

LOWER SOIL ZONE:

SUBLAYER 1

SUBLAYER 2

SUBLAYER 3

SUBLAYER 4

SUBLAYER 5

SUBLAYER 6

SUBLAYER 7

SUBLAYER 8

SUBLAYER 9

SUBLAYER 10

1 -- AVERAGE POLLUTANT CONCENTRATIONS -- NOTE ONLY NON-ZERO VALUES ARE PRINTED -

UPPER SOIL ZONE

SUBLAYER 1

SOIL MOISTURE (UG/ML)	2.257E+01
ADSORBED SOIL (UG/G)	8.722E+01
SOIL AIR (UG/ML)	4 051E-01
PURE PHASE (UG/ML)	2 186E+02

SUBLAYER 2

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1 314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.055E+03

SUBLAYER 3

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.227E+03

SUBLAYER 4

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.227E+03

SUBLAYER 5

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.227E+03

SUBLAYER 6

SOIL MOISTURE (UG/ML)	3 400E+01
ADSORBED SOIL (UG/G)	1 314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.227E+03

SUBLAYER 7

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.227E+03

SUBLAYER 8

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8.227E+03

SUBLAYER 9

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01
PURE PHASE (UG/ML)	8 227E+03

SUBLAYER 10

SOIL MOISTURE (UG/ML)	3.400E+01
ADSORBED SOIL (UG/G)	1.314E+02
SOIL AIR (UG/ML)	6.039E-01

PURE PHASE (UG/ML) 8 342E+03

SOIL ZONE 2:

SUBLAYER 1

SOIL MOISTURE (UG/ML) 8 084E+00
ADSORBED SOIL (UG/G) 3 124E+01
SOIL AIR (UG/ML) 1 427E-01

SUBLAYER 2

SOIL MOISTURE (UG/ML) 2.209E+00
ADSORBED SOIL (UG/G) 8.536E+00
SOIL AIR (UG/ML) 3 906E-02

SUBLAYER 3

SOIL MOISTURE (UG/ML) 6.625E-01
ADSORBED SOIL (UG/G) 2.560E+00
SOIL AIR (UG/ML) 1 173E-02

SUBLAYER 4

SOIL MOISTURE (UG/ML) 2.395E-02
ADSORBED SOIL (UG/G) 9 254E-02
SOIL AIR (UG/ML) 4 084E-04

SOIL ZONE 3:

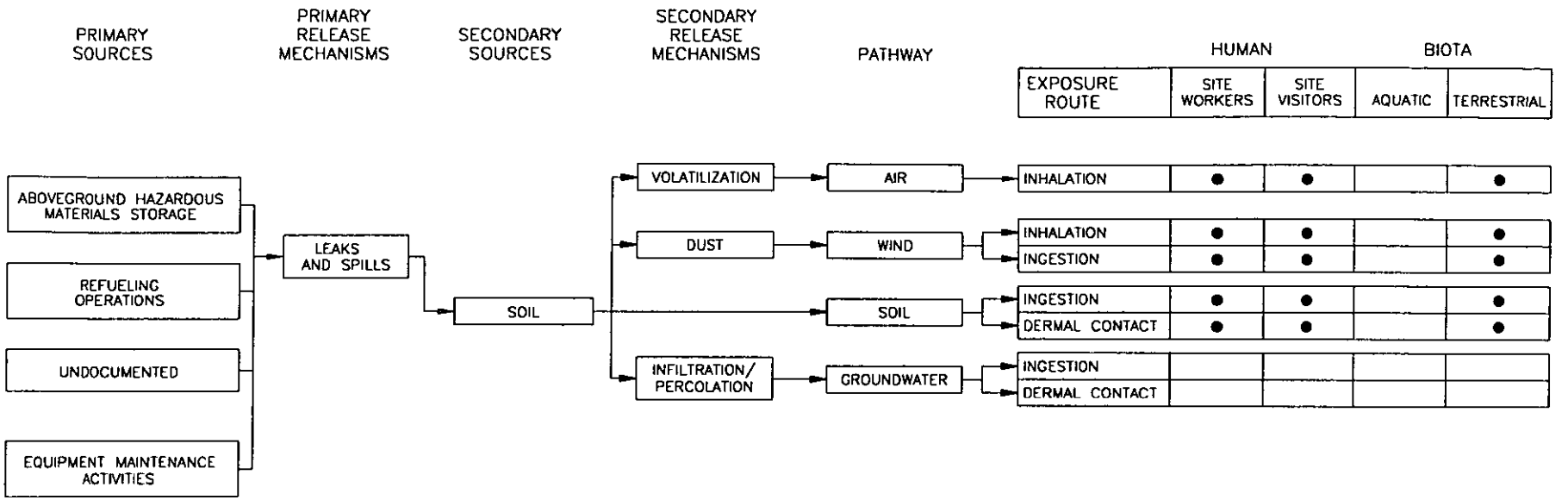
LOWER SOIL ZONE.

MAX. POLL. DEPTH (M) 1.010E+00

**********EXECUTION COMPLETED**********

APPENDIX D

CLEANUP LEVEL CALCULATIONS AND SUPPORTING INFORMATION



Conceptual Site Model

FIGURE

D-1

Cape Romanzof AFS Biocell Closure
Cape Romanzof, Alaska

DRAWN	PROJECT NUMBER	APPROVED	DATE	FILE NAME
CEH	33360		1/00	33360a2.dwg

136 306

Cape Romanzof
equation 3

Equation 3: Soil Cleanup Level Equation for Ingestion of Noncarcinogenic Commercial/Industrial

$$\text{Cleanup level} = \frac{\mathbf{THQ} \times \mathbf{BW} \times \mathbf{AT} \times 365\text{d/yr}}{1/(\mathbf{RfD_o} \times 10^{-6}\text{kg/mg} \times \mathbf{EF} \times \mathbf{ED} \times \mathbf{IR})}$$

parameter	definition	unit	default	values to be used	
THQ	target hazard quotient	unitless	1	1	
BW	body weight	kg	15	70	
AT	averaging time**	yr	6	25	
RfDo	oral reference dose	mg/kg-d		0.03	RRO Aromatic
EF	exposure frequency	d/yr	Arctic zone =200 Under 40 inch Zone = 270 Over 40 inch Zone = 330	250	
ED	exposure duration	yr	6	25	
IR	soil ingestion rate	mg/d	200	50	

** for noncarcinogens, averaging time is equal to exposure duration.
Cleanup levels are calculated for industrial/commercial exposure.

Cleanup level
RRO Aromatic= 35,930 mg/kg

Cleanup level
RRO Aromatic + Aliphatic= 89,824 mg/kg

Cape Romanzof Method 3 Benzene Calculations
Migration to Groundwater

Equation 11: Organic Contaminants – Soil-Water Partitioning Equation for Migration to Groundwater

C_t (mg/kg) = C_w {K_{oc}·f_{oc} +((θ_w + θ_aH')/ρ_b)}

parameter	definition	unit	default	values to be used	
C_t	soil cleanup level	mg/kg			
C_w	target soil leachate conc.	mg/L	**	0.430769	input
K_{oc}	soil organic carbon/water partition coefficient	L/kg	chemical specific	58.9	Benzene
f_{oc}	fraction organic carbon of soil	g/g	0.001(0.1%)	0.00149	average of (0.13% and 0.168% obtained from field samples)
θ_w	water-filled soil porosity		0.3 (30%)	0.3	
ρ_b	dry soil bulk density	kg/L	1.5	1.5	may be modified under method 3
n	total soil porosity	L_{pore}/L_{soil}	0.3 or ($1-r_b/r_s$)	0 3	may be modified under method 3
ρ_s	soil particle density	kg/L	2.65	2.65	
θ_a	air-filled soil porosity	L_{air}/L_{soil}	0.15 or ($n - \theta_w$)	0.15	may be modified under method 3
H'	Henry's law constant	unitless	H x 41	0.228	
H	Henry's law constant	atm-m^3/mol	H		

* Note: For ionizing organics, the cleanup standards are pH dependent. As site pH deviates from 6.8, K_{oc} should be modified according to Part 5 of EPA's Soil Screening Levels Guidance in Reference 1 and the soil cleanup values must be recalculated for the site.

** Groundwater Cleanup Level (Equation 1) x 10 Attenuation Factor x DF

Soil Cleanup Level	**0.13**	**mg/kg for benzene**

** w = 0.005*(10*DF)= 0.430769231

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equation 12

Equation 12: Derivation of Dilution Factor

DF = **1 + (Kid/IL)**

parameter	definition	unit	default	values to be used	
DF	dilution factor	unitless			
K	aquifer hydraulic conductivity	m/yr	876	500	silty sand/clean sand
i	hydraulic gradient	m/m	0.002	0.002	may be modified under method 3
d	mixing zone depth	m	see equation 13	29.38	
I	infiltration rate*	m/yr	Over 40 Inch Zone = 0.6 Under 40 Inch Zone = 0.13	0.13	
L	source length parallel to the ground	m	64 (for 0.5 acre source)	191	as-built drawings (maximum width)

* Calculated as 1/5 x (mean plus one standard deviation of yearly rainfall)

DF = 2.18

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equation 13

Equation 13: Estimation of Mixing Zone Depth

$$d = (0.0112 \times L^2)^{0.5} + d_a\{1 - \exp[(-L \times I)/(Kid_a)]\}$$

parameter	definition	unit	default	values to be used	
d	mixing zone depth	m			
i	hydraulic gradient	m/m	0.002	0.002	may be modified under method 3
L	source length parallel to ground water flow	m	64	191	as-built drawings (maximum width)
I	infiltration rate*	m/yr	Over 40 Inch Zone = 0.6 Under 40 Inch Zone = 0.13	0.13	
K	aquifer hydraulic conductivity	m/yr	876	500	silty sand/clean sand
d_a	aquifer thickness	m	10	10	

* Calculated as 1/5 x (mean plus one standard deviation of yearly rainfall)

** Note: The standard default mixing zone depth used to determine the cleanup standards were:

d = 15.7 for the Over 40 Inch Zone

d = 10.6 for the Under 40 Inch Zone

d = 29.3786163

DISTRIBUTION

Biocell Closure Report
Biotreatment Cell Construction,
Operation, and Maintenance
Cape Romanzof LRRS, Alaska

June 23, 2000

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