FINAL

VOLUME II
APPENDICES B - E

WARSAW VILLAGE LANDFILL SITE
NYSDEC SITE NO. 961006
WARSAW VILLAGE
WYOMING COUNTY, NEW YORK

PRELIMINARY SITE ASSESSMENTS
WORK ASSIGNMENT NO. D002478-17
NEW YORK STATE SUPERFUND STANDBY CONTRACT

Prepared for

DIVISION OF HAZARDOUS WASTE REMEDIATION
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD
ALBANY, NEW YORK

Prepared by

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JUNE 1995

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APPENDIX B

DATA VALIDATION REPORT

DATA VALIDATION REPORT

for the

WARSAW VILLAGE LANDFILL SITE
WARSAW, WYOMING COUNTY, NEW YORK
WORK ASSIGNMENT NO. D002478-17
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Prepared for:

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DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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Prepared by:

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290 Elwood Davis Road, Suite 312
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JULY 1993

TEST PIT EXCAVATION AND DRUM SAMPLING DATA EVALUATION

The following outlines a preliminary review of laboratory data for the Warsaw samples collected from 09/13/94 through 09/16/94.

I. SAMPLE RECEIPT

All samples were received intact under the proper COC. The COC for TP-010-010, TP-010-001, TP-010-003, LC003, and TB001 indicated a cooler temperature of 14°C (57.2°F) upon laboratory receipt. All sample results associated with these samples are considered estimated ("J" or "UJ").

II. TCL VOLATILES

1. All holding times were within criteria.
2. Field duplicate precision exceeded the 50 RPD criteria for trichloroethene (TCE) in sample TP-003-003 and its corresponding duplication TP-003-003DUP. The TCE results in the samples are considered estimated ("J").
3. Medium level soil analysis was performed for DR-010-001 and TP-010-010 due to high total xylenes concentrations.
4. Sample surrogate recoveries were within criteria.
5. The MSB analyzed for this SDG was compliant with recoveries within criteria.
6. The MS/MSD sample recoveries and precision was within criteria except for the low MSD recovery for TCE. Sample data was not affected.
7. Internal standard area counts and retention items were within criteria except for the low internal standard area count for IS3 (CBZ) in TP-003-003. Compounds associated with this internal standard for this sample are considered estimated ("UJ").

   All TCL volatile sample results are considered usable as determined by preliminary review.

III. TCL SEMIVOLATILES

1. All holding times were within criteria.
2. Field duplicate precision was within criteria for TP-003-003 and its corresponding field duplicate TP-003-003DUP.
3. Sample DR-010-001 was reanalyzed at a four-fold dilution due to high naphthalene and bis(2-ethylhexyl)-phthalate concentrations which caused exceedances in calibration ranges for these compounds in the original analysis.

The diluted results for naphthalene and bis(2-ethylhexyl)-phthalate should be used in assessing site conditions.

4. One base-neutral surrogate had no recovery in DR-010-010DLRE; therefore, positive base-neutral results in this sample are considered estimated ("J") and the non-detected results are unusable ("R").

5. A MSB was not analyzed for this SDG due to laboratory error. MSB results were submitted for MSBs analyzed prior to Warsaw samples and after Warsaw samples. Both MSB recovery results were compliant.

6. The MS/MSD results are considered non-compliant with low MS and MSD recoveries (in some cases less than 10%R). All compounds that were spiked for the MS/MSD analysis except for 4-nitrophenol have sample results in the unspiked sample TP-003-003 that are considered estimated ("J" or "UJ") with the exception of pentachlorophenol which has an usable ("R") sample result in TP-003-003.

7. Internal standard area counts and retention times were within criteria except for the high internal standard area count for IS3 (ANT) in DR-010-001; low area counts for IS4 (PHN), IS5 (CRY), and IS6 (PRY) in DR-010-001RE; low area counts for IS5 (CRY) and IS6 (PRY) in DR-010-001DL; and high area counts for IS1 (DCB), IS3 (ANT), IS4 (PHN), and IS5 (CRY) in DR-010-001DLRE. Positive sample results associated with these internal standards in their corresponding samples are considered estimated ("J") and non-detected sample results associated with the internal standards for DR-010-001RE and DR-010-001DL are considered estimated (UJ).

8. DR-010-001 was reanalyzed due to out of criteria internal standards. However, the re-analyzed sample DR-010-001RE produced worse internal standard area counts. Therefore, sample results from the original analysis should be used in assessing site conditions. Similarly, DR-010-001DL was reanalyzed due to out of criteria internal standards yielding worse internal standard area counts and surrogate recoveries in DR-010-001DLRE. Therefore, sample results from the original analysis should be used in assessing site conditions.

   All TCL semivolatile sample results are considered usable as determined by preliminary review except for the base-neutral fraction in DR-010-001DLRE.

IV. TCL PESTICIDE/PCBS

1. Samples TP-003-003 and TP-003-003DUP exceeded extraction holding time by one day. All sample results for these samples are considered estimated ("J" or "UJ").

2. Field duplicate precision exceeded the 50 RPD criteria for Aroclor-1254 in sample TP-003-003 and its corresponding duplicate TP-003-003DUP. The Aroclor-1254 results in these samples are considered estimated ("J").

3. Aroclor-1254 was confirmed by GC/MS for samples DR-010-001 and DR-010-001DL.

4. Sample results were not affected due to out of criteria surrogate recoveries for TP-003-003.

5. A MSB was not analyzed for this SDG due to laboratory error. MSB results were submitted for the MSB analyzed prior to the Warsaw samples. This MSB was non-compliant with high MSB recoveries for g-BHC, dieldrin, and 4,4-DDT. Warsaw sample results were not affected since these compounds were not detected.

6. The MS/MSD analysis results had poor precision due to out of criteria RPDs and the MSD experienced a high recovery for 4,4-DDT. These results did not affect sample data.

7. The 4,4'-DDD result in TP-010-003 is considered unusable ("R") since the %D is greater than 90% for the detected concentrations between the two GC columns.

   All TCL pesticide/PCB sample results are considered usable as determined by preliminary review except for the 4,4'-DDD results in TP-010-003.

V. EP-TOX PESTICIDES

1. All holding times were within criteria.

2. Field duplicate precision was within criteria.

3. All sample surrogate recoveries were within criteria except for the low surrogate recovery in TP-010-010. Sample results were not affected for TP-010-010.

4. All MSB, MSB/MSBDUP and MS/MSD results were compliant with acceptable recoveries and precision.

   All EP-TOX pesticide sample results are considered usable as determined by preliminary review. All sample results were non-detect for EP Toxicity pesticides.

VI. EP-TOX HERBICIDES

1. All holding times were within criteria.

2. Field duplicate precision was within criteria.

3. All sample surrogate recoveries were within criteria except for the less than 10% recovery in DR-010-001. Positive sample results for this sample are considered estimated ("J") and non-detected results are unusable ("R"). In addition, sample TP-003-003 recovered a low amount of surrogate and the results for TP-003-003 are considered estimated ("J" or "UJ").

4. All MSB and MSB/MSBDUP results were compliant with acceptable recoveries and precision.

5. The MS/MSD results were compliant for recoveries; however, the duplicate precision for the MS/MSD samples yielded high RPDs. The unspiked sample TP-003-003 was not affected.

All EP-TOX herbicide sample results are considered usable as determined by preliminary review with the exception of the non-detected results for DR-010-001.

VII. TAL INORGANIC

1. All sample holding times were within criteria.
2. Field duplicate precision was within criteria.
3. Matrix spike sample recoveries associated with soil samples were out of criteria for antimony, arsenic, silver, manganese, and lead. All sample results for antimony, arsenic, and manganese are considered estimated ("J" or "UJ") and positive sample results for lead are considered estimated ("J"). However, positive sample results for silver are considered estimated ("J") and non-detected sample results for silver are not usable ("R").
4. Initial and continuing calibration verifications were within criteria and considered acceptable.
5. Initial anc continuing calibration blanks and preparation blanks were within criteria and considered acceptable.
6. ICP serial dilution results associated with soil samples were out of criteria for iron, lead, and zinc. All soil sample results for iron, lead, and zinc are considered estimated ("J") with the exception of lead in TP-010-010 and TP-010-003.

   All tAL inorganic results are considered usable as determined by preliminary review with the exception of the non-detected silver results in soil samples.

VIII. EP TOX METALS

A preliminary review was conducted on the EP TOX Metals laboratory results for sample DR-010-001. The following is noted:

1. All sample holding times were within criteria with the exception of mercury which exceeded holding times by 36 days. The nondetected mercury result for this sample is considered unusable (R).
2. All initial and continuing calibration blanks and laboratory preparation blanks were within criteria and did not contain metals above the CRQL.
3. The initial and continuing calibration verifications and the laboratory control sample were within criteria.
4. The ICP interference check sample was within criteria.
5. It was noted that the method of standard additions (MSA) was used for all analytes in ICP analysis (Arsenic, Barium, Cadmium, Chromium, Lead, and Selenium), AA analysis (Silver), and CV analysis (Mercury). After review of MSA results and the results reported for the sample on Form I, only silver and mercury are considered nondetect at the values given on Form I. The results for the remaining analytes should be as follows:

Arsenic	26 μg/l
Selenium	32 μg/l
Cadmium	39 μg/l
Chromium	48 μg/l
Lead	276 μg/l
Barium	1118 μg/l

These results were determined by the definition of an MSA cited on page G-4 of the "USEPA SOW for Inorganic Analytes", document #ILM02.0, and on page G-10 of the NYSDEC ASP. The correlation coefficient for silver in the MSA was less than 0.995 but greater than 0.990. Therefore, the nondetected results for silver in this sample is considered estimated (UJ).

6. The matrix spike recoveries for cadmium (164%), lead (149%), and silver (62%) were out of criteria. The nondetected result for silver is considered estimated (UJ) and the positive results for cadmium and lead are considered estimated (J).

7. It is noted that the IDL for lead (30 μg/l) is higher than the CRQL (3 μg/l). This notation brings up the question as to why wasn't lead analyzed by AA to achieve a lower IDL?

All revised results are considered usable with the exception of mercury which grossly exceeded holding times for this sample.

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SECTION 1

DATA VALIDATION SUMMARY

As directed by the New York State Department of Environmental Conservation (NYSDEC) data validation was conducted on only one sample delivery group (SDG) from all of the samples collected from the six sites. Standard contract compliance screening was conducted on all other SDGs.

The sample results from one SDG (Warsaw SDG MW1) were validated and reviewed for useability with respect to the requirements as stated in the NYSDEC Analytical Services Protocol (ASP) dated December 1991 and the following USEPA publications: "Laboratory Data Validation: Functional Guidelines for Evaluating Organic Analyses", February 1988; "Laboratory Data Validation: Functional Guidelines for Evaluating Inorganics Analyses", July 1988; "National Functional Guidelines for Organic Data Review," Draft Edition, June 1991; and "National Functional Guidelines for PCB/Pesticides Data Review," Draft Edition, June 1991.

The analytical laboratory for this project was RECRA Environmental, Inc. of Amherst, New York. The laboratory is certified by the New York State Department of Health under the Environmental Laboratory Approval Program to perform analyses in accordance with the NYSDEC ASP, dated December 1991.

1.1 LABORATORY DATA PACKAGES

The laboratory data package turnaround time, time for sample receipt by the analytical laboratory to receipt of the analytical data packages by Engineering-Science, Inc. (ES), was 30 days for SDG MW1.

The data package (SDG MW1) received from the laboratory was paginated, complete, and overall of good quality. Comments on specific quality control (QC) and other requirements are discussed in detail in the attached data validation report.

1.2 SAMPLING AND CHAIN OF CUSTODY (COC)

Subsurface samples from the Warsaw site were collected from March 24, 1993 through March 26, 1993. The laboratory received samples within two days of sampling. All samples were properly preserved and shipped under proper COC procedures.

1.3 LABORATORY ANALYTICAL METHODS

Summaries of the problems concerning the laboratory analyses, the qualifications resulting from the data validation procedures, and statements on the laboratory analytical precision, accuracy, representativeness, comparability, and completeness (PARCC) are given for each analytical method in Section 1.3.1 through 1.3.4.

Data was qualified with the following flags:

"U" - non-detected at value given;
"UJ" - estimated non-detected at value given;
"J" - estimated value;
"R" - unuseable value.

1.3.1 Volatile Organic Compounds (VOCs)

The VOC analytical results and the associated data validation qualifiers are tabulated in Section 3. Certain reported concentrations were qualified as estimated in some samples due to such to factors as noncompliant calibration criteria, noncompliant recoveries of system monitoring compounds resulting from matrix interferences, and target compound contamination detected in method blanks.

According to the definition of completeness in the LQAP, the VOC analyses were 100% complete, and data are valid and useable within listed qualifiers on Form 1 data summary.

1.3.2 Semivolatile Organic Compounds (SVOCs)

The SVOC analytical results and associated data validation qualifiers are tabulated in Section 3. Certain reported concentrations were qualified as estimated due to noncompliant calibration criteria, noncompliant surrogate and/or internal standard recoveries resulting from matrix interferences, method blank contamination, and noncompliant holding time for some re-extraction samples.

According to the definition of completeness in the LQAP, the analyses were 100% complete, and data are valid and useable within listed qualifiers on Form 1 data summary.

1.3.3 Pesticides and Polychlorinated Biphenyls (PCBs)

The pesticide and PCB analytical results and associated data validation qualifiers are tabulated in Section 3. Certain reported concentrations were qualified as estimated due to noncompliant calibration criteria and noncompliant surrogate recoveries resulting from the matrix interferences.

According to the definition of completeness in the LQAP, the analyses were 100% complete, and data are valid and useable within listed qualifiers on Form 1 data summary.

1.3.4 Metals and Cyanide

The TAL metals, and cyanide results and associated data validation qualifiers are tabulated in Section 3. Certain reported concentrations were qualified as estimated, due to noncompliant matrix spike recoveries, noncompliant duplicate results, blank contamination, ICP serial dilution results and noncompliant QC results for graphite furnace atomic absorption (GFAA) analyses.

According to the definition of completeness in the LQAP, the analyses were 100% complete, analyses were compliant, and data are valid and useable within listed qualifiers on Form 1 data summary.

SECTION 2

DATA VALIDATION REPORT FOR SDG MW1

2.1 SAMPLE DELIVERY GROUP SUMMARY

Data Validation For:

- Target Compound List (TCL) Volatile Organic Compounds (VOCs)
- TCL Semivolatile Organic Compounds (SVOCs),
- TCL Pesticides and PCBs (Pest &PCBs), and
- Target Analyte List (TAL) Metals and Cyanide (CN)

Client: NYSDEC Division of Hazardous Waste Remediation

Site: Warsaw Village Landfill Site

ES Project No.: SY327.06

Dates of Sample Collection: March 24, 25, 27, 1993

Laboratory: RECRA Environmental, Inc., Amherst, New York

Validator Name: Hanmin Song

Validator Firm: Engineering-Science, Inc., Syracuse, New York

Senior Reviewers: James Stephens

Reviewer Firm: Engineering-Science, Inc.,

Date Review Completed:

The data package, SDG MW1 consisted of soil and aqueous samples from the Warsaw Village Landfill site for CLP analyses. All samples were shipped under a chain of custody (COC) record and received intact by the analytical laboratory.

This data validation and usability report is presented by type of analyses. The samples contained in this SDG and the analyses are summarized in Table 1.

2.2 DATA VALIDATION OF VOLATILE ORGANIC COMPOUNDS

2.2.1 Holding Times

All samples were analyzed within the seven days of the verified time of sample receipt (VTSR) by the laboratory.

2.2.2 GC/MS Tuning

The GC/MS tune (BFB) requirements were met in all cases and were performed at the correct frequency.

2.2.3 Calibrations

The initial calibration performed on March 10, 1993 for water matrix and March 12, 1993 for soil matrix were compliant with a minimum RPF of 0.05 and a maximum %RSD of 30%, except for the compounds listed on Table 2 which were outside the QC limits of 30% for maximum %RSD.

Positive results for the analytes listed on Table 2 in the affected samples were qualified as estimated and flagged "J".

The continuing calibration check was performed on March 29, 1993 and March 30, 1993 (associated with March 12, 1993 Initial Calibrations) for soil samples, and March 31, 1993 (associated with March 10, 1993 Initial Calibrations) for aqueous samples. All calibration compounds were compliant with a minimum RRF of 0.05 and a maximum %D of 25%, except the compounds listed on Table 3 which were outside 25% QC for %D. The associated sample results for these non-compliant compounds were considered estimated with positive results flagged with "J" and "non-detect" results flagged with "UJ".

2.2.4 Blanks

Method Blank VBLK3P, VBLK3T and VBLK3U were associated with this SDG. The following target compounds, as listed in Table 4, were detected in the method blank at the concentration level less than CRQL. All associated samples results with concentration less than 10 times the common laboratory contaminates (methylene chloride, acetone and 2-butanone) and less than five times all other compounds found in the method blank were qualified as non-detect, "U", at the value given.

2.2.5 System Monitoring Compound (SMC) and Internal Standard (IS) Recovery

SMCs were compliant for all samples.

All the IS recoveries of samples were compliant with specified QC based on the associated calibration standards (i.e. sample's area count within 50% to 200% and retention time within +/- 0.5 minutes of the standard), with the exceptions listed on Table 5. The affected compounds were those quantitated using the above internal standard as specified by the protocol.

All affected compounds in the sample were qualified with positive results as "J", and non-detect results as "UJ" (if $\%R_{area} \geq 10$) or "R" (if $\%R_{area} < 10$).

2.2.6 Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Matrix Spike Blank (MSB)

MS/MSD analysis was performed on soil sample MW3. All the relative percent differences (RPD) and spike recoveries (%R), including the MSB, were within QC limits.

2.2.7 Target Compound Identification

The process used for target compound identification was compliant and compound identifications were acceptable.

2.2.8 Compound Quantitation And Reported Detection Limits

Compound quantitation was compliant. The 10% of results which were verified from the raw data agreed with the laboratory's reported values on the Form I data summaries.

Reported Detection Limits dated January 1993 for Instrument 70033 were acceptable.

2.2.9 System Performance

The GC/MS system performance was consistent and acceptable through the period of analysis.

2.2.10 Overall Assessment of Data For The Case

The quality assurance objectives for measurement data include considerations for precision, accuracy, representativeness, completeness, and comparability. The data package as presented by the laboratory is 100% complete, and all data are valid and useable within listed qualifiers on Form I data summaries.

DATA VALIDATION OF SEMIVOLATILE ORGANIC COMPOUNDS

2.3.1 Holding Times

All samples were extracted within the five days of the verified time of sample receipt (VTSR) and analyzed within forty days after the extraction.

2.3.2 GC/MS Tuning

GC/MS tune (DFTPP) requirements were met in all cases and were performed at the correct frequency.

2.3.3 Calibrations

Initial calibrations performed on March 22, 1993 for Instrument 700202 and April 6, 1993 for Instrument 700404 were all compliant for minimum RRF (0.05) and maximum % RSD (30%) criteria.

There were three continuing calibration (C/C) checks associated with March 22, 1993, Initial calibration (I/C) for Instrument 700202 and one C/C check associated with April 6, 1993 I/C for Instrument 700404. They were all compliant for minimum RRF (0.05) and maximum %D (25%), except the compounds listed on Table 6 which were outside the %D QC criteria.

All the results for the compounds listed in Table 6 detected in the affected samples were considered estimated and qualified "J" (for concentrations $\geq$ IDL) or "UJ" (concentrations < IDL).

2.3.4 Blanks

There were four method blanks in association with this SDG. Method blanks SBLKS1, SBLKS3, SBLKS4 and SBLKW2 were extracted on March 29, 30, 31, 1993

and were analyzed on April 1, 5, 6, 1993 respectively. Target compounds detected in these blanks were summarized on Table 7.

All associated samples containing any of the compounds listed on Table 7 with concentration less than 10 times the common laboratory contaminants (all phthalate) and/or less than five times all other analytes were flagged "U" and are considered to be non-detect at the value given.

2.3.5 Surrogate and Internal Standard Recovery

The surrogate recoveries were acceptable.

All internal standard area responses and retention times were within specified QC ranges based on associated calibration standards (area count within 50% to 200% and retention time within +/- 0.5 minuts of the standard), with the exceptions listed on Table 8. The affected compounds were those quantitated using the above internal standard as specified by the protocol.

All affected compounds in the sample were qualified with positive results as "J", and non-detect results as "UJ" (if $\%R_{area} \geq 10$) or "R" (if $\%R_{area} < 10$).

2.3.6 Matrix Spike/Matrix Spike duplicate (MS/MSD) and Matrix Spike Blank (MSB)

MS/MSD analysis was performed on soil sample MW-3. All the relative percent difference (RPD) and spike recoveries (%R) were within QC limits. MSB had one out of 11 spike recoveries (4-nitrophenol) above QC limits.

2.3.7 Target Compound Identification

The process used for target compound identification was acceptable.

2.3.8 Compound Quantitation and Reported Detection Limits

The compound quantitation was compliant. The 10% of results verified from the raw data agreed with the laboratory's reported levels on the Form Is.

The reported detection limits dated December, 1992 were acceptable.

2.3.9 System Performance

The GC/MS system performance was acceptable.

2.3.10 Overall Assessment of Date for the Case

The data quality objectives for measurement data include considerations for precision, accuracy, representativeness, completeness, and comparability. The data package presented by the laboratory is 100% complete and all useable data are valid within listed qualifiers on Form I data summary sheets.

2.4 DATA VALIDATION OF PESTICIDE AND POLYCHLORINATED BIPHENYLS

2.4.1 Holding Times

All samples were extracted within the five days of the verified time of sample receipt (VTSR) and analyzed within the forty days after the extraction.

2.4.2 Instrument Performance

The performance requirements were met for GC-31 and GC-32 system. The GC/ECD system performance was acceptable throughout the period of sample analysis for both primary and confirmation analysis.

2.4.3 Calibrations

Initial calibrations performed on March 22, 1993 were acceptable.

The continuing calibration checks associated with sample analysis were compliant for both primary and confirmation column analysis.

2.4.4 Blanks

No target compounds were detected in the four method blanks. Method blank PBLK2 was a water blank; PBLK1, PBLK3 and PBLK4 were soil blanks.

2.4.5 Surrogate Recovery

The surrogates, decachlorobiphenyl (DCB) and tetrachloro-m-xylene (TCX), were spiked into all samples and blanks.

All the surrogate recoveries of the samples were compliant, except samples MW2, MW3 and MW3MSD which had DCB recoveries on second column slightly below advisory QC limits. No QA qualifiers were assigned here.

2.4.6 Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Matrix Spike Blank (MSB)

MS/MSD analysis was performed on soil sample MW3. All the relative percent difference (RPD) and spike recoveries (%R), including MSB, were within QC limits.

2.4.7 Pesticide Cleanup

The florisil cartridge cleanup which was analyzed on October 30, 1991 (florisil cartridge 150AC9 and the GPC cleanup calibration performed on April 2, 1993 (GPC column GPC2-0329) had all the spike recoveries within QC limits.

2.4.8 Target Compound Identification

The process used for target compound identification was acceptable.

2.4.9 Compound Quantitation and Reported Detection Limits

Ten percent of sample results which were verified from the raw data agreed well with the Form I data summary sheets.

The reported detection limits dated January and February, 1993 were acceptable.

2.4.10 Overall Assessment of Data for the Case

The quality assurance objectives for measurement data include considerations for precision, accuracy, representativeness, completeness, and comparability. The data package as presented by the laboratory is 100% complete and all data are valid and useable within listed qualifiers on Form I data summary sheets.

2.5 DATA VALIDATION OF TAL METALS AND CYANIDE

2.5.1 Holding Times

All samples were extracted and analyzed within the required time of the verified time of sample receipt (VTSR). The cyanide limit was 12 days from VTSR, the mercury limit was 26 days from VTSR, and the other metals limits were 180 days from VTSR.

2.5.2 Calibrations

The instruments were properly standardized before sample analyses and the standardization correlation coefficients were greater than 0.995.

All Initial Calibrations and Continuing Calibration checks were analyzed at the correct sequence and frequency. The %Recoveries of these calibrations were all compliant with QC criteria (90-110% for ICP and AA Metals, 80-120% for mercury, and 85-115% for cyanide).

2.5.3 Blanks

All the calibration blanks were run at the correct sequence and were acceptable.

All metals preparation blanks were compliant, except the ICP water preparation blanks which had sodium contamination at levels less than the CRDL. (Na_{PBW} = 824 ug/L, Na_{CRDL} = 5000 ug/L).

All water samples were associated with the contaminated blank. The positive sodium results in associated water samples were flagged "U" when the analyte level in the sample was less than five times the blank contaminant concentration.

2.5.4 Interference Check Sample (ICS)

ICS solution was run at the beginning and the end of sample analysis. All results of the ICSAB solution were acceptable.

2.5.5 Laboratory Control Sample (LCS)

The LCSs were compliant for all TAL metals.

2.5.6 Duplicates

The matrix duplicate MD analyses were performed on soil samples MW-2D and MW-3D. The RPD of metal analyses were acceptable if they were within the range of $\pm$20% for sample concentrations greater than five times the CRDL and $\pm$ CRDL for results less than five times the CRDL. Table 9 listed MD outliers. These outliers in the samples were considered estimated and qualified with "J" (for concentration $\geq$ IDL) or "UJ" (for concentration < IDL).

2.5.7 Matrix Spike (MS)

The MS analysis was performed on soil sample MW-3S. All MS recovery results were compliant, except antimony (43.6%), cadmium (67.6%), lead (20.69%) and selemium (49.8%) which were outside 75-125% QC limits. These noncompliant analyte results were flagged by the data validator in associated samples using the criteria noted on Table 10.

2.5.8 ICP Serial Dilutions

ICP serial dilutions were performed on samples with high analyte concentrations (a factor of 50 above the IDL). Dilutions were done for samples MW-1L and WARDWL. QC results for target analytes were compliant.

2.5.9 Furnace Atomic Absorption Analysis QC

The furnace AA QC were performed for arsenic, lead, selenium, silver and thallium. Some QC limits were found out of control limits and flags were assigned by the lab accordingly.

- Analytes with spike recoveries less than 40% were flagged "E";
- If sample concentration was less than 50% of the spike concentration and the spike recovery was outside 85-115% range, the analytes were flagged with "W";
- If the sample concentration was greater than 50% of the spike concentration and the spike recoveries were outside 85-115% range, the analytes were quantitated by the Method of Standard Addition (MSA);
- If the correlation coefficient of the MSA was greater than or equal to 0.995, the analytes were flagged with a "S". Otherwise the analytes were flagged with a "+".

The additional flags shown on Table 11 were assigned by the data validator for the furnace analyses.

2.5.10 Sample Result Verification

Ten percent of all reported sample results were recalculated from raw data. All Form I sample results which were verified were correctly calculated and reported.

The "B" flag was assigned by the laboratory to results which were $\geq$ the IDL but $<$ CRDL. These analyte results were further qualified as estimated, and flagged "J" by the data validator.

2.5.11 System Performance and Reported Detection Limits

All instrument system performances were acceptable through the period of analysis.

The reported instrument detection limits, measured during March and April 1993, were acceptable for all analytes.

2.5.12 Overall Assessment of Date For the Case

The quality assurance objectives for measurement data include considerations for precision, accuracy, representativeness, completeness, and comparability. The data package as presented by the laboratory is 100% complete and all useable data are valid within listed qualifiers.

TABLE 1

SUMMARY OF SAMPLE ANALYSES FOR SDG MW1
WARSAW VILLAGE LANDFILL SITE

Sample Number	Matrix (1)	TCL VOCs	TCL SVOCs	TCL Pest&PCBs	TAL Metals	Other(2)
MW-1	S	X	X	X	X	X
MW-2	S	X	X	X	X	X
MW-2DUP	S	X	X	X	X	X
MW-3	S	X	X	X	X	X
MW-4	S	X	X	X	X	X
MW-5	S	X	X	X	X	X
MW-3MS	S	X	X	X	X	X
MW-3MSD	S	X	X	X		
MW-3MD	S				X	X
WARDW	W	X	X	X	X	X

(1) S - Soil; W - Water
(2) Cyanide Analyses

TABLE 2

VOC INITIAL CALIBRATIONS
QC OUTLIERS AND AFFECTED SAMPLES

I/C Date	Instrument ID	Matrix	Compound	%RSD	Affected Samples
03/10/93	70033	Water	methylene chloride acetone	52.1 31.3	VBLK3U, WARDW
03/12/93	70033	Soil	methylene chloride	60.5	VBLK3P, MW4, MW2, MW2DUP, VBLK3T, MW1, MW4RE, MW2RE MW2DUPRE, MW3, MW5, MW3MS, MW3MSD, MSB

TABLE 3

VOC CONTINUING CALIBRATION QC OUTLIERS AND AFFECTED SAMPLES

C/C Date	C/C File	Matrix	Compound	%D	Affected Samples
03/29/93	ZJ884	Soil	1,2-dichloroethene (total) bromoform	47.0 26.2	VBLK3P, MW4, MW2, MW2DUP
03/30/93	ZJ899	Soil	methylene chloride	27.5	VBLK3T, MW1, MW4RE, MW2RE, MW3, MW5, MW3MS, MW3MSD, MSB, MW2DUPRE
03/31/93	ZJ913	Water	methylene chloride	34.0	VBLK3U, WARDW

TABLE 4

DETECTED TARGET COMPOUNDS IN METHOD BLANKS

Blank ID	Matrix	Detected Target Compound	Conc.	CRQL	Affected Samples
VBLK3P	Soil	methylene chloride	8 ug/kg	10 ug/kg	MW2, MW2DUP, MW4
VBLK3T	Soil	methylene chloride acetone	9 ug/kg 5 ug/kg	10 ug/kg 10 ug/kg	MSB, MW1, MW2DUPRE, MW2RE, MW3, MW4RE, MW5, MW3MS, MW3MSD
VBLK3U	Water	methylene chloride	3 ug/L	10 ug/L	WARDW

TABLE 5

VOC INTERNAL STANDARD RECOVERY QC OUTLIERS

Sample ID	Internal Standard	Retention Time		Area Response		%R_{area}*
		Sample	Standard	Sample	Standard	
MW2	bromochloromethene	9.94	9.90	30938	62128	49.8
MW2	1,4-difluorobenzene	20.23	20.24	109186	232479	46.7
MW2	chlorobenzene-d5	20.57	25.03	82596	188765	43.8
MW2DUP	1,4-difluorobenzene	20.22	20.24	115583	232479	49.7
MW2DUP	chlorobenzene-d5	25.06	25.03	74881	188765	39.7
MW4	bromochloromethene	9.97	9.90	16949	62128	27.3
MW4	1,4-difluorobenzene	20.26	20.24	64845	232479	27.9
MW4	chlorobenzene-d5	25.05	25.03	46267	188765	24.5
MW2RE	1,4-difluorobenzene	20.21	20.22	103591	219720	47.1
MW2RE	chlorobenzene-d5	25.05	25.00	68255	187356	36.4
MW2DUPRE	chlorobenzene-d5	25.04	25.00	72977	187356	39.0
MW4RE	bromochloromethene	9.92	9.92	21894	57437	38.1
MW4RE	1,4-difluorobenzene	20.21	20.22	79915	219720	36.4
MW4RE	chlorobenzene-d5	25.04	25.00	59825	187356	31.9
MW3	1,4-difluorobenzene	20.21	20.22	101112	219720	46.0
MW3	chlorobenzene-d5	25.05	25.00	67564	187356	36.1
MW3MS	chlorobenzene-d5	25.04	25.00	83580	187356	44.6
MW3MSD	1,4-difluorobenzene	20.21	20.22	103894	219720	47.3
MW3MSD	chlorobenzene-d5	25.05	25.00	66810	187356	35.7

* $\%R_{area} = \frac{\text{Sample Area Response}}{\text{Standard Area Response}} \times 100$

TABLE 6

SVOC CONTINUING CALIBRATION QC OUTLIERS AND AFFECTED SAMPLES

C/C Date	C/C File	Matrix	Compound	%D	Affected Samples
04/05/93	YH599	Soil	2,4-dinitrophenol 4,6-dinitro-2-methylphenol	-35.2 -28.3	SBLKS3, MW4, MW2, MW2DUP, MW2DL, MW2RE, MW2DUPRE
04/06/93	YH614	Water/soil	4,6-dinitro-2-methylphenol	-26.8	SBLKW2, WARDW, MW2DUPDL

TABLE 7

DETECTED TARGET COMPOUNDS IN METHOD BLANKS

Blank ID	Matrix	Detected Target Compound	Conc.	CRQL	Affected Samples
SBLKS3	Soil	diethylphthalate	24 ug/kg	330 ug/kg	MW2, MW2DL, MW2DUP, MW2DUPDL, MW2DUPRE, MW2RE, MW4
SBLKS4	Soil	diethylphthalate	19 ug/kg	330 ug/kg	MSB, MW3, MW5, MW3MS, MW3MSD

TABLE 8

SVOC INTERNAL STANDARD RECOVERY QC OUTLIERS

Sample ID	Internal Standard	Retention Time		Area Response		%R_{area}*
		Sample	Standard	Sample	Standard	
MW2	chrysene-d12	30.36	30.36	42728	110010	38.8
MW2	perylene-d12	36.12	36.11	18363	52010	35.3
MW2DL	chrysene-d12	30.37	30.36	54661	110010	49.7
MW2DL	perylene-d12	36.14	36.11	22062	52020	42.4
MW2DUP	chrysene-d12	30.39	30.36	24840	110010	22.6
MW2DUP	perylene-d12	36.15	36.11	12156	52010	23.4
MW2DUPRE	chrysene-d12	30.39	30.36	27871	110010	25.3
MW2DUPRE	perylene-d12	36.16	36.11	16142	52010	31.0
MW2RE	chrysene-d12	30.38	30.36	45142	110010	41.0
MW2RE	perylene-d12	36.15	36.11	20155	52010	38.8

* $\%R_{area} = \frac{\text{Sample Area Response}}{\text{Standard Area Response}} \times 100$

TABLE 9

MATRIX DUPLICATE QC OUTLIERS AND AFFECTED SAMPLES

MD ID	Analyte	RPD	QC Limits (RPD)	Affected Samples
MW-3D	Aluminum	29.2	±20	all samples
	Calcium	34.5	±20	
	Chromium	21.6	±20	
	Lead	58.2	±20	
	Manganese	21.2	±20	
MW-2D	Calcium	38.4	±20	all samples
	Lead	77.8	±20	
	Magnesium	24.8	±20	
	Zinc	29.1	±20	

TABLE 10

NONCOMPLIANT MS RESULTS AND DATA VALIDATION FLAGS

MS % Recovery	Sample Results	Validation Flag
> 125%	< IDL	none
> 125% or < 75%	≥ IDL	"J"
30 - 74%	< IDL	"UJ"
< 30%	< IDL	"R"

TABLE 11

FURNACE AA DATA VALIDATION FLAGS

Lab Flag	Sample Results	Validation Flag
"E"	$\geq$IDL	"J"
"E"	<IDL	"UJ"
"W"	$\geq$IDL	"J"
"W"	<IDL	"UJ"
"+"	any	"J"
"S"	any	none

FORM I REPORTS WITH VALIDATION QUALIFERS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET 0015

EPA SAMPLE NO.

MW1

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030599

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ902

Level: (low/med) LOW Date Received: 03/24/93

% Moisture: not dec. 12 Date Analyzed: 03/30/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	29	B
67-64-1	Acetone	25	B
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-02-6	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-01-5	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

D.V.Q

~~10~~ U, J

~~57~~ U, J

HS 5/20/93 JS 7.22.93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0016

EPA SAMPLE NO.

MW1

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030599

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ902

Level: (low/med) LOW Date Received: 03/24/93

% Moisture: not dec. 12 Date Analyzed: 03/30/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon dioxide	1.27	73	BJN

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

0017

EPA SAMPLE NO.

MW2

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ890

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: not dec. 23 Date Analyzed: 03/29/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	D.L.
74-87-3	Chloromethane	13	U	UJ
74-83-9	Bromomethane	13	U	UJ
75-01-4	Vinyl Chloride	13	U	UJ
75-00-3	Chloroethane	13	U	UJ
75-09-2	Methylene Chloride	28	B	~~10~~ UJ
67-64-1	Acetone	32		J
75-15-0	Carbon Disulfide	13	U	UJ
75-35-4	1,1-Dichloroethene	13	U	UJ
75-34-3	1,1-Dichloroethane	13	U	UJ
540-59-0	1,2-Dichloroethene (total)	13	U	UJ
67-66-3	Chloroform	13	U	
107-06-2	1,2-Dichloroethane	13	U	
78-93-3	2-Butanone	13	U	
71-55-6	1,1,1-Trichloroethane	13	U	
56-23-5	Carbon Tetrachloride	13	U	
75-27-4	Bromodichloromethane	13	U	
78-87-5	1,2-Dichloropropane	13	U	
10061-02-6	cis-1,3-Dichloropropene	13	U	
79-01-6	Trichloroethene	13	U	
124-48-1	Dibromochloromethane	13	U	
79-00-5	1,1,2-Trichloroethane	13	U	
71-43-2	Benzene	13	U	
10061-01-5	trans-1,3-Dichloropropene	13	U	
75-25-2	Bromoform	13	U	
108-10-1	4-Methyl-2-Pentanone	13	U	
591-78-6	2-Hexanone	13	U	
127-18-4	Tetrachloroethene	13	U	
79-34-5	1,1,2,2-Tetrachloroethane	13	U	
108-88-3	Toluene	13	U	
108-90-7	Chlorobenzene	13	U	
100-41-4	Ethylbenzene	13	U	
100-42-5	Styrene	13	U	
1330-20-7	Xylene (total)	13	U	

MS 5/20/93

JJ 7.22.93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0018

EPA SAMPLE NO.

MW2

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ890

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: not dec. 23 Date Analyzed: 03/29/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon dioxide	1.29	190	BJN

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET 0019

EPA SAMPLE NO.

MW2RE

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780RI

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ904

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: not dec. 23 Date Analyzed: 03/30/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	29	B
67-64-1	Acetone	13	B
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-02-6	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-01-5	trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Xylene (total)	13	U

D V.U

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V

HS 5/20/93

JS 7-22-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0020

EPA SAMPLE NO.

MW2RE

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780RI

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ904

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: not dec. 23 Date Analyzed: 03/30/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon dioxide	1.27	210	BJN

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET 0021

EPA SAMPLE NO.

MW2DUP

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780MD

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ891

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: not dec. 21 Date Analyzed: 03/29/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	32	B
67-64-1	Acetone	22	
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-02-6	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-01-5	trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Xylene (total)	13	U

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UJ

HS 5/20/93

SS 7-22-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0022

EPA SAMPLE NO.

MW2DUP

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780MD

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ891

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: not dec. 21 Date Analyzed: 03/29/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon dioxide	1.28	250	BJN

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET 30023

EPA SAMPLE NO.

MW2DUPRE

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780FR

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ905

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: not dec. 21 Date Analyzed: 03/30/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	29	B
67-64-1	Acetone	11	BJ
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-02-6	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-01-5	trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Xylene (total)	13	U

D.L.Q

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PS 6/24/93

JS 7-22-93

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET 0025

EPA SAMPLE NO.

MW3

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS031091

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ906

Level: (low/med) LOW Date Received: 03/27/93

% Moisture: not dec. 21 Date Analyzed: 03/30/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	13	U	
74-83-9	Bromomethane	13	U	
75-01-4	Vinyl Chloride	13	U	
75-00-3	Chloroethane	13	U	
75-09-2	Methylene Chloride	27	B	~~U~~ U,J
67-64-1	Acetone	13	U	
75-15-0	Carbon Disulfide	13	U	
75-35-4	1,1-Dichloroethene	13	U	
75-34-3	1,1-Dichloroethane	13	U	
540-59-0	1,2-Dichloroethene (total)	13	U	
67-66-3	Chloroform	13	U	
107-06-2	1,2-Dichloroethane	13	U	
78-93-3	2-Butanone	13	U	UJ
71-55-6	1,1,1-Trichloroethane	13	U	
56-23-5	Carbon Tetrachloride	13	U	
75-27-4	Bromodichloromethane	13	U	
78-87-5	1,2-Dichloropropane	13	U	
10061-02-6	cis-1,3-Dichloropropene	13	U	
79-01-6	Trichloroethene	13	U	
124-48-1	Dibromochloromethane	13	U	
79-00-5	1,1,2-Trichloroethane	13	U	
71-43-2	Benzene	13	U	
10061-01-5	trans-1,3-Dichloropropene	13	U	
75-25-2	Bromoform	13	U	
108-10-1	4-Methyl-2-Pentanone	13	U	
591-78-6	2-Hexanone	13	U	
127-18-4	Tetrachloroethene	13	U	
79-34-5	1,1,2,2-Tetrachloroethane	13	U	
108-88-3	Toluene	3	J	J
108-90-7	Chlorobenzene	13	U	UJ
100-41-4	Ethylbenzene	13	U	UJ
100-42-5	Styrene	13	U	UJ
1330-20-7	Xylene (total)	13	U	UJ

HS 5/20/93

JS 7-22-93

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET 0027

EPA SAMPLE NO.

MW4

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030779

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ889

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: not dec. 13 Date Analyzed: 03/29/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	D.V.Q
74-87-3	Chloromethane	11	U	UJ
74-83-9	Bromomethane	11	U	UJ
75-01-4	Vinyl Chloride	11	U	UJ
75-00-3	Chloroethane	11	U	UJ
75-09-2	Methylene Chloride	16	B	~~U~~ U.J
67-64-1	Acetone	11	U	UJ
75-15-0	Carbon Disulfide	11	U	
75-35-4	1,1-Dichloroethene	11	U	
75-34-3	1,1-Dichloroethane	11	U	
540-59-0	1,2-Dichloroethene (total)	11	U	
67-66-3	Chloroform	11	U	
107-06-2	1,2-Dichloroethane	11	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	11	U	
56-23-5	Carbon Tetrachloride	11	U	
75-27-4	Bromodichloromethane	11	U	
78-87-5	1,2-Dichloropropane	11	U	
10061-02-6	cis-1,3-Dichloropropene	11	U	
79-01-6	Trichloroethene	11	U	
124-48-1	Dibromochloromethane	11	U	
79-00-5	1,1,2-Trichloroethane	11	U	
71-43-2	Benzene	11	U	
10061-01-5	trans-1,3-Dichloropropene	11	U	
75-25-2	Bromoform	11	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	11	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	11	U	
108-90-7	Chlorobenzene	11	U	
100-41-4	Ethylbenzene	11	U	
100-42-5	Styrene	11	U	
1330-20-7	Xylene (total)	11	U	✓

5/20/93 JS 7-22-93

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0029

MW4RE

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030779RI

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ903

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: not dec. 13 Date Analyzed: 03/30/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	11	U	UJ
74-83-9	Bromomethane	11	U	UJ
75-01-4	Vinyl Chloride	11	U	UJ
75-00-3	Chloroethane	11	U	UJ
75-09-2	Methylene Chloride	19	B	~~10~~ U, J
67-64-1	Acetone	20	B	~~57~~ U, J
75-15-0	Carbon Disulfide	11	U	UJ
75-35-4	1,1-Dichloroethene	11	U	UJ
75-34-3	1,1-Dichloroethane	11	U	
540-59-0	1,2-Dichloroethene (total)	11	U	
67-66-3	Chloroform	11	U	
107-06-2	1,2-Dichloroethane	11	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	11	U	
56-23-5	Carbon Tetrachloride	11	U	
75-27-4	Bromodichloromethane	11	U	
78-87-5	1,2-Dichloropropane	11	U	
10061-02-6	cis-1,3-Dichloropropene	11	U	
79-01-6	Trichloroethene	11	U	
124-48-1	Dibromochloromethane	11	U	
79-00-5	1,1,2-Trichloroethane	11	U	
71-43-2	Benzene	11	U	
10061-01-5	trans-1,3-Dichloropropene	11	U	
75-25-2	Bromoform	11	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	11	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	11	U	
108-90-7	Chlorobenzene	11	U	
100-41-4	Ethylbenzene	11	U	
100-42-5	Styrene	11	U	
1330-20-7	Xylene (total)	11	U	

D.V.G

HS 5/20/93

HS 7-22-93

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET 0031

EPA SAMPLE NO.

MW5

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS031092

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ907

Level: (low/med) LOW Date Received: 03/27/93

% Moisture: not dec. 17 Date Analyzed: 03/30/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	15	B
67-64-1	Acetone	19	B
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-02-6	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-01-5	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

D.V.G

~~12 U,J~~ 6 U

HS 5/20/93

JS 7-22-93

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET 10033

EPA SAMPLE NO.

WARDW

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: AS031093

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: CJ915

Level: (low/med) LOW Date Received: 03/27/93

% Moisture: not dec. Date Analyzed: 03/31/93

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	8	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-02-6	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-01-5	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

D.V.G

10 U.J

HS 5/20/93

J.S 7-22-93

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0035

EPA SAMPLE NO.

MW1

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030599

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BH589

Level: (low/med) LOW Date Received: 03/24/93

% Moisture: 12 decanted: (Y/N) N Date Extracted: 03/29/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/01/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-Propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)Methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	910	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	910	U
131-11-3	Dimethyl Phthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	910	U
83-32-9	Acenaphthene	370	U

HB 5/30/93

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0037
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW1

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030599

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BH589

Level: (low/med) LOW Date Received: 03/24/93

% Moisture: 12 decanted: (Y/N) N Date Extracted: 03/29/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/01/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNWON	9.13	800	BJ
2.		UNKNOWN	9.38	1900	BJ
3.	4436753	3-Hexene-2, 5-dione	9.71	810	BJN
4.		UNKNOWN	10.51	2700	BJ
5.		UNKNOWN	11.76	4200	BJ
6.		UNKNOWN HYDROCARBON C13H28 M	15.67	610	J
7.		UNKNOWN HYDROCARBON C14H30 M	17.17	1200	J
8.		UNKNOWN HYDROCARBON C16H34 M	18.05	810	J
9.		UNKNOWN HYDROCARBON C15H32 M	18.57	1200	J
10.		UNKNOWN HYDROCARBON C16H34 M	19.89	1300	J
11.		UNKNOWN HYDROCARBON	20.51	1100	J
12.		UNKNOWN HYDROCARBON C17H36 M	21.14	1600	J
13.		UNKNOWN HYDROCARBON C19H40 M	21.21	1100	J
14.		UNKNOWN HYDROCARBON	22.32	930	J
15.		UNKNOWN HYDROCARBON	22.45	550	J
16.		UNKNOWN HYDROCARBON	23.45	870	J
17.		UNKNOWN HYDROCARBON	24.52	830	J
18.		UNKNOWN HYDROCARBON C21H44 M	25.54	760	J
19.		UNKNOWN HYDROCARBON C22H46 M	26.51	550	J
20.		UNKNOWN ACID	28.48	4000	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0039

EPA SAMPLE NO.

MW2

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BH604

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 23 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
				D.L.a
51-28-5	2,4-Dinitrophenol	1000	U	UJ
100-02-7	4-Nitrophenol	1000	U	
132-64-9	Dibenzofuran	240	J	
121-14-2	2,4-Dinitrotoluene	430	U	
84-66-2	Diethylphthalate	63	BJ	430U
7005-72-3	4-Chlorophenyl-phenylether	430	U	
86-73-7	Fluorene	520		
100-01-6	4-Nitroaniline	1000	U	
534-52-1	4,6-Dinitro-2-Methylphenol	1000	U	UJ
86-30-6	N-Nitrosodiphenylamine (1)	430	U	
101-55-3	4-Bromophenyl-phenylether	430	U	
118-74-1	Hexachlorobenzene	430	U	
87-86-5	Pentachlorophenol	1000	U	
85-01-8	Phenanthrene	2800		
120-12-7	Anthracene	790		
86-74-8	Carbazole	190	J	
84-74-2	Di-n-Butylphthalate	430	U	
206-44-0	Fluoranthene	2600		
129-00-0	Pyrene	3500	E	J
85-68-7	Butylbenzylphthalate	430	U	UJ
91-94-1	3,3'-Dichlorobenzidine	430	U	UJ
56-55-3	Benzo(a)Anthracene	1500		J
218-01-9	Chrysene	1400		J
117-81-7	bis(2-Ethylhexyl)Phthalate	54	J	J
117-84-0	Di-n-Octyl Phthalate	430	U	UJ
205-99-2	Benzo(b)Fluoranthene	1100		J
207-08-9	Benzo(k)Fluoranthene	1200		J
50-32-8	Benzo(a)Pyrene	1200		J
193-39-5	Indeno(1,2,3-cd)Pyrene	810		J
53-70-3	Dibenz(a,h)Anthracene	430	U	UJ
191-24-2	Benzo(g,h,i)Perylene	790		J

(1) - Cannot be separated from Diphenylamine

MS 5/20/93

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0041

EPA SAMPLE NO.

MW2RE

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780RI

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BH608

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 23 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitroso-Di-n-Propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
111-91-1	bis(2-Chloroethoxy)Methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	120	J
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-Methylphenol	430	U
91-57-6	2-Methylnaphthalene	95	J
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethyl Phthalate	430	U
208-96-8	Acenaphthylene	110	J
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	210	J

HS 5/20/93

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0043
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW2RE

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780RI

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BH608

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 23 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.09	930	BJ
2.		UNKNOWN	9.34	2400	J
3.	4436-75-3	3-Hexene-2, 5-dione	9.67	1100	BJN
4.		UNKNOWN	10.10	520	J
5.		UNKNOWN	10.47	1800	BJ
6.		UNKNOWN	11.71	4100	J
7.		UNKNOWN HYDROCARBON	17.99	280	J
8.		UNKNOWN HYDROCARBON C15H32	18.50	390	J
9.		UNKNOWN HYDROCARBON C16H34	19.83	610	J
10.		UNKNOWN HYDROCARBON	20.45	500	J
11.		UNKNOWN HYDROCARBON C17H36	21.08	710	J
12.		UNKNOWN HYDROCARBON C19H40	21.15	870	J
13.		UNKNOWN HYDROCARBON	22.27	560	J
14.		UNKNOWN HYDROCARBON C20H42	22.39	370	J
15.		UNKNOWN HYDROCARBON	23.39	650	J
16.		UNKNOWN HYDROCARBON	24.46	1100	J
17.		UNKNOWN MW190	24.80	780	J
18.		UNKNOWN HYDROCARBON C21H44	25.48	480	J
19.		UNKNOWN C17H12 MW216	27.91	430	J
20.		UNKNOWN C17H12 MW216	28.07	350	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0045

EPA SAMPLE NO.

MW2DL

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780DL

Sample wt/vol: 30.00 (g/mL) G Lab File ID: BH606

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 23 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/93

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	230	DJ
121-14-2	2,4-Dinitrotoluene	860	U
84-66-2	Diethylphthalate	57	BDJ
7005-72-3	4-Chlorophenyl-phenylether	860	U
86-73-7	Fluorene	530	DJ
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-Methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine (1)	860	U
101-55-3	4-Bromophenyl-phenylether	860	U
118-74-1	Hexachlorobenzene	860	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	2700	D
120-12-7	Anthracene	740	DJ
86-74-8	Carbazole	190	DJ
84-74-2	Di-n-Butylphthalate	860	U
206-44-0	Fluoranthene	2600	D
129-00-0	Pyrene	3400	D
85-68-7	Butylbenzylphthalate	860	U
91-94-1	3,3'-Dichlorobenzidine	860	U
56-55-3	Benzo(a)Anthracene	1400	D
218-01-9	Chrysene	1300	D
117-81-7	bis(2-Ethylhexyl)Phthalate	59	DJ
117-84-0	Di-n-Octyl Phthalate	860	U
205-99-2	Benzo(b)Fluoranthene	1200	D
207-08-9	Benzo(k)Fluoranthene	1100	D
50-32-8	Benzo(a)Pyrene	1200	D
193-39-5	Indeno(1,2,3-cd)Pyrene	790	DJ
53-70-3	Dibenz(a,h)Anthracene	860	U
191-24-2	Benzo(g,h,i)Perylene	670	DJ

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0047

MW2DUP

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780MD

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BH605

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 21 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	47	J
111-44-4	bis(2-Chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methylphenol	71	J
108-60-1	2,2'-oxybis(1-Chloropropane)	420	U
106-44-5	4-Methylphenol	170	J
621-64-7	N-Nitroso-Di-n-Propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	190	J
111-91-1	bis(2-Chloroethoxy)Methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	5300	E J
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-Methylphenol	420	U
91-57-6	2-Methylnaphthalene	2400	
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethyl Phthalate	420	U
208-96-8	Acenaphthylene	730	
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	2700	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0048

EPA SAMPLE NO.

MW2DUP

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780MD

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BH605

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 21 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	D.V.G
51-28-5	2,4-Dinitrophenol	1000	U	UJ
100-02-7	4-Nitrophenol	1000	U	
132-64-9	Dibenzofuran	3100		
121-14-2	2,4-Dinitrotoluene	420	U	
84-66-2	Diethylphthalate	76	BJ	420U
7005-72-3	4-Chlorophenyl-phenylether	420	U	
86-73-7	Fluorene	4300	E	J
100-01-6	4-Nitroaniline	1000	U	
534-52-1	4,6-Dinitro-2-Methylphenol	1000	U	UJ
86-30-6	N-Nitrosodiphenylamine (1)	420	U	
101-55-3	4-Bromophenyl-phenylether	420	U	
118-74-1	Hexachlorobenzene	420	U	
87-86-5	Pentachlorophenol	1000	U	
85-01-8	Phenanthrene	14000	E	J
120-12-7	Anthracene	5500	E	J
86-74-8	Carbazole	2400		
84-74-2	Di-n-Butylphthalate	48	J	
206-44-0	Fluoranthene	9400	E	J
129-00-0	Pyrene	16000	E	J
85-68-7	Butylbenzylphthalate	420	U	UJ
91-94-1	3,3'-Dichlorobenzidine	420	U	UJ
56-55-3	Benzo(a)Anthracene	6300	E	J
218-01-9	Chrysene	5400	E	J
117-81-7	bis(2-Ethylhexyl)Phthalate	420	U	UJ
117-84-0	Di-n-Octyl Phthalate	420	U	UJ
205-99-2	Benzo(b)Fluoranthene	4000	E	J
207-08-9	Benzo(k)Fluoranthene	3900	E	J
50-32-8	Benzo(a)Pyrene	4500	E	J
193-39-5	Indeno(1,2,3-cd)Pyrene	2800		J
53-70-3	Dibenz(a,h)Anthracene	420	U	UJ
191-24-2	Benzo(g,h,i)Perylene	2700		J

(1) - Cannot be separated from Diphenylamine

HS 5/20/93

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET `0051

EPA SAMPLE NO.

MW2DUPRE

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780FR

Sample wt/vol: 30.00 (g/mL) G Lab File ID: BH609

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 21 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	1000	U	UJ
100-02-7	4-Nitrophenol	1000	U	
132-64-9	Dibenzofuran	3000		
121-14-2	2,4-Dinitrotoluene	420	U	
84-66-2	Diethylphthalate	74	BJ	4.2 U
7005-72-3	4-Chlorophenyl-phenylether	420	U	
86-73-7	Fluorene	4200	E	J
100-01-6	4-Nitroaniline	1000	U	
534-52-1	4,6-Dinitro-2-Methylphenol	1000	U	UJ
86-30-6	N-Nitrosodiphenylamine (1)	420	U	
101-55-3	4-Bromophenyl-phenylether	420	U	
118-74-1	Hexachlorobenzene	420	U	
87-86-5	Pentachlorophenol	1000	U	
85-01-8	Phenanthrene	13000	E	J
120-12-7	Anthracene	5200	E	J
86-74-8	Carbazole	2300		
84-74-2	Di-n-Butylphthalate	49	J	
206-44-0	Fluoranthene	8700	E	J
129-00-0	Pyrene	16000	E	J
85-68-7	Butylbenzylphthalate	420	U	UJ
91-94-1	3,3'-Dichlorobenzidine	420	U	UJ
56-55-3	Benzo(a)Anthracene	6500	E	J
218-01-9	Chrysene	5600	E	J
117-81-7	bis(2-Ethylhexyl)Phthalate	420	U	UJ
117-84-0	Di-n-Octyl Phthalate	420	U	UJ
205-99-2	Benzo(b)Fluoranthene	3900	E	J
207-08-9	Benzo(k)Fluoranthene	3400	E	J
50-32-8	Benzo(a)Pyrene	4200	E	J
193-39-5	Indeno(1,2,3-cd)Pyrene	2600		J
53-70-3	Dibenz(a,h)Anthracene	420	U	UJ
191-24-2	Benzo(g,h,i)Perylene	2500		J

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 30053

EPA SAMPLE NO.

MW2DUPDL

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780XM

Sample wt/vol: 30.00 (g/mL) G Lab File ID: BH621

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 21 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/93

Injection Volume: 2.0(uL) Dilution Factor: 6.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2500	U
111-44-4	bis(2-Chloroethyl)Ether	2500	U
95-57-8	2-Chlorophenol	2500	U
541-73-1	1,3-Dichlorobenzene	2500	U
106-46-7	1,4-Dichlorobenzene	2500	U
95-50-1	1,2-Dichlorobenzene	2500	U
95-48-7	2-Methylphenol	2500	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2500	U
106-44-5	4-Methylphenol	150	DJ
621-64-7	N-Nitroso-Di-n-Propylamine	2500	U
67-72-1	Hexachloroethane	2500	U
98-95-3	Nitrobenzene	2500	U
78-59-1	Isophorone	2500	U
88-75-5	2-Nitrophenol	2500	U
105-67-9	2,4-Dimethylphenol	130	DJ
111-91-1	bis(2-Chloroethoxy)Methane	2500	U
120-83-2	2,4-Dichlorophenol	2500	U
120-82-1	1,2,4-Trichlorobenzene	2500	U
91-20-3	Naphthalene	5300	D
106-47-8	4-Chloroaniline	2500	U
87-68-3	Hexachlorobutadiene	2500	U
59-50-7	4-Chloro-3-Methylphenol	2500	U
91-57-6	2-Methylnaphthalene	2300	DJ
77-47-4	Hexachlorocyclopentadiene	2500	U
88-06-2	2,4,6-Trichlorophenol	2500	U
95-95-4	2,4,5-Trichlorophenol	6100	U
91-58-7	2-Chloronaphthalene	2500	U
88-74-4	2-Nitroaniline	6100	U
131-11-3	Dimethyl Phthalate	2500	U
208-96-8	Acenaphthylene	620	DJ
606-20-2	2,6-Dinitrotoluene	2500	U
99-09-2	3-Nitroaniline	6100	U
83-32-9	Acenaphthene	2600	D

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0055

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW2DUPDL

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780XM

Sample wt/vol: 30.00 (g/mL) G Lab File ID: BH621

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 21 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/93

Injection Volume: 2.0(uL) Dilution Factor: 6.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.20	2500	J
2.		UNKNOWN	10.31	1800	BJ
3.		UNKNOWN	11.52	2900	J
4.	90120	Naphthalene, 1-methyl-	16.34	1600	JN
5.		UNKNOWN C12H12 MW156	17.68	1000	J
6.		UNKNOWN C12H12 MW156	17.93	1300	J
7.		UNKNOWN HYDROCARBON C16H34 M	19.68	1100	J
8.		UNKNOWN C13H12 MW168	20.58	890	J
9.		UNKNOWN MW182	20.94	2300	J
10.		UNKNOWN HYDROCARBON	20.99	1400	J
11.		UNKNOWN C14H12 MW180	21.81	1300	J
12.		UNKNOWN HYDROCARBON	22.11	1600	J
13.	132650	Dibenzothiophene	22.64	1400	JN
14.		UNKNOWN HYDROCARBON	23.23	1300	J
15.		UNKNOWN C15H12 MW192	24.24	1900	J
16.		UNKNOWN C15H12 MW192	24.32	2800	J
17.		UNKNOWN MW190	24.63	4200	J
18.		UNKNOWN C16H12 MW204	25.00	1300	J
19.		UNKNOWN C17H12 MW216	27.71	3000	J
20.		UNKNOWN C17H12 MW216	27.88	3000	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0057

EPA SAMPLE NO.

MW3

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS031091

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DH273

Level: (low/med) LOW Date Received: 03/27/93

% Moisture: 21 decanted: (Y/N) N Date Extracted: 03/31/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

DH3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl-phenylether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-Methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	420	U
101-55-3	4-Bromophenyl-phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	40	J
120-12-7	Anthracene	420	U
86-74-8	Carbazole	420	U
84-74-2	Di-n-Butylphthalate	420	U
206-44-0	Fluoranthene	50	J
129-00-0	Pyrene	47	J
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)Anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)Phthalate	51	J
117-84-0	Di-n-Octyl Phthalate	420	U
205-99-2	Benzo(b)Fluoranthene	420	U
207-08-9	Benzo(k)Fluoranthene	420	U
50-32-8	Benzo(a)Pyrene	420	U
193-39-5	Indeno(1,2,3-cd)Pyrene	420	U
53-70-3	Dibenz(a,h)Anthracene	420	U
191-24-2	Benzo(g,h,i)Perylene	420	U

UJ

(1) - Cannot be separated from Diphenylamine

HS 4/20/93

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: 20059

MW4

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030779

Sample wt/vol: 30.00 (g/mL) G Lab File ID: BH603

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-Propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)Methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethyl Phthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

30060 EPA SAMPLE NO.

MW4

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030779

Sample wt/vol: 30.00 (g/mL) G Lab File ID: BH603

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
				D/C
51-28-5	2,4-Dinitrophenol	920	U	UJ
100-02-7	4-Nitrophenol	920	U	
132-64-9	Dibenzofuran	380	U	
121-14-2	2,4-Dinitrotoluene	380	U	
84-66-2	Diethylphthalate	87	BJ	38ul
7005-72-3	4-Chlorophenyl-phenylether	380	U	
86-73-7	Fluorene	380	U	
100-01-6	4-Nitroaniline	920	U	
534-52-1	4,6-Dinitro-2-Methylphenol	920	U	UJ
86-30-6	N-Nitrosodiphenylamine (1)	380	U	
101-55-3	4-Bromophenyl-phenylether	380	U	
118-74-1	Hexachlorobenzene	380	U	
87-86-5	Pentachlorophenol	920	U	
85-01-8	Phenanthrene	380	U	
120-12-7	Anthracene	380	U	
86-74-8	Carbazole	380	U	
84-74-2	Di-n-Butylphthalate	74	J	
206-44-0	Fluoranthene	380	U	
129-00-0	Pyrene	380	U	
85-68-7	Butylbenzylphthalate	380	U	
91-94-1	3,3'-Dichlorobenzidine	380	U	
56-55-3	Benzo(a)Anthracene	380	U	
218-01-9	Chrysene	380	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	37	J	
117-84-0	Di-n-Octyl Phthalate	380	U	
205-99-2	Benzo(b)Fluoranthene	380	U	
207-08-9	Benzo(k)Fluoranthene	380	U	
50-32-8	Benzo(a)Pyrene	380	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	380	U	
53-70-3	Dibenz(a,h)Anthracene	380	U	
191-24-2	Benzo(g,h,i)Perylene	380	U	

(1) - Cannot be separated from Diphenylamine

MS 5/20/93

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS 30061

MW4

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030779

Sample wt/vol: 30.00 (g/mL) G Lab File ID: BH603

Level: (low/med) LOW Date Received: 03/25/93

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/30/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN C9H20 MW128	8.07	270	J
2.		UNKNOWN	9.08	650	BJ
3.		UNKNOWN	9.32	940	J
4.	4436-75-3	3-Hexene-2, 5-dione	9.66	1000	BJN
5.		UNKNOWN	10.45	1300	BJ
6.		UNKNOWN	11.42	290	J
7.		UNKNOWN	11.69	3400	J
8.		UNKNOWN HYDROCARBON C13H28 M	15.60	230	J
9.		UNKNOWN HYDROCARBON	17.98	290	J
10.		UNKNOWN HYDROCARBON C15H32 M	18.50	420	J
11.		UNKNOWN HYDROCARBON C16H34 M	19.82	480	J
12.		UNKNOWN HYDROCARBON	20.43	330	J
13.		UNKNOWN HYDROCARBON C17H36 M	21.06	560	J
14.		UNKNOWN HYDROCARBON C19H40 M	21.14	460	J
15.		UNKNOWN HYDROCARBON	22.25	440	J
16.		UNKNOWN HYDROCARBON	23.38	440	J
17.		UNKNOWN HYDROCARBON	24.45	480	J
18.		UNKNOWN HYDROCARBON C21H44 M	25.47	380	J
19.		UNKNOWN HYDROCARBON C22H46 M	26.45	330	J
20.		UNKNOWN HYDROCARBON	27.38	480	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

?0062

MW5

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS031092

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DH276

Level: (low/med) LOW Date Received: 03/27/93

% Moisture: 17 decanted: (Y/N) N Date Extracted: 03/31/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-Di-n-Propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)Methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	960	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	960	U
131-11-3	Dimethyl Phthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	960	U
83-32-9	Acenaphthene	400	U

Sites

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

10063 | MW5

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS031092

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DH276

Level: (low/med) LOW Date Received: 03/27/93

% Moisture: 17 decanted: (Y/N) N Date Extracted: 03/31/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

DHG

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	960	U	
100-02-7	4-Nitrophenol	960	U	
132-64-9	Dibenzofuran	400	U	
121-14-2	2,4-Dinitrotoluene	400	U	
84-66-2	Diethylphthalate	33	BJ	#2 d
7005-72-3	4-Chlorophenyl-phenylether	400	U	
86-73-7	Fluorene	400	U	
100-01-6	4-Nitroaniline	960	U	
534-52-1	4,6-Dinitro-2-Methylphenol	960	U	dJ
86-30-6	N-Nitrosodiphenylamine (1)	400	U	
101-55-3	4-Bromophenyl-phenylether	400	U	
118-74-1	Hexachlorobenzene	400	U	
87-86-5	Pentachlorophenol	960	U	
85-01-8	Phenanthrene	400	U	
120-12-7	Anthracene	400	U	
86-74-8	Carbazole	400	U	
84-74-2	Di-n-Butylphthalate	23	J	
206-44-0	Fluoranthene	400	U	
129-00-0	Pyrene	400	U	
85-68-7	Butylbenzylphthalate	400	U	
91-94-1	3,3'-Dichlorobenzidine	400	U	
56-55-3	Benzo(a)Anthracene	400	U	
218-01-9	Chrysene	400	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	400	U	
117-84-0	Di-n-Octyl Phthalate	400	U	
205-99-2	Benzo(b)Fluoranthene	400	U	
207-08-9	Benzo(k)Fluoranthene	400	U	
50-32-8	Benzo(a)Pyrene	400	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	400	U	
53-70-3	Dibenz(a,h)Anthracene	400	U	
191-24-2	Benzo(g,h,i)Perylene	400	U	

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10064

MW5

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS031092

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DH276

Level: (low/med) LOW Date Received: 03/27/93

% Moisture: 17 decanted: (Y/N) N Date Extracted: 03/31/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.59	540	BJ
2.		UNKNOWN	6.83	1300	BJ
3.	4436753	3-Hexene-2, 5-dione	7.17	420	BJN
4.		UNKNOWN	7.55	280	J
5.		UNKNOWN	8.97	1100	J
6.		UNKNOWN	9.04	1700	J
7.		UNKNOWN HYDROCARBON	15.07	220	J
8.		UNKNOWN HYDROCARBON C15H32 M	15.57	220	J
9.		UNKNOWN HYDROCARBON C16H34 M	16.86	320	J
10.		UNKNOWN HYDROCARBON	17.44	380	J
11.		UNKNOWN HYDROCARBON C17H36 M	18.06	480	J
12.		UNKNOWN HYDROCARBON C19H40 M	18.13	420	J
13.		UNKNOWN HYDROCARBON C18H38 M	19.22	400	J
14.		UNKNOWN HYDROCARBON	19.33	260	J
15.		UNKNOWN HYDROCARBON	20.31	460	J
16.		UNKNOWN HYDROCARBON C20H42 M	21.36	340	J
17.		UNKNOWN HYDROCARBON C21H44 M	22.35	380	J
18.		UNKNOWN HYDROCARBON C22H46 M	23.31	700	J
19.		UNKNOWN HYDROCARBON	24.21	620	J
20.		UNKNOWN HYDROCARBON C24H50 M	25.10	460	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

10065 WARDW

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: AS031093

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BH619

Level: (low/med) LOW Date Received: 03/27/93

% Moisture: decanted: (Y/N) Date Extracted: 03/31/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0066

EPA SAMPLE NO.

WARDW

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: AS031093

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BH619

Level: (low/med) LOW Date Received: 03/27/93

% Moisture: decanted: (Y/N) Date Extracted: 03/31/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	2	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

HS 3/90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 0067

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WARDW

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: AS031093

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BH619

Level: (low/med) LOW Date Received: 03/27/93

% Moisture: decanted: (Y/N) Date Extracted: 03/31/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.91	4	J
2.		UNKNOWN	11.29	4	J
3.		UNKNOWN CYCLOALKANE	12.83	7	J
4.		UNKNOWN	25.57	34	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET 30068

EPA SAMPLE NO.

MW1

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030599

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 12 decanted: (Y/N) N Date Received: 03/24/93

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/29/93

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/02/93

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.7	U
72-55-9	4,4'-DDE	3.7	U
72-20-8	Endrin	3.7	U
33213-65-9	Endosulfan II	2.0	JP
72-54-8	4,4'-DDD	3.7	U
1031-07-8	Endosulfan sulfate	3.7	U
50-29-3	4,4'-DDT	3.7	U
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin ketone	3.7	U
7421-93-4	Endrin aldehyde	3.7	U
5103-71-9	alpha-Chlordane	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

00069

EPA SAMPLE NO.

MW2

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 23 decanted: (Y/N) N Date Received: 03/25/93

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/30/93

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/07/93

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	0.30	JP
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	0.76	JP
959-98-8	Endosulfan I	0.26	J
60-57-1	Dieldrin	4.3	U
72-55-9	4,4'-DDE	4.3	U
72-20-8	Endrin	0.83	JP
33213-65-9	Endosulfan II	1.9	J
72-54-8	4,4'-DDD	4.3	U
1031-07-8	Endosulfan sulfate	4.3	U
50-29-3	4,4'-DDT	4.3	U
72-43-5	Methoxychlor	22	U
53494-70-5	Endrin ketone	4.3	U
7421-93-4	Endrin aldehyde	4.3	U
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	2.2	U
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	87	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	43	U

HS 5/27/93

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET 10070

EPA SAMPLE NO.

MW2DUP

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030780MD

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 21 decanted: (Y/N) N Date Received: 03/25/93

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/30/93

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/07/93

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	0.24	JP
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	0.55	JP
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	4.2	U
72-55-9	4,4'-DDE	4.2	U
72-20-8	Endrin	4.2	U
33213-65-9	Endosulfan II	4.2	U
72-54-8	4,4'-DDD	4.2	U
1031-07-8	Endosulfan sulfate	4.2	U
50-29-3	4,4'-DDT	4.2	U
72-43-5	Methoxychlor	22	U
53494-70-5	Endrin ketone	4.2	U
7421-93-4	Endrin aldehyde	4.2	U
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	2.2	U
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	85	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

HS 5/27/93

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET 10071

EPA SAMPLE NO.

MW3

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS031091

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 21 decanted: (Y/N) N Date Received: 03/27/93

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/93

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/07/93

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.1 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	4.2	U
72-55-9	4,4'-DDE	4.2	U
72-20-8	Endrin	4.2	U
33213-65-9	Endosulfan II	4.2	U
72-54-8	4,4'-DDD	4.2	U
1031-07-8	Endosulfan sulfate	4.2	U
50-29-3	4,4'-DDT	4.2	U
72-43-5	Methoxychlor	22	U
53494-70-5	Endrin ketone	4.2	U
7421-93-4	Endrin aldehyde	4.2	U
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	2.2	U
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	85	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

MS 5/20/93

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET 0072

EPA SAMPLE NO.

MW4

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS030779

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 13 decanted: (Y/N) N Date Received: 03/25/93

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/30/93

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/07/93

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.1 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.8	U
72-55-9	4,4'-DDE	3.8	U
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	2.2	JP
72-54-8	4,4'-DDD	3.8	U
1031-07-8	Endosulfan sulfate	3.8	U
50-29-3	4,4'-DDT	3.8	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.8	U
7421-93-4	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

0073

MW5

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) SOIL Lab Sample ID: AS031092

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 17 decanted: (Y/N) N Date Received: 03/27/93

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/93

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/07/93

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.1 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	4.0	U
72-55-9	4,4'-DDE	4.0	U
72-20-8	Endrin	4.0	U
33213-65-9	Endosulfan II	4.0	U
72-54-8	4,4'-DDD	4.0	U
1031-07-8	Endosulfan sulfate	4.0	U
50-29-3	4,4'-DDT	4.0	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	4.0	U
7421-93-4	Endrin aldehyde	4.0	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	81	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	40	U
11096-82-5	Aroclor-1260	40	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET 0074

EPA SAMPLE NO.

WARDW

Lab Name: RECRA ENVIRON Contract: NY3A4497

Lab Code: RECMD Case No.: 4497 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: AS031093

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 03/27/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 03/31/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/06/93

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RS 4/20/93

NYSDEC - ASP

0075

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: RECRA_ENVIRONMENTAL_INC._ Contract: NY93-290__

Lab Code: RECNY_ Case No.: 4497_ SAS No.: _____ SDG No.:MW1___

Version: ASP91

NYSDEC Sample No.	Lab Sample ID.
_MW-1_____	__5070_____
_MW-2_____	__5072_____
_MW-2D_____	__5073_____
_MW-3_____	__5074_____
_MW-3D_____	__5075_____
_MW-3S_____	__5076_____
_MW-4_____	__5071_____
_MW-5_____	__5077_____
_WAR_DW_____	__4994_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

_____

_____

_____

_____

I certify that this data package is in compliance with the terms and conditions of the Protocol, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Robert K. Wyeth_____

Date: 4/26/93 Title: Laboratory Director_____

NYSDEC ASP

0076

1

NYSDEC SAMPLE NO.

INORGANIC ANALYSES DATA SHEET

MW-1

Lab Name: RECRA_ENVIRONMENTAL_INC._ Contract: NY93-290__

Lab Code: RECNY_ Case No.: 4497_ SAS No.: _____ SDG No.: MW1___

Matrix (soil/water): SOIL_ Lab Sample ID: 5070_____

Level (low/med): LOW__ Date Received: 03/24/93

% Solids: _78.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	PVQ
7429-90-5	Aluminum	6880		*	P	J
7440-36-0	Antimony	15.4	U	N	P	UJ
7440-38-2	Arsenic	9.5			F	
7440-39-3	Barium	23.5	B		P	J
7440-41-7	Beryllium	1.3	U		P	
7440-43-9	Cadmium	0.57	B	SN	F	J
7440-70-2	Calcium	56400		*	P	J
7440-47-3	Chromium	10.8		*	P	J
7440-48-4	Cobalt	8.0	B		P	J
7440-50-8	Copper	30.6			P	
7439-89-6	Iron	18400			P	
7439-92-1	Lead	16.9		+N*	F	J
7439-95-4	Magnesium	14200		*	P	J
7439-96-5	Manganese	395		*	P	J
7439-97-6	Mercury	0.13	U		CV	
7440-02-0	Nickel	26.8			P	
7440-09-7	Potassium	1380			P	
7782-49-2	Selenium	1.00	U	N	F	UJ
7440-22-4	Silver	0.05	U		F	
7440-23-5	Sodium	240	B		P	J
7440-28-0	Thallium	1.2	U	W	F	UJ
7440-62-2	Vanadium	16.3			P	
7440-66-6	Zinc	94.7		*	P	J
	Cyanide	1.6	U		C	

HS 5/20/93

Color Before: BROWN____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

LAB_SAMPLE_ID:_AS030599-SG000022

NYSDEC ASP

1 #0077 NYSDEC SAMPLE NO.

INORGANIC ANALYSES DATA SHEET

MW-2

Lab Name: RECRA_ENVIRONMENTAL_INC._ Contract: NY93-290__

Lab Code: RECNY_ Case No.: 4497_ SAS No.: _____ SDG No.: MW1___

Matrix (soil/water): SOIL_ Lab Sample ID: 5072_____

Level (low/med): LOW__ Date Received: 03/25/93

% Solids: _72.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	D.V.A
7429-90-5	Aluminum	8010		*	P	J
7440-36-0	Antimony	15.7	U	N	P	UJ
7440-38-2	Arsenic	13.1			F	
7440-39-3	Barium	28.9	B		P	J
7440-41-7	Beryllium	1.3	U		P	
7440-43-9	Cadmium	0.58	B	SN	F	J
7440-70-2	Calcium	46900		*	P	J
7440-47-3	Chromium	11.7		*	P	J
7440-48-4	Cobalt	9.7	B		P	J
7440-50-8	Copper	44.3			P	
7439-89-6	Iron	27100			P	
7439-92-1	Lead	34.6		+N*	F	J
7439-95-4	Magnesium	14300		*	P	J
7439-96-5	Manganese	468		*	P	J
7439-97-6	Mercury	0.14	U		CV	
7440-02-0	Nickel	27.6			P	
7440-09-7	Potassium	1510			P	
7782-49-2	Selenium	1.1	U	N	F	UJ
7440-22-4	Silver	0.05	B		F	J
7440-23-5	Sodium	251	B		P	J
7440-28-0	Thallium	1.3	U	W	F	UJ
7440-62-2	Vanadium	19.4			P	
7440-66-6	Zinc	163		*	P	J
	Cyanide	1.7	U		C	

HIS 5/24/93

Color Before: BROWN____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

LAB_SAMPLE_ID:_AS030780-SG000022

NYSDEC ASP

0078

1

NYSDEC SAMPLE NO.

INORGANIC ANALYSES DATA SHEET

MW-3

Lab Name: RECRA_ENVIRONMENTAL_INC._ Contract: NY93-290__

Lab Code: RECNY_ Case No.: 4497_ SAS No.: _____ SDG No.: MW1___

Matrix (soil/water): SOIL_ Lab Sample ID: 5074_____

Level (low/med): LOW__ Date Received: 03/27/93

% Solids: _82.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8950		*	P	J
7440-36-0	Antimony	13.9	U	N	P	UJ
7440-38-2	Arsenic	6.0			F	
7440-39-3	Barium	58.4			P	
7440-41-7	Beryllium	1.2	U		P	
7440-43-9	Cadmium	0.14	B	N	F	J
7440-70-2	Calcium	19300		*	P	J
7440-47-3	Chromium	12.5		*	P	J
7440-48-4	Cobalt	6.7	B		P	J
7440-50-8	Copper	15.2			P	
7439-89-6	Iron	21100			P	
7439-92-1	Lead	11.6		N*	F	J
7439-95-4	Magnesium	7300		*	P	J
7439-96-5	Manganese	334		*	P	J
7439-97-6	Mercury	0.11	U		CV	
7440-02-0	Nickel	18.0			P	
7440-09-7	Potassium	991	B		P	J
7782-49-2	Selenium	0.97	U	WN	F	UJ
7440-22-4	Silver	0.05	U		F	
7440-23-5	Sodium	186	U		P	
7440-28-0	Thallium	1.2	U	W	F	UJ
7440-62-2	Vanadium	16.8			P	
7440-66-6	Zinc	65.6		*	P	J
	Cyanide	1.5	U		C	

DUP

MS 5/20/93

Color Before: BROWN____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

LAB_SAMPLE_ID:_AS031091-SG000022

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

MW-4

Lab Name: RECRA_ENVIRONMENTAL_INC._ Contract: NY93-290__

Lab Code: RECNY_ Case No.: 4497_ SAS No.: _____ SDG No.: MW1___

Matrix (soil/water): SOIL_ Lab Sample ID: 5071_____

Level (low/med): LOW__ Date Received: 03/25/93

% Solids: _75.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6760		*	P	J
7440-36-0	Antimony	16.0	U	N	P	UJ
7440-38-2	Arsenic	4.6			F	
7440-39-3	Barium	39.5	B		P	J
7440-41-7	Beryllium	1.3	U		P	
7440-43-9	Cadmium	0.26	B	SN	F	J
7440-70-2	Calcium	14300		*	P	J
7440-47-3	Chromium	8.3		*	P	J
7440-48-4	Cobalt	5.3	U		P	
7440-50-8	Copper	19.7			P	
7439-89-6	Iron	18000			P	
7439-92-1	Lead	17.4		SN*	F	J
7439-95-4	Magnesium	5180		*	P	J
7439-96-5	Manganese	336		*	P	J
7439-97-6	Mercury	0.13	U		CV	
7440-02-0	Nickel	16.7			P	
7440-09-7	Potassium	1100	B		P	J
7782-49-2	Selenium	0.98	U	WN	F	UJ
7440-22-4	Silver	0.05	U		F	
7440-23-5	Sodium	213	U		P	
7440-28-0	Thallium	1.2	U		F	
7440-62-2	Vanadium	13.4			P	
7440-66-6	Zinc	61.1		*	P	J
	Cyanide	1.6	U		C	

Color Before: BROWN____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

LAB_SAMPLE_ID:_AS030779-SG000022

NYSDEC ASP

0080

1

NYSDEC SAMPLE NO.

INORGANIC ANALYSES DATA SHEET

MW-5

Lab Name: RECRA_ENVIRONMENTAL_INC._ Contract: NY93-290__

Lab Code: RECNY_ Case No.: 4497_ SAS No.: _____ SDG No.: MW1___

Matrix (soil/water): SOIL_ Lab Sample ID: 5077_____

Level (low/med): LOW__ Date Received: 03/27/93

% Solids: _80.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5450		*	P	J
7440-36-0	Antimony	15.3	U	N	P	UJ
7440-38-2	Arsenic	7.0			F	
7440-39-3	Barium	22.9	B		P	J
7440-41-7	Beryllium	1.3	U		P	
7440-43-9	Cadmium	0.53	B	SN	F	J
7440-70-2	Calcium	39600		*	P	J
7440-47-3	Chromium	8.3		*	P	J
7440-48-4	Cobalt	5.8	B		P	J
7440-50-8	Copper	22.1			P	
7439-89-6	Iron	14700			P	
7439-92-1	Lead	8.2		N*	F	J
7439-95-4	Magnesium	10800		*	P	J
7439-96-5	Manganese	297		*	P	J
7439-97-6	Mercury	0.11	U		CV	
7440-02-0	Nickel	18.3			P	
7440-09-7	Potassium	1140	B		P	J
7782-49-2	Selenium	1.00	U	WN	F	UJ
7440-22-4	Silver	0.05	U		F	
7440-23-5	Sodium	204	U		P	
7440-28-0	Thallium	1.2	U		F	
7440-62-2	Vanadium	12.0	B		P	J
7440-66-6	Zinc	64.4		*	P	J
	Cyanide	1.5	U		C	

MS 51%

Color Before: BROWN____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: ___

Comments:

LAB_SAMPLE_ID:_AS031092-SG000022

1
INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.
WAR DW

Lab Name: RECRA_ENVIRONMENTAL_INC._ Contract: NY93-290__

Lab Code: RECNY_ Case No.: 4497_ SAS No.: _____ SDG No.: MW1___

Matrix (soil/water): WATER Lab Sample ID: 4994_____

Level (low/med): LOW__ Date Received: 03/27/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	DVQ
7429-90-5	Aluminum	130	B	*	P	J
7440-36-0	Antimony	60.0	U	N	P	UJ
7440-38-2	Arsenic	4.0	U		F	
7440-39-3	Barium	54.4	B		P	J
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.20	U	N	F	UJ
7440-70-2	Calcium	43900		*	P	J
7440-47-3	Chromium	10.6		*	P	J
7440-48-4	Cobalt	20.0	U		P	
7440-50-8	Copper	10.0	U		P	
7439-89-6	Iron	797			P	
7439-92-1	Lead	3.0	U	WN*	F	UJ
7439-95-4	Magnesium	9920		*	P	J
7439-96-5	Manganese	32.8		*	P	J
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	30.0	U		P	
7440-09-7	Potassium	1000	B		P	J
7782-49-2	Selenium	4.0	U	WN	F	UJ
7440-22-4	Silver	10.0	U		P	
7440-23-5	Sodium	5840			P	
7440-28-0	Thallium	5.0	U		F	
7440-62-2	Vanadium	20.0	U		P	
7440-66-6	Zinc	37.2		*	P	J
	Cyanide	10.0	U		C	

MS 5/2/93

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: ___

Comments:
LAB_SAMPLE_ID:_AS031093-SG000021

APPENDIX C

GEOLOGIC DATA

ENGINEERING–SCIENCE DRILLING RECORD

BORING MW–1

Contractor: SJB Drilling
Driller: Kenny Swanick
Inspector: A. Zielinski
Rig Type: CME 550
Continuous Split Spoon Sampling

PROJECT NAME Warsaw Village Landfill
PROJECT NUMBER SY 327.06.04

Sheet 1 of 1
Location: South end of Site

GROUNDWATER OBSERVATIONS

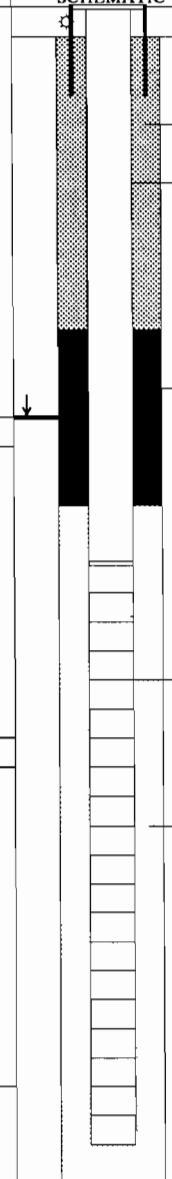
Water Level				
Date				
Time				
Meas. From				

Weather Cloudy 40's
Date/Time Start 12:30 pm, 3/24/93
Date/Time Finish 4:00 pm, 3/24/93

Plot Plan

Microtip Reading	Run	Sample Depth	Percent Recovery	Blow Cts	FIELD IDENTIFICATION OF MATERIAL
		0			Continuous Split Spoon Sampling
					0 to 1.5' Black SAND fine to coarse, some silt, trace gravel, grass, roots,
0.0	1	1	75	3/6	wood chips, moss= topsoil
				5/5	
		2			1.5 to 2.2' Brown SAND fine to medium, some silt, damp, loose
					FILL, Brown to Gray Gravel and Sand, red brick, weathered concrete
0.0	2	3	55	7/6	
				8/7	
		4			
					4.0' to 5.4' Brown SAND fine to medium, some silt, wood chips
0.0	3	5	73	2/2	
				4/4	
		6			FILL 5.4 to 6.0' Gravel and Sand, weathered concrete, brown stain
					6.0 to 6.8' Brown SAND fine, some silt, damp
0.0	4	7	80	3/5	6.8 to 7.2' Gray CLAY, trace silt, dense, wet
				5/5	7.2' to 10.8' Gray SAND fine to coarse, trace to some silt, dilatant, saturated
		8			
0.0	5	9	50	3/4	
				4/4	
		10			
					No Recovery: spoon coated with very wet gray sand, fine to medium
0.0	6	11	0	1/2	
				1/2	
		12			
					12 to 12.5' Gray CLAY, trace + silt, dense
0.0	7	13	92	4/3	12.5 to 14.0' Gray SAND fine to coarse, saturated, dilatant,
				3/3	grain size layering
		14			
					Gray SAND, course at top grading to fine at base, some + silt, trace clay
0.0	8	15	50	HM/1	saturated
				1/2	
		16			
					to 17.2' Gray SAND, coarse to fine, saturated
3.2	9	17	95	3/3	
				10/11	17.2' to 17.8' Sand and Silt, some clay, saturated
		18			
					17.8 to 20.0' GRAVEL, some sand medium to coarse, saturated
0.0	10	19	78	9/7	grading coarse sand to gravel to coarse sand
				9/9	
		20			
					Gray SAND, medium to coarse, saturated
0.0	11	21	75	HM/2	
				7/8	21.6 to 22.0' Gravel and Sand, saturated
		22			Total Depth 22.0'

WELL SCHEMATIC



COMMENTS

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Continuous Split Spoon Sampling, Total Depth 22.0' Grain size analysis sample 12–14'
0–6.8' FILL, 6.8'–7.2' CLAY, 7.2–12.0' SAND, 12–12.5' CLAY, 12.5–17.8' SAND
17.8–22.0' Gravel and Sand.

WELL INSTALLATION CHECKLIST

Site Name: Warsaw Village Landfill
Job Number: SY327.06.04
Boring Number: MW-1
Date: 3/24/93
By: A. Zielinski
Page:

Depth of Hole: 22.0'
Diameter of Hole: ~8"

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?
Yes X No

SCREEN
Material: 2" PVC, Schedule 40
Slot Size: 10 slot, 0.010"
Length: 10'
Threaded: Yes X No

RISER PIPE
Material: 2" PVC, Schedule 40 Screen set 9.0-19.0'
Total Length of Well - Screen Length: 11.9'
Threaded: Yes X No

END CAP
Material: PVC
Threaded: Yes X No

ALL JOINTS TEFLON TAPED Yes No X

TOTAL LENGTH OF WELL CASING (includes screen and stick-up) 21.9'

SAND PACK
Type/Size: Sibley 1240
Amount (calculated):
Amount (actual): 200 lbs
Installed with Tremie: Yes No X

BENTONITE SEAL(S)
Type/Size: 3/8" Pellets
Amount (calculated):
Amount (actual): 80 lbs
Installed with Tremie: Yes No X
Secondary Seal(s) Used: Yes No X
Explain:

Bentonite allowed to swell at least 30 minutes? Yes X No

WELL INSTALLATION CHECKLIST

Site Name: Warsaw Village Landfill Date: 3/24/93
Job Number: SY327.06.04 By: A. Zielinski
Boring Number: MW-1 Page: _____

GROUT/CEMENT

Mixture (# cement / # bentonite): 1 3/4 bag/ 1/4 bag
Mixture (Gal. water / # dry mix): _____
Amount (calculated): _____
Amount (actual): 30 gals
Installed with Tremie: Yes _____ No X

LOCKING PROTECTIVE CASING INSTALLED Yes X No _____
Locked immediately after installation: Yes X No _____
Grout sloped at surface to allow run-off: Yes X No _____
Drain hole drilled prior to development: Yes _____ No X
Stick-up: 2.46'

ANY FOREIGN OBJECTS LOST IN THE WELL Yes _____ No X
If YES:
(1) What was lost:
(2) Depth:
(3) Stage of well installation:
(4) Was object retrieved: Yes _____ No _____
(All or part/how) _____

WELL CAPPED: Yes X No _____

WELL IDENTIFIED: Yes X No _____

DISPOSAL OF CUTTINGS

Left in pile: X
Spread out: _____ PID reading: _____ ppm
Containerized: _____
Other: _____

DISPOSAL OF FLUIDS

Run off on ground surface: X
Containerized: _____
Other: _____

_____
Engineering-Science Representative

March 24, 1993
Date

wlcklfm

ENGINEERING–SCIENCE DRILLING RECORD

BORING MW–2

Contractor: SJB Drilling
Driller: Kenny Swanich
Inspector: A. Zielinski
Rig Type: CME 550
Continuous Split Spoon Sampling

PROJECT NAME Warsaw Village Landfill
PROJECT NUMBER SY 327.06.04

Sheet 1 of 1
Location:
East–central portion of site

Weather Clearing, ~45 F
Date/Time Start 2:10 pm, 3/25/93
Date/Time Finish 4:45 pm, 3/25/93

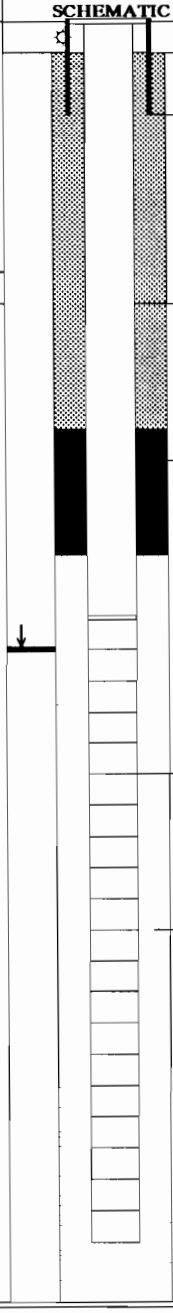
Plot Plan

GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From				

Microtip Reading	Run	Sample Depth	Percent Recovery	Blow Cts	FIELD IDENTIFICATION OF MATERIAL
		0			Continuous Split Spoon Sampling
					Brown Sand and Silt, trace clay, grass roots, worms, loose, moist
0.0	1	1	50	1/2	
				2/3	
		2			
					Brown Sand and Silt, trace gravel, loose, moist to 3.5'
0.0	2	3	48	2/4	
				6/13	
		4			3.5 to 4.2' WOOD
					Brown to Black Sand and silt, trace clay, dense, moist
1.3	3	5	60	1/3	
				4/5	
		6			
					Brown Sand and Silt, trace + clay, dense, moist
4.2	4	7	30	5/11	
				18/18	
		8			
					Brown SAND fine to coarse, some – silt, moist
2.0	5	9	70	6/4	
				4/6	saturated at 9.5', dilatant
		10			
					10' to 11.2', Brown SAND medium to coarse, saturated
2.0	6	11	60	6/4	
				3/3	11.2' to 12.0' Brown SAND medium to fine, some silt, dilatant, saturated
		12			
					Brown–Gray SAND fine to coarse, some silt, dilatant, saturated
0.0	7	13	90	3/4	
				5/5	
		14			
					Gray SAND fine to medium, some + silt, saturated, running sands
0.0	8	15	55	6/5	dilatant where water content is low
				3/3	
		16			
					Gray SAND, fine to medium to 16.5'
0.0	9	17	100	HMX2	16.5 to 18.0' Gray fine Sand and Silt, trace clay, saturated, dense
				1/3	
		18			
					Gray SAND fine to medium, some silt, trace clay, saturated
0.0	10	19	65	HM/1	
				4/3	
		20			Total Depth 20.0'

WELL SCHEMATIC



COMMENTS

2.11' stick up
Grout to 6.0'
2"pvc riser to 9.0'
Bentonite seal
6.0' to 8.0'
2" well screen
9.0' to 19.0'
Sand pack
8.0' to 20.0'
TD 20.0'

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Continuous Split Spoon Sampling, Total Depth 20.0'
Grain size analysis samples collected from 12 to 14' and from 16 to 18'
0–0–3.5' Sand and Silt, 3.5–4.2' WOOD, 4.2–20.0' SAND

WELL INSTALLATION CHECKLIST

Site Name: Warsaw Village Landfill
Job Number: SY327.06.04
Boring Number: MW-2
Date: March 25, 1993
By: A. Zielinski
Page:

Depth of Hole: 20.0'
Diameter of Hole: ~8'

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?

Yes X No

SCREEN

Material: 2" PVC, Schedule 40
Screen set 9.0–19.0'
Slot Size: 10 slot, 0.010"
Length: 10'
Threaded: Yes X No

RISER PIPE

Material: 2" PVC, Schedule 40
Total Length of Well – Screen Length: 12'
Threaded: Yes X No

END CAP

Material: PVC
Threaded: Yes X No

ALL JOINTS TEFLON TAPED Yes No X

TOTAL LENGTH OF WELL CASING (includes screen and stick-up) 22.0'

SAND PACK

Type/Size: Sibley 1240
Amount (calculated):
Amount (actual): 200 lbs
Installed with Tremie: Yes X No

BENTONITE SEAL(S)

Type/Size: 3/8" Pellets
Amount (calculated):
Amount (actual): 50 lbs
Installed with Tremie: Yes No X
Secondary Seal(s) Used: Yes No X
Explain:

Bentonite allowed to swell at least 30 minutes? Yes X No

WELL INSTALLATION CHECKLIST

Site Name: Warsaw Village Landfill
Job Number: SY327.06.04
Boring Number: MW-2

Date: March 25, 1993
By: A. Zielinski
Page:

GROUT/CEMENT

Mixture (# cement / # bentonite): 2 bags/ 1/2 bag clay
Mixture (Gal. water / # dry mix):
Amount (calculated):
Amount (actual): 30 gals
Installed with Tremie: Yes ____ No X

LOCKING PROTECTIVE CASING INSTALLED Yes X No ____
Locked immediately after installation: Yes X No ____
Grout sloped at surface to allow run-off: Yes X No ____
Drain hole drilled prior to development: Yes ____ No X
Stick-up: 2.11'

ANY FOREIGN OBJECTS LOST IN THE WELL Yes ____ No X
If YES:
(1) What was lost:
(2) Depth:
(3) Stage of well installation:
(4) Was object retrieved: Yes ____ No ____
(All or part/how)

WELL CAPPED: Yes X No ____

WELL IDENTIFIED: Yes X No ____

DISPOSAL OF CUTTINGS

Left in pile: X
Spread out: PID reading: ____ ppm
Containerized:
Other:

DISPOSAL OF FLUIDS

Run off on ground surface: X
Containerized:
Other:

Engineering-Science Representative

March 25, 1993
Date

wlcklfm

ENGINEERING–SCIENCE DRILLING RECORD

BORING MW-3

Contractor: SJB Drilling
Driller: Kenny Swinnich
Inspector: A. Zielinski
Rig Type: CME 550
Continuous Split Spoon Sampling

PROJECT NAME Warsaw Village Landfill
PROJECT NUMBER SY 327.06.04

Sheet 1 of 1
Location: north central area

Weather Sunny, 40 F
Date/Time Start 9:30 am, 3/26/93
Date/Time Finish 11:50 am, 3/26/93

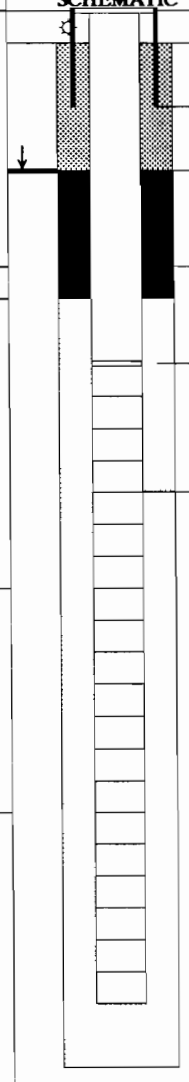
Plot Plan

GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From				

Microtip Reading	Run	Sample Depth	Percent Recovery	Blow Cts	FIELD IDENTIFICATION OF MATERIAL
		0			Continuous Split Spoon Sampling
					Brown SAND medium to fine, some silt, trace gravel, dense, moist
3.2	1	1	70	HM/2	
				3/6	
		2			water at 2'
					Brown SAND medium to fine, some silt, to 3.6', saturated
2.1	2	3	30	7/7	
				8/8	at 3.6' GRAVEL coarse, angular to 3.8'
		4			3.8 to 4.0' silt and clay, dense, saturated
					GRAVEL, some + sand, green and yellow discoloration, damp, loose
3.4	3	5	35	6/7	
				6/7	
		6			
					Gravel and Sand, sand medium to fine, saturated, thick black substance
1.7	4	7	20	10/9	coating sample
				5/5	
		8			
					from 8.0 to 8.6', Gravel and Sand, saturated
0.0	5	9	65	3/4	8.6 to 10.0' Grey Silt and Clay, dense, massive, moist
				5/7	does not fracture easily
		10			
					Grey Silt and Clay, trace fine sand, dense, moist
0.0	6	11	60	3/3	
				3/4	
		12			
					Grey SAND fine to medium, some silt, trace – gravel, dense, saturated
0.0	7	13	100	2/3	
				6/9	
		14			
					Grey SAND fine to medium, some silt, trace gravel, dilatant, saturated
0.0	8	15	85	2/3	
				3/4	
		16			TD 16.0'
		17			

WELL SCHEMATIC



COMMENTS

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Split Spoon, total depth, 16.0', Grain size analysis samples collected 8–14'
No jar samples collected, all recovery required for laboratory samples.
0.0–3.8' SAND, 3.8–4.0' Silt/Clay, 4.0–8.6' Gravel/Sand, 8.6–12.0' Silt/Clay, 12.0–16.0' SAND

WELL INSTALLATION CHECKLIST

Site Name: Warsaw Village Landfill
Job Number: SY327.06.04
Boring Number: MW-3

Date: March 26, 1993
By: A. Zielinski
Page:

Depth of Hole: 16'
Diameter of Hole: ~8"

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?

Yes X No

SCREEN

Material: 2" PVC, Schedule 40
Slot Size: 10 Slot 0.010"
Length: 10'
Threaded: Yes X No

Screen set from 5.0-15.0'

RISER PIPE

Material: 2" PVC, Schedule 40
Total Length of Well - Screen Length: 8'
Threaded: Yes X No

END CAP

Material: PVC
Threaded: Yes X No

ALL JOINTS TEFLON TAPED Yes No X

TOTAL LENGTH OF WELL CASING (includes screen and stick-up) 18'

SAND PACK

Type/Size: Sibley 1240
Amount (calculated):
Amount (actual): 200 lbs
Installed with Tremie: Yes No X

BENTONITE SEAL(S)

Type/Size: 3/8" Pellets
Amount (calculated):
Amount (actual): 40 lbs
Installed with Tremie: Yes No X
Secondary Seal(s) Used: Yes No X
Explain:

Bentonite allowed to swell at least 30 minutes? Yes X No

WELL INSTALLATION CHECKLIST

Site Name: Warsaw Village Landfill
Job Number: SY327.06.04
Boring Number: MW-3

Date: March 26, 1993
By: A. Zielinski
Page:

GROUT/CEMENT

Mixture (# cement / # bentonite): 1 bag/ 1/4 bag
Mixture (Gal. water / # dry mix):
Amount (calculated):
Amount (actual): 15 gals
Installed with Tremie: Yes ____ No X

LOCKING PROTECTIVE CASING INSTALLED Yes X No ____
Locked immediately after installation: Yes X No ____
Grout sloped at surface to allow run-off: Yes X No ____
Drain hole drilled prior to development: Yes ____ No X
Stick-up: 2.3'

ANY FOREIGN OBJECTS LOST IN THE WELL Yes ____ No X
If YES:
(1) What was lost:
(2) Depth:
(3) Stage of well installation:
(4) Was object retrieved: Yes ____ No ____
(All or part/how)

WELL CAPPED: Yes X No ____

WELL IDENTIFIED: Yes X No ____

DISPOSAL OF CUTTINGS

Left in pile: X
Spread out: PID reading: ____ ppm
Containerized:
Other:

DISPOSAL OF FLUIDS

Run off on ground surface: X
Containerized:
Other:

Engineering-Science Representative

March 26, 1993
Date

wick1fm

ENGINEERING–SCIENCE DRILLING RECORD

BORING MW–4

Contractor: SJB Drilling
Driller: Kenny Swannich
Inspector: A. Zielinski
Rig Type: CME 550
Continuous Split Spoon Sampling

PROJECT NAME Warsaw Village Landfill
PROJECT NUMBER SY 327.06.04

Sheet 1 of 1
Location: West–central area of site

Weather Fog ~38 F
Date/Time Start 10:00 am, 3/25/93
Date/Time Finish 12:00 pm, 3/25/93

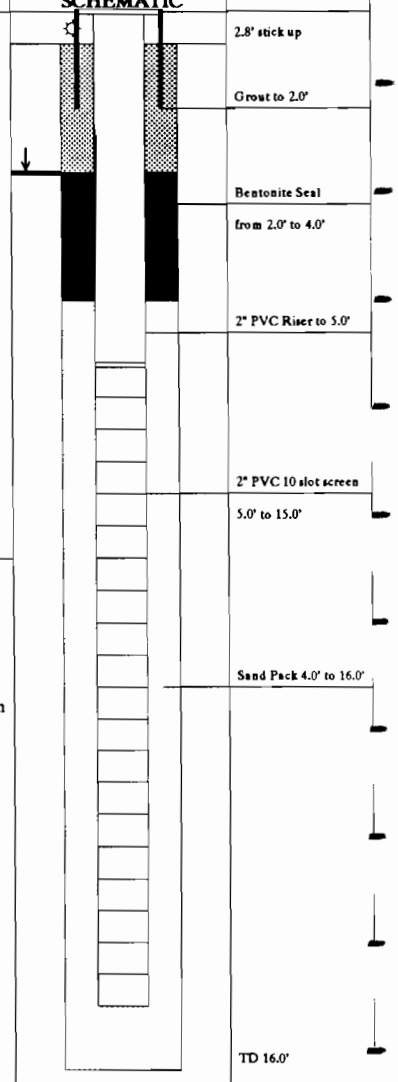
Plot Plan

GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From				

Microtip Reading	Run	Sample Depth	Percent Recovery	Blow Cts	FIELD IDENTIFICATION OF MATERIAL
		0			Continuous Split Spoon Sampling
					Brown/Red SAND fine to coarse, some silt, trace gravel, well rounded, damp
1.2	1	1	50	2/3	grass roots and moss
				3/4	
		2			
					Brown SAND fine to coarse, some silt and gravel, well rounded, wet
0.4	2	3	20	2/3	
				3/3	
		4			
					No recovery, very wet, gray, medium sand on spoon
0.0	3	5	0	1/3	
				1/1	
		6			
					Brown Sand and Silt, saturated, black mottling, pieces of decomposing wood
0.0	4	7	46	HM	
		8			
					Brown coarse Sand and Gravel, saturated, clean
0.0	5	9	30	1/1	
				6/6	
		10			
					Course Sand and Gravel, rounded limestone and crystalline rocks, saturated, clean
0.0	6	11	25	6/11	
				12/12	
		12			
					No recovery, no penetration, augered to 14.0'
0.0	7	13	0	42/	
		14			
					Sand and Gravel, rounded, saturated, clean
0.0	8	15	5	10/10	
				8/6	
		16			Total Depth 16.0'
		17			

WELL SCHEMATIC



COMMENTS

Continuous Split Spoon, Total Depth 16.0', Grain size analysis samples 10–12'

0–8.0' SAND and Silt, 8.0–16.0' Sand/Gravel

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

WELL INSTALLATION CHECKLIST

Site Name: Warsaw Village Landfill
Job Number: SY327.06.04
Boring Number: MW-4

Date: 3/25/93
By: A. Zielinski
Page:

Depth of Hole: 16.0'
Diameter of Hole: ~8"

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?

Yes X No

SCREEN

Material: 2" PVC, Schedule 40
Slot Size: 10 slot, 0,010"
Length: 10'
Threaded: Yes X No

Screen set from 5.0-15.0'

RISER PIPE

Material: 2" PVC, Schedule 40
Total Length of Well - Screen Length: 8.0'
Threaded: Yes X No

END CAP

Material: PVC
Threaded: Yes X No

ALL JOINTS TEFLON TAPED Yes No X

TOTAL LENGTH OF WELL CASING (includes screen and stick-up) 18.0'

SAND PACK

Type/Size: Sibley 1240
Amount (calculated):
Amount (actual): 190 lbs
Installed with Tremie: Yes No X

BENTONITE SEAL(S)

Type/Size: 3/8" Pellets
Amount (calculated):
Amount (actual): 40 lbs
Installed with Tremie: Yes No X
Secondary Seal(s) Used: Yes No X
Explain:

Bentonite allowed to swell at least 30 minutes? Yes X No

WELL INSTALLATION CHECKLIST

Site Name: Warsaw Village Landfill
Job Number: SY327.06.04
Boring Number: MW-4
Date: 3/25/93
By: A. Zielinski
Page:

GROUT/CEMENT

Mixture (# cement / # bentonite): 1bag/ 1/4 bag
Mixture (Gal. water / # dry mix):
Amount (calculated):
Amount (actual): 15 gallons
Installed with Tremie: Yes ____ No X

LOCKING PROTECTIVE CASING INSTALLED Yes X No ____
Locked immediately after installation: Yes X No ____
Grout sloped at surface to allow run-off: Yes X No ____
Drain hole drilled prior to development: Yes ____ No X
Stick-up: 2.8'

ANY FOREIGN OBJECTS LOST IN THE WELL Yes ____ No X
If YES:
(1) What was lost:
(2) Depth:
(3) Stage of well installation:
(4) Was object retrieved: Yes ____ No ____
(All or part/how)

WELL CAPPED: Yes X No ____

WELL IDENTIFIED: Yes X No ____

DISPOSAL OF CUTTINGS

Left in pile: X
Spread out: PID reading: ____ ppm
Containerized:
Other:

DISPOSAL OF FLUIDS

Run off on ground surface: X
Containerized:
Other:

Engineering-Science Representative

3/25/93
Date

wicklfm

ENGINEERING–SCIENCE DRILLING RECORD

BORING MW-5

Contractor: SJB Drilling
Driller: Kenny Swanich
Inspector: A. Zielinski
Rig Type: CME 550

PROJECT NAME Warsaw Village Landfill
PROJECT NUMBER SY 327.06.04

Sheet 1 of 1
Location: south/west portion of site

Weather Sunny 50's
Date/Time Start 1:45 pm, 3/26/93
Date/Time Finish 4:10 pm, 3/26/93

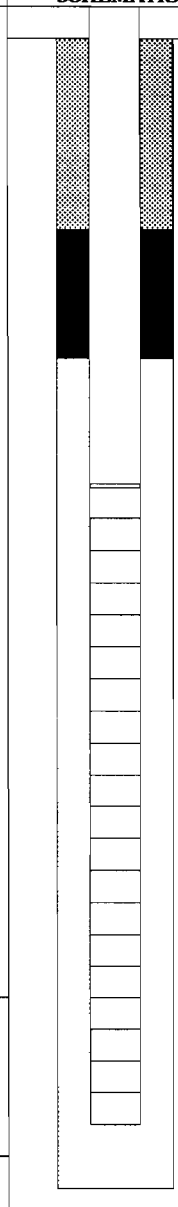
Plot Plan

GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From				

Microtip Reading	Run	Sample Depth	Percent Recovery	Blow Cts	FIELD IDENTIFICATION OF MATERIAL
		0			
					Brown SAND fine to course, trace silt, grass, roots, wet, dense
0.0	1	1	55	HM/3	
				4/7	
		2			
					Brown SAND fine to course, some silt, saturated, dilatant
0.0	2	3	80	5/7	
				7/5	
		4			
					Brown SAND medium to course, trace – silt, dense, wet
1.1	3	5	80	2/3	
				4/2	
		6			
					6.0 to 7.0' Gray SAND fine to medium, some silt, dilatant
1.4	4	7	80	2/4	
				5/6	Gray SAND medium to course, loose, wet
		8			
					Gray SAND fine to course, some silt, dilatant, saturated
0.0	5	9	50	1/1	
				2/4	
		10			
					Gray/Black SAND, fine to medium, clean, super saturated, running
0.0	6	11	70	1/3	
				3/6	
		12			
					Gray SAND fine to medium, super saturated, running sands
0.0	7	13	95	3/4	
				5/5	
		14			
					Gray SAND fine to course, saturated, to 15.0'
0.0	8	15	90	1/1	
				1/2	Gray Sand and Silt, saturated, dilatant to 17.5'
		16			
0.0	9	17	100	3/3	
				5/7	
		18			17.5' Gray Sand and Gravel, rounded, saturated
					Total Depth 18.0'

WELL SCHEMATIC



COMMENTS

2.71' stick up
Grout to 3.0'
Bentonite Seal 3.0' to 5.0'
2" PVC Riser to 7.0'
2" PVC 10 Slot Screen 7.0' to 17.0'
Sand Pack 5.0' to 18.0'
TD 18.0'

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Split Spoon Sampling, Total Depth 18.0'
Grain size analysis samples collected from 8.0' to 12.0'

WELL INSTALLATION CHECKLIST

Site Name: Warsaw Village Landfill
Job Number: SY327.06.04
Boring Number: MW-5

Date: 3/26/93
By: A. Zielinski
Page:

Depth of Hole: 18.0'
Diameter of Hole: ~8"

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?

Yes X No

SCREEN

Material: PVC, 2"
Slot Size: 10 slot
Length: 10'
Threaded: Yes X No

RISER PIPE

Material: PVC, 2"
Total Length of Well – Screen Length: 10'
Threaded: Yes X No

END CAP

Material: PVC
Threaded: Yes X No

ALL JOINTS TEFLON TAPED Yes No X

TOTAL LENGTH OF WELL CASING (includes screen and stick-up) 20'

SAND PACK

Type/Size: Sibley 1240
Amount (calculated):
Amount (actual): 200 lbs
Installed with Tremie: Yes No X

BENTONITE SEAL(S)

Type/Size: 3/8" Pellets
Amount (calculated):
Amount (actual): 60 lbs
Installed with Tremie: Yes No X
Secondary Seal(s) Used: Yes No X
Explain:

Bentonite allowed to swell at least 30 minutes? Yes X No

WELL INSTALLATION CHECKLIST

Site Name: Warsaw Village Landfill
Job Number: SY327.06.04
Boring Number: MW-5
Date: 3/26/93
By: A. Zielinski
Page:

GROUT/CEMENT

Mixture (# cement / # bentonite): 1 1/2 bags to 1/3 bag
Mixture (Gal. water / # dry mix):
Amount (calculated):
Amount (actual): 25 gals
Installed with Tremie: Yes ____ No X

LOCKING PROTECTIVE CASING INSTALLED Yes X No ____

Locked immediately after installation: Yes X No ____
Grout sloped at surface to allow run-off: Yes X No ____
Drain hole drilled prior to development: Yes ____ No ____
Stick-up: 2.71'

ANY FOREIGN OBJECTS LOST IN THE WELL Yes ____ No X

If YES:
(1) What was lost:
(2) Depth:
(3) Stage of well installation:
(4) Was object retrieved: Yes ____ No ____
(All or part/how)

WELL CAPPED: Yes X No ____

WELL IDENTIFIED: Yes X No ____

DISPOSAL OF CUTTINGS

Left in pile:
Spread out: X PID reading: 0.0 ppm
Containerized:
Other:

DISPOSAL OF FLUIDS NONE

Run off on ground surface:
Containerized:
Other:

Engineering-Science Representative

March 26, 1993
Date

wlcklfm

Huntingdon

Empire Soils Investigations, Inc., Division
105 Corona Avenue
Groton New York 13073
(315)475-07[illegible]
(607)898-[illegible]
Fax (607)898-4760

June 2, 1993

Thomas Abrams
Engineering-Science, Inc.
290 Elwood Davis Road, Suite 312
Liverpool, New York 13088

Reference: Geotechnical Analysis for PSA
Work Assignment No. D002478-17

Dear Mr. Abrams,

Enclosed please find the results of soil samples grain size analysis in accordance with our subcontract dated March 19, 1993 and your letter of transmittal dated May 10, 1993. In all cases we utilized the entire sample provided. Some of the samples containing gravel do not meet the "Approximate Minimum Mass of Portion, g" stated in ASTM D 422 Section 5.1.1 (see copy below). The actual weight retained of samples listed on our "GRAIN SIZE DISTRIBUTION TEST DATA" reports. This information is provided for your use in evaluating the test data.

> 5.1.1 The size of the portion retained on the No. 10 sieve shall depend on the maximum size of particle, according to the following schedule:
>
> | Nominal Diameter of Largest Particles, in. (mm) | Approximate Minimum Mass of Portion, g |
> |---|---|
> | ⅜ (9.5) | 500 |
> | ¾ (19.0) | 1000 |
> | 1 (25.4) | 2000 |
> | 1½ (38.1) | 3000 |
> | 2 (50.8) | 4000 |
> | 3 (76.2) | 5000 |
>
> 5.1.2 The size of the portion passing the No. 10 sieve shall be approximately 115 g for sandy soils and approximately 65 g for silt and clay soils.

If you have any questions or require additional data please contact the undersigned. Samples and containers will be returned via UPS.

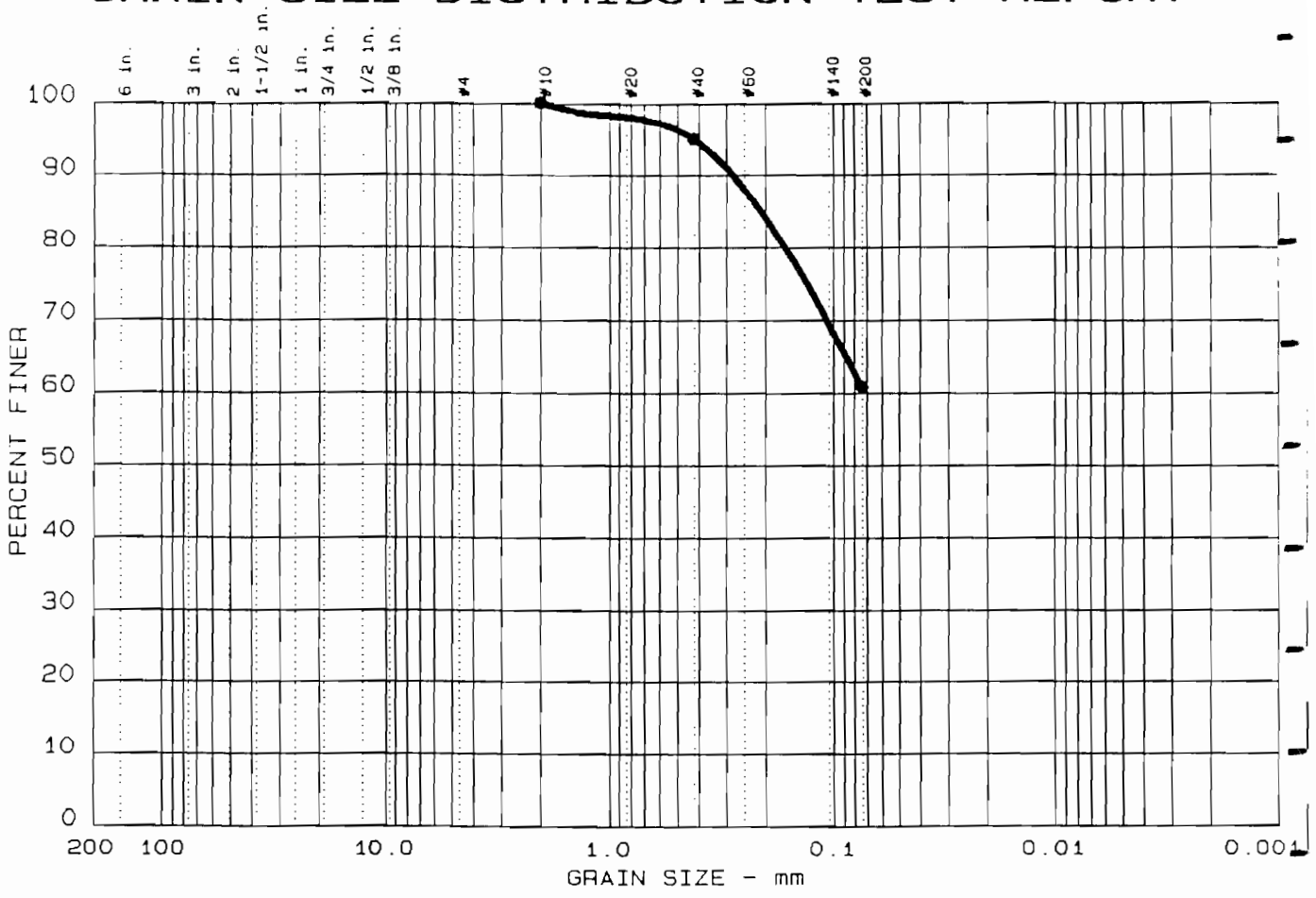
Respectfully submitted,

EMPIRE SOILS INVESTIGATIONS, INC.

Thomas Hamilton

Thomas A. Hamilton
Construction Services Manager

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	39.1	60.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.21							

	MATERIAL DESCRIPTION	USCS	AASHTO
●	Sandy silt and clay	ML or CL	

Project No.: GT-93-029
Project: PSA Warsaw, S4327.06.04
● Location: WARS MW 1, 12'-14' ; 14'-16'

Date: May 27, 1993

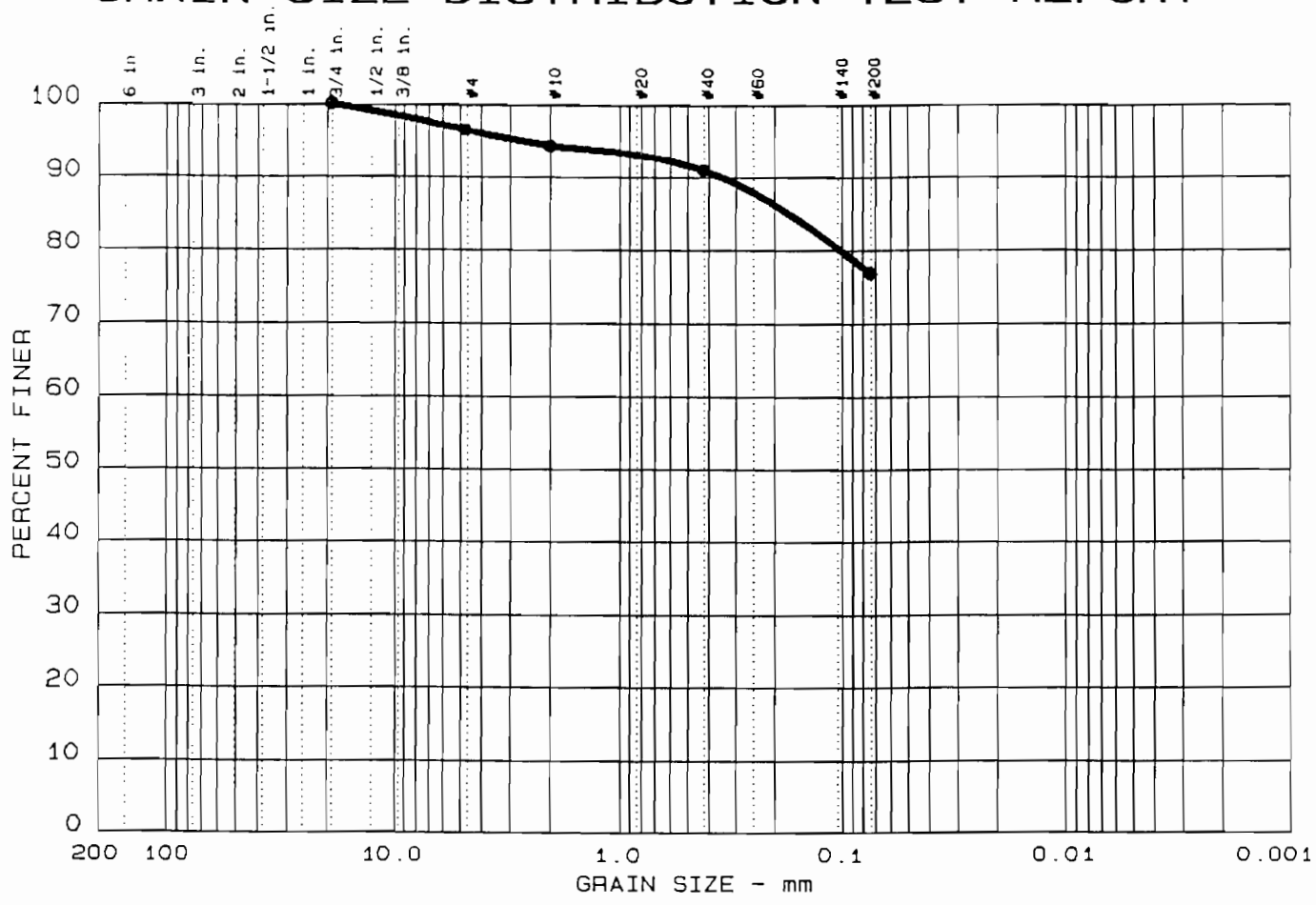
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC.

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	3.5	19.6	76.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.17							

	MATERIAL DESCRIPTION	USCS	AASHTO
●	Sandy silt and clay	ML or CL	

Project No.: GT-93-029
Project: PSA Warsaw, S4327.06.04
● Location: WARS MW 2, 14'-16' ; 16'-18'

Date: May 27, 1993

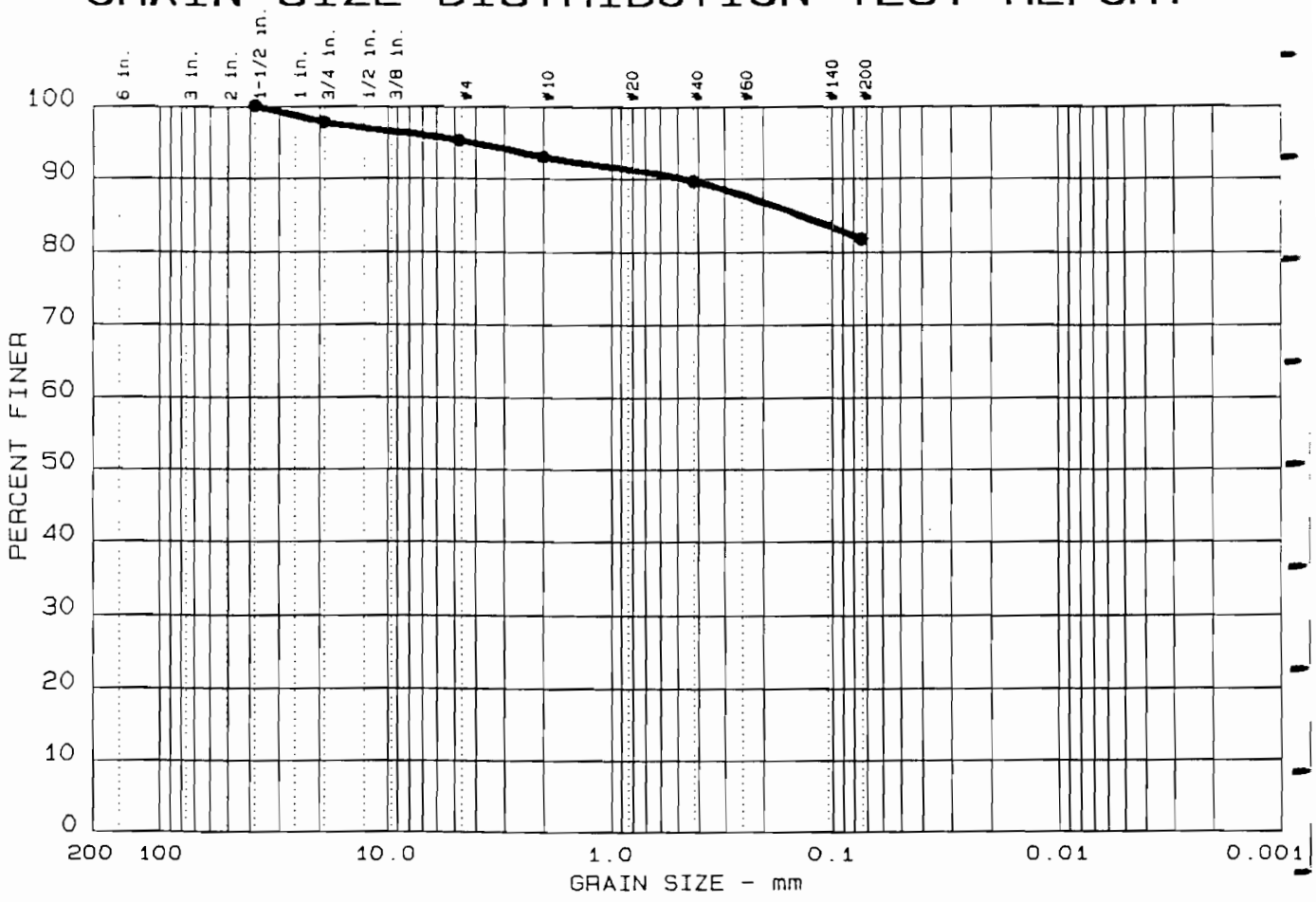
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC.

Figure No. 2

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	4.7	13.5	81.8	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.14							

MATERIAL DESCRIPTION	USCS	AASHTO
● Sandy silt and clay	ML or CL	

Project No.: GT-93-029
Project: PSA Warsaw, S4327.06.04
● Location: WARS MW 3, 8'-10' ; 10'-12'

Date: May 27, 1993

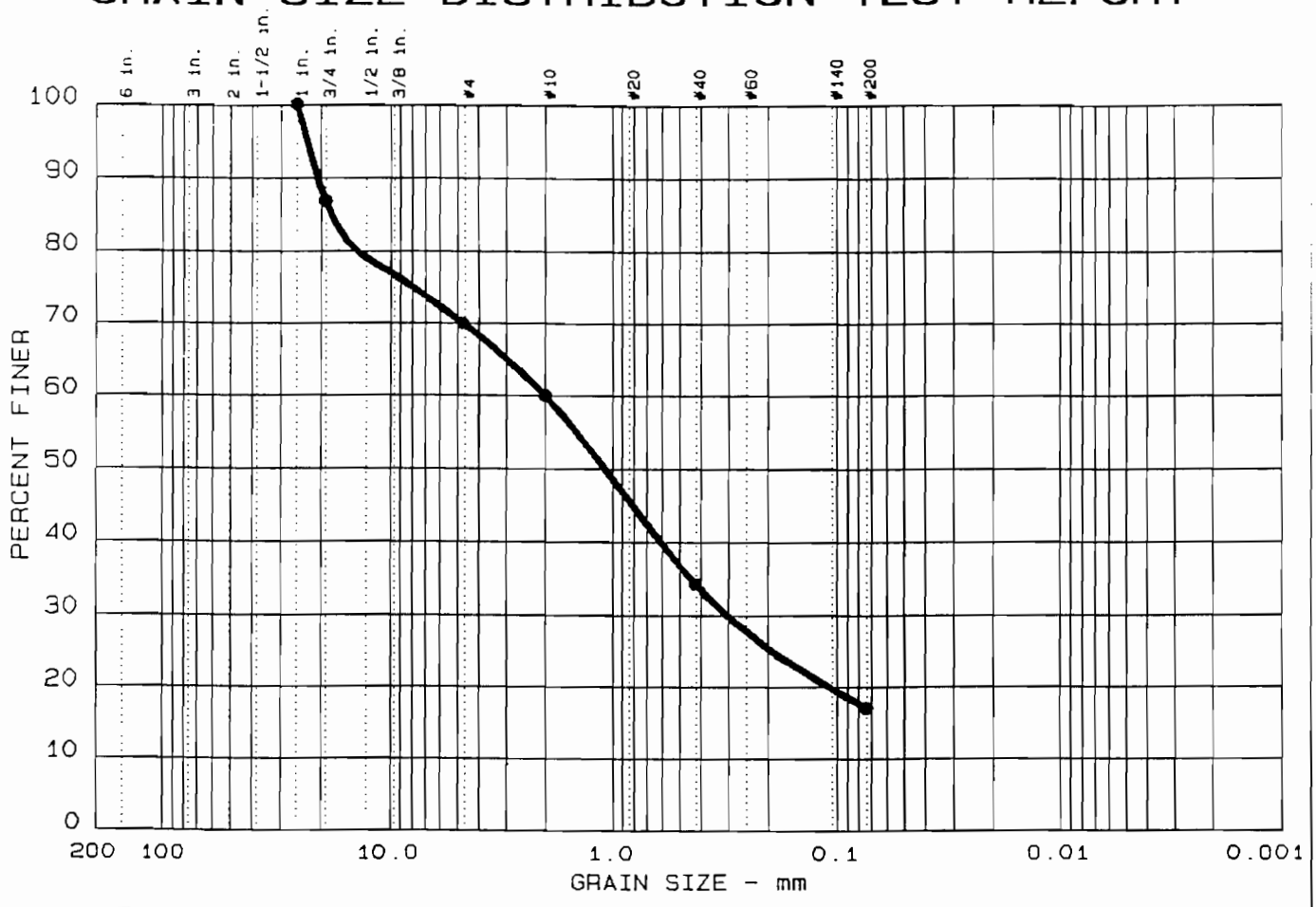
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC.

Figure No. 3

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	30.0	52.9	17.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			17.99	2.00	1.07	0.305				

	MATERIAL DESCRIPTION	USCS	AASHTO
●	Silty sand with gravel	SM	

Project No.: GT-93-029
Project: PSA Warsaw, S4327.06.04
● Location: WARS MW 4, 6'-8' ; 10'-12'

Date: May 27, 1993

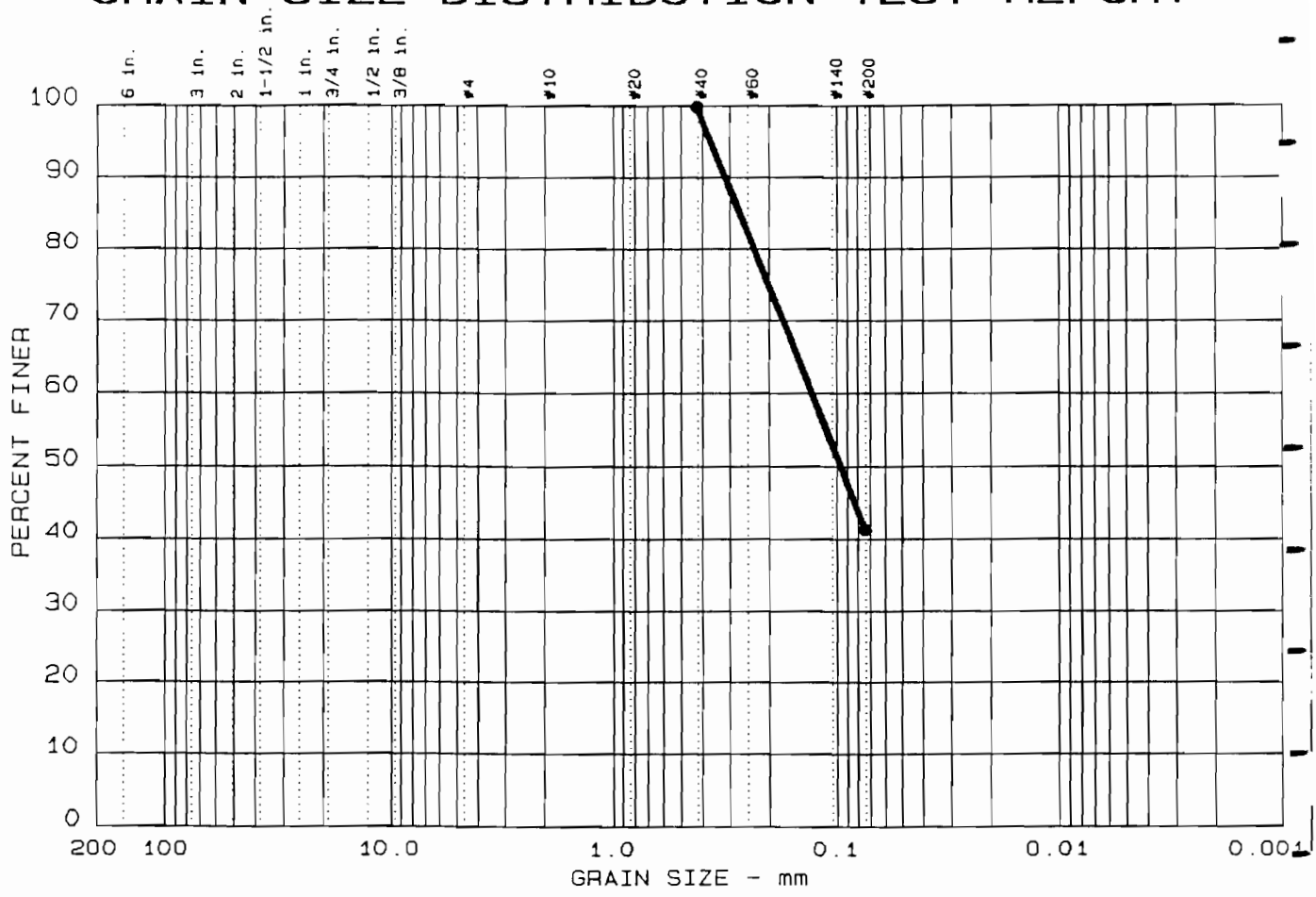
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC.

Figure No. 4

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	0.0	58.8	41.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.27	0.13	0.10					

	MATERIAL DESCRIPTION	USCS	AASHTO
●	Silty sand	SM	

Project No.: GT-93-029
Project: PSA Warsaw, S4327.06.04
● Location: WARS MW 5, 8'-10' ; 10'-12'

Date: May 27, 1993

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC.

Figure No. 5

GRAIN SIZE DISTRIBUTION TEST DATA

Date: May 27, 1993
Project No.: GT-93-029
Project: PSA Warsaw, S4327.06.04

Sample Data

Location of Sample: WARS MW 1, 12'-14' ; 14'-16'
Sample Description: Sandy silt and clay
USCS Class: ML or CL Liquid limit:
AASHTO Class: Plasticity index:

Notes

Remarks:

Fig. No.: 1

Mechanical Analysis Data

Initial
Dry sample and tare= 656.90
Tare = 0.00
Dry sample weight = 656.90
Sieve tare method

Sieve	Weight retained	Sieve tare	Percent finer
# 10	0.25	0.00	100.0
# 40	32.38	0.00	95.0
# 200	224.37	0.00	60.9

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 39.1
% FINES = 60.9

D85= 0.21

GRAIN SIZE DISTRIBUTION TEST DATA

Date: May 27, 1993
Project No.: GT-93-029
Project: PSA Warsaw, S4327.06.04

Sample Data

Location of Sample: WARS MW 2, 14'-16' ; 16'-18'
Sample Description: Sandy silt and clay
USCS Class: ML or CL Liquid limit:
AASHTO Class: Plasticity index:

Notes

Remarks:

Fig. No.: 2

Mechanical Analysis Data

Initial
Dry sample and tare= 609.80
Tare = 0.00
Dry sample weight = 609.80
Sieve tare method

Sieve	Weight retained	Sieve tare	Percent finer
0.75 inches	0.00	0.00	100.0
# 4	21.38	0.00	96.5
# 10	13.32	0.00	94.3
# 40	19.97	0.00	91.0
# 200	86.53	0.00	76.8

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 3.5 % SAND = 19.6
% FINES = 76.9

D85= 0.17

GRAIN SIZE DISTRIBUTION TEST DATA

Date: May 27, 1993
Project No.: GT-93-029
Project: PSA Warsaw, S4327.06.04

Sample Data

Location of Sample: WARS MW 3, 8'-10' ; 10'-12'
Sample Description: Sandy silt and clay
USCS Class: ML or CL Liquid limit:
AASHTO Class: Plasticity index:

Notes

Remarks:

Fig. No.: 3

Mechanical Analysis Data

Initial
Dry sample and tare= 561.50
Tare = 0.00
Dry sample weight = 561.50
Sieve tare method

Sieve	Weight retained	Sieve tare	Percent finer
1.5 inches	0.00	0.00	100.0
0.75 inches	12.59	0.00	97.8
# 4	13.92	0.00	95.3
# 10	12.82	0.00	93.0
# 40	18.81	0.00	89.6
# 200	44.10	0.00	81.8

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 4.7 % SAND = 13.5
% FINES = 81.8

D85= 0.14

GRAIN SIZE DISTRIBUTION TEST DATA

Date: May 27, 1993
Project No.: GT-93-029
Project: PSA Warsaw, S4327.06.04

Sample Data

Location of Sample: WARS MW 4, 6'-8' ; 10'-12'
Sample Description: Silty sand with gravel
USCS Class: SM Liquid limit:
AASHTO Class: Plasticity index:

Notes

Remarks:

Fig. No.: 4

Mechanical Analysis Data

Initial
Dry sample and tare= 478.30
Tare = 0.00
Dry sample weight = 478.30
Sieve tare method

Sieve		Weight retained	Sieve tare	Percent finer
1	inches	0.00	0.00	100.0
0.75	inches	62.99	0.00	86.8
# 4		80.49	0.00	70.0
# 10		48.33	0.00	59.9
# 40		122.81	0.00	34.2
# 200		82.02	0.00	17.1

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 30.0 % SAND = 52.9
% FINES = 17.1

D85= 17.99 D60= 1.995 D50= 1.072
D30= 0.3055

GRAIN SIZE DISTRIBUTION TEST DATA

Date: May 27, 1993
Project No.: GT-93-029
Project: PSA Warsaw, S4327.06.04

Sample Data

Location of Sample: WARS MW 5, 8'-10' ; 10'-12'
Sample Description: Silty sand
USCS Class: SM Liquid limit:
AASHTO Class: Plasticity index:

Notes

Remarks:

Fig. No.: 5

Mechanical Analysis Data

Initial
Dry sample and tare= 562.50
Tare = 0.00
Dry sample weight = 562.50
Sieve tare method

Sieve	Weight retained	Sieve tare	Percent finer
# 40	1.81	0.00	99.7
# 200	329.09	0.00	41.2

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 58.8
% FINES = 41.2

D85= 0.27 D60= 0.129 D50= 0.096

APPENDIX D

LABORATORY ANALYTICAL DATA

NYSDEC - PSA WORK ASSIGNMENTS WARSAW SITE SUB-SURFACE SOIL BORING DATA		SAMPLE ID: DEPTH: LAB ID: SDG: MATRIX: SAMPLED:	MW1 0-20' AS030599 MW1 SOIL 03/24/93	MW2 0-12' AS030780 MW1 SOIL 03/25/93	MW2-RE 0-12' AS030780RI MW1 SOIL 03/25/93	MW2-DL 0-20' AS030780DL MW1 SOIL 03/25/93	MW2-DUP 0-12' AS030780MD MW1 SOIL 03/25/93	MW2-DUPRE 0-12' AS030780FR MW1 SOIL 03/25/93	MW2-DUPDL 0-20' AS030780XM MW1 SOIL 03/25/93	MW3 0-14' AS031091 MW1 SOIL 03/26/93	MW4 0-10' AS030779 MW1 SOIL 03/25/93	MW4-RE 0-10' AS030779RI MW1 SOIL 03/25/93	MW5 0-14' AS031092 MW1 SOIL 03/26/93	WARDW NA AS031093 MW1 WATER 03/26/93
CAS NO	COMPOUND	UNITS:												UG/L
	ASP91-1 VOLATILES													
74-87-3	Chloromethane	UG/KG	11 U	13 UJ	13 U	-	13 U	13 U	-	13 U	11 UJ	11 UJ	12 U	10 U
74-83-9	Bromomethane	UG/KG	11 U	13 UJ	13 U	-	13 U	13 U	-	13 U	11 UJ	11 UJ	12 U	10 U
75-01-4	Vinyl chloride	UG/KG	11 U	13 UJ	13 U	-	13 U	13 U	-	13 U	11 UJ	11 UJ	12 U	10 U
75-00-3	Chloroethane	UG/KG	11 U	13 UJ	13 U	-	13 U	13 U	-	13 U	11 UJ	11 UJ	12 U	10 U
75-09-2	Methylene chloride	UG/KG	29 UJ	26 UJ	29 UJ	-	32 UJ	29 UJ	-	27 UJ	16 UJ	19 UJ	15 UJ	10 UJ
67-64-1	Acetone	UG/KG	25 UJ	32 J	13 U	-	22	11 U	-	13 U	11 UJ	20 UJ	19 U	10 U
75-15-0	Carbon Disulfide	UG/KG	11 U	13 UJ	13 U	-	13 U	13 U	-	13 U	11 UJ	11 UJ	12 U	10 U
75-35-4	1,1-Dichloroethene	UG/KG	11 U	13 UJ	13 U	-	13 U	13 U	-	13 U	11 UJ	11 UJ	12 U	10 U
75-34-3	1,1-Dichloroethane	UG/KG	11 U	13 UJ	13 U	-	13 U	13 U	-	13 U	11 UJ	11 UJ	12 U	10 U
540-59-0	1,2-Dichloroethene (Total)	UG/KG	11 U	13 UJ	13 U	-	13 UJ	13 U	-	13 U	11 UJ	11 UJ	12 U	10 U
67-66-3	Chloroform	UG/KG	11 U	13 UJ	13 U	-	13 U	13 U	-	13 U	11 UJ	11 UJ	12 U	6 J
107-06-2	1,2-Dichloroethane	UG/KG	11 U	13 UJ	13 U	-	13 U	13 U	-	13 U	11 UJ	11 UJ	12 U	10 U
78-93-3	2-Butanone	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
71-55-6	1,1,1-Trichloroethane	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
56-23-5	Carbon Tetrachloride	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
75-27-4	Bromodichloromethane	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
78-87-5	1,2-Dichloropropane	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
10061-02-6	cis-1,3-Dichloropropene	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
79-01-6	Trichloroethene	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
124-48-1	Dibromochloromethane	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
79-00-5	1,1,2-Trichloroethane	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
71-43-2	Benzene	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
10061-01-5	trans-1,3-Dichloropropene	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
75-25-2	Bromoform	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 U	-	13 UJ	11 UJ	11 UJ	12 U	10 U
108-10-1	4-Methyl-2-pentanone	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 UJ	-	13 UJ	11 UJ	11 UJ	12 U	10 U
591-78-6	2-Hexanone	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 UJ	-	13 UJ	11 UJ	11 UJ	12 U	10 U
127-18-4	Tetrachloroethene	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 UJ	-	13 UJ	11 UJ	11 UJ	12 U	10 U
79-34-5	1,1,2,2-Tetrachloroethane	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 UJ	-	3 J	11 UJ	11 UJ	12 U	10 U
108-88-3	Toluene	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 UJ	-	13 UJ	11 UJ	11 UJ	12 U	10 U
108-90-7	Chlorobenzene	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 UJ	-	13 UJ	11 UJ	11 UJ	12 U	10 U
100-41-4	Ethyl benzene	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 UJ	-	13 UJ	11 UJ	11 UJ	12 U	10 U
100-42-5	Styrene	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 UJ	-	13 UJ	11 UJ	11 UJ	12 U	10 U
1330-20-7	Total Xylenes	UG/KG	11 U	13 UJ	13 UJ	-	13 UJ	13 UJ	-	13 UJ	11 UJ	11 UJ	12 U	10 U

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SUB–SURFACE SOIL BORING DATA		SAMPLE ID: DEPTH: LAB ID: SDG: MATRIX: SAMPLED:	MW1 0–20' AS030599 MW1 SOIL 03/24/93	MW2 0–12' AS030780 MW1 SOIL 03/25/93	MW2–RE 0–12' AS030780RI MW1 SOIL 03/25/93	MW2–DL 0–20' AS030780DL MW1 SOIL 03/25/93	MW2–DUP 0–12' AS030780MD MW1 SOIL 03/25/93	MW2–DUPRE 0–12' AS030780FR MW1 SOIL 03/25/93	MW2–DUPDL 0–20' AS030780XM MW1 SOIL 03/25/93	MW3 0–14' AS031091 MW1 SOIL 03/26/93	MW4 0–10' AS030779 MW1 SOIL 03/25/93	MW4–RE 0–10' AS030779RI MW1 SOIL 03/25/93	MW5 0–14' AS031092 MW1 SOIL 03/26/93	WARDW NA AS031093 MW1 WATER 03/26/93
CAS NO	COMPOUND	UNITS:												UG/L
	ASP91–2 SEMIVOLATILES													
108–95–2	Phenol	UG/KG	370 U	430 U	430 U	860 U	47 J	46 J	2500 U	420 U	380 U	400 U	10 U	–
111–44–4	Bis(2–chloroethyl) ether	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
95–57–8	2–Chlorophenol	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
541–73–1	1,3–Dichlorobenzene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
106–46–7	1,4–Dichlorobenzene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
95–50–1	1,2–Dichlorobenzene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
95–48–7	2–Methylphenol	UG/KG	370 U	430 U	430 U	860 U	71 J	86 J	2500 U	420 U	380 U	400 U	10 U	–
108–60–1	Bis(2–chloroisopropyl) ether	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
106–44–5	4–Methylphenol	UG/KG	370 U	430 U	430 U	860 U	170 J	180 J	150 DJ	420 U	380 U	400 U	10 U	–
621–64–7	N–Nitroso–Di–n–propylamine	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
67–72–1	Hexachloroethane	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
98–95–3	Nitrobenzene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
78–59–1	Isophorone	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
88–75–5	2–Nitrophenol	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
105–67–9	2,4–Dimethylphenol	UG/KG	370 U	430 U	430 U	860 U	190 J	200 J	130 DJ	420 U	380 U	400 U	10 U	–
111–91–1	Bis(2–chloroethoxy) methane	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
120–83–2	2,4–Dichlorophenol	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
120–82–1	1,2,4–Trichlorobenzene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
91–20–3	Naphthalene	UG/KG	370 U	120 J	120 J	110 DJ	5300 J	5400 J	5300 D	420 U	380 U	400 U	10 U	–
106–47–8	4–Chloroaniline	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
87–68–3	Hexachlorobutadiene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
59–50–7	4–Chloro–3–methylphenol	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
91–57–6	2–Methylnaphthalene	UG/KG	370 U	92 J	95 J	82 DJ	2400	2400	2300 DJ	420 U	380 U	400 U	10 U	–
77–47–4	Hexachlorocyclopentadiene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
88–06–2	2,4,6–Trichlorophenol	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
95–95–4	2,4,5–Trichlorophenol	UG/KG	910 U	1000 U	1000 U	2100 U	1000 U	1000 U	6100 U	1000 U	920 U	960 U	25 U	–
91–58–7	2–Chloronaphthalene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
88–74–4	2–Nitroaniline	UG/KG	910 U	1000 U	1000 U	2100 U	1000 U	1000 U	6100 U	1000 U	920 U	960 U	25 U	–
131–11–3	Dimethyl phthalate	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
208–96–8	Acenaphthylene	UG/KG	370 U	110 J	110 J	100 DJ	730	730	620 DJ	420 U	380 U	400 U	10 U	–
606–20–2	2,6–Dinitrotoluene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
99–09–2	3–Nitroaniline	UG/KG	910 U	1000 U	1000 U	2100 U	1000 U	1000 U	6100 U	1000 U	920 U	960 U	25 U	–
83–32–9	Acenaphthene	UG/KG	370 U	220 J	210 J	210 DJ	2700	2700	2600 D	420 U	380 U	400 U	10 U	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SUB–SURFACE SOIL BORING DATA		SAMPLE ID: DEPTH: LAB ID: SDG: MATRIX: SAMPLED:	MW1 0–20' AS030599 MW1 SOIL 03/24/93	MW2 0–12' AS030780 MW1 SOIL 03/25/93	MW2–RE 0–12' AS030780RI MW1 SOIL 03/25/93	MW2–DL 0–20' AS030780DL MW1 SOIL 03/25/93	MW2–DUP 0–12' AS030780MD MW1 SOIL 03/25/93	MW2–DUPRE 0–12' AS030780FR MW1 SOIL 03/25/93	MW2–DUPDL 0–20' AS030780XM MW1 SOIL 03/25/93	MW3 0–14' AS031091 MW1 SOIL 03/26/93	MW4 0–10' AS030779 MW1 SOIL 03/25/93	MW4–RE 0–10' AS030779RI MW1 SOIL 03/25/93	MW5 0–14' AS031092 MW1 SOIL 03/26/93	WARDW NA AS031093 MW1 WATER 03/26/93 UG/L
CAS NO	COMPOUND	UNITS:												
	ASP91–2 SEMIVOLATILES CONT'D													
51–28–5	2,4–Dinitrophenol	UG/KG	910 U	1000 UJ	1000 UJ	2100 UJ	1000 UJ	1000 UJ	6100 U	1000 U	920 UJ	960 U	25 U	–
100–02–7	4–Nitrophenol	UG/KG	910 U	1000 U	1000 U	2100 U	1000 U	1000 U	6100 U	1000 U	920 U	960 U	25 U	–
132–64–9	Dibenzofuran	UG/KG	370 U	240 J	250 J	230 DJ	3100	3000	2800 D	420 U	380 U	400 U	10 U	–
121–14–2	2,4–Dinitrotoluene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
84–66–2	Diethyl phthalate	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
7005–72–3	4–Chlorodiphenylether	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
86–73–7	Fluorene	UG/KG	370 U	520	550	530 DJ	4300 J	4200 J	4500 D	420 U	380 U	400 U	10 U	–
100–01–6	4–Nitroaniline	UG/KG	910 U	1000 U	1000 U	2100 U	1000 U	1000 U	6100 U	1000 U	920 U	960 U	25 U	–
534–52–1	4,6–Dinitro–2–methylphenol	UG/KG	910 U	1000 UJ	1000 UJ	2100 UJ	1000 UJ	1000 UJ	6100 UJ	1000 UJ	920 UJ	960 UJ	25 U	–
86–30–6	N–nitrosodiphenylamine	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
101–55–3	4–Bromophenyl phenyl ether	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
118–74–1	Hexachlorobenzene	UG/KG	370 U	430 U	430 U	860 U	420 U	420 U	2500 U	420 U	380 U	400 U	10 U	–
87–86–5	Pentachlorophenol	UG/KG	910 U	1000 U	1000 U	2100 U	1000 U	1000 U	6100 U	1000 U	920 U	960 U	25 U	–
85–01–8	Phenanthrene	UG/KG	370 U	2800	2700	2700 D	14000 J	13000 J	17000 D	40 J	380 U	400 U	10 U	–
120–12–7	Anthracene	UG/KG	370 U	790	800	740 DJ	5500 J	5200 J	5300 D	420 U	380 U	400 U	10 U	–
86–74–8	Carbazole	UG/KG	370 U	190 J	190 J	190 DJ	2400	2300	2200 DJ	420 U	380 U	400 U	10 U	–
84–74–2	Di–n–butyl phthalate	UG/KG	44 J	430 U	430 U	860 U	48 J	49 J	2500 U	420 U	74 J	23 J	2 J	–
206–44–0	Fluoranthene	UG/KG	370 U	2600	2600	2600 D	9400 J	8700 J	11000 D	50 J	380 U	400 U	10 U	–
129–00–0	Pyrene	UG/KG	370 U	3500 J	3500 J	3400 J	16000 J	16000 J	13000 D	47 J	380 U	400 U	10 U	–
85–68–7	Butyl benzyl phthalate	UG/KG	370 U	430 UJ	430 UJ	860 UJ	420 UJ	420 UJ	2500 U	420 U	380 U	400 U	10 U	–
91–94–1	3,3'–Dichlorobenzidine	UG/KG	370 U	430 UJ	430 UJ	860 UJ	420 UJ	420 UJ	2500 U	420 U	380 U	400 U	10 U	–
56–55–3	Benzo(a)anthracene	UG/KG	370 U	1500 J	1600 J	1400 J	6300 J	6500 J	5400 D	420 U	380 U	400 U	10 U	–
218–01–9	Chrysene	UG/KG	52 J	1400 J	1400 J	1300 J	5400 J	5600 J	4600 D	420 U	380 U	400 U	10 U	–
117–81–7	Bis(2–ethylhexyl) phthalate	UG/KG	140 J	54 J	62 J	59 J	420 UJ	420 UJ	2500 U	51 J	37 J	400 U	10 U	–
117–84–0	Di–n–octyl phthalate	UG/KG	370 U	430 UJ	430 UJ	860 UJ	420 UJ	420 UJ	2500 U	420 U	380 U	400 U	10 U	–
205–99–2	Benzo(b)fluoranthene	UG/KG	370 U	1100 J	1100 J	1200 J	4000 J	3900 J	4000 D	420 U	380 U	400 U	10 U	–
207–08–9	Benzo(k)fluoranthene	UG/KG	370 U	1200 J	1100 J	1100 J	3900 J	3400 J	3400 D	420 U	380 U	400 U	10 U	–
50–32–8	Benzo(a)pyrene	UG/KG	370 U	1200 J	1200 J	1200 J	4500 J	4200 J	4400 D	420 U	380 U	400 U	10 U	–
193–39–5	Indeno(1,2,3–cd)pyrene	UG/KG	370 U	810 J	860 J	790 J	2800 J	2600 J	2600 D	420 U	380 U	400 U	10 U	–
53–70–3	Dibenzo(a,h)anthracene	UG/KG	370 U	430 UJ	430 UJ	860 UJ	420 UJ	420 UJ	2500 U	420 U	380 U	400 U	10 U	–
191–24–2	Benzo(ghi)perylene	UG/KG	370 U	790 J	820 J	670 J	2700 J	2500 J	2200 DJ	420 U	380 U	400 U	10 U	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SUB–SURFACE SOIL BORING DATA		SAMPLE ID: DEPTH: LAB ID: SDG: MATRIX: SAMPLED:	MW1 0–20' AS030599 MW1 SOIL 03/24/93	MW2 0–12' AS030780 MW1 SOIL 03/25/93	MW2–RE 0–12' AS030780RI MW1 SOIL 03/25/93	MW2–DL 0–20' AS030780DL MW1 SOIL 03/25/93	MW2–DUP 0–12' AS030780MD MW1 SOIL 03/25/93	MW2–DUPRE 0–12' AS030780FR MW1 SOIL 03/25/93	MW2–DUPDL 0–20' AS030780XM MW1 SOIL 03/25/93	MW3 0–14' AS031091 MW1 SOIL 03/26/93	MW4 0–10' AS030779 MW1 SOIL 03/25/93	MW4–RE 0–10' AS030779RI MW1 SOIL 03/25/93	MW5 0–14' AS031092 MW1 SOIL 03/26/93	WARDW NA AS031093 MW1 WATER 03/26/93
CAS NO	COMPOUND	UNITS:												UG/L
	ASP91–3 PESTICIDES/PCBs													
319–84–6	alpha–BHC	UG/KG	1.9 U	2.2 U	–	–	2.2 U	–	–	2.2 U	2.0 U	2.0 U	0.050 U	–
319–85–7	beta–BHC	UG/KG	1.9 U	2.2 U	–	–	2.2 U	–	–	2.2 U	2.0 U	2.0 U	0.050 U	–
319–86–8	delta–BHC	UG/KG	1.9 U	2.2 U	–	–	2.2 U	–	–	2.2 U	2.0 U	2.0 U	0.050 U	–
58–89–9	gamma–BHC (Lindane)	UG/KG	1.9 U	2.2 U	–	–	2.2 U	–	–	2.2 U	2.0 U	2.0 U	0.050 U	–
76–44–8	Heptachlor	UG/KG	1.9 U	0.30 JP	–	–	0.24 JP	–	–	2.2 U	2.0 U	2.0 U	0.050 U	–
309–00–2	Aldrin	UG/KG	1.9 U	2.2 U	–	–	2.2 U	–	–	2.2 U	2.0 U	2.0 U	0.050 U	–
1024–57–3	Heptachlor epoxide	UG/KG	1.9 U	0.78 JP	–	–	0.55 JP	–	–	2.2 U	2.0 U	2.0 U	0.050 U	–
959–98–8	Endosulfan I	UG/KG	1.9 U	0.26 J	–	–	2.2 U	–	–	2.2 U	2.0 U	2.0 U	0.050 U	–
60–57–1	Dieldrin	UG/KG	3.7 U	4.3 U	–	–	4.2 U	–	–	4.2 U	3.8 U	4.0 U	0.10 U	–
72–55–9	4,4'–DDE	UG/KG	3.7 U	4.3 U	–	–	4.2 U	–	–	4.2 U	3.8 U	4.0 U	0.10 U	–
72–20–8	Endrin	UG/KG	3.7 U	0.83 JP	–	–	4.2 U	–	–	4.2 U	3.8 U	4.0 U	0.10 U	–
33213–65–9	Endosulfan II	UG/KG	2.0 JP	1.9 J	–	–	4.2 U	–	–	4.2 U	2.2 JP	4.0 U	0.10 U	–
72–54–8	4,4'–DDD	UG/KG	3.7 U	4.3 U	–	–	4.2 U	–	–	4.2 U	3.8 U	4.0 U	0.10 U	–
1031–07–8	Endosulfan Sulfate	UG/KG	3.7 U	4.3 U	–	–	4.2 U	–	–	4.2 U	3.8 U	4.0 U	0.10 U	–
50–29–3	4,4'–DDT	UG/KG	3.7 U	4.3 U	–	–	4.2 U	–	–	4.2 U	3.8 U	4.0 U	0.10 U	–
72–43–5	Methoxychlor	UG/KG	19 U	22 U	–	–	22 U	–	–	22 U	20 U	20 U	0.50 U	–
53494–70–5	Endrin ketone	UG/KG	3.7 U	4.3 U	–	–	4.2 U	–	–	4.2 U	3.8 U	4.0 U	0.10 U	–
7421–93–4	Endrin aldehyde	UG/KG	3.7 U	4.3 U	–	–	4.2 U	–	–	4.2 U	3.8 U	4.0 U	0.10 U	–
5103–71–9	alpha–Chlordane	UG/KG	1.9 U	2.2 U	–	–	2.2 U	–	–	2.2 U	2.0 U	2.0 U	0.050 U	–
5103–74–2	gamma–Chlordane	UG/KG	1.9 U	2.2 U	–	–	2.2 U	–	–	2.2 U	2.0 U	2.0 U	0.050 U	–
8001–35–2	Toxaphene	UG/KG	190 U	220 U	–	–	220 U	–	–	220 U	200 U	200 U	5.0 U	–
12674–11–2	Aroclor 1016	UG/KG	37 U	43 U	–	–	42 U	–	–	42 U	38 U	40 U	1.0 U	–
11104–28–2	Aroclor 1221	UG/KG	78 U	87 U	–	–	85 U	–	–	85 U	77 U	81 U	2.0 U	–
11141–16–5	Aroclor 1232	UG/KG	37 U	43 U	–	–	42 U	–	–	42 U	38 U	40 U	1.0 U	–
53469–21–9	Aroclor 1242	UG/KG	37 U	43 U	–	–	42 U	–	–	42 U	38 U	40 U	1.0 U	–
12672–29–6	Aroclor 1248	UG/KG	37 U	43 U	–	–	42 U	–	–	42 U	38 U	40 U	1.0 U	–
11097–69–1	Aroclor 1254	UG/KG	37 U	43 U	–	–	42 U	–	–	42 U	38 U	40 U	1.0 U	–
11096–82–5	Aroclor 1260	UG/KG	37 U	43 U	–	–	42 U	–	–	42 U	38 U	40 U	1.0 U	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SUB–SURFACE SOIL BORING DATA		SAMPLE ID: DEPTH: LAB ID: SDG: MATRIX: SAMPLED:	MW1 0–20' AS030599 MW1 SOIL 03/24/93	MW2 0–12' AS030780 MW1 SOIL 03/25/93	MW2–RE 0–12' AS030780RI MW1 SOIL 03/25/93	MW2–DL 0–20' AS030780DL MW1 SOIL 03/25/93	MW2–DUP 0–12' AS030780MD MW1 SOIL 03/25/93	MW2–DUPRE 0–12' AS030780FR MW1 SOIL 03/25/93	MW2–DUPDL 0–20' AS030780XM MW1 SOIL 03/25/93	MW3 0–14' AS031091 MW1 SOIL 03/26/93	MW4 0–10' AS030779 MW1 SOIL 03/25/93	MW4–RE 0–10' AS030779RI MW1 SOIL 03/25/93	MW5 0–14' AS031092 MW1 SOIL 03/26/93	WARDW NA AS031093 MW1 WATER 03/26/93 UG/L
CAS NO	COMPOUND	UNITS:												
	TOTAL METALS													
7429–90–5	Aluminum – Total	MG/KG	6880 J	8010 J	–	–	–	–	–	8950 J	6760 J	5450 J	130 J	–
7440–36–0	Antimony – Total	MG/KG	15.4 UJ	15.7 UJ	–	–	–	–	–	13.9 UJ	16 UJ	15.3 UJ	60 UJ	–
7440–38–2	Arsenic – Total	MG/KG	9.5	13.1	–	–	–	–	–	6	4.6	7	4 U	–
7440–39–3	Barium – Total	MG/KG	23.5 J	26.9 J	–	–	–	–	–	58.4	39.5 J	22.9 J	54.4 J	–
7440–41–7	Beryllium – Total	MG/KG	1.3 U	1.3 U	–	–	–	–	–	1.2 U	1.3 U	1.3 U	5 U	–
7440–43–9	Cadmium – Total	MG/KG	0.57 J	0.58 J	–	–	–	–	–	0.14 J	0.26 J	0.53 J	0.2 UJ	–
7440–70–2	Calcium – Total	MG/KG	56400 J	46900 J	–	–	–	–	–	19300 J	14300 J	39600 J	43900 J	–
7440–47–3	Chromium – Total	MG/KG	10.6 J	11.7 J	–	–	–	–	–	12.5 J	6.3 J	6.3 J	10.6 J	–
7440–48–4	Cobalt – Total	MG/KG	6 J	9.7 J	–	–	–	–	–	6.7 J	5.3 U	5.6 J	20 U	–
7440–50–8	Copper – Total	MG/KG	30.6	44.3	–	–	–	–	–	15.2	19.7	22.1	10 U	–
7439–89–6	Iron – Total	MG/KG	18400	27100	–	–	–	–	–	21000	18000	14700	797	–
7439–92–1	Lead – Total	MG/KG	16.9 J	34.6 J	–	–	–	–	–	11.6 J	17.4 J	6.2 J	3 UJ	–
7439–95–4	Magnesium – Total	MG/KG	14200 J	14300 J	–	–	–	–	–	7300 J	5180 J	10600 J	9920 J	–
7439–96–5	Manganese – Total	MG/KG	395 J	466 J	–	–	–	–	–	334 J	336 J	297 J	32.6 J	–
7439–97–6	Mercury – Total	MG/KG	0.13 U	0.14 U	–	–	–	–	–	0.11 U	0.13 U	0.11 U	0.2 U	–
7440–02–0	Nickel – Total	MG/KG	26.6	27.6	–	–	–	–	–	16	16.7	16.3	30 U	–
7440–09–7	Potassium – Total	MG/KG	1380	1510	–	–	–	–	–	991 J	1100 J	1140 J	1000 J	–
7782–49–2	Selenium – Total	MG/KG	1 UJ	1.1 UJ	–	–	–	–	–	0.97 UJ	0.98 UJ	1 UJ	4 UJ	–
7440–22–4	Silver – Total	MG/KG	0.05 U	0.05 J	–	–	–	–	–	0.05 U	0.05 U	0.05 U	10 U	–
7440–23–5	Sodium – Total	MG/KG	240 J	251 J	–	–	–	–	–	166 U	213 U	204 U	5840	–
7440–28–0	Thallium – Total	MG/KG	1.2 UJ	1.3 UJ	–	–	–	–	–	1.2 UJ	1.2 U	1.2 U	5 U	–
7440–62–2	Vanadium – Total	MG/KG	16.3	19.4	–	–	–	–	–	16.6	13.4	12 J	20 U	–
7440–66–6	Zinc – Total	MG/KG	94.7 J	163 J	–	–	–	–	–	65.6 J	61.1 J	64.4 J	37.2 J	–
57–12–5	Cyanide – Total	MG/KG	1.6 U	1.7 U	–	–	–	–	–	1.5 U	1.6 U	1.5 U	10 U	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE GROUNDWATER DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	GW001 RECRA AS034720 WAR1 WATER 04/26/93	GW002 RECRA AS034721 WAR1 WATER 04/26/93	GW002–DUP RECRA AS034725 WAR1 WATER 04/26/93	GW003 RECRA AS034723 WAR1 WATER 04/26/93	GW004 RECRA AS034722 WAR1 WATER 04/26/93	GW005 RECRA AS034719 WAR1 WATER 04/26/93	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93
CAS NO	COMPOUND	UNITS:							
	ASP 91–1 VOLATILES								
74–87–3	Chloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
74–83–9	Bromomethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
75–01–4	Vinyl chloride	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
75–00–3	Chloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
75–09–2	Methylene chloride	UG/L	14 B	1 BJ	2 BJ	8 BJ	10 B	5 BJ	2 BJ
67–64–1	Acetone	UG/L	8 BJ	10 U	10 U	4 J	8 J	10 U	10 U
75–15–0	Carbon Disulfide	UG/L	10 U	10 U	10 U	10 U	2 J	10 U	10 U
75–35–4	1,1–Dichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
75–34–3	1,1–Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
540–59–0	1,2–Dichloroethene (Total)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
67–66–3	Chloroform	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
107–06–2	1,2–Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
78–93–3	2–Butanone	UG/L	11 B	10 U	10 U	8 J	10 U	6 BJ	10 U
71–55–6	1,1,1–Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
56–23–5	Carbon Tetrachloride	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
75–27–4	Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
78–87–5	1,2–Dichloropropane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
10061–02–6	cis–1,3–Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
79–01–6	Trichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
124–48–1	Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
79–00–5	1,1,2–Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
71–43–2	Benzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
10061–01–5	trans–1,3–Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
75–25–2	Bromoform	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
108–10–1	4–Methyl–2–pentanone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
591–78–6	2–Hexanone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
127–18–4	Tetrachloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
79–34–5	1,1,2,2–Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
108–88–3	Toluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
108–90–7	Chlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
100–41–4	Ethyl benzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
100–42–5	Styrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1330–20–7	Total Xylenes	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE GROUNDWATER DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	GW001 RECRA AS034720 WAR1 WATER 04/26/93	GW002 RECRA AS034721 WAR1 WATER 04/26/93	GW002–DUP RECRA AS034725 WAR1 WATER 04/26/93	GW003 RECRA AS034723 WAR1 WATER 04/26/93	GW004 RECRA AS034722 WAR1 WATER 04/26/93	GW005 RECRA AS034719 WAR1 WATER 04/26/93	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93
CAS NO	COMPOUND	UNITS:							
	ASP91–2 SEMIVOLATILES								
108–95–2	Phenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
111–44–4	Bis(2–chloroethyl) ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
95–57–8	2–Chlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
541–73–1	1,3–Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
106–46–7	1,4–Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
95–50–1	1,2–Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
95–48–7	2–Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
108–60–1	Bis(2–chloroisopropyl) ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
106–44–5	4–Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
621–64–7	N–Nitroso–Di–n–propylamine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
67–72–1	Hexachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
98–95–3	Nitrobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
78–59–1	Isophorone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
88–75–5	2–Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
105–67–9	2,4–Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
111–91–1	Bis(2–chloroethoxy) methane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
120–83–2	2,4–Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
120–82–1	1,2,4–Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
91–20–3	Naphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
106–47–8	4–Chloroaniline	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
87–68–3	Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
59–50–7	4–Chloro–3–methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
91–57–6	2–Methylnaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
77–47–4	Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
88–06–2	2,4,6–Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
95–95–4	2,4,5–Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U	–
91–58–7	2–Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
88–74–4	2–Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U	–
131–11–3	Dimethyl phthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
208–96–8	Acenaphthylene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
606–20–2	2,6–Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–
99–09–2	3–Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U	–
83–32–9	Acenaphthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	–

NYSDEC - PSA WORK ASSIGNMENTS WARSAW SITE GROUNDWATER DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	GW001 RECRA AS034720 WAR1 WATER 04/26/93	GW002 RECRA AS034721 WAR1 WATER 04/26/93	GW002-DUP RECRA AS034725 WAR1 WATER 04/26/93	GW003 RECRA AS034723 WAR1 WATER 04/26/93	GW004 RECRA AS034722 WAR1 WATER 04/26/93	GW005 RECRA AS034719 WAR1 WATER 04/26/93	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93
CAS NO	COMPOUND	UNITS:							
	ASP91-2 SEMIVOLATILES CONT'D								
51-28-5	2,4-Dinitrophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U	-
100-02-7	4-Nitrophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U	-
132-64-9	Dibenzofuran	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
121-14-2	2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
84-66-2	Diethyl phthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
7005-72-3	4-Chlorodiphenylether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
86-73-7	Fluorene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
100-01-6	4-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U	-
534-52-1	4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U	-
86-30-6	N-nitrosodiphenylamine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
101-55-3	4-Bromophenyl phenyl ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
118-74-1	Hexachlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
87-86-5	Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U	-
85-01-8	Phenanthrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
120-12-7	Anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
86-74-8	Carbazole	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
84-74-2	Di-n-butyl phthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
206-44-0	Fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
129-00-0	Pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
85-68-7	Butyl benzyl phthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
91-94-1	3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
56-55-3	Benzo(a)anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
218-01-9	Chrysene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
117-81-7	Bis(2-ethylhexyl) phthalate	UG/L	1 J	0.8 J	10 U	10 U	10 U	0.7 J	-
117-84-0	Di-n-octyl phthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
205-99-2	Benzo(b)fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
207-08-9	Benzo(k)fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
50-32-8	Benzo(a)pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
193-39-5	Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
53-70-3	Dibenzo(a,h)anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-
191-24-2	Benzo(ghi)perylene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	-

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE GROUNDWATER DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	GW001 RECRA AS034720 WAR1 WATER 04/26/93	GW002 RECRA AS034721 WAR1 WATER 04/26/93	GW002–DUP RECRA AS034725 WAR1 WATER 04/26/93	GW003 RECRA AS034723 WAR1 WATER 04/26/93	GW004 RECRA AS034722 WAR1 WATER 04/26/93	GW005 RECRA AS034719 WAR1 WATER 04/26/93	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93
CAS NO	COMPOUND	UNITS:							
	ASP91 – 3 PESTICIDES/PCBs								
319–84–6	alpha–BHC	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	–
319–85–7	beta–BHC	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	–
319–86–8	delta–BHC	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	–
58–89–9	gamma–BHC (Lindane)	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	–
76–44–8	Heptachlor	UG/L	0.050 U	0.014 JP	0.050 U	0.050 U	0.050 U	0.050 U	–
309–00–2	Aldrin	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	–
1024–57–3	Heptachlor epoxide	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	–
959–98–8	Endosulfan I	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	–
60–57–1	Dieldrin	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	–
72–55–9	4,4'–DDE	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	–
72–20–8	Endrin	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	–
33213–65–9	Endosulfan II	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	–
72–54–8	4,4'–DDD	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	–
1031–07–8	Endosulfan Sulfate	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	–
50–29–3	4,4'–DDT	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	–
72–43–5	Methoxychlor	UG/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	–
53494–70–5	Endrin ketone	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	–
7421–93–4	Endrin aldehyde	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	–
5103–71–9	alpha–Chlordane	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	–
5103–74–2	gamma–Chlordane	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	–
8001–35–2	Toxaphene	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	–
12674–11–2	Aroclor 1016	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	–
11104–28–2	Aroclor 1221	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	–
11141–16–5	Aroclor 1232	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	–
53469–21–9	Aroclor 1242	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	–
12672–29–6	Aroclor 1248	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	–
11097–69–1	Aroclor 1254	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	–
11096–82–5	Aroclor 1260	UG/L	1.0 U	1.0 U	0.32 J	1.0 U	1.0 U	1.0 U	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE GROUNDWATER DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	GW001 RECRA AS034720 WAR1 WATER 04/26/93	GW002 RECRA AS034721 WAR1 WATER 04/26/93	GW002–DUP RECRA AS034725 WAR1 WATER 04/26/93	GW003 RECRA AS034723 WAR1 WATER 04/26/93	GW004 RECRA AS034722 WAR1 WATER 04/26/93	GW005 RECRA AS034719 WAR1 WATER 04/26/93	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93
CAS NO	COMPOUND	UNITS:							
	TOTAL METALS								
7429–90–5	Aluminum – Total	UG/L	4930 *	2020 *	–	15700 *	14500 *	4720 *	–
7440–36–0	Antimony – Total	UG/L	5.0 U	5.0 U	–	5.0 U	5.0 U	5.0 U	–
7440–38–2	Arsenic – Total	UG/L	7.0 B	4.0 U	–	7.0 B	13.0	4.0 BW	–
7440–39–3	Barium – Total	UG/L	114 B	40.0 U	–	214	332	178 B	–
7440–41–7	Beryllium – Total	UG/L	5.0 U	5.0 U	–	5.0 U	5.0 U	5.0 U	–
7440–43–9	Cadmium – Total	UG/L	0.60 BN	0.20 UWN	–	0.50 BN	0.80 BN	1.3 BN	–
7440–70–2	Calcium – Total	UG/L	153000 B	21900 B	–	71400	167000 B	206000 B	–
7440–47–3	Chromium – Total	UG/L	10 U	10 U	–	18.8	28.4	10 U	–
7440–48–4	Cobalt – Total	UG/L	20.0 U	20.0 U	–	20.0 U	20.0 U	20.0 U	–
7440–50–8	Copper – Total	UG/L	10 U	10 U	–	17.6 B	48.2	14.1 B	–
7439–89–6	Iron – Total	UG/L	17600 *	3080 *	–	28300 *	49900 *	16700 *	–
7439–92–1	Lead – Total	UG/L	8.0	3.0 UW	–	17.0	25.0 W	6.4 S	–
7439–95–4	Magnesium – Total	UG/L	31400	6680	–	19600	35700	37600	–
7439–96–5	Manganese – Total	UG/L	589	85.7	–	661	3490	1880	–
7439–97–6	Mercury – Total	UG/L	0.20 U	0.20 U	–	0.20 U	0.20 U	0.20 U	–
7440–02–0	Nickel – Total	UG/L	30.0 U	30.0 U	–	30.0 U	66.3	40.1	–
7440–09–7	Potassium – Total	UG/L	4480 B	1370 B	–	5960	6590	7440	–
7782–49–2	Selenium – Total	UG/L	4.0 UW	4.0 U	–	4.0 UW	4.0 UW	4.0 U	–
7440–22–4	Silver – Total	UG/L	10 U	10 U	–	10 U	10 U	10 U	–
7440–23–5	Sodium – Total	UG/L	9360	5470	–	5950	15700	6110	–
7440–28–0	Thallium – Total	UG/L	5.0 U	5.0 U	–	5.0 U	5.0 UW	5.0 U	–
7440–62–2	Vanadium – Total	UG/L	20.0 U	20.0 U	–	27.0 B	37.7 B	20.0 U	–
7440–66–6	Zinc – Total	UG/L	735	60.3	–	92.6	221	668	–
57–12–5	Cyanide – Total	UG/L	10 U	10 U	–	10 U	10 U	NA	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE LEACHATE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	LC001 RECRA AS034715 WAR1 WATER 04/26/93	LC002 RECRA AS034718 WAR1 WATER 04/26/93	LC003 RECRA A4492404 SDG1 WATER 09/16/94	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93	TB001 RECRA A4492405 SDG1 WATER 09/16/94
CAS NO	COMPOUND	UNITS:					
	ASP 91-1 VOLATILES						
74-87-3	Chloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
74-83-9	Bromomethane	UG/L	10 U	10 U	10 U	10 U	10 U
75-01-4	Vinyl chloride	UG/L	10 U	10 U	10 U	10 U	10 U
75-00-3	Chloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
75-09-2	Methylene chloride	UG/L	20 B	14 B	10 U	2 BJ	10 U
67-64-1	Acetone	UG/L	31 B	37 B	10 U	10 U	10 U
75-15-0	Carbon Disulfide	UG/L	54	10 U	10 U	10 U	10 U
75-35-4	1,1-Dichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
75-34-3	1,1-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
540-59-0	1,2-Dichloroethene (Total)	UG/L	10 U	10 U	10 U	10 U	10 U
67-66-3	Chloroform	UG/L	10 U	10 U	10 U	10 U	10 U
107-06-2	1,2-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
78-93-3	2-Butanone	UG/L	10 B	12 B	10 U	10 U	10 U
71-55-6	1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
56-23-5	Carbon Tetrachloride	UG/L	10 U	10 U	10 U	10 U	10 U
75-27-4	Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
78-87-5	1,2-Dichloropropane	UG/L	10 U	10 U	10 U	10 U	10 U
10061-02-6	cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U
79-01-6	Trichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
124-48-1	Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
79-00-5	1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
71-43-2	Benzene	UG/L	10 U	10 U	10 U	10 U	10 U
10061-01-5	trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U
75-25-2	Bromoform	UG/L	10 U	10 U	10 U	10 U	10 U
108-10-1	4-Methyl-2-pentanone	UG/L	10 U	10 U	10 U	10 U	10 U
591-78-6	2-Hexanone	UG/L	10 U	10 U	10 U	10 U	10 U
127-18-4	Tetrachloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
79-34-5	1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
108-88-3	Toluene	UG/L	10 U	10 U	10 U	10 U	10 U
108-90-7	Chlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
100-41-4	Ethyl benzene	UG/L	10 U	10 U	10 U	10 U	10 U
100-42-5	Styrene	UG/L	10 U	10 U	10 U	10 U	10 U
1330-20-7	Total Xylenes	UG/L	10 U	10 U	10 U	10 U	10 U

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE LEACHATE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	LC001 RECRA AS034715 WAR1 WATER 04/26/93	LC002 RECRA AS034718 WAR1 WATER 04/26/93	LC003 RECRA A4492404 SDG1 WATER 09/16/94	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93	TB001 RECRA A4492405 SDG1 WATER 09/16/94
CAS NO	COMPOUND	UNITS:					
	ASP91-2 SEMIVOLATILES						
108-95-2	Phenol	UG/L	10 U	10 U	11 U	–	–
111-44-4	Bis(2-chloroethyl) ether	UG/L	10 U	10 U	11 U	–	–
95-57-8	2-Chlorophenol	UG/L	10 U	10 U	11 U	–	–
541-73-1	1,3-Dichlorobenzene	UG/L	10 U	10 U	11 U	–	–
106-46-7	1,4-Dichlorobenzene	UG/L	10 U	10 U	11 U	–	–
95-50-1	1,2-Dichlorobenzene	UG/L	10 U	10 U	11 U	–	–
95-48-7	2-Methylphenol	UG/L	10 U	10 U	11 U	–	–
108-60-1	Bis(2-chloroisopropyl) ether	UG/L	10 U	10 U	11 U	–	–
106-44-5	4-Methylphenol	UG/L	10 U	10 U	11 U	–	–
621-64-7	N-Nitroso-Di-n-propylamine	UG/L	10 U	10 U	11 U	–	–
67-72-1	Hexachloroethane	UG/L	10 U	10 U	11 U	–	–
98-95-3	Nitrobenzene	UG/L	10 U	10 U	11 U	–	–
78-59-1	Isophorone	UG/L	10 U	10 U	11 U	–	–
88-75-5	2-Nitrophenol	UG/L	10 U	10 U	11 U	–	–
105-67-9	2,4-Dimethylphenol	UG/L	10 U	10 U	11 U	–	–
111-91-1	Bis(2-chloroethoxy) methane	UG/L	10 U	10 U	11 U	–	–
120-83-2	2,4-Dichlorophenol	UG/L	10 U	10 U	11 U	–	–
120-82-1	1,2,4-Trichlorobenzene	UG/L	10 U	10 U	11 U	–	–
91-20-3	Naphthalene	UG/L	10 U	10 U	11 U	–	–
106-47-8	4-Chloroaniline	UG/L	10 U	10 U	11 U	–	–
87-68-3	Hexachlorobutadiene	UG/L	10 U	10 U	11 U	–	–
59-50-7	4-Chloro-3-methylphenol	UG/L	10 U	10 U	11 U	–	–
91-57-6	2-Methylnaphthalene	UG/L	10 U	10 U	11 U	–	–
77-47-4	Hexachlorocyclopentadiene	UG/L	10 U	10 U	11 U	–	–
88-06-2	2,4,6-Trichlorophenol	UG/L	10 U	10 U	11 U	–	–
95-95-4	2,4,5-Trichlorophenol	UG/L	25 U	25 U	27 U	–	–
91-58-7	2-Chloronaphthalene	UG/L	10 U	10 U	11 U	–	–
88-74-4	2-Nitroaniline	UG/L	25 U	25 U	27 U	–	–
131-11-3	Dimethyl phthalate	UG/L	10 U	10 U	11 U	–	–
208-96-8	Acenaphthylene	UG/L	10 U	10 U	11 U	–	–
606-20-2	2,6-Dinitrotoluene	UG/L	10 U	10 U	11 U	–	–
99-09-2	3-Nitroaniline	UG/L	25 U	25 U	27 U	–	–
83-32-9	Acenaphthene	UG/L	10 U	10 U	11 U	–	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE LEACHATE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	LC001 RECRA AS034715 WAR1 WATER 04/26/93	LC002 RECRA AS034718 WAR1 WATER 04/26/93	LC003 RECRA A4492404 SDG1 WATER 09/16/94	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93	TB001 RECRA A4492405 SDG1 WATER 09/16/94
CAS NO	COMPOUND	UNITS:					
	ASP91-2 SEMIVOLATILES CONT'D						
51-28-5	2,4-Dinitrophenol	UG/L	25 U	25 U	27 U	–	–
100-02-7	4-Nitrophenol	UG/L	25 U	25 U	27 U	–	–
132-64-9	Dibenzofuran	UG/L	10 U	10 U	11 U	–	–
121-14-2	2,4-Dinitrotoluene	UG/L	10 U	10 U	11 U	–	–
84-66-2	Diethyl phthalate	UG/L	10 U	10 U	11 U	–	–
7005-72-3	4-Chlorodiphenylether	UG/L	10 U	10 U	11 U	–	–
86-73-7	Fluorene	UG/L	10 U	10 U	11 U	–	–
100-01-6	4-Nitroaniline	UG/L	25 U	25 U	27 U	–	–
534-52-1	4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	27 U	–	–
86-30-6	N-nitrosodiphenylamine	UG/L	10 U	10 U	11 U	–	–
101-55-3	4-Bromophenyl phenyl ether	UG/L	10 U	10 U	11 U	–	–
118-74-1	Hexachlorobenzene	UG/L	10 U	10 U	11 U	–	–
87-86-5	Pentachlorophenol	UG/L	25 U	25 U	27 U	–	–
85-01-8	Phenanthrene	UG/L	10 U	10 U	11 U	–	–
120-12-7	Anthracene	UG/L	10 U	10 U	11 U	–	–
86-74-8	Carbazole	UG/L	10 U	10 U	11 U	–	–
84-74-2	Di-n-butyl phthalate	UG/L	10 U	10 U	0.5 J	–	–
206-44-0	Fluoranthene	UG/L	10 U	10 U	11 U	–	–
129-00-0	Pyrene	UG/L	10 U	10 U	11 U	–	–
85-68-7	Butyl benzyl phthalate	UG/L	10 U	10 U	11 U	–	–
91-94-1	3,3'-Dichlorobenzidine	UG/L	10 U	10 U	11 U	–	–
56-55-3	Benzo(a)anthracene	UG/L	10 U	10 U	11 U	–	–
218-01-9	Chrysene	UG/L	10 U	10 U	11 U	–	–
117-81-7	Bis(2-ethylhexyl) phthalate	UG/L	10 U	10 U	11 U	–	–
117-84-0	Di-n-octyl phthalate	UG/L	10 U	10 U	11 U	–	–
205-99-2	Benzo(b)fluoranthene	UG/L	10 U	10 U	11 U	–	–
207-08-9	Benzo(k)fluoranthene	UG/L	10 U	10 U	11 U	–	–
50-32-8	Benzo(a)pyrene	UG/L	10 U	10 U	11 U	–	–
193-39-5	Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	11 U	–	–
53-70-3	Dibenzo(a,h)anthracene	UG/L	10 U	10 U	11 U	–	–
191-24-2	Benzo(ghi)perylene	UG/L	10 U	10 U	11 U	–	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE LEACHATE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	LC001 RECRA AS034715 WAR1 WATER 04/26/93	LC002 RECRA AS034718 WAR1 WATER 04/26/93	LC003 RECRA A4492404 SDG1 WATER 09/16/94	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93	TB001 RECRA A4492405 SDG1 WATER 09/16/94
CAS NO	COMPOUND	UNITS:					
	ASP91–3 PESTICIDES/PCBs						
319–84–6	alpha–BHC	UG/L	0.050 U	0.050 U	0.052 U	–	–
319–85–7	beta–BHC	UG/L	0.050 U	0.050 U	0.052 U	–	–
319–86–8	delta–BHC	UG/L	0.68 P	0.050 U	0.052 U	–	–
58–89–9	gamma–BHC (Lindane)	UG/L	0.033 JP	0.050 U	0.052 U	–	–
76–44–8	Heptachlor	UG/L	0.050 U	0.050 U	0.052 U	–	–
309–00–2	Aldrin	UG/L	0.050 U	0.050 U	0.052 U	–	–
1024–57–3	Heptachlor epoxide	UG/L	0.050 U	0.050 U	0.052 U	–	–
959–98–8	Endosulfan I	UG/L	0.050 U	0.050 U	0.052 U	–	–
60–57–1	Dieldrin	UG/L	0.10 U	0.10 U	0.1 U	–	–
72–55–9	4,4'–DDE	UG/L	0.10 U	0.10 U	0.1 U	–	–
72–20–8	Endrin	UG/L	0.10 U	0.10 U	0.1 U	–	–
33213–65–9	Endosulfan II	UG/L	0.10 U	0.10 U	0.1 U	–	–
72–54–8	4,4'–DDD	UG/L	0.10 U	0.10 U	0.1 U	–	–
1031–07–8	Endosulfan Sulfate	UG/L	0.10 U	0.10 U	0.1 U	–	–
50–29–3	4,4'–DDT	UG/L	0.10 U	0.10 U	0.1 U	–	–
72–43–5	Methoxychlor	UG/L	0.50 U	0.50 U	0.52 U	–	–
53494–70–5	Endrin ketone	UG/L	0.10 U	0.10 U	0.1 U	–	–
7421–93–4	Endrin aldehyde	UG/L	0.10 U	0.10 U	0.1 U	–	–
5103–71–9	alpha–Chlordane	UG/L	0.050 U	0.050 U	0.052 U	–	–
5103–74–2	gamma–Chlordane	UG/L	0.050 U	0.050 U	0.052 U	–	–
8001–35–2	Toxaphene	UG/L	5.0 U	5.0 U	5.2 U	–	–
12674–11–2	Aroclor 1016	UG/L	1.0 U	1.0 U	1 U	–	–
11104–28–2	Aroclor 1221	UG/L	2.0 U	2.0 U	2.1 U	–	–
11141–16–5	Aroclor 1232	UG/L	1.0 U	1.0 U	1 U	–	–
53469–21–9	Aroclor 1242	UG/L	1.0 U	1.0 U	1 U	–	–
12672–29–6	Aroclor 1248	UG/L	1.0 U	1.0 U	1 U	–	–
11097–69–1	Aroclor 1254	UG/L	1.0 U	1.0 U	1 U	–	–
11096–82–5	Aroclor 1260	UG/L	1.0 U	1.0 U	1 U	–	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE LEACHATE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	LC001 RECRA AS034715 WAR1 WATER 04/26/93	LC002 RECRA AS034718 WAR1 WATER 04/26/93	LC003 RECRA A4492404 SDG1 WATER 09/16/94	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93	TB001 RECRA A4492405 SDG1 WATER 09/16/94
CAS NO	COMPOUND	UNITS:					
	TOTAL METALS						
7429-90-5	Aluminum – Total	UG/L	5930 *	200 U*	90 U	–	–
7440-36-0	Antimony – Total	UG/L	5.0 UW	5.0 U	30 NU	–	–
7440-38-2	Arsenic – Total	UG/L	13.0	4.0 U	8.8 BN	–	–
7440-39-3	Barium – Total	UG/L	576	246	326	–	–
7440-41-7	Beryllium – Total	UG/L	5.0 U	5.0 U	3 U	–	–
7440-43-9	Cadmium – Total	UG/L	0.90 BN	0.20 UN	5 U	–	–
7440-70-2	Calcium – Total	UG/L	77800	71600	105000	–	–
7440-47-3	Chromium – Total	UG/L	10 U	10 U	10 U	–	–
7440-48-4	Cobalt – Total	UG/L	20.0 U	20.0 U	10 U	–	–
7440-50-8	Copper – Total	UG/L	30.0	10 U	10 U	–	–
7439-89-6	Iron – Total	UG/L	261000 *	2380 *	996 E	–	–
7439-92-1	Lead – Total	UG/L	11.3 S	3.0 UW	2 U	–	–
7439-95-4	Magnesium – Total	UG/L	16900	18800	20100	–	–
7439-96-5	Manganese – Total	UG/L	2340	684	564 N	–	–
7439-97-6	Mercury – Total	UG/L	0.20 U	0.20 U	0.2 U	–	–
7440-02-0	Nickel – Total	UG/L	30.0 U	30.0 U	20 U	–	–
7440-09-7	Potassium – Total	UG/L	4970 B	4230 B	6000	–	–
7782-49-2	Selenium – Total	UG/L	4.0 UW	4.0 U	3 U	–	–
7440-22-4	Silver – Total	UG/L	10 U	10 U	10 NU	–	–
7440-23-5	Sodium – Total	UG/L	9320	12400	12300	–	–
7440-28-0	Thallium – Total	UG/L	5.0 U	5.0 U	3 U	–	–
7440-62-2	Vanadium – Total	UG/L	20.0 U	20.0 U	10 U	–	–
7440-66-6	Zinc – Total	UG/L	494	10 U	16.7 BE	–	–
57-12-5	Cyanide – Total	UG/L	10 U	10 U	10 U	–	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SURFACE WATER DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	SW001 RECRA AS034713 WAR1 WATER 04/26/93	SW002 RECRA AS034717 WAR1 WATER 04/26/93	SW003 RECRA AS034716 WAR1 WATER 04/26/93	SW004 RECRA AS034714 WAR1 WATER 04/26/93	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93
CAS NO	COMPOUND	UNITS:					
	ASP91-1 VOLATILES						
74-87-3	Chloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
74-83-9	Bromomethane	UG/L	10 U	10 U	10 U	10 U	10 U
75-01-4	Vinyl chloride	UG/L	10 U	10 U	10 U	10 U	10 U
75-00-3	Chloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
75-09-2	Methylene chloride	UG/L	3 BJ	1 BJ	16 B	2 BJ	2 BJ
67-64-1	Acetone	UG/L	10 U	10 U	20 B	10 U	10 U
75-15-0	Carbon Disulfide	UG/L	10 U	10 U	3 J	10 U	10 U
75-35-4	1,1-Dichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
75-34-3	1,1-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
540-59-0	1,2-Dichloroethene (Total)	UG/L	10 U	10 U	10 U	10 U	10 U
67-66-3	Chloroform	UG/L	10 U	10 U	10 U	10 U	10 U
107-06-2	1,2-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
78-93-3	2-Butanone	UG/L	10 U	8 BJ	10 B	10 U	10 U
71-55-6	1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
56-23-5	Carbon Tetrachloride	UG/L	10 U	10 U	10 U	10 U	10 U
75-27-4	Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
78-87-5	1,2-Dichloropropane	UG/L	10 U	10 U	10 U	10 U	10 U
10061-02-6	cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U
79-01-6	Trichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
124-48-1	Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
79-00-5	1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
71-43-2	Benzene	UG/L	10 U	10 U	10 U	10 U	10 U
10061-01-5	trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U
75-25-2	Bromoform	UG/L	10 U	10 U	10 U	10 U	10 U
108-10-1	4-Methyl-2-pentanone	UG/L	10 U	10 U	10 U	10 U	10 U
591-78-6	2-Hexanone	UG/L	10 U	10 U	10 U	10 U	10 U
127-18-4	Tetrachloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
79-34-5	1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
108-88-3	Toluene	UG/L	10 U	10 U	10 U	10 U	10 U
108-90-7	Chlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
100-41-4	Ethyl benzene	UG/L	10 U	10 U	10 U	10 U	10 U
100-42-5	Styrene	UG/L	10 U	10 U	10 U	10 U	10 U
1330-20-7	Total Xylenes	UG/L	10 U	10 U	10 U	10 U	10 U

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SURFACE WATER DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	SW001 RECRA AS034713 WAR1 WATER 04/26/93	SW002 RECRA AS034717 WAR1 WATER 04/26/93	SW003 RECRA AS034716 WAR1 WATER 04/26/93	SW004 RECRA AS034714 WAR1 WATER 04/26/93	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93
CAS NO	COMPOUND	UNITS:					
	ASP91-2 SEMIVOLATILES						
108-95-2	Phenol	UG/L	10 U	10 U	10 U	10 U	–
111-44-4	Bis(2-chloroethyl) ether	UG/L	10 U	10 U	10 U	10 U	–
95-57-8	2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U	–
541-73-1	1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	–
106-46-7	1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	–
95-50-1	1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	–
95-48-7	2-Methylphenol	UG/L	10 U	10 U	10 U	10 U	–
108-60-1	Bis(2-chloroisopropyl) ether	UG/L	10 U	10 U	10 U	10 U	–
106-44-5	4-Methylphenol	UG/L	10 U	10 U	10 U	10 U	–
621-64-7	N-Nitroso-Di-n-propylamine	UG/L	10 U	10 U	10 U	10 U	–
67-72-1	Hexachloroethane	UG/L	10 U	10 U	10 U	10 U	–
98-95-3	Nitrobenzene	UG/L	10 U	10 U	10 U	10 U	–
78-59-1	Isophorone	UG/L	10 U	10 U	10 U	10 U	–
88-75-5	2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	–
105-67-9	2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	–
111-91-1	Bis(2-chloroethoxy) methane	UG/L	10 U	10 U	10 U	10 U	–
120-83-2	2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	–
120-82-1	1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U	–
91-20-3	Naphthalene	UG/L	10 U	10 U	10 U	10 U	–
106-47-8	4-Chloroaniline	UG/L	10 U	10 U	10 U	10 U	–
87-68-3	Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U	–
59-50-7	4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U	–
91-57-6	2-Methylnaphthalene	UG/L	10 U	10 U	10 U	10 U	–
77-47-4	Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	10 U	–
88-06-2	2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	–
95-95-4	2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	–
91-58-7	2-Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U	–
88-74-4	2-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	–
131-11-3	Dimethyl phthalate	UG/L	10 U	10 U	10 U	10 U	–
208-96-8	Acenaphthylene	UG/L	10 U	10 U	10 U	10 U	–
606-20-2	2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	–
99-09-2	3-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	–
83-32-9	Acenaphthene	UG/L	10 U	10 U	10 U	10 U	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SURFACE WATER DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	SW001 RECRA AS034713 WAR1 WATER 04/26/93	SW002 RECRA AS034717 WAR1 WATER 04/26/93	SW003 RECRA AS034716 WAR1 WATER 04/26/93	SW004 RECRA AS034714 WAR1 WATER 04/26/93	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93
CAS NO	COMPOUND	UNITS:					
	ASP91-2 SEMIVOLATILES CONT'D						
51-28-5	2,4-Dinitrophenol	UG/L	25 U	25 U	25 U	25 U	–
100-02-7	4-Nitrophenol	UG/L	25 U	25 U	25 U	25 U	–
132-64-9	Dibenzofuran	UG/L	10 U	10 U	10 U	10 U	–
121-14-2	2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	–
84-66-2	Diethyl phthalate	UG/L	10 U	10 U	10 U	10 U	–
7005-72-3	4-Chlorodiphenylether	UG/L	10 U	10 U	10 U	10 U	–
86-73-7	Fluorene	UG/L	10 U	10 U	10 U	10 U	–
100-01-6	4-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	–
534-52-1	4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 U	–
86-30-6	N-nitrosodiphenylamine	UG/L	10 U	10 U	10 U	10 U	–
101-55-3	4-Bromophenyl phenyl ether	UG/L	10 U	10 U	10 U	10 U	–
118-74-1	Hexachlorobenzene	UG/L	10 U	10 U	10 U	10 U	–
87-86-5	Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U	–
85-01-8	Phenanthrene	UG/L	10 U	10 U	10 U	10 U	–
120-12-7	Anthracene	UG/L	10 U	10 U	10 U	10 U	–
86-74-8	Carbazole	UG/L	10 U	10 U	10 U	10 U	–
84-74-2	Di-n-butyl phthalate	UG/L	10 U	10 U	10 U	10 U	–
206-44-0	Fluoranthene	UG/L	10 U	10 U	10 U	10 U	–
129-00-0	Pyrene	UG/L	10 U	10 U	10 U	10 U	–
85-68-7	Butyl benzyl phthalate	UG/L	10 U	10 U	10 U	10 U	–
91-94-1	3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 U	10 U	–
56-55-3	Benzo(a)anthracene	UG/L	10 U	10 U	10 U	10 U	–
218-01-9	Chrysene	UG/L	10 U	10 U	10 U	10 U	–
117-81-7	Bis(2-ethylhexyl) phthalate	UG/L	10 U	10 U	10 U	10 U	–
117-84-0	Di-n-octyl phthalate	UG/L	10 U	10 U	10 U	10 U	–
205-99-2	Benzo(b)fluoranthene	UG/L	10 U	10 U	10 U	10 U	–
207-08-9	Benzo(k)fluoranthene	UG/L	10 U	10 U	10 U	10 U	–
50-32-8	Benzo(a)pyrene	UG/L	10 U	10 U	10 U	10 U	–
193-39-5	Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	10 U	10 U	–
53-70-3	Dibenzo(a,h)anthracene	UG/L	10 U	10 U	10 U	10 U	–
191-24-2	Benzo(ghi)perylene	UG/L	10 U	10 U	10 U	10 U	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SURFACE WATER DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	SW001 RECRA AS034713 WAR1 WATER 04/26/93	SW002 RECRA AS034717 WAR1 WATER 04/26/93	SW003 RECRA AS034716 WAR1 WATER 04/26/93	SW004 RECRA AS034714 WAR1 WATER 04/26/93	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93
CAS NO	COMPOUND	UNITS:					
	ASP91-3 PESTICIDES/PCBs						
319-84-6	alpha-BHC	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	–
319-85-7	beta-BHC	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	–
319-86-8	delta-BHC	UG/L	0.050 U	0.050 U	0.31	0.050 U	–
58-89-9	gamma-BHC (Lindane)	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	–
76-44-8	Heptachlor	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	–
309-00-2	Aldrin	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	–
1024-57-3	Heptachlor epoxide	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	–
959-98-8	Endosulfan I	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	–
60-57-1	Dieldrin	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	–
72-55-9	4,4'-DDE	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	–
72-20-8	Endrin	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	–
33213-65-9	Endosulfan II	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	–
72-54-8	4,4'-DDD	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	–
1031-07-8	Endosulfan Sulfate	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	–
50-29-3	4,4'-DDT	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	–
72-43-5	Methoxychlor	UG/L	0.50 U	0.50 U	0.50 U	0.50 U	–
53494-70-5	Endrin ketone	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	–
7421-93-4	Endrin aldehyde	UG/L	0.10 U	0.10 U	0.10 U	0.10 U	–
5103-71-9	alpha-Chlordane	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	–
5103-74-2	gamma-Chlordane	UG/L	0.050 U	0.050 U	0.050 U	0.050 U	–
8001-35-2	Toxaphene	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	–
12674-11-2	Aroclor 1016	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	–
11104-28-2	Aroclor 1221	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	–
11141-16-5	Aroclor 1232	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	–
53469-21-9	Aroclor 1242	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	–
12672-29-6	Aroclor 1248	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	–
11097-69-1	Aroclor 1254	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	–
11096-82-5	Aroclor 1260	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SURFACE WATER DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	SW001 RECRA AS034713 WAR1 WATER 04/26/93	SW002 RECRA AS034717 WAR1 WATER 04/26/93	SW003 RECRA AS034716 WAR1 WATER 04/26/93	SW004 RECRA AS034714 WAR1 WATER 04/26/93	TRIP BLANK RECRA AS034726 WAR1 WATER 04/26/93
CAS NO	COMPOUND	UNITS:					
	TOTAL METALS						
7429-90-5	Aluminum – Total	UG/L	360 *	290 *	640 *	350 *	–
7440-36-0	Antimony – Total	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	–
7440-38-2	Arsenic – Total	UG/L	4.0 U	4.0 U	6.0 B	4.0 U	–
7440-39-3	Barium – Total	UG/L	40.0 U	40.0 U	456	40.0 U	–
7440-41-7	Beryllium – Total	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	–
7440-43-9	Cadmium – Total	UG/L	0.20 UN	0.20 UN	0.20 UN	0.20 UN	–
7440-70-2	Calcium – Total	UG/L	24000 B	24400 B	77300	18200 B	–
7440-47-3	Chromium – Total	UG/L	10 U	10 U	10 U	10 U	–
7440-48-4	Cobalt – Total	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	–
7440-50-8	Copper – Total	UG/L	10 U	10 U	10 U	10 U	–
7439-89-6	Iron – Total	UG/L	460 *	390 *	23200 *	790 *	–
7439-92-1	Lead – Total	UG/L	3.0 UW	3.0 UW	3.0 UW	3.0 UW	–
7439-95-4	Magnesium – Total	UG/L	7140	7360	19300	5270	–
7439-96-5	Manganese – Total	UG/L	22.0	22.9	863	89.6	–
7439-97-6	Mercury – Total	UG/L	0.20 U	0.20 U	0.20 U	0.20 U	–
7440-02-0	Nickel – Total	UG/L	30.0 U	30.0 U	30.0 U	30.0 U	–
7440-09-7	Potassium – Total	UG/L	1390 B	1380 B	4370 B	855 B	–
7782-49-2	Selenium – Total	UG/L	4.0 UW	4.0 U	4.0 U	4.0 U	–
7440-22-4	Silver – Total	UG/L	10 U	10 U	10 U	10 U	–
7440-23-5	Sodium – Total	UG/L	11600	11500	11800	5040	–
7440-28-0	Thallium – Total	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	–
7440-62-2	Vanadium – Total	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	–
7440-66-6	Zinc – Total	UG/L	10 U	10.4 B	25.1	10 U	–
57-12-5	Cyanide – Total	UG/L	10 U	17.1	10 U	10 U	–

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE SEDIMENT DATA		SAMPLE ID: DEPTH: LAB ID: SDG: MATRIX: SAMPLED:	SD001 0–.5' AS034727 WAR1S SOIL 04/26/93	SD002 0–.5' AS034731 WAR1S SOIL 04/26/93	SD003 0–.5' AS034729 WAR1S SOIL 04/26/93	SD004 0–.5' AS034728 WAR1S SOIL 04/26/93	TRIP BLANK NA AS034735 WAR1S WATER 04/26/93
CAS NO	COMPOUND	UNITS:					UG/L
	ASP91–1 VOLATILES						
74–87–3	Chloromethane	UG/KG	15 U	13 U	26 U	24 U	10 U
74–83–9	Bromomethane	UG/KG	15 U	13 U	26 U	24 U	10 U
75–01–4	Vinyl chloride	UG/KG	15 U	13 U	26 U	24 U	10 U
75–00–3	Chloroethane	UG/KG	15 U	13 U	26 U	24 U	10 U
75–09–2	Methylene chloride	UG/KG	39 B	25 B	73 B	48 B	13 B
67–64–1	Acetone	UG/KG	18 B	14 B	190 B	160 B	10 U
75–15–0	Carbon Disulfide	UG/KG	15 U	13 U	26 U	24 U	10 U
75–35–4	1,1–Dichloroethene	UG/KG	15 U	13 U	26 U	24 U	10 U
75–34–3	1,1–Dichloroethane	UG/KG	15 U	13 U	26 U	24 U	10 U
540–59–0	1,2–Dichloroethene (Total)	UG/KG	15 U	13 U	26 U	24 U	10 U
67–66–3	Chloroform	UG/KG	15 U	13 U	26 U	24 U	10 U
107–06–2	1,2–Dichloroethane	UG/KG	15 U	13 U	26 U	24 U	10 U
78–93–3	2–Butanone	UG/KG	10 BJ	9 BJ	57 B	52 B	10 U
71–55–6	1,1,1–Trichloroethane	UG/KG	15 U	13 U	26 U	24 U	10 U
56–23–5	Carbon Tetrachloride	UG/KG	15 U	13 U	26 U	24 U	10 U
75–27–4	Bromodichloromethane	UG/KG	15 U	13 U	26 U	24 U	10 U
78–87–5	1,2–Dichloropropane	UG/KG	15 U	13 U	26 U	24 U	10 U
10061–02–6	cis–1,3–Dichloropropene	UG/KG	15 U	13 U	26 U	24 U	10 U
79–01–6	Trichloroethene	UG/KG	15 U	13 U	26 U	24 U	10 U
124–48–1	Dibromochloromethane	UG/KG	15 U	13 U	26 U	24 U	10 U
79–00–5	1,1,2–Trichloroethane	UG/KG	15 U	13 U	26 U	24 U	10 U
71–43–2	Benzene	UG/KG	3 J	13 U	3 J	4 J	10 U
10061–01–5	trans–1,3–Dichloropropene	UG/KG	15 U	13 U	26 U	24 U	10 U
75–25–2	Bromoform	UG/KG	15 U	13 U	26 U	24 U	10 U
108–10–1	4–Methyl–2–pentanone	UG/KG	15 U	13 U	26 U	24 U	10 U
591–78–6	2–Hexanone	UG/KG	15 U	13 U	26 U	24 U	10 U
127–18–4	Tetrachloroethene	UG/KG	15 U	13 U	26 U	24 U	10 U
79–34–5	1,1,2,2–Tetrachloroethane	UG/KG	15 U	13 U	26 U	24 U	10 U
108–88–3	Toluene	UG/KG	15 U	13 U	26 U	24 U	10 U
108–90–7	Chlorobenzene	UG/KG	15 U	13 U	26 U	24 U	10 U
100–41–4	Ethyl benzene	UG/KG	15 U	13 U	26 U	24 U	10 U
100–42–5	Styrene	UG/KG	15 U	13 U	26 U	24 U	10 U
1330–20–7	Total Xylenes	UG/KG	15 U	13 U	26 U	24 U	10 U

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE SEDIMENT DATA		SAMPLE ID: DEPTH: LAB ID: SDG: MATRIX: SAMPLED:	SD001 0–.5' AS034727 WAR1S SOIL 04/26/93	SD002 0–.5' AS034731 WAR1S SOIL 04/26/93	SD003 0–.5' AS034729 WAR1S SOIL 04/26/93	SD004 0–.5' AS034728 WAR1S SOIL 04/26/93	TRIP BLANK NA AS034735 WAR1S WATER 04/26/93
CAS NO	COMPOUND	UNITS:					UG/L
	ASP91–2 SEMIVOLATILES						
108–95–2	Phenol	UG/KG	500 U	430 U	850 U	800 U	–
111–44–4	Bis(2–chloroethyl) ether	UG/KG	500 U	430 U	850 U	800 U	–
95–57–8	2–Chlorophenol	UG/KG	500 U	430 U	850 U	800 U	–
541–73–1	1,3–Dichlorobenzene	UG/KG	500 U	430 U	850 U	800 U	–
106–46–7	1,4–Dichlorobenzene	UG/KG	500 U	430 U	850 U	800 U	–
95–50–1	1,2–Dichlorobenzene	UG/KG	500 U	430 U	850 U	800 U	–
95–48–7	2–Methylphenol	UG/KG	500 U	430 U	850 U	800 U	–
108–60–1	Bis(2–chloroisopropyl) ether	UG/KG	500 U	430 U	850 U	800 U	–
106–44–5	4–Methylphenol	UG/KG	500 U	430 U	850 U	800 U	–
621–64–7	N–Nitroso–Di–n–propylamine	UG/KG	500 U	430 U	850 U	800 U	–
67–72–1	Hexachloroethane	UG/KG	500 U	430 U	850 U	800 U	–
98–95–3	Nitrobenzene	UG/KG	500 U	430 U	850 U	800 U	–
78–59–1	Isophorone	UG/KG	500 U	430 U	850 U	800 U	–
88–75–5	2–Nitrophenol	UG/KG	500 U	430 U	850 U	800 U	–
105–67–9	2,4–Dimethylphenol	UG/KG	500 U	430 U	850 U	800 U	–
111–91–1	Bis(2–chloroethoxy) methane	UG/KG	500 U	430 U	850 U	800 U	–
120–83–2	2,4–Dichlorophenol	UG/KG	500 U	430 U	850 U	800 U	–
120–82–1	1,2,4–Trichlorobenzene	UG/KG	500 U	430 U	850 U	800 U	–
91–20–3	Naphthalene	UG/KG	500 U	430 U	850 U	800 U	–
106–47–8	4–Chloroaniline	UG/KG	500 U	430 U	850 U	800 U	–
87–68–3	Hexachlorobutadiene	UG/KG	500 U	430 U	850 U	800 U	–
59–50–7	4–Chloro–3–methylphenol	UG/KG	500 U	430 U	850 U	800 U	–
91–57–6	2–Methylnaphthalene	UG/KG	500 U	430 U	850 U	800 U	–
77–47–4	Hexachlorocyclopentadiene	UG/KG	500 U	430 U	850 U	800 U	–
88–06–2	2,4,6–Trichlorophenol	UG/KG	500 U	430 U	850 U	800 U	–
95–95–4	2,4,5–Trichlorophenol	UG/KG	1200 U	1000 U	2100 U	2000 U	–
91–58–7	2–Chloronaphthalene	UG/KG	500 U	430 U	850 U	800 U	–
88–74–4	2–Nitroaniline	UG/KG	1200 U	1000 U	2100 U	2000 U	–
131–11–3	Dimethyl phthalate	UG/KG	500 U	430 U	850 U	800 U	–
208–96–8	Acenaphthylene	UG/KG	500 U	430 U	850 U	800 U	–
606–20–2	2,6–Dinitrotoluene	UG/KG	500 U	430 U	850 U	800 U	–
99–09–2	3–Nitroaniline	UG/KG	1200 U	1000 U	2100 U	2000 U	–
83–32–9	Acenaphthene	UG/KG	500 U	430 U	850 U	800 U	–

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE SEDIMENT DATA		SAMPLE ID: DEPTH: LAB ID: SDG: MATRIX: SAMPLED:	SD001 0–.5' AS034727 WAR1S SOIL 04/26/93	SD002 0–.5' AS034731 WAR1S SOIL 04/26/93	SD003 0–.5' AS034729 WAR1S SOIL 04/26/93	SD004 0–.5' AS034728 WAR1S SOIL 04/26/93	TRIP BLANK NA AS034735 WAR1S WATER 04/26/93
CAS NO	COMPOUND	UNITS:					UG/L
	ASP91–2 SEMIVOLATILES CONT'D						
51–28–5	2,4–Dinitrophenol	UG/KG	1200 U	1000 U	2100 U	2000 U	–
100–02–7	4–Nitrophenol	UG/KG	1200 U	1000 U	2100 U	2000 U	–
132–64–9	Dibenzofuran	UG/KG	500 U	430 U	850 U	800 U	–
121–14–2	2,4–Dinitrotoluene	UG/KG	500 U	430 U	850 U	800 U	–
84–66–2	Diethyl phthalate	UG/KG	49 BJ	71 BJ	130 BJ	110 BJ	–
7005–72–3	4–Chlorodiphenylether	UG/KG	500 U	430 U	850 U	800 U	–
86–73–7	Fluorene	UG/KG	500 U	430 U	850 U	44 J	–
100–01–6	4–Nitroaniline	UG/KG	1200 U	1000 U	2100 U	2000 U	–
534–52–1	4,6–Dinitro–2–methylphenol	UG/KG	1200 U	1000 U	2100 U	2000 U	–
86–30–6	N–nitrosodiphenylamine	UG/KG	500 U	430 U	850 U	800 U	–
101–55–3	4–Bromophenyl phenyl ether	UG/KG	500 U	430 U	850 U	800 U	–
118–74–1	Hexachlorobenzene	UG/KG	500 U	430 U	850 U	800 U	–
87–86–5	Pentachlorophenol	UG/KG	1200 U	1000 U	2100 U	2000 U	–
85–01–8	Phenanthrene	UG/KG	86 J	150 J	850 U	270 J	–
120–12–7	Anthracene	UG/KG	83 J	140 J	850 U	150 J	–
86–74–8	Carbazole	UG/KG	500 U	430 U	850 U	57 J	–
84–74–2	Di–n–butyl phthalate	UG/KG	500 U	430 U	850 U	800 U	–
206–44–0	Fluoranthene	UG/KG	120 J	180 J	130 J	570 J	–
129–00–0	Pyrene	UG/KG	91 J	140 J	97 J	460 J	–
85–68–7	Butyl benzyl phthalate	UG/KG	500 U	430 U	850 U	800 U	–
91–94–1	3,3'–Dichlorobenzidine	UG/KG	500 U	430 U	850 U	800 U	–
56–55–3	Benzo(a)anthracene	UG/KG	45 J	50 J	850 U	300 J	–
218–01–9	Chrysene	UG/KG	70 J	95 J	850 U	380 J	–
117–81–7	Bis(2–ethylhexyl) phthalate	UG/KG	37 BJ	430 U	850 U	800 U	–
117–84–0	Di–n–octyl phthalate	UG/KG	500 U	430 U	850 U	800 U	–
205–99–2	Benzo(b)fluoranthene	UG/KG	53 J	53 J	66 J	270 J	–
207–08–9	Benzo(k)fluoranthene	UG/KG	31 J	64 J	79 J	310 J	–
50–32–8	Benzo(a)pyrene	UG/KG	37 J	53 J	270 J	220 J	–
193–39–5	Indeno(1,2,3–cd)pyrene	UG/KG	500 U	34 J	850 U	150 J	–
53–70–3	Dibenzo(a,h)anthracene	UG/KG	500 U	430 U	850 U	800 U	–
191–24–2	Benzo(ghi)perylene	UG/KG	500 U	39 J	850 U	150 J	–

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE SEDIMENT DATA		SAMPLE ID: DEPTH: LAB ID: SDG: MATRIX: SAMPLED:	SD001 0–.5' AS034727 WAR1S SOIL 04/26/93	SD002 0–.5' AS034731 WAR1S SOIL 04/26/93	SD003 0–.5' AS034729 WAR1S SOIL 04/26/93	SD004 0–.5' AS034728 WAR1S SOIL 04/26/93	TRIP BLANK NA AS034735 WAR1S WATER 04/26/93
CAS NO	COMPOUND	UNITS:					UG/L
	ASP91–3 PESTICIDES/PCBs						
319–84–6	alpha–BHC	UG/KG	2.6 U	2.2 U	4.3 U	4.1 U	–
319–85–7	beta–BHC	UG/KG	2.6 U	2.2 U	4.3 U	4.1 U	–
319–86–8	delta–BHC	UG/KG	2.6 U	2.2 U	4.3 U	4.1 U	–
58–89–9	gamma–BHC (Lindane)	UG/KG	2.6 U	2.2 U	4.3 U	4.1 U	–
76–44–8	Heptachlor	UG/KG	2.6 U	2.2 U	4.3 U	4.1 U	–
309–00–2	Aldrin	UG/KG	2.6 U	2.2 U	4.3 U	4.1 U	–
1024–57–3	Heptachlor epoxide	UG/KG	2.6 U	2.2 U	4.3 U	4.1 U	–
959–98–8	Endosulfan I	UG/KG	2.6 U	2.2 U	4.3 U	4.1 U	–
60–57–1	Dieldrin	UG/KG	5.0 U	4.3 U	8.4 U	8.0 U	–
72–55–9	4,4'–DDE	UG/KG	0.51 JP	4.3 U	1.0 JP	8.0 U	–
72–20–8	Endrin	UG/KG	5.0 U	4.3 U	8.4 U	8.0 U	–
33213–65–9	Endosulfan II	UG/KG	5.0 U	4.3 U	8.4 U	1.3 J	–
72–54–8	4,4'–DDD	UG/KG	5.0 U	4.3 U	0.65 JP	8.0 U	–
1031–07–8	Endosulfan Sulfate	UG/KG	5.0 U	4.3 U	8.4 U	8.0 U	–
50–29–3	4,4'–DDT	UG/KG	0.38 JP	0.51 JP	8.4 U	8.0 U	–
72–43–5	Methoxychlor	UG/KG	26 U	22 U	43 U	41 U	–
53494–70–5	Endrin ketone	UG/KG	5.0 U	4.3 U	8.4 U	1.6 J	–
7421–93–4	Endrin aldehyde	UG/KG	5.0 U	4.3 U	8.4 U	8.0 U	–
5103–71–9	alpha–Chlordane	UG/KG	2.6 U	2.2 U	4.3 U	4.1 U	–
5103–74–2	gamma–Chlordane	UG/KG	2.6 U	2.2 U	4.3 U	4.1 U	–
8001–35–2	Toxaphene	UG/KG	260 U	220 U	430 U	410 U	–
12674–11–2	Aroclor 1016	UG/KG	50 U	43 U	84 U	80 U	–
11104–28–2	Aroclor 1221	UG/KG	100 U	87 U	170 U	160 U	–
11141–16–5	Aroclor 1232	UG/KG	50 U	43 U	84 U	80 U	–
53469–21–9	Aroclor 1242	UG/KG	50 U	43 U	84 U	80 U	–
12672–29–6	Aroclor 1248	UG/KG	50 U	43 U	84 U	80 U	–
11097–69–1	Aroclor 1254	UG/KG	50 U	43 U	84 U	80 U	–
11096–82–5	Aroclor 1260	UG/KG	50 U	43 U	84 U	80 U	–

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE SEDIMENT DATA		SAMPLE ID: DEPTH: LAB ID: SDG: MATRIX: SAMPLED:	SD001 0–.5' AS034727 WAR1S SOIL 04/26/93	SD002 0–.5' AS034731 WAR1S SOIL 04/26/93	SD003 0–.5' AS034729 WAR1S SOIL 04/26/93	SD004 0–.5' AS034728 WAR1S SOIL 04/26/93	TRIP BLANK NA AS034735 WAR1S WATER 04/26/93
CAS NO	COMPOUND	UNITS:					UG/L
	TOTAL METALS						
7429–90–5	Aluminum – Total	MG/KG	5720	4720	7590	9530	–
7440–36–0	Antimony – Total	MG/KG	14.5 UN	15.9 UN	51.7 UN	29.9 UN	–
7440–38–2	Arsenic – Total	MG/KG	3.9 SN	4.9 SN	23.7 N	9.2 N	–
7440–39–3	Barium – Total	MG/KG	34.5 B	34.6 B	275	99.9	–
7440–41–7	Beryllium – Total	MG/KG	1.2 U	1.3 U	4.3 U	2.5 U	–
7440–43–9	Cadmium – Total	MG/KG	0.22 BN	0.23 BN	0.73 BN	0.36 BN	–
7440–70–2	Calcium – Total	MG/KG	8000 B	15700	60000	5070	–
7440–47–3	Chromium – Total	MG/KG	7.9	7.6	10.3	13.4	–
7440–48–4	Cobalt – Total	MG/KG	4.8 U	5.3 U	17.2 U	10 U	–
7440–50–8	Copper – Total	MG/KG	21.7	13.9	26.0	22.8	–
7439–89–6	Iron – Total	MG/KG	17200	13300	54000	28700	–
7439–92–1	Lead – Total	MG/KG	10.7	10.9	33.7	23.6 S	–
7439–95–4	Magnesium – Total	MG/KG	4720	5620	6690	3810	–
7439–96–5	Manganese – Total	MG/KG	411	298	2230	521	–
7439–97–6	Mercury – Total	MG/KG	0.13	0.12 U	0.42 U	0.23 U	–
7440–02–0	Nickel – Total	MG/KG	13.7	10.3 B	25.8 U	20.9	–
7440–09–7	Potassium – Total	MG/KG	549 B	743 B	830 B	829 B	–
7782–49–2	Selenium – Total	MG/KG	1.0 UWN	1.0 UN	3.6 UN	2.0 UWN	–
7440–22–4	Silver – Total	MG/KG	2.4 UN	2.6 UN	8.6 UN	5.0 UN	–
7440–23–5	Sodium – Total	MG/KG	193 U	212 U	689 U	399 U	–
7440–28–0	Thallium – Total	MG/KG	1.2 U	1.3 U	4.6 U	2.5 U	–
7440–62–2	Vanadium – Total	MG/KG	10.4 B	9.3 B	17.2 U	15.3 B	–
7440–66–6	Zinc – Total	MG/KG	60.0	68.6	232	85.6	–
57–12–5	Cyanide – Total	MG/KG	1.6 U	2.9	5.7 U	3.2 U	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SURFACE SOIL DATA		SAMPLE ID: DEPTH: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	SS001 0–0.5' RECRA AS034732 WAR1S SOIL 04/26/93	SS001–DL 0–0.5' RECRA AS034732DL WAR1S SOIL 04/26/93	SS002 0–0.5' RECRA AS034730 WAR1S SOIL 04/26/93	SS002–DUP 0–0.5' RECRA AS034734 WAR1S SOIL 04/26/93	TRIP BLANK NA RECRA AS034735 WAR1S WATER 04/26/93
CAS NO	COMPOUND	UNITS:					UG/L
	ASP91–1 VOLATILES						
74–87–3	Chloromethane	UG/KG	13 U	–	14 U	17 U	10 U
74–83–9	Bromomethane	UG/KG	13 U	–	14 U	17 U	10 U
75–01–4	Vinyl chloride	UG/KG	13 U	–	14 U	17 U	10 U
75–00–3	Chloroethane	UG/KG	13 U	–	14 U	17 U	10 U
75–09–2	Methylene chloride	UG/KG	68 B	–	33 B	72 B	13 B
67–64–1	Acetone	UG/KG	7 BJ	–	14 U	56 B	10 U
75–15–0	Carbon Disulfide	UG/KG	13 U	–	14 U	17 U	10 U
75–35–4	1,1–Dichloroethene	UG/KG	13 U	–	14 U	17 U	10 U
75–34–3	1,1–Dichloroethane	UG/KG	13 U	–	14 U	17 U	10 U
540–59–0	1,2–Dichloroethene (Total)	UG/KG	13 U	–	14 U	17 U	10 U
67–66–3	Chloroform	UG/KG	13 U	–	14 U	17 U	10 U
107–06–2	1,2–Dichloroethane	UG/KG	13 U	–	14 U	17 U	10 U
78–93–3	2–Butanone	UG/KG	9 BJ	–	14 U	21 B	10 U
71–55–6	1,1,1–Trichloroethane	UG/KG	13 U	–	14 U	17 U	10 U
56–23–5	Carbon Tetrachloride	UG/KG	13 U	–	14 U	17 U	10 U
75–27–4	Bromodichloromethane	UG/KG	13 U	–	14 U	17 U	10 U
78–87–5	1,2–Dichloropropane	UG/KG	13 U	–	14 U	17 U	10 U
10061–02–6	cis–1,3–Dichloropropene	UG/KG	13 U	–	14 U	17 U	10 U
79–01–6	Trichloroethene	UG/KG	13 U	–	14 U	17 U	10 U
124–48–1	Dibromochloromethane	UG/KG	13 U	–	14 U	17 U	10 U
79–00–5	1,1,2–Trichloroethane	UG/KG	13 U	–	14 U	17 U	10 U
71–43–2	Benzene	UG/KG	13 U	–	14 U	17 U	10 U
10061–01–5	trans–1,3–Dichloropropene	UG/KG	13 U	–	14 U	17 U	10 U
75–25–2	Bromoform	UG/KG	13 U	–	14 U	17 U	10 U
108–10–1	4–Methyl–2–pentanone	UG/KG	13 U	–	14 U	17 U	10 U
591–78–6	2–Hexanone	UG/KG	13 U	–	14 U	17 U	10 U
127–18–4	Tetrachloroethene	UG/KG	13 U	–	14 U	17 U	10 U
79–34–5	1,1,2,2–Tetrachloroethane	UG/KG	13 U	–	14 U	17 U	10 U
108–88–3	Toluene	UG/KG	13 U	–	14 U	17 U	10 U
108–90–7	Chlorobenzene	UG/KG	13 U	–	14 U	17 U	10 U
100–41–4	Ethyl benzene	UG/KG	13 U	–	14 U	17 U	10 U
100–42–5	Styrene	UG/KG	13 U	–	14 U	17 U	10 U
1330–20–7	Total Xylenes	UG/KG	13 U	–	14 U	17 U	10 U

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SURFACE SOIL DATA		SAMPLE ID: DEPTH: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	SS001 0–0.5' RECRA AS034732 WAR1S SOIL 04/26/93	SS001–DL 0–0.5' RECRA AS034732DL WAR1S SOIL 04/26/93	SS002 0–0.5' RECRA AS034730 WAR1S SOIL 04/26/93	SS002–DUP 0–0.5' RECRA AS034734 WAR1S SOIL 04/26/93	TRIP BLANK NA RECRA AS034735 WAR1S WATER 04/26/93
CAS NO	COMPOUND	UNITS:					UG/L
	ASP91–2 SEMIVOLATILES						
108–95–2	Phenol	UG/KG	420 U	840 U	470 U	550 U	–
111–44–4	Bis(2–chloroethyl) ether	UG/KG	420 U	840 U	470 U	550 U	–
95–57–8	2–Chlorophenol	UG/KG	420 U	840 U	470 U	550 U	–
541–73–1	1,3–Dichlorobenzene	UG/KG	420 U	840 U	470 U	550 U	–
106–46–7	1,4–Dichlorobenzene	UG/KG	420 U	840 U	470 U	550 U	–
95–50–1	1,2–Dichlorobenzene	UG/KG	420 U	840 U	470 U	550 U	–
95–48–7	2–Methylphenol	UG/KG	420 U	840 U	470 U	550 U	–
108–60–1	Bis(2–chloroisopropyl) ether	UG/KG	420 U	840 U	470 U	550 U	–
106–44–5	4–Methylphenol	UG/KG	420 U	840 U	470 U	550 U	–
621–64–7	N–Nitroso–Di–n–propylamine	UG/KG	420 U	840 U	470 U	550 U	–
67–72–1	Hexachloroethane	UG/KG	420 U	840 U	470 U	550 U	–
98–95–3	Nitrobenzene	UG/KG	420 U	840 U	470 U	550 U	–
78–59–1	Isophorone	UG/KG	420 U	840 U	470 U	550 U	–
88–75–5	2–Nitrophenol	UG/KG	420 U	840 U	470 U	550 U	–
105–67–9	2,4–Dimethylphenol	UG/KG	420 U	840 U	470 U	550 U	–
111–91–1	Bis(2–chloroethoxy) methane	UG/KG	420 U	840 U	470 U	550 U	–
120–83–2	2,4–Dichlorophenol	UG/KG	420 U	840 U	470 U	550 U	–
120–82–1	1,2,4–Trichlorobenzene	UG/KG	420 U	840 U	470 U	550 U	–
91–20–3	Naphthalene	UG/KG	230 J	230 DJ	29 J	33 J	–
106–47–8	4–Chloroaniline	UG/KG	420 U	840 U	470 U	550 U	–
87–68–3	Hexachlorobutadiene	UG/KG	420 U	840 U	470 U	550 U	–
59–50–7	4–Chloro–3–methylphenol	UG/KG	420 U	840 U	470 U	550 U	–
91–57–6	2–Methylnaphthalene	UG/KG	330 J	350 DJ	29 J	550 U	–
77–47–4	Hexachlorocyclopentadiene	UG/KG	420 U	840 U	470 U	550 U	–
88–06–2	2,4,6–Trichlorophenol	UG/KG	420 U	840 U	470 U	550 U	–
95–95–4	2,4,5–Trichlorophenol	UG/KG	1000 U	2000 U	1100 U	1300 U	–
91–58–7	2–Chloronaphthalene	UG/KG	420 U	840 U	470 U	550 U	–
88–74–4	2–Nitroaniline	UG/KG	1000 U	2000 U	1100 U	1300 U	–
131–11–3	Dimethyl phthalate	UG/KG	420 U	840 U	470 U	550 U	–
208–96–8	Acenaphthylene	UG/KG	310 J	250 DJ	110 J	140 J	–
606–20–2	2,6–Dinitrotoluene	UG/KG	420 U	840 U	470 U	550 U	–
99–09–2	3–Nitroaniline	UG/KG	1000 U	2000 U	1100 U	1300 U	–
83–32–9	Acenaphthene	UG/KG	86 J	87 DJ	150 J	150 J	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SURFACE SOIL DATA		SAMPLE ID: DEPTH: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	SS001 0–0.5' RECRA AS034732 WAR1S SOIL 04/26/93	SS001–DL 0–0.5' RECRA AS034732DL WAR1S SOIL 04/26/93	SS002 0–0.5' RECRA AS034730 WAR1S SOIL 04/26/93	SS002–DUP 0–0.5' RECRA AS034734 WAR1S SOIL 04/26/93	TRIP BLANK NA RECRA AS034735 WAR1S WATER 04/26/93
CAS NO	COMPOUND	UNITS:					UG/L
	ASP91–2 SEMIVOLATILES CONT'D						
51–28–5	2,4–Dinitrophenol	UG/KG	1000 U	2000 U	1100 U	1300 U	–
100–02–7	4–Nitrophenol	UG/KG	1000 U	2000 U	1100 U	1300 U	–
132–64–9	Dibenzofuran	UG/KG	170 J	170 DJ	90 J	84 J	–
121–14–2	2,4–Dinitrotoluene	UG/KG	420 U	840 U	470 U	550 U	–
84–66–2	Diethyl phthalate	UG/KG	62 BJ	65 BDJ	63 BJ	55 BJ	–
7005–72–3	4–Chlorodiphenylether	UG/KG	420 U	840 U	470 U	550 U	–
86–73–7	Fluorene	UG/KG	240 J	250 DJ	210 J	220 J	–
100–01–6	4–Nitroaniline	UG/KG	1000 U	2000 U	1100 U	1300 U	–
534–52–1	4,6–Dinitro–2–methylphenol	UG/KG	1000 U	2000 U	1100 U	1300 U	–
86–30–6	N–nitrosodiphenylamine	UG/KG	420 U	840 U	470 U	550 U	–
101–55–3	4–Bromophenyl phenyl ether	UG/KG	420 U	840 U	470 U	550 U	–
118–74–1	Hexachlorobenzene	UG/KG	420 U	840 U	470 U	550 U	–
87–86–5	Pentachlorophenol	UG/KG	1000 U	2000 U	1100 U	1300 U	–
85–01–8	Phenanthrene	UG/KG	2000	2100 D	1700	2100	–
120–12–7	Anthracene	UG/KG	350 J	340 DJ	300 J	370 J	–
86–74–8	Carbazole	UG/KG	270 J	300 DJ	170 J	180 J	–
84–74–2	Di–n–butyl phthalate	UG/KG	89 J	82 DJ	89 J	29 J	–
206–44–0	Fluoranthene	UG/KG	3000	4100 D	2900	3500	–
129–00–0	Pyrene	UG/KG	3700 E	2700 D	2500	3000	–
85–68–7	Butyl benzyl phthalate	UG/KG	420 U	840 U	470 U	550 U	–
91–94–1	3,3'–Dichlorobenzidine	UG/KG	420 U	840 U	470 U	550 U	–
56–55–3	Benzo(a)anthracene	UG/KG	2000	2000 D	1400	1600	–
218–01–9	Chrysene	UG/KG	2000	2200 D	1300	1600	–
117–81–7	Bis(2–ethylhexyl) phthalate	UG/KG	180 BJ	110 BDJ	230 BJ	120 BJ	–
117–84–0	Di–n–octyl phthalate	UG/KG	420 U	840 U	470 U	550 U	–
205–99–2	Benzo(b)fluoranthene	UG/KG	2700	2100 D	1400	1700	–
207–08–9	Benzo(k)fluoranthene	UG/KG	1800	2400 D	1200	1500	–
50–32–8	Benzo(a)pyrene	UG/KG	2000	2100 D	1200	1500	–
193–39–5	Indeno(1,2,3–cd)pyrene	UG/KG	1600	1400 D	770	970	–
53–70–3	Dibenzo(a,h)anthracene	UG/KG	800	670 DJ	390 J	500 J	–
191–24–2	Benzo(ghi)perylene	UG/KG	1800	1500 D	780	1000	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE SURFACE SOIL DATA		SAMPLE ID: DEPTH: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	SS001 0–0.5' RECRA AS034732 WAR1S SOIL 04/26/93	SS001–DL 0–0.5' RECRA AS034732DL WAR1S SOIL 04/26/93	SS002 0–0.5' RECRA AS034730 WAR1S SOIL 04/26/93	SS002–DUP 0–0.5' RECRA AS034734 WAR1S SOIL 04/26/93	TRIP BLANK NA RECRA AS034735 WAR1S WATER 04/26/93
CAS NO	COMPOUND	UNITS:					UG/L
	ASP9103 PESTICIDES/PCBs						
319–84–6	alpha–BHC	UG/KG	11 U	–	4.8 U	2.8 U	–
319–85–7	beta–BHC	UG/KG	11 U	–	4.8 U	2.8 U	–
319–86–8	delta–BHC	UG/KG	11 U	–	4.8 U	2.8 U	–
58–89–9	gamma–BHC (Lindane)	UG/KG	11 U	–	4.8 U	2.8 U	–
76–44–8	Heptachlor	UG/KG	1.4 JP	–	0.58 JP	0.30 JP	–
309–00–2	Aldrin	UG/KG	11 U	–	4.8 U	2.8 U	–
1024–57–3	Heptachlor epoxide	UG/KG	11 U	–	4.8 U	2.8 U	–
959–98–8	Endosulfan I	UG/KG	11 U	–	4.8 U	2.8 U	–
60–57–1	Dieldrin	UG/KG	21 U	–	9.4 U	5.5 U	–
72–55–9	4,4'–DDE	UG/KG	2.3 JP	–	3.2 JP	2.3 JP	–
72–20–8	Endrin	UG/KG	21 U	–	9.4 U	5.5 U	–
33213–65–9	Endosulfan II	UG/KG	21 U	–	2.8 JP	2.8 JP	–
72–54–8	4,4'–DDD	UG/KG	21 U	–	1.1 JP	1.0 JP	–
1031–07–8	Endosulfan Sulfate	UG/KG	21 U	–	9.4 U	5.5 U	–
50–29–3	4,4'–DDT	UG/KG	3.8 J	–	6.4 JP	5.8 P	–
72–43–5	Methoxychlor	UG/KG	110 U	–	4.3 JP	5.4 JP	–
53494–70–5	Endrin ketone	UG/KG	10 J	–	3.7 JP	4.0 JP	–
7421–93–4	Endrin aldehyde	UG/KG	21 U	–	9.4 U	5.5 U	–
5103–71–9	alpha–Chlordane	UG/KG	11 U	–	4.8 U	2.7 J	–
5103–74–2	gamma–Chlordane	UG/KG	11 U	–	0.69 JP	1.1 JP	–
8001–35–2	Toxaphene	UG/KG	1100 U	–	480 U	280 U	–
12674–11–2	Aroclor 1016	UG/KG	210 U	–	94 U	55 U	–
11104–28–2	Aroclor 1221	UG/KG	430 U	–	190 U	110 U	–
11141–16–5	Aroclor 1232	UG/KG	210 U	–	94 U	55 U	–
53469–21–9	Aroclor 1242	UG/KG	210 U	–	94 U	55 U	–
12672–29–6	Aroclor 1248	UG/KG	210 U	–	94 U	55 U	–
11097–69–1	Aroclor 1254	UG/KG	210 U	–	94 U	55 U	–
11096–82–5	Aroclor 1260	UG/KG	210 U	–	94 U	55 U	–

NYSDEC -- PSA WORK ASSIGNMENTS WARSAW SITE SURFACE SOIL DATA		SAMPLE ID: DEPTH: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	SS001 0-0.5' RECRA AS034732 WAR1S SOIL 04/26/93	SS001-DL 0-0.5' RECRA AS034732DL WAR1S SOIL 04/26/93	SS002 0-0.5' RECRA AS034730 WAR1S SOIL 04/26/93	SS002-DUP 0-0.5' RECRA AS034734 WAR1S SOIL 04/26/93	TRIP BLANK NA RECRA AS034735 WAR1S WATER 04/26/93
CAS NO	COMPOUND	UNITS:					UG/L
	TOTAL METALS						
7429-90-5	Aluminum - Total	MG/KG	4610	-	6340	-	-
7440-36-0	Antimony - Total	MG/KG	14.7 UN	-	19.8 UN	-	-
7440-38-2	Arsenic - Total	MG/KG	6.0 N	-	5.3 N	-	-
7440-39-3	Barium - Total	MG/KG	45.0 B	-	104	-	-
7440-41-7	Beryllium - Total	MG/KG	1.2 U	-	1.6 U	-	-
7440-43-9	Cadmium - Total	MG/KG	0.66 BSN	-	1.1 BSN	-	-
7440-70-2	Calcium - Total	MG/KG	50100 B	-	29100	-	-
7440-47-3	Chromium - Total	MG/KG	8.7	-	12.9	-	-
7440-48-4	Cobalt - Total	MG/KG	5.1 B	-	6.6 U	-	-
7440-50-8	Copper - Total	MG/KG	91.3	-	30.4	-	-
7439-89-6	Iron - Total	MG/KG	18400	-	17100	-	-
7439-92-1	Lead - Total	MG/KG	103	-	129	-	-
7439-95-4	Magnesium - Total	MG/KG	6600	-	5490	-	-
7439-96-5	Manganese - Total	MG/KG	357	-	579	-	-
7439-97-6	Mercury - Total	MG/KG	0.52	-	0.20	-	-
7440-02-0	Nickel - Total	MG/KG	14.7	-	18.9	-	-
7440-09-7	Potassium - Total	MG/KG	579 B	-	1620 B	-	-
7782-49-2	Selenium - Total	MG/KG	0.96 UWN	-	1.3 UWN	-	-
7440-22-4	Silver - Total	MG/KG	2.5 UN	-	3.3 UN	-	-
7440-23-5	Sodium - Total	MG/KG	196 U	-	264 U	-	-
7440-28-0	Thallium - Total	MG/KG	1.2 U	-	1.6 U	-	-
7440-62-2	Vanadium - Total	MG/KG	10.7 B	-	11.6 B	-	-
7440-66-6	Zinc - Total	MG/KG	140	-	158	-	-
57-12-5	Cyanide - Total	MG/KG	1.5	-	2.0 U	-	-

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE TEST PIT DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	TP–010–003 RECRA A4492403 SDG1 SOIL 09/15/94	TP–010–010 RECRA A4492401 SDG1 SOIL 09/15/94	TP003003 RECRA A4489801 SDG1 SOIL 09/13/94	TP003003 DUP RECRA A4489801FD SDG1 SOIL 09/13/94
Cas No.	Compound	UNITS:				
	ASP91–1 – VOLATILES					
74–87–3	Chloromethane	UG/KG	12 U	1500 U	18 U	18 U
74–83–9	Bromomethane	UG/KG	12 U	1500 U	18 U	18 U
75–01–4	Vinyl chloride	UG/KG	12 U	1500 U	18 U	18 U
75–00–3	Chloroethane	UG/KG	12 U	1500 U	18 U	18 U
75–09–2	Methylene chloride	UG/KG	12 U	1500 U	4 J	2 J
67–64–1	Acetone	UG/KG	130	1500 U	18 U	18 U
75–15–0	Carbon Disulfide	UG/KG	12 U	1500 U	18 U	18 U
75–35–4	1,1–Dichloroethene	UG/KG	12 U	1500 U	18 U	18 U
75–34–3	1,1–Dichloroethane	UG/KG	12 U	1500 U	18 U	18 U
540–59–0	1,2–Dichloroethene (Total)	UG/KG	12 U	1500 U	18 U	18 U
67–66–3	Chloroform	UG/KG	12 U	1500 U	18 U	18 U
107–06–2	1,2–Dichloroethane	UG/KG	12 U	1500 U	18 U	18 U
78–93–3	2–Butanone	UG/KG	38	1500 U	18 U	18 U
71–55–6	1,1,1–Trichloroethane	UG/KG	12 U	1500 U	18 U	18 U
56–23–5	Carbon Tetrachloride	UG/KG	12 U	1500 U	18 U	18 U
75–27–4	Bromodichloromethane	UG/KG	12 U	1500 U	18 U	18 U
78–87–5	1,2–Dichloropropane	UG/KG	12 U	1500 U	18 U	18 U
10061–02–6	cis–1,3–Dichloropropene	UG/KG	12 U	1500 U	18 U	18 U
79–01–6	Trichloroethene	UG/KG	12 U	1500 U	46	3 J
124–48–1	Dibromochloromethane	UG/KG	12 U	1500 U	18 U	18 U
79–00–5	1,1,2–Trichloroethane	UG/KG	12 U	1500 U	18 U	18 U
71–43–2	Benzene	UG/KG	12 U	1500 U	18 U	18 U
10061–01–5	trans–1,3–Dichloropropene	UG/KG	12 U	1500 U	18 U	18 U
75–25–2	Bromoform	UG/KG	12 U	1500 U	18 U	18 U
108–10–1	4–Methyl–2–pentanone	UG/KG	12 U	1500 U	18 U	18 U
591–78–6	2–Hexanone	UG/KG	12 U	1500 U	18 U	18 U
127–18–4	Tetrachloroethene	UG/KG	12 U	1500 U	18 U	18 U
79–34–5	1,1,2,2–Tetrachloroethane	UG/KG	12 U	1500 U	18 U	18 U
108–88–3	Toluene	UG/KG	2 J	650 J	18 U	18 U
108–90–7	Chlorobenzene	UG/KG	12 U	1500 U	18 U	18 U
100–41–4	Ethyl benzene	UG/KG	2 J	1400 J	18 U	18 U
100–42–5	Styrene	UG/KG	12 U	1500 U	18 U	18 U
1330–20–7	Total Xylenes	UG/KG	35	5900	18 U	18 U

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE TEST PIT DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	TP–010–003 RECRA A4492403 SDG1 SOIL 09/15/94	TP–010–010 RECRA A4492401 SDG1 SOIL 09/15/94	TP003003 RECRA A4489801 SDG1 SOIL 09/13/94	TP003003 DUP RECRA A4489801FD SDG1 SOIL 09/13/94
Cas No.	Compound	UNITS:				
	ASP91–2 – SEMIVOLATILES					
108–95–2	Phenol	UG/KG	410 U	400 U	520 U	520 U
111–44–4	Bis(2–chloroethyl) ether	UG/KG	410 U	400 U	520 U	520 U
95–57–8	2–Chlorophenol	UG/KG	410 U	400 U	520 U	520 U
541–73–1	1,3–Dichlorobenzene	UG/KG	410 U	400 U	520 U	520 U
106–46–7	1,4–Dichlorobenzene	UG/KG	410 U	400 U	520 U	520 U
95–50–1	1,2–Dichlorobenzene	UG/KG	410 U	400 U	520 U	520 U
95–48–7	2–Methylphenol	UG/KG	410 U	400 U	520 U	520 U
108–60–1	Bis(2–chloroisopropyl) ether	UG/KG	410 U	400 U	520 U	520 U
106–44–5	4–Methylphenol	UG/KG	410 U	42 J	520 U	520 U
621–64–7	N–Nitroso–Di–n–propylamine	UG/KG	410 U	400 U	520 U	520 U
67–72–1	Hexachloroethane	UG/KG	410 U	400 U	520 U	520 U
98–95–3	Nitrobenzene	UG/KG	410 U	400 U	520 U	520 U
78–59–1	Isophorone	UG/KG	410 U	400 U	520 U	520 U
88–75–5	2–Nitrophenol	UG/KG	410 U	400 U	520 U	520 U
105–67–9	2,4–Dimethylphenol	UG/KG	410 U	11 J	520 U	520 U
111–91–1	Bis(2–chloroethoxy) methane	UG/KG	410 U	400 U	520 U	520 U
120–83–2	2,4–Dichlorophenol	UG/KG	410 U	400 U	520 U	520 U
120–82–1	1,2,4–Trichlorobenzene	UG/KG	410 U	400 U	520 U	520 U
91–20–3	Naphthalene	UG/KG	190 J	400 U	10 J	90 J
106–47–8	4–Chloroaniline	UG/KG	410 U	400 U	520 U	520 U
87–68–3	Hexachlorobutadiene	UG/KG	410 U	400 U	520 U	520 U
59–50–7	4–Chloro–3–methylphenol	UG/KG	410 U	9 J	520 U	520 U
91–57–6	2–Methylnaphthalene	UG/KG	28 J	400 U	6 J	32 J
77–47–4	Hexachlorocyclopentadiene	UG/KG	410 U	400 U	520 U	520 U
88–06–2	2,4,6–Trichlorophenol	UG/KG	410 U	400 U	520 U	520 U
95–95–4	2,4,5–Trichlorophenol	UG/KG	1000 U	970 U	1200 U	1300 U
91–58–7	2–Chloronaphthalene	UG/KG	410 U	400 U	520 U	520 U
88–74–4	2–Nitroaniline	UG/KG	1000 U	970 U	1200 U	1300 U
131–11–3	Dimethyl phthalate	UG/KG	410 U	400 U	520 U	520 U
208–96–8	Acenaphthylene	UG/KG	50 J	400 U	27 J	81 J
606–20–2	2,6–Dinitrotoluene	UG/KG	410 U	400 U	520 U	520 U
99–09–2	3–Nitroaniline	UG/KG	1000 U	970 U	1200 U	1300 U

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE TEST PIT DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	TP–010–003 RECRA A4492403 SDG1 SOIL 09/15/94	TP–010–010 RECRA A4492401 SDG1 SOIL 09/15/94	TP003003 RECRA A4489801 SDG1 SOIL 09/13/94	TP003003 DUP RECRA A4489801FD SDG1 SOIL 09/13/94
Cas No.	Compound	UNITS:				
	ASP91–2 – SEMIVOLATILES CONT'D					
83–32–9	Acenaphthene	UG/KG	410 U	400 U	6 J	15 J
51–28–5	2,4–Dinitrophenol	UG/KG	1000 U	970 U	1200 U	1300 U
100–02–7	4–Nitrophenol	UG/KG	1000 U	970 U	1200 U	1300 U
132–64–9	Dibenzo(a,h)anthracene	UG/KG	410 U	400 U	26 J	63 J
121–14–2	2,4–Dinitrotoluene	UG/KG	410 U	400 U	520 U	520 U
84–66–2	Diethyl phthalate	UG/KG	410 U	400 U	4 J	6 J
7005–72–3	4–Chlorodiphenylether	UG/KG	410 U	400 U	520 U	520 U
86–73–7	Fluorene	UG/KG	410 U	400 U	31 J	87 J
100–01–6	4–Nitroaniline	UG/KG	1000 U	970 U	1200 U	1300 U
534–52–1	4,6–Dinitro–2–methylphenol	UG/KG	1000 U	970 U	1200 U	1300 U
86–30–6	N–nitrosodiphenylamine	UG/KG	410 U	32 J	520 U	520 U
101–55–3	4–Bromophenyl phenyl ether	UG/KG	410 U	400 U	520 U	520 U
118–74–1	Hexachlorobenzene	UG/KG	410 U	400 U	520 U	520 U
87–86–5	Pentachlorophenol	UG/KG	1000 U	970 U	1200 U	1300 U
85–01–8	Phenanthrene	UG/KG	84 J	12 J	240 J	600
120–12–7	Anthracene	UG/KG	27 J	400 U	50 J	520 U
86–74–8	Carbazole	UG/KG	410 U	400 U	23 J	64 J
84–74–2	Di–n–butyl phthalate	UG/KG	370 BJ	72 BJ	120 BJ	190 BJ
206–44–0	Fluoranthene	UG/KG	160 J	400 U	280 J	860
129–00–0	Pyrene	UG/KG	160 J	14 J	360 J	660
85–68–7	Butyl benzyl phthalate	UG/KG	21 J	400 U	520 U	520 U
91–94–1	3,3'–Dichlorobenzidine	UG/KG	410 U	400 U	520 U	520 U
56–55–3	Benzo(a)anthracene	UG/KG	100 J	400 U	250 J	360 J
218–01–9	Chrysene	UG/KG	130 J	400 U	270 J	370 J
117–81–7	Bis(2–ethylhexyl) phthalate	UG/KG	180 BJ	110 BJ	520 U	520 U
117–84–0	Di–n–octyl phthalate	UG/KG	410 U	400 U	520 U	520 U
205–99–2	Benzo(b)fluoranthene	UG/KG	210 J	10 J	300 J	440 J
207–08–9	Benzo(k)fluoranthene	UG/KG	120 J	5 J	130 J	220 J
50–32–8	Benzo(a)pyrene	UG/KG	110 J	400 U	210 J	340 J
193–39–5	Indeno(1,2,3–cd)pyrene	UG/KG	67 J	400 U	95 J	260 J
53–70–3	Dibenzofuran	UG/KG	410 U	400 U	14 J	61 J
191–24–2	Benzo(ghi)perylene	UG/KG	45 J	400 U	58 J	190 J

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE TEST PIT DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED: UNITS:	TP–010–003 RECRA A4492403 SDG1 SOIL 09/15/94	TP–010–010 RECRA A4492401 SDG1 SOIL 09/15/94	TP003003 RECRA A4489801 SDG1 SOIL 09/13/94	TP003003 DUP RECRA A4489801FD SDG1 SOIL 09/13/94
Cas No.	Compound					
	ASP91–3 – PESTICIDES/AROCLORS					
319–84–6	alpha–BHC	UG/KG	2.2 U	2.1 U	2.7 U	2.7 U
319–85–7	beta–BHC	UG/KG	2.2 U	2.1 U	2.7 U	2.7 U
319–86–8	delta–BHC	UG/KG	2.2 U	2.1 U	2.7 U	2.7 U
58–89–9	gamma–BHC (Lindane)	UG/KG	2.2 U	2.1 U	2.7 U	2.7 U
76–44–8	Heptachlor	UG/KG	2.2 U	2.1 U	2.7 U	2.7 U
309–00–2	Aldrin	UG/KG	2.2 U	2.1 U	2.7 U	2.7 U
1024–57–3	Heptachlor epoxide	UG/KG	2.2 U	2.1 U	2.7 U	2.7 U
959–98–8	Endosulfan I	UG/KG	2.2 U	2.1 U	2.7 U	2.7 U
60–57–1	Dieldrin	UG/KG	4.2 U	4 U	5.3 U	5.2 U
72–55–9	4,4'–DDE	UG/KG	4.2 U	4 U	5.3 U	5.2 U
72–20–8	Endrin	UG/KG	4.2 U	4 U	5.3 U	5.2 U
33213–65–9	Endosulfan II	UG/KG	4.2 U	4 U	5.3 U	5.2 U
72–54–8	4,4'–DDD	UG/KG	34 P	4 U	5.3 U	5.2 U
1031–07–8	Endosulfan Sulfate	UG/KG	4.2 U	4 U	5.3 U	5.2 U
50–29–3	4,4'–DDT	UG/KG	4.2 U	4 U	5.3 U	5.2 U
72–43–5	Methoxychlor	UG/KG	22 U	21 U	27 U	27 U
53494–70–5	Endrin ketone	UG/KG	4.2 U	4 U	5.3 U	5.2 U
7421–93–4	Endrin aldehyde	UG/KG	4.2 U	4 U	5.3 U	5.2 U
5103–71–9	alpha–Chlordane	UG/KG	2.2 U	2.1 U	2.7 U	2.7 U
5103–74–2	gamma–Chlordane	UG/KG	2.2 U	2.1 U	2.7 U	2.7 U
8001–35–2	Toxaphene	UG/KG	220 U	210 U	270 U	270 U
12674–11–2	Aroclor 1016	UG/KG	42 U	40 U	53 U	52 U
11104–28–2	Aroclor 1221	UG/KG	85 U	82 U	110 U	100 U
11141–16–5	Aroclor 1232	UG/KG	42 U	40 U	53 U	52 U
53469–21–9	Aroclor 1242	UG/KG	42 U	36 J	53 U	52 U
12672–29–6	Aroclor 1248	UG/KG	42 U	40 U	53 U	52 U
11097–69–1	Aroclor 1254	UG/KG	230	21 J	71	160
11096–82–5	Aroclor 1260	UG/KG	42 U	40 U	53 U	52 U

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE TEST PIT DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	TP–010–003 RECRA A4492403 SDG1 SOIL 09/15/94	TP–010–010 RECRA A4492401 SDG1 SOIL 09/15/94	TP003003 RECRA A4489801 SDG1 SOIL 09/13/94	TP003003 DUP RECRA A4489801FD SDG1 SOIL 09/13/94
Cas No.	Compound	UNITS:				
	TOTAL METALS					
7429–90–5	Aluminum – Total	MG/KG	7750	10700	11100	9200
7440–36–0	Antimony – Total	MG/KG	7.5 UN	7.3 UN	9.5 UN	9.4 UN
7440–38–2	Arsenic – Total	MG/KG	5.4 N	6.1 N	18.3 N	11.2 N
7440–39–3	Barium – Total	MG/KG	64.2	44.6 B	283	277
7440–41–7	Beryllium – Total	MG/KG	0.75 U	0.73 U	0.95 U	0.94 U
7440–43–9	Cadmium – Total	MG/KG	1.2 U	1.2 U	11.4	9.1
7440–70–2	Calcium – Total	MG/KG	5090	2470	35300	27400
7440–47–3	Chromium – Total	MG/KG	10.9	13.4	19.6	27.2
7440–48–4	Cobalt – Total	MG/KG	9.1 B	10.3 B	12.3 B	9.1 B
7440–50–8	Copper – Total	MG/KG	19.3	20.6	447	383
7439–89–6	Iron – Total	MG/KG	23400 E	21600 E	39700 E	30800 E
7439–92–1	Lead – Total	MG/KG	26.9 EN	16.2 EN	511 EN	554 EN
7439–95–4	Magnesium – Total	MG/KG	3240	3660	7460	5700
7439–96–5	Manganese – Total	MG/KG	865 N	409 N	618 N	571 N
7439–97–6	Mercury – Total	MG/KG	0.11 U	0.11 U	0.23	0.38
7440–02–0	Nickel – Total	MG/KG	23.1	21	32.8	41.5
7440–09–7	Potassium – Total	MG/KG	630 B	764 B	2810	2210
7782–49–2	Selenium – Total	MG/KG	0.77 U	0.72 U	0.94 U	0.93 U
7440–22–4	Silver – Total	MG/KG	2.5 UN	2.4 UN	3.8 N	3.4 N
7440–23–5	Sodium – Total	MG/KG	282 B	379 B	597 B	543 B
7440–28–0	Thallium – Total	MG/KG	0.77 U	0.72 U	0.94 U	0.93 UW
7440–62–2	Vanadium – Total	MG/KG	15.2	16.2	20.2	17.2
7440–66–6	Zinc – Total	MG/KG	134 E	93.7 E	2640 E	2030 E
57–12–5	Cyanide – Total	MG/KG	1.2 U	1.2 U	1.6 U	1.6 U
	WET CHEMISTRY ANALYSIS (SOIL) S.U.					
ES–5016	Flashpoint (Ignitability)	Deg. F	200 E	200 E	200 E	200 E
7783–6–4	H2S Released From Waste (Reactivity)	MG/KG	10 U	10 U	10 U	10 U
74–90–8	HCN Released From Waste (Reactivity)	MG/KG	10 U	10 U	10 U	10 U
10–29–7	Leachable pH (Corrosivity)	S.U.	7.4	7.18	7.14	7.16

NYSDEC – PSA WORK ASSIGNMENT WARSAW SITE TEST PIT DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED: UNITS:	TP–010–003 RECRA A4492403 SDG1 SOIL 09/15/94	TP–010–010 RECRA A4492401 SDG1 SOIL 09/15/94	TP003003 RECRA A4489801 SDG1 SOIL 09/13/94	TP003003 DUP RECRA A4489801FD SDG1 SOIL 09/13/94
Cas No.	Compound					
	METHOD 8080 – EP TOXICITY PESTICIDES					
58–89–9	gamma–BHC (Lindane)	UG/L	1 U	1 U	1 U	1 U
57–74–9	Chlordane	UG/L	10 U	10 U	10 U	10 U
72–20–8	Endrin	UG/L	2 U	2 U	2 U	2 U
76–44–8	Heptachlor	UG/L	1 U	1 U	1 U	1 U
1024–57–3	Heptachlor epoxide	UG/L	1 U	1 U	1 U	1 U
72–43–5	Methoxychlor	UG/L	10 U	10 U	10 U	10 U
8001–35–2	Toxaphene	UG/L	20 U	20 U	20 U	20 U
	METHOD 8150 – EP TOXICITY HERBICIDES					
94–75–7	2,4–D	UG/L	1.3 U	1.4 U	1.2 U	1.2 U
93–72–1	2,4,5–TP (Silvex)	UG/L	0.65 U	0.68 U	0.62 U	0.62 U

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE DRUM SAMPLE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	DR-010-001 RECRA A4492402 SDG1 SOIL 09/15/94	DR-010-001DL RECRA A4492402DL SDG1 SOIL 09/15/94	DR-010-001DLRE RECRA A4492402V SDG1 SOIL 09/15/94	DR-010-001RE RECRA A4492402RI SDG1 SOIL 09/15/94
Cas No.	Compound	UNITS:				
	ASP91-1 – VOLATILES					
74-87-3	Chloromethane	UG/KG	1600 U	–	–	–
74-83-9	Bromomethane	UG/KG	1600 U	–	–	–
75-01-4	Vinyl chloride	UG/KG	1600 U	–	–	–
75-00-3	Chloroethane	UG/KG	1600 U	–	–	–
75-09-2	Methylene chloride	UG/KG	1600 U	–	–	–
67-64-1	Acetone	UG/KG	1600 U	–	–	–
75-15-0	Carbon Disulfide	UG/KG	1600 U	–	–	–
75-35-4	1,1-Dichloroethene	UG/KG	1600 U	–	–	–
75-34-3	1,1-Dichloroethane	UG/KG	1600 U	–	–	–
540-59-0	1,2-Dichloroethene (Total)	UG/KG	1600 U	–	–	–
67-66-3	Chloroform	UG/KG	1600 U	–	–	–
107-06-2	1,2-Dichloroethane	UG/KG	1600 U	–	–	–
78-93-3	2-Butanone	UG/KG	1600 U	–	–	–
71-55-6	1,1,1-Trichloroethane	UG/KG	1600 U	–	–	–
56-23-5	Carbon Tetrachloride	UG/KG	1600 U	–	–	–
75-27-4	Bromodichloromethane	UG/KG	1600 U	–	–	–
78-87-5	1,2-Dichloropropane	UG/KG	1600 U	–	–	–
10061-02-6	cis-1,3-Dichloropropene	UG/KG	1600 U	–	–	–
79-01-6	Trichloroethene	UG/KG	1600 U	–	–	–
124-48-1	Dibromochloromethane	UG/KG	1600 U	–	–	–
79-00-5	1,1,2-Trichloroethane	UG/KG	1600 U	–	–	–
71-43-2	Benzene	UG/KG	1600 U	–	–	–
10061-01-5	trans-1,3-Dichloropropene	UG/KG	1600 U	–	–	–
75-25-2	Bromoform	UG/KG	1600 U	–	–	–
108-10-1	4-Methyl-2-pentanone	UG/KG	1600 U	–	–	–
591-78-6	2-Hexanone	UG/KG	1600 U	–	–	–
127-18-4	Tetrachloroethene	UG/KG	1600 U	–	–	–
79-34-5	1,1,2,2-Tetrachloroethane	UG/KG	1600 U	–	–	–
108-88-3	Toluene	UG/KG	67 J	–	–	–
108-90-7	Chlorobenzene	UG/KG	1600 U	–	–	–
100-41-4	Ethyl benzene	UG/KG	760 J	–	–	–
100-42-5	Styrene	UG/KG	1600 U	–	–	–
1330-20-7	Total Xylenes	UG/KG	35000	–	–	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE DRUM SAMPLE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	DR-010-001 RECRA A4492402 SDG1 SOIL 09/15/94	DR-010-001DL RECRA A4492402DL SDG1 SOIL 09/15/94	DR-010-001DLRE RECRA A4492402V SDG1 SOIL 09/15/94	DR-010-001RE RECRA A4492402RI SDG1 SOIL 09/15/94
Cas No.	Compound	UNITS:				
	ASP91-2 – SEMIVOLATILES					
108-95-2	Phenol	UG/KG	530 U	2100 U	2100 U	530 U
111-44-4	Bis(2-chloroethyl) ether	UG/KG	530 U	2100 U	2100 U	530 U
95-57-8	2-Chlorophenol	UG/KG	530 U	2100 U	2100 U	530 U
541-73-1	1,3-Dichlorobenzene	UG/KG	530 U	2100 U	2100 U	530 U
106-46-7	1,4-Dichlorobenzene	UG/KG	530 U	2100 U	2100 U	530 U
95-50-1	1,2-Dichlorobenzene	UG/KG	530 U	2100 U	2100 U	530 U
95-48-7	2-Methylphenol	UG/KG	530 U	2100 U	2100 U	530 U
108-60-1	Bis(2-chloroisopropyl) ether	UG/KG	530 U	2100 U	2100 U	530 U
106-44-5	4-Methylphenol	UG/KG	530 U	2100 U	2100 U	530 U
621-64-7	N-Nitroso-Di-n-propylamine	UG/KG	530 U	2100 U	2100 U	530 U
67-72-1	Hexachloroethane	UG/KG	530 U	2100 U	2100 U	530 U
98-95-3	Nitrobenzene	UG/KG	530 U	2100 U	2100 U	530 U
78-59-1	Isophorone	UG/KG	530 U	2100 U	2100 U	530 U
88-75-5	2-Nitrophenol	UG/KG	530 U	2100 U	2100 U	530 U
105-67-9	2,4-Dimethylphenol	UG/KG	530 U	2100 U	2100 U	530 U
111-91-1	Bis(2-chloroethoxy) methane	UG/KG	530 U	2100 U	2100 U	530 U
120-83-2	2,4-Dichlorophenol	UG/KG	530 U	2100 U	2100 U	530 U
120-82-1	1,2,4-Trichlorobenzene	UG/KG	530 U	2100 U	2100 U	530 U
91-20-3	Naphthalene	UG/KG	4800 E	6600 D	6400 D	5400 E
106-47-8	4-Chloroaniline	UG/KG	530 U	2100 U	2100 U	530 U
87-68-3	Hexachlorobutadiene	UG/KG	530 U	2100 U	2100 U	530 U
59-50-7	4-Chloro-3-methylphenol	UG/KG	530 U	2100 U	2100 U	530 U
91-57-6	2-Methylnaphthalene	UG/KG	2500	1300 DJ	2700 D	1200
77-47-4	Hexachlorocyclopentadiene	UG/KG	530 U	2100 U	2100 U	530 U
88-06-2	2,4,6-Trichlorophenol	UG/KG	390 J	510 DJ	1400 DJ	390 J
95-95-4	2,4,5-Trichlorophenol	UG/KG	1300 U	5100 U	5100 U	1300 U
91-58-7	2-Chloronaphthalene	UG/KG	530 U	2100 U	2100 U	530 U
88-74-4	2-Nitroaniline	UG/KG	1300 U	5100 U	5100 U	1300 U
131-11-3	Dimethyl phthalate	UG/KG	530 U	2100 U	2100 U	530 U
208-96-8	Acenaphthylene	UG/KG	530 U	2100 U	2100 U	530 U
606-20-2	2,6-Dinitrotoluene	UG/KG	530 U	2100 U	2100 U	530 U
99-09-2	3-Nitroaniline	UG/KG	1300 U	5100 U	5100 U	1300 U

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE DRUM SAMPLE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	DR-010-001 RECRA A4492402 SDG1 SOIL 09/15/94	DR-010-001DL RECRA A4492402DL SDG1 SOIL 09/15/94	DR-010-001DLRE RECRA A4492402V SDG1 SOIL 09/15/94	DR-010-001RE RECRA A4492402RI SDG1 SOIL 09/15/94
Cas No.	Compound	UNITS:				
	ASP91-2 – SEMIVOLATILES CONT'D					
83-32-9	Acenaphthene	UG/KG	530 U	2100 U	2100 U	530 U
51-28-5	2,4-Dinitrophenol	UG/KG	1300 U	5100 U	5100 U	1300 U
100-02-7	4-Nitrophenol	UG/KG	1300 U	5100 U	5100 U	1300 U
132-64-9	Dibenzo(a,h)anthracene	UG/KG	530 U	2100 U	2100 U	530 U
121-14-2	2,4-Dinitrotoluene	UG/KG	530 U	2100 U	2100 U	530 U
84-66-2	Diethyl phthalate	UG/KG	530 U	2100 U	2100 U	530 U
7005-72-3	4-Chlorodiphenylether	UG/KG	530 U	2100 U	2100 U	530 U
86-73-7	Fluorene	UG/KG	530 U	2100 U	2100 U	530 U
100-01-6	4-Nitroaniline	UG/KG	1300 U	5100 U	5100 U	1300 U
534-52-1	4,6-Dinitro-2-methylphenol	UG/KG	1300 U	5100 U	5100 U	1300 U
86-30-6	N-nitrosodiphenylamine	UG/KG	530 U	2100 U	2100 U	530 U
101-55-3	4-Bromophenyl phenyl ether	UG/KG	530 U	2100 U	2100 U	530 U
118-74-1	Hexachlorobenzene	UG/KG	530 U	2100 U	2100 U	530 U
87-86-5	Pentachlorophenol	UG/KG	1300	540 DJ	3500 DJ	1200 J
85-01-8	Phenanthrene	UG/KG	16 J	2100 U	2100 U	19 J
120-12-7	Anthracene	UG/KG	530 U	2100 U	2100 U	530 U
86-74-8	Carbazole	UG/KG	530 U	2100 U	2100 U	530 U
84-74-2	Di-n-butyl phthalate	UG/KG	530 U	2100 U	2100 U	530 U
206-44-0	Fluoranthene	UG/KG	530 U	2100 U	2100 U	530 U
129-00-0	Pyrene	UG/KG	52 J	2100 U	2100 U	52 J
85-68-7	Butyl benzyl phthalate	UG/KG	530 U	2100 U	2100 U	530 U
91-94-1	3,3'-Dichlorobenzidine	UG/KG	530 U	2100 U	2100 U	530 U
56-55-3	Benzo(a)anthracene	UG/KG	530 U	2100 U	2100 U	530 U
218-01-9	Chrysene	UG/KG	530 U	2100 U	2100 U	530 U
117-81-7	Bis(2-ethylhexyl) phthalate	UG/KG	8200 BE	11000 BD	17000 BD	9500 BE
117-84-0	Di-n-octyl phthalate	UG/KG	530 U	2100 U	2100 U	530 U
205-99-2	Benzo(b)fluoranthene	UG/KG	530 U	2100 U	2100 U	530 U
207-08-9	Benzo(k)fluoranthene	UG/KG	530 U	2100 U	2100 U	530 U
50-32-8	Benzo(a)pyrene	UG/KG	530 U	2100 U	2100 U	530 U
193-39-5	Indeno(1,2,3-cd)pyrene	UG/KG	530 U	2100 U	2100 U	530 U
53-70-3	Dibenzofuran	UG/KG	530 U	2100 U	2100 U	530 U
191-24-2	Benzo(ghi)perylene	UG/KG	530 U	2100 U	2100 U	530 U

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE DRUM SAMPLE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	DR–010–001 RECRA A4492402 SDG1 SOIL 09/15/94	DR–010–001DL RECRA A4492402DL SDG1 SOIL 09/15/94	DR–010–001DLRE RECRA A4492402V SDG1 SOIL 09/15/94	DR–010–001RE RECRA A4492402RI SDG1 SOIL 09/15/94
Cas No.	Compound	UNITS:				
	ASP91–3 – PESTICIDES/AROCLORS					
319–84–6	alpha–BHC	UG/KG	270 U	2700 U	–	–
319–85–7	beta–BHC	UG/KG	270 U	2700 U	–	–
319–86–8	delta–BHC	UG/KG	270 U	2700 U	–	–
58–89–9	gamma–BHC (Lindane)	UG/KG	270 U	2700 U	–	–
76–44–8	Heptachlor	UG/KG	270 U	2700 U	–	–
309–00–2	Aldrin	UG/KG	270 U	2700 U	–	–
1024–57–3	Heptachlor epoxide	UG/KG	270 U	2700 U	–	–
959–98–8	Endosulfan I	UG/KG	270 U	2700 U	–	–
60–57–1	Dieldrin	UG/KG	520 U	5200 U	–	–
72–55–9	4,4'–DDE	UG/KG	520 U	5200 U	–	–
72–20–8	Endrin	UG/KG	520 U	5200 U	–	–
33213–65–9	Endosulfan II	UG/KG	520 U	5200 U	–	–
72–54–8	4,4'–DDD	UG/KG	520 U	5200 U	–	–
1031–07–8	Endosulfan Sulfate	UG/KG	520 U	5200 U	–	–
50–29–3	4,4'–DDT	UG/KG	520 U	5200 U	–	–
72–43–5	Methoxychlor	UG/KG	2700 U	27000 U	–	–
53494–70–5	Endrin ketone	UG/KG	520 U	5200 U	–	–
7421–93–4	Endrin aldehyde	UG/KG	520 U	5200 U	–	–
5103–71–9	alpha–Chlordane	UG/KG	270 U	2700 U	–	–
5103–74–2	gamma–Chlordane	UG/KG	270 U	2700 U	–	–
8001–35–2	Toxaphene	UG/KG	27000 U	270000 U	–	–
12674–11–2	Aroclor 1016	UG/KG	5200 U	52000 U	–	–
11104–28–2	Aroclor 1221	UG/KG	11000 U	110000 U	–	–
11141–16–5	Aroclor 1232	UG/KG	5200 U	52000 U	–	–
53469–21–9	Aroclor 1242	UG/KG	5200 U	52000 U	–	–
12672–29–6	Aroclor 1248	UG/KG	5200 U	52000 U	–	–
11097–69–1	Aroclor 1254	UG/KG	8600 C	7400 CDJ	–	–
11096–82–5	Aroclor 1260	UG/KG	5200 U	52000 U	–	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE DRUM SAMPLE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	DR-010-001 RECRA A4492402 SDG1 SOIL 09/15/94	DR-010-001DL RECRA A4492402DL SDG1 SOIL 09/15/94	DR-010-001DLRE RECRA A4492402V SDG1 SOIL 09/15/94	DR-010-001RE RECRA A4492402RI SDG1 SOIL 09/15/94
Cas No.	Compound	UNITS:				
	TOTAL METALS					
7429-90-5	Aluminum – Total	MG/KG	3310	–	–	–
7440-36-0	Antimony – Total	MG/KG	9.5 UN	–	–	–
7440-38-2	Arsenic – Total	MG/KG	2.6 BN	–	–	–
7440-39-3	Barium – Total	MG/KG	127	–	–	–
7440-41-7	Beryllium – Total	MG/KG	0.95 U	–	–	–
7440-43-9	Cadmium – Total	MG/KG	1.6 U	–	–	–
7440-70-2	Calcium – Total	MG/KG	39100	–	–	–
7440-47-3	Chromium – Total	MG/KG	219	–	–	–
7440-48-4	Cobalt – Total	MG/KG	16.7	–	–	–
7440-50-8	Copper – Total	MG/KG	3.2 U	–	–	–
7439-89-6	Iron – Total	MG/KG	43400 E	–	–	–
7439-92-1	Lead – Total	MG/KG	1190 EN	–	–	–
7439-95-4	Magnesium – Total	MG/KG	1700	–	–	–
7439-96-5	Manganese – Total	MG/KG	343 N	–	–	–
7439-97-6	Mercury – Total	MG/KG	0.13 U	–	–	–
7440-02-0	Nickel – Total	MG/KG	43	–	–	–
7440-09-7	Potassium – Total	MG/KG	191 U	–	–	–
7782-49-2	Selenium – Total	MG/KG	0.94 U	–	–	–
7440-22-4	Silver – Total	MG/KG	3.2 UN	–	–	–
7440-23-5	Sodium – Total	MG/KG	551 B	–	–	–
7440-28-0	Thallium – Total	MG/KG	0.94 U	–	–	–
7440-62-2	Vanadium – Total	MG/KG	5.1 B	–	–	–
7440-66-6	Zinc – Total	MG/KG	535 E	–	–	–
57-12-5	Cyanide – Total	MG/KG	1.6 U	–	–	–
	WET CHEMISTRY ANALYSIS					
ES-5016	Flashpoint (Ignitability)	Deg. F	200 E	–	–	–
7783-6-4	H2S Released From Waste (Reactivity)	MG/KG	10 U	–	–	–
74-90-8	HCN Released From Waste (Reactivity)	MG/KG	10 U	–	–	–
10-29-7	Leachable pH (Corrosivity)	S.U.	7.53	–	–	–

NYSDEC – PSA WORK ASSIGNMENTS WARSAW SITE DRUM SAMPLE DATA		SAMPLE ID: SOURCE: LAB ID: SDG: MATRIX: SAMPLED:	DR–010–001 RECRA A4492402 SDG1 SOIL 09/15/94	DR–010–001DL RECRA A4492402DL SDG1 SOIL 09/15/94	DR–010–001DLRE RECRA A4492402V SDG1 SOIL 09/15/94	DR–010–001RE RECRA A4492402RI SDG1 SOIL 09/15/94
Cas No.	Compound	UNITS:				
	METHOD 8080 – EP TOXICITY PESTICIDES					
58–89–9	gamma–BHC (Lindane)	UG/L	1 U	–	–	–
57–74–9	Chlordane	UG/L	10 U	–	–	–
72–20–8	Endrin	UG/L	2 U	–	–	–
76–44–8	Heptachlor	UG/L	1 U	–	–	–
1024–57–3	Heptachlor epoxide	UG/L	1 U	–	–	–
72–43–5	Methoxychlor	UG/L	10 U	–	–	–
8001–35–2	Toxaphene	UG/L	20 U	–	–	–
	METHOD 8150 – EP TOXICITY HERBICIDES					
94–75–7	2,4–D	UG/L	1.3 U	–	–	–
93–72–1	2,4,5–TP (Silvex)	UG/L	0.63 U	–	–	–

APPENDIX E

SELECTED REFERENCES

WB

ATSDR, 1992.

UPDATE
UPDATE
UPDATE

Toxicological Profile for

MERCURY

Draft
For Public Comment

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry

Comment Period Ends:

February 19, 1993

There are many different uses for and sources of mercury. Metallic mercury is mined and is also a waste product of gold mining. Chemical factories that make chlorine use mercury and may release metallic mercury into the air. Thermometers, barometers, batteries, and tooth fillings all contain metallic mercury. Inorganic mercury compounds are commonly used in electrical equipment (for example, batteries, lamps) and skin care and medicinal products. Some inorganic mercury compounds are used in fungicides. Methylmercury is generally produced in the environment, rather than made by human activity. Fungicides and paints may contain other organic mercury compounds. Mercury compounds may be found in the air, soil, and water near hazardous waste sites.

Chapter 3 contains more information on the physical and chemical properties of mercury. Chapter 4 contains more information on the production and use of mercury.

1.2 WHAT HAPPENS TO MERCURY WHEN IT ENTERS THE ENVIRONMENT?

Mercury is a naturally occurring metal found throughout the environment as a result of normal breakdown of the earth's crust by wind and water. The total amount of mercury in the environment caused by natural processes throughout the world is far greater than the total amount caused by human activities. However, the amount of mercury that exists in any one place through natural processes is usually very low. In contrast, the amount of mercury that may be at a particular waste site because of human activity can be very high. Air, water, and soil can contain mercury from both natural sources and human activity.

The mercury in air, water, and soil is thought to be mostly inorganic mercury. This inorganic mercury can enter the air from deposits of ore that contain mercury, from the burning of fuels or garbage, and from the emissions of factories that use mercury. Inorganic mercury may also enter water or soil from rocks that contain mercury, releases of water containing mercury from factories or water treatment facilities, and the disposal of wastes. Organic compounds of mercury may be released in the soil through the use of mercury-containing fungicides.

Metallic mercury is a liquid at room temperature. It can evaporate easily into the air and be carried a long distance before returning to water or soil in rain or snow. As mentioned before, some microorganisms in the water or soil can change inorganic forms of mercury to organic forms. Organic forms of mercury can enter the water and remain there for a long time, particularly if there are particles in the water to which they can attach. If mercury enters the water in any form, it is likely to settle to the bottom where it can remain a long time. Mercury also remains in soil for a long time. Mercury usually stays on the surface of the sediments or soil and does not move through the soil to underground water.

Small fish and other organisms living in the water can take up the organic forms of mercury. When larger fish eat these small fish or other organisms that contain organic mercury, their bodies will store most of it. In this way, large fish living in contaminated waters can collect a relatively large amount of organic mercury. Plants may also have a

4. PRODUCTION, IMPORT/EXPORT, USE, AND DISPOSAL

4.1 PRODUCTION

Mercury ore is predominantly mined by underground methods (90% of the time) although surface methods are also used (Drake et al. 1981). Native metallic mercury is found in only very small quantities in some ore deposits and is mainly found as a sulfide (i.e., cinnabar). The commercial grade of mercury is labeled premium virgin-grade, which is 99.9% pure. To increase the purity, filtration, redistillation, and electrolytic processing are employed. Triple distilled is the purest and most costly form of mercury available (Carrico 1985; Grayson 1983; HSDB 1992). Mercury can be recovered as a by-product of goldmining or from worn out or obsolete items such as dental amalgams, batteries, and instruments (Reese 1991). Mercury is also recovered at chlorine and caustic soda plants and from the U.S. Department of Energy stocks of secondary mercury (DOI 1989; Reese 1991).

The estimated world mine production of mercury is 1989 was 5,840 metric tons; domestic mine production figures have been withheld since 1986 by the Bureau of Mines to avoid disclosing company proprietary data. Mercury in the United States is produced as the primary product in one mine and as a byproduct at nine mines (Reese 1991). U.S. mercury production by recovery from secondary sources was 137 metric tons in 1989 and 140 metric tons (estimated) in 1990 (Reese 1991). Domestic production of mercury has been characterized by abundant supply and slowly declining demand for the last 2 decades (DOI 1989). Increasing recognition of mercury's toxicity has led to curtailment of its use in some applications and elimination in others. This declining production trend is expected to continue. The reported consumption of mercury in the United States was 1,593 metric tons in 1988 and 1,214 metric tons in 1989 (DOI 1989). The substantial drop in consumption in 1989 was mainly attributed to a further decline in the manufacture of mercury batteries and lower use of chlorine-alkali production. The probable U.S. demand for mercury in the year 2000 is forecast to be 46,000 flasks (76 pound/flask), representing a decline at an average annual rate of 0.4% (Carrico 1985).

In 1989 one mine in Nevada produced mercury as a principal product (this mine was closed in November of 1990), and nine gold mines in Nevada, California, and Utah produced it as a by-product. Since 1975, Nevada has been the leading mercury producer with small amounts produced in California (DOI 1989; Reese 1991). As of January 1991 the U.S. secondary mercury industry consisted of about five companies in the Eastern United States that produce 178 metric tons in 1988 and 137 metric tons in 1989 (DOI 1989; Reese 1991). Table 4-1 shows the number of facilities per state that manufacture or process elemental mercury, as well as a range of the maximum amount of mercury present at the facilities (TRI90 1992).

4.2 IMPORT/EXPORT

In 1989, U.S. imports of mercury fell sharply for the second consecutive year: 636 metric tons in 1987, 329 metric tons in 1988, and 131 metric tons in 1989 (DOI 1989). U.S. exports in 1989 totaled 221 metric tons and show that in 1989 the United States was a net exporter of mercury, although for more than 40 years the United States was a net importer of mercury (Carrico 1985; DOI 1989). The 1989 export information is the first available data on mercury exports since 1977, and therefore no general trends can be estimated.

4.3 USE

Mercury is critical to the production of many manufactured products. The commercial importance of mercury is based on its unusual combination of physicochemical properties, such as high specific gravity, fluidity at normal temperatures, electrical conductivity, toxicity, uniform volume expansion, and ability to alloy with other metals (Carrico 1985; Drake et al. 1981).

Although mercury is noted for its use in thermometers, barometers, and pressure-sensing devices, it is utilized in many other products. Batteries containing mercury are used in many devices including hearing aids, cameras, toys, portable radios, calculators, smoke alarms, self-winding watches, radio microphones, guided missiles, and space craft. In addition, electric or mercury lamps are used for outdoor lighting (including floodlights and streetlights), for motion picture projection, for health treatment, and photography. Mercury is used as a catalyst in the chlorine and caustic soda industry; it is also used in the production of vinyl chloride monomer, urethane foam, and dyes. Other uses of mercury include in soaps, pigments (paint), refining, lubrication oils, and dental amalgams. In pharmaceuticals, mercury is used in diuretics, in antiseptics, and in skin preparations, although recently this type of usage has declined sharply. Most biocide uses for mercury have been canceled, and the use of most alkyl and nonalkyl fungicides containing mercury for use on rice and in laundry products and as marine antifouling paint have been suspended (Carrico 1985; Drake et al. 1981; Grayson 1983; Windholz 1983).

The domestic use pattern of mercury in 1990 was as follows: approximately 33% was used in electrical and electronic applications, an additional 33% was consumed in the manufacture of chlorine and caustic soda, while the remaining 34% was used for applications such as measuring and control instruments, dental equipment, and paint (Reese 1991).

4.4 DISPOSAL

Mercury-containing waste products include waste effluents from chlorine-alkali plants and discarded mercury-containing mechanical and electrical devices (Carrico 1985). Under current federal guidelines, mercury and its compounds are considered hazardous substances, and various regulations to control the emission of mercury (especially organic compounds) into the environment are in effect (Carrico 1985). Emissions from mercury ore processing facilities and mercury cell chlorine-alkali plants are limited to 2.3 kg per day per plant. Emission of mercury from the incineration or drying of wastewater sludges is limited to 3.2 kg per day (EPA 1975a, 1975b). In addition, dumping wastes containing more than trace amounts of mercury is prohibited.

An important method of mercury disposal is recycling. From 1985 to 1989, production from old scrap averaged nearly 217 metric tons, equivalent to 14% of the average reported consumption during that period (DOI 1989). Virtually all mercury can be reclaimed from mercury cell chlorine-alkali plants, electrical apparatus, and control instruments when plants or equipment are dismantled or scrapped. High-volume sources of scrap for reprocessing include instrument and electrical manufacturers, research laboratories, mercury cell batteries, and industrial waste (Carrico 1985). In addition, as environmental concerns increase, the recovery of mercury from industrial processes and various recycling methods will become a more significant component of the domestic mercury supply.

5. POTENTIAL FOR HUMAN EXPOSURE

5.1 OVERVIEW

Mercury occurs naturally as a mineral and is distributed throughout the environment. The compound has three valence states and is found in the environment in the form of various inorganic and organic complexes and as the elemental metal. The major features of the biogeochemical cycle of mercury include degassing of mineral mercury from the lithosphere and hydrosphere, long-range transport in the atmosphere, wet and dry deposition to land and surface water, sorption to soil and sediment particulates, and bioaccumulation in terrestrial and aquatic food chains.

Inhalation of mercury in workplace atmospheres is the main route of occupational exposure to the compound. The most recent estimate indicates that about 70,000 people are potentially exposed to mercury in workplace environments in the United States. The general population is exposed to mercury primarily through ingestion of contaminated foodstuffs, with fish being the major source of dietary mercury. Populations with potentially high exposures to mercury include workers in industries processing or using the compound and members of the general public who routinely consume large amounts of fish.

Mercury has been identified in 600 of the 1,300 hazardous waste sites on the NPL (HAZDAT 1992). The frequency of these sites can bee seen in Figure 5-1. Of these sites, 593 are located in the United States and 7 are located in the Commonwealth of Puerto Rico (not shown).

5.2 RELEASES TO THE ENVIRONMENT

Of the estimated 195,460 pounds of elemental mercury released or transferred from industrial facilities reported in the Toxics Release Inventory (TRI) in 1990, 27,339 pounds were released to the environment and 168,079 pounds were transferred off-site by the 39 facilities reporting to the 1990 Toxics Release Inventory (TRI90 1992) (see Table 5-1). A TRI facility is any general manufacturing facility with 10 or more full-time employees that produces, imports, or processes 75,000 or more pounds of any TRI chemical or that uses more than 10,000 pounds of a TRI chemical in a year. The data listed in the TRI should be used with caution because only certain types of facilities are required to report. This is not an exhaustive list.

5.2.1 Air

Mercury is a naturally occurring metal that is ubiquitous in the environment. The compound is released to environmental media by both natural processes and anthropogenic sources. Mercury ore is found in all classes of rocks, including limestone, calcareous shales, sandstone, serpentine, chert, andesite, basalt, and rhyolite. The normal concentration of mercury in igneous and sedimentary rocks and minerals appears to be 10–50 ng/g (Andersson 1979); however, the mineral cinnabar contains 86.2% mercury (Stokinger 1981). The major source of atmospheric mercury has been reported to be global degassing of mineral mercury from the lithosphere and hydrosphere at a rate of 25,000–150,000 metric tons/year (WHO 1976). Anthropogenic releases of mercury to the atmosphere have been estimated to be 2,000–3,000 metric tons/year, mostly from the mining and smelting of mercury ores, industrial processes involving the use of mercury, and combustion of fossil fuels, primarily coal (Lindberg 1984). Mercury emissions from coal-fired power plants are almost exclusively in the vapor phase (98%) (Germani and Zoller 1988). Other potential emission sources include chlorine-alkali manufacturing facilities, copper and zinc smelting operations, paint application, waste oil combustion (EPA 1987f), geothermal energy plants (Baldi 1988), and municipal waste incineration (Bache et al. 1991). Of these, combustion of fossil fuels is the largest source (Gavis and Ferguson 1972). In addition, the incineration of medical waste has been found to release up to 12.3 mg mercury/m^3 (Glasser et al. 1991). Other potential emission sources include slag from metal production, fires at waste deposits, and diffuse emissions from other anthropogenic sources

such as dentists and industrial activities. Point source emissions may be reduced by controls on waste incineration (Lindqvist 1991b).

Of the 27,339 pounds of mercury released to the environment from TRI facilities in 1989, 22,404 pounds were air emissions from 34 facilities (see Table 5-2) (TRI90 1992).

5.2.2 Water

Weathering of mercury-bearing minerals in igneous rocks releases about 800 metric tons of mercury per year to surface waters on a global basis (Gavis and Ferguson 1972). Mercury may also be released to surface waters in effluents from a number of industrial processes including chlorine-alkali production, mining operations and ore processing, metallurgy and electroplating, chemical manufacturing, ink manufacturing, paper mills, leather tanning, pharmaceutical production, and textile manufacture (Dean et al. 1972; EPA 1971c). The compound has been detected at approximately 4 μg/L in residential and commercial wastewater effluents (Levins et al. 1979), although discharges from a regional wastewater treatment facility on the St. Louis River that received primarily municipal wastes contained 364 ng/L of mercury and resulted in concentrations in the adjacent sediment of up to 5,070 ng/g (Glass et al. 1990).

Of the 27,339 pounds of mercury released to the environment from TRI facilities in 1990, 751 pounds were released to water from 19 facilities (see Table 5-2) (TRI90 1992).

5.2.3 Soil

Mercury is released to cultivated soils through the direct application of inorganic and organic fertilizers (e.g., sewage sludge and compost), lime, and fungicides containing the compound (Andersson 1979). Additional anthropogenic releases are expected through the disposal of industrial and domestic products (e.g., thermometers, electrical switches, and batteries) as solid wastes in landfills.

Of the 27,339 pounds of mercury released to the environment from TRI facilities in 1990, 4,184 pounds were released on-site to land from five facilities (see Table 5-2) (TRI90 1992).

5.3 ENVIRONMENTAL FATE

5.3.1 Transport and Partitioning

The global biogeochemical cycling of mercury is characterized by degassing of the element from soils and surface waters, followed by atmospheric transport, deposition of mercury back to land and surface waters, and sorption of the compound to soil or sediment particulates. Particulate-bound mercury can be converted to insoluble mercury sulfide and precipitated or bioconverted into more volatile or soluble forms that re-enter the atmosphere or are taken up by biota and bioaccumulated in terrestrial and aquatic food chains (EPA 1984b).

Mercury has three valence states. The specific state and form in which the compound is found in an environmental medium is dependent upon a number of factors, including the redox potential and pH of the medium. The most reduced form is metallic mercury, which is a liquid at ambient temperatures but readily vaporizes. Elemental mercury is the principal form of the compound in the atmosphere, and therefore the form involved in long-range transport of the compound. In soils and surface waters, mercury can exist in the mercuric (Hg^{+2}) and mercurous (Hg^{+1}) states as a number of complex ions with varying water solubilities. Mercuric mercury, present as complexes and chelates with ligands, is probably the predominant form of mercury present in surface waters.

Metallic mercury released in vapor form to the atmosphere can be transported long distances before wet and dry deposition processes return the compound to land and water surfaces. Residence time in the

ATSDR, 1990. WB

Toxicological Profile for

CARBON DISULFIDE

Draft
For Public Comment

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry

Comment Period Ends:

February 15, 1991

1. PUBLIC HEALTH STATEMENT

The purpose of this Statement is to provide you with information about carbon disulfide and to emphasize the human health effects that may result from exposure. The Environmental Protection Agency (EPA) has identified 1,177 National Priorities List (NPL) sites. Carbon disulfide has been found at 25 of the sites evaluated by EPA. As more sites are evaluated by the EPA, this number may change. The information in this profile is important for you to know because these sites are potential or actual sources of human exposure to carbon disulfide and because carbon disulfide may cause harmful health effects.

When a chemical is released from a large area such as an industrial plant, or from a container such as a drum or bottle, it enters the environment as a chemical emission. This emission, which is also called a release, does not always lead to exposure. You are exposed only when you come into contact with the chemical. You can come into contact with it in the environment through breathing, eating, or drinking substances containing the chemical. Exposure may also result from skin contact with the chemical.

If you are exposed to a hazardous substance such as carbon disulfide, several factors determine whether harmful health effects will occur and the type and severity of those health effects. These factors include the dose (how much), the duration (how long), the route or pathway by which you are exposed (breathing, eating, drinking, or skin contact), the other chemicals to which you are exposed, and your individual characteristics such as age, sex, nutrition, family traits, life style, and state of health.

1.1 WHAT IS CARBON DISULFIDE?

Pure carbon disulfide is a colorless liquid with a pleasant odor that is like the smell of chloroform. The impure carbon disulfide that is usually used in most industry processes, however, is a yellowish liquid with an unpleasant odor like that of rotting radishes. Carbon disulfide evaporates at room temperature, and the gas is more than twice as heavy as air. Carbon disulfide easily forms explosive mixtures with air and catches fire very easily.

In nature, very small amounts of carbon disulfide are found in gases from volcanic eruptions and in marshy areas. Carbon disulfide is made for commercial use by combining carbon and sulfur at very high temperatures. Several industries use carbon disulfide as a raw material to make such things as rayon, cellophane, and carbon tetrachloride. Carbon disulfide is also used to dissolve rubber in the production of tires and as a raw material to make some pesticides. More information on the chemical and physical properties, use, and environmental fate of carbon disulfide is found in Chapters 3, 4, and 5.

1. PUBLIC HEALTH STATEMENT

1.2 HOW MIGHT I BE EXPOSED TO CARBON DISULFIDE?

The amount of carbon disulfide found in the atmosphere from natural sources such as volcanoes is so low that good measurements are not available from many areas. One measurement shows that carbon disulfide contributes less than 8% of sulfur in the upper atmosphere.

Small amounts of carbon disulfide can enter the air by evaporation and as a by-product of several manufacturing processes. It lasts about 14 days in the atmosphere. The people most often exposed to carbon disulfide are workers in plants that use carbon disulfide in their manufacturing processes. Carbon disulfide has also been found at 25 toxic waste sites in the United States and in small amounts in some drinking water in the United States. More information on how you might become exposed to carbon disulfide is found in Chapter 5.

1.3 HOW CAN CARBON DISULFIDE ENTER AND LEAVE MY BODY?

Most people who are exposed to carbon disulfide breathe air that contains it. Carbon disulfide easily and rapidly enters your bloodstream through the lungs. Carbon disulfide can enter your body through your skin, or you may drink it in contaminated drinking water. About 10%-30% of the absorbed carbon disulfide leaves the body through the lungs; less than 1% leaves in the urine. The rest of the absorbed carbon disulfide is changed in the body and leaves through the urine in the form of other chemicals. It takes about 4 days for the body to completely get rid of absorbed carbon disulfide. For more information, see Chapter 2.

1.4 HOW CAN CARBON DISULFIDE AFFECT MY HEALTH?

At very high levels (near 10,000 parts of carbon disulfide per million parts of air [ppm]) carbon disulfide may be life-threatening due to effects on the nervous system or heart. There is no evidence that carbon disulfide causes cancer in humans or animals. High doses of carbon disulfide given to some pregnant female rats resulted in increased numbers of birth defects in their babies. However, no evidence has been found that women exposed to lower doses (about 4 ppm) of carbon disulfide found in the workplace (or those married to exposed men) give birth to children with increased numbers of birth defects.

A Minimal Risk Level (MRL) of 0.003 ppm in air was derived from animal data for short-term and intermediate exposures. The MRL is further described in Chapter 2 and in Table 2-1. The MRL provides a basis for comparison with levels that people might encounter either in the air or in food or drinking water. If a person is exposed to carbon disulfide at an amount below the MRL, it is not expected that harmful (noncancer) health effects will occur. Because these levels are based only on information currently available, some uncertainty is always associated with them. Also, because the method for

4.2 IMPORT/EXPORT

Imports of carbon disulfide have fallen at a fairly steady rate from 2,700 metric tons in 1980 to 1,400 metric tons in 1985. Exports, on the other hand, fell sharply from 5,900 metric tons in 1980 to 900 metric tons in 1982. Exports continued to decline to 450 metric tons in 1983 and then stabilized at 1,400 metric tons in 1984 (Mannsville Chemical Products Corp. 1985). No information was found on export levels after 1985.

4.3 USE

Carbon disulfide has been an important industrial chemical since the 1800s because of its many useful properties, including its ability to solubilize fats, rubbers, phosphorus, sulfur, and other elements (Sine 1989; Timmerman 1978; Windholz 1983). Because of its ability to dissolve phosphorus, it was once widely used to produce matches, but was later replaced by another chemical. Carbon disulfide's fat-solvent properties also made it indispensable in preparing fats, lacquers, and camphor; in refining petroleum jelly and paraffin; and in extracting oil from bones, palmstones, olives, and rags. It was also used in processing India rubber sap from tropical trees. In all of these extraction processes, however, carbon disulfide has been replaced by other solvents (Davidson and Feinleib 1972).

Its fat, rubber, and metal solvent properties have made carbon disulfide highly suitable for a variety of other continuing industrial applications including the vulcanization and manufacture of rubber and rubber accessories; the production of resins, xanthanates, thiocyanates, plywood adhesives, and flotation agents; solvent and spinning-solution applications, polymerization inhibition of vinyl chloride; conversion and processing of hydrocarbons; petroleum-well cleaning; brightening of precious metals in electroplating; thin film deposition of nickel; as an agent to increase corrosion and wear-resistance in metals; rust removal from metals; and removal and recovery of metals and other elements from waste water and other media (Davidson and Feinleib 1972; Peyton et al. 1976; Sine 1989; WHO 1981; Windholz 1983; Worthing 1987). It has also been used in industry to promote sulfidation in the synthesis of rare earth sulfides used in semiconductors, as a regenerator for transition metal sulfide catalysts, as a development restrainer in photography and lithography, and as a solvent to remove printing on recycled plastics (Timmerman 1978).

Carbon disulfide's most important industrial use, however, has been in the manufacture of regenerated cellulose rayon by the viscose process (viscose rayon) and cellophane (Davidson and Feinleib 1972; NIOSH 1977; Timmerman 1978; Peyton et al. 1976; WHO 1981). In 1974, over 80% of carbon disulfide manufactured was used to make viscose rayon and cellophane (Austin 1974). This proportion fell to 50% in 1984, but the rayon and cellophane uses still

accounted for the greatest fraction of carbon disulfide production (Mannsville Chemical Products Corp. 1985).

Another principal industrial use for carbon disulfide has been as a feedstock for carbon tetrachloride production (Mannsville Chemical Products Corp. 1985; NIOSH 1977; Timmerman 1978). While only 10% of U.S. carbon disulfide production was used to produce carbon tetrachloride in 1960, this increased to 32% in 1974, largely due to a rapid increase in the demand for carbon tetrachloride for the production of fluorocarbon propellants and refrigerants (Timmerman 1978). Although most chemical manufacturers had switched to methanol as a raw material for carbon tetrachloride, Akzo America Inc. continued to use carbon disulfide for this purpose as of 1985 (Mannsville Chemical Products Corp. 1985).

In the food industry, carbon disulfide has been used to protect fresh fruit from insects and fungus during shipping, in adhesives for food packaging, and in the solvent extraction of growth inhibitors (Timmerman 1978).

In agriculture, carbon disulfide has been widely used as a fumigant to control insects in stored grain, normally when mixed with carbon tetrachloride to reduce fire hazard (Sine 1989; Worthing 1987). It has also be used to remove botfly larva infestations from the stomachs of horses and ectoparasites from swine (Rossof 1974).

In 1984, the estimated distribution of carbon disulfide utilization was as follows: 40% of production went to manufacture viscose rayon, 10% to produce cellophane, 25% to produce carbon tetrachloride, 10% to produce rubber chemicals, and 15% to produce pesticides and to solubilize waxes and oils (Mannsville Chemical Products Corp. 1985). Future use patterns remain uncertain, although it is expected that less may be used to produce viscose rayon, cellulose, and carbon tetrachloride, products for which demand has declined and for which alternate production processes may be found (Mannsville Chemical Products Corp. 1985; Timmerman 1978). Unless substitutes for carbon disulfide are found, its use levels may depend largely on relative import and export levels of textiles and apparel, at least in the short-term (Mannsville Chemical Products Corp. 1985). Carbon disulfide use for many other specialty industrial uses is expected to continue (Timmerman 1978).

4.4 DISPOSAL

No information was found on past or present disposal methods for carbon disulfide or on quantities and locations of disposal. The EPA CERCLA guideline for reportable quantity is 100 pounds (EPA 1986e).

5. POTENTIAL FOR HUMAN EXPOSURE

5.1 OVERVIEW

The primary disposition of carbon disulfide in the environment is related to its use as an industrial solvent and chemical intermediate. Releases from industrial processes are almost exclusively to the atmosphere. Releases of the compound to surface waters and soils are expected to partition rapidly to the atmosphere through volatilization. Hydrolysis and biodegradation do not appear to be important processes in determining the environmental fate of carbon disulfide. It has been detected at generally low levels in ambient air, surface water, groundwater, drinking water, food products, and human milk. Concentrations in environmental media are greatest near source areas (e.g., industrial point sources, oceans and marshes, volcanoes).

Inhalation of carbon disulfide in workplace air is generally the main route of human exposure to the compound.

EPA has identified 1,177 NPL sites. Carbon disulfide has been found at 25 of the sites evaluated for that compound. It is not known how many of the 1,177 sites have been evaluated for carbon disulfide. As more sites are evaluated by EPA, this number may change (View 1989). The frequency of these sites within the United States can be seen in Figure 5-1.

5.2 RELEASES TO THE ENVIRONMENT

According to the Superfund Amendments and Reauthorization Act (SARA), Section 313, Toxics Release Inventory (TRI), an estimated total of at least 92.3 million pounds of carbon disulfide were released to the environment from manufacturing and processing facilities in the United States in 1987 (see Table 5-1). This total includes an estimated 89,500 pounds that were released through underground injection. The TRI data must be viewed with caution since the 1987 data represent first-time, incomplete reporting of estimated releases by these facilities. Not all sources of chemical wastes are included, and not all pertinent facilities have submitted the required data.

According to the View Database (1989), carbon disulfide has been identified at 25 of the 1,177 NPL sites. The frequency of these sites within the United States can be seen in Figure 5-1.

5.2.1 Air

There are several known natural sources of carbon disulfide, including microbial activity in soils and ocean sediments and volcanic activity. The quantity of carbon disulfide emitted from such natural sources as volcanic and geothermal activity is not known, although it may be substantial (Peyton et al. 1976). Combustion of fossil fuels and other carbonaceous material in the presence of sulfur compounds releases carbon disulfide.

5. POTENTIAL FOR HUMAN EXPOSURE

Historically, carbon disulfide was used in the processing of rubber, but changing technology made the old practices outmoded. Currently, the largest single use of carbon disulfide is in the viscose rayon industry. For every kg of viscose used, 20-30 g of carbon disulfide are emitted (WHO 1979). The largest non-point source of man-made levels of carbon disulfide result from its use as a fumigant and in laboratory processes, and from the degradation of rubber products (Abrams et al. 1975). Small amounts of carbon disulfide have also been detected in a landfill simulator (Vogt and Walsh 1985) and the odorous emissions from a sewage treatment plant (Ruby et al. 1987).

Point sources of carbon disulfide include the biological degradation and incineration of wastes (municipal refuse, sewage sludge, and industrial wastes), although it is not formed during water treatment processes (Abrams et al. 1975).

Atmospheric levels of carbon disulfide are frequently not measurable due to the extremely low ambient concentrations. Many of the hypotheses about the role of carbon disulfide in the atmosphere and its interactions with other compounds have proven difficult to examine, and much attention has gone toward developing more sensitive analytical methods.

According to TRI, an estimated total of at least 92.1 million pounds of carbon disulfide were released to the atmosphere from manufacturing and processing facilities in the United States in 1987 (TRI 1989) (see Table 5-1).

Carbon disulfide has been detected in the magmatic gas over volcanoes, during the aging of roasted coffee, during the pressure cooking of grain-water mixtures, as a volatile constituent in the vapor of burning cigarettes, and in the vapor space above liquid sulfur (Peyton et al. 1976).

During analytical measurements of sulfur compounds at five wetland areas in Florida, carbon disulfide was often not detected while large amounts of dimethylsulfide were found (Cooper et al. 1987). De Mello et al. (1987) speculated that carbon disulfide generation from coastal areas in Florida was related to the concentration of organic matter in the sediment. Staubes et al. (1987) found that humus soils were stronger sources for biogenic sulfur than soils with lower organic content; however, a low humus content coupled with high moisture favors the production of carbon disulfide over dimethylsulfide.

Based on their measurements and assumptions in the study of sulfur emissions from a North Carolina salt marsh, Aneja et al. (1980) estimated that carbon disulfide produced by marshes (0.022 g sulfur/m^2-year) contributes less than 0.07% of biogenic sulfur and less than 8% to the stratospheric aerosol layer.

In order to avoid the difficulties of naturally occurring variations in study conditions, Fall et al. (1988) studied the emission of sulfur gases from several plant/soil systems using a flux chamber. The effects of light and temperature were observed. The study was designed so that emissions from soil could be separated from emissions from plants. Further work was proposed so that systematic investigation can accurately measure the contributions of a number of sulfur compounds under varying conditions.

Steudler et al. (1987) hypothesized a direct relationship between the levels of carbon disulfide emitted from forested soils and the amounts of sulfur and nitrogen entering them in acid rain precipitation.

Carbon disulfide has been measured in atmospheric samples collected during the major eruptions of Mount St. Helens. Low levels desorbed from volcanic ash were found to decrease with increasing distance from the volcanic activity (Rasmussen et al. 1982).

5.2.2 Water

According to TRI, an estimated total of at least 21,790 pounds of carbon disulfide were released to surface water from manufacturing and processing facilities in the United States in 1987 (TRI 1989) (see Table 5-1).

Carbon disulfide has been detected in surface water samples analyzed for about 0.7% of the 2,783 hazardous waste sites participating in the Contract Laboratory Program (CLP) at a geometric mean concentration of 0.58 parts-per-billion (ppb) in the positive samples. The compound has also been detected in the groundwater samples taken at approximately 3% of the sites participating in the CLP at a geometric mean concentration of 6.29 ppb in the positive samples (CLPSD 1989). Note that the CLP Statistical Database (CLPSD) includes data from both NPL and non-NPL sites.

Carbon disulfide is widely found in coastal and ocean waters and extensive study has been done to determine levels over the different types of water bodies. The measurements of Carroll (1985) show that the ocean appears to be a source of carbon disulfide.

Carbon disulfide was found at a concentration of ≥5 μg/L in groundwater samples collected from only 1 of 19 municipal, solid waste landfills examined by Battista and Connelly (1989).

South Carolina Department of Health (1986) found unspecified levels of carbon disulfide in groundwater samples collected from 1 of 11 wells constructed in a surficial aquifer near a recycling and disposal company that had been storing chemicals.

In a study of 63 industrial effluents collected from a wide range of chemical manufacturers from across the United States, carbon disulfide was

found in 6 of the effluents at concentrations less than 10 µg/L and in 2 effluents at 10-100 µg/L (Perry et al. 1978, 1979).

5.2.3 Soil

According to TRI, an estimated total of at least 3,480 pounds of carbon disulfide were released to soils from manufacturing and processing facilities in the United States in 1987 (TRI 1989) (see Table 5-1).

Carbon disulfide has been detected in soil samples taken at an estimated 2% of the 2,783 hazardous waste sites for which samples were analyzed by the Contract Laboratory Program (CLP). The geometric mean concentration in the positive samples was 8.66 ppb (CLPSD 1989). Note that the CLP Statistical Database (CLPSD) includes data from both NPL and non-NPL sites.

Little information was found regarding releases of carbon disulfide to soils. Fain et al. (1987) reported 0.9 mg/L carbon disulfide (dry weight basis) in a typical refinery oily waste applied to a land treatment unit.

5.3 ENVIRONMENTAL FATE

5.3.1 Transport and Partitioning

Releases of carbon disulfide to the environment as a result of industrial activity are expected to be primarily to the atmosphere. Any carbon disulfide released to surface waters in effluent streams is expected to partition rapidly to the atmosphere as a result of the high vapor pressure and low solubility (Henry's law constant = 1.01×10^{-2} atm • m^3/mol) of the compound. Hydrolysis is not a significant removal mechanism since the evaporation half-life from a saturated solution is estimated to be 11 minutes (Peyton et al. 1976).

Although no information was found evaluating the partitioning of carbon disulfide from water onto sediments, it is not expected to be removed significantly from the aquatic phase through adsorption. The K_{oc} value, calculated from water solubility data for carbon disulfide is only 54 (EPA 1986b), indicating high soil mobility.

Although Roy and Griffin (1985) did not conduct absorption studies, they classified carbon disulfide as a mobile solvent exhibiting a low tendency to be retained by soils. Carbon disulfide released to soils in spills should rapidly volatilize to the atmosphere, but a portion of the compound remaining on soil surfaces could be available for transport into groundwater, since it does not have much affinity for soil particles. Farwell et al. (1979) indicated that carbon disulfide volatilizes from a variety of soils, although rates were not provided.

UPDATE
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ATSDR, 1991.

Toxicological Profile for

CYANIDE

Draft
For Public Comment

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry

Comment Period Ends:

February 18, 1992

1. PUBLIC HEALTH STATEMENT

This Statement was prepared to give you information about cyanide and to emphasize the human health effects that may result from exposure to it. The Environmental Protection Agency (EPA) has identified 1,300 sites on its National Priorities List (NPL). Cyanide has been found in at least 159 of these sites. However, we do not know how many of the 1,300 NPL sites have been evaluated for cyanide. As EPA evaluates more sites, the number of sites at which cyanide is found may change. This information is important for you to know because cyanide may cause harmful health effects and because these sites are potential or actual sources of human exposure to cyanide.

When a chemical is released from a large area, such as an industrial plant, or from a container, such as a drum or bottle, it enters the environment as a chemical emission. This emission, which is also called a release, does not always lead to exposure. You can be exposed to a chemical only when you come into contact with the chemical. You may be exposed to it in the environment by breathing, eating, or drinking substances containing the chemical or from skin contact with it.

If you are exposed to a hazardous chemical such as cyanide, several factors will determine whether harmful health effects will occur and what the type and severity of those health effects will be. These factors include the dose (how much), the duration (how long), the route or pathway by which you are exposed (breathing, eating, drinking, or skin contact), the other chemicals to which you are exposed, and your individual characteristics such as age, sex, nutritional status, family traits, life style, and state of health.

1.1 WHAT IS CYANIDE?

Cyanides are a group of compounds (substances formed by joining two or more chemicals) based on a common structure formed when elemental nitrogen and carbon are combined. Cyanides are produced by certain bacteria, fungi, and algae and may be found in a number of foods and plants. In your body, cyanide can combine with a chemical (hydroxocobalamin) to form vitamin B_{12} (cyanocobalamin), a vitamin needed in the human diet. Hydrogen cyanide is a compound of cyanide and hydrogen. When cyanide combines with metals and organic compounds, it forms simple and complex salts and compounds. Sodium cyanide and potassium cyanide are examples of simple cyanide salts. In cassava roots (rootstocks grown in the tropics) and in vitamin B_{12}, cyanide occurs as complex organic compounds. Most cyanide in the environment comes from industrial processes. Cyanide salts and hydrogen cyanide are mainly used in electroplating, metallurgy, production of organic chemicals, photographic development, war gas, and intermediates for manufacturing plastics.

Cyanide is a powerful and rapid-acting poison. Hydrogen cyanide has been used in gas-chamber executions and as a war gas.

Of the cyanide compounds, hydrogen cyanide, sodium cyanide, and potassium cyanide are those most likely to be found in the environment from industrial activities. Hydrogen cyanide is a colorless gas with a faint, bitter, almond-like odor. Sodium cyanide and potassium cyanide are both white solids with a slight, bitter, almond-like odor in damp air. The largest cyanide source in air results from vehicle exhaust. Other sources include releases from certain chemical industries, industrial and municipal waste burning, and the use of cyanide-containing pesticides. The largest cyanide sources in water result from discharges from organic chemical industries, iron and steel works, and publicly owned waste water treatment works. Much smaller amounts of cyanide may enter water through storm-water runoff in locations where cyanide-containing road salts are used. Groundwater can be contaminated from cyanide present in some landfills. Two cyanide sources in soil resulted from the disposal of cyanide-containing wastes in landfills and the use of cyanide-containing road salts. More information on the physical and chemical properties and on the production and use of cyanides can be found in Chapters 3 and 4.

1.2 WHAT HAPPENS TO CYANIDE WHEN IT ENTERS THE ENVIRONMENT?

Cyanide enters the air, water, and soil as a result of both natural processes and human activities. In air, cyanides are present mainly as gaseous hydrogen cyanide. A small amount of cyanide in the air is present as fine dust particles. This dust eventually settles over land and water. Rain and snow aid in removing cyanide particles from the air. The gaseous hydrogen cyanide is not easily removed from the air by settling, rain, or snow. The half-life (the time needed for half of the material to be removed) of hydrogen cyanide in the atmosphere is 1 to 3 years. Most of the cyanides in water will form hydrogen cyanide and evaporate from water. Some of the cyanides in water will be transformed into other less harmful chemicals by microorganisms in the water or by forming a complex with metals, such as iron. Although the exact half-life of cyanide in water is not known, it is expected to be short. Fish accumulate very little cyanide from water into their bodies. A portion of cyanide in soil can form hydrogen cyanide and evaporate. Some of the cyanide will be transformed into other chemical forms by microorganisms in the soil. Some forms of cyanide may remain in soil, but cyanides do not usually seep into groundwater. However, cyanides have been detected in groundwaters of a few landfills. At the high concentrations found in some landfill leachates (water that seeps through landfill soil), cyanides become toxic to soil microorganisms. Since these microorganisms can no longer transform (change to other chemical forms) cyanides, the cyanides are able to leach into groundwater. More information about the fate and movement of cyanides in the environment can be found in Chapters 4 and 5.

1.3 HOW MIGHT I BE EXPOSED TO CYANIDE?

You may be exposed to cyanides from breathing air and drinking water or eating foods that contain cyanides. People who work in cyanide-related industries may be exposed to cyanide by skin contact as well. The concentration of hydrogen cyanide in uncontaminated air is less than 0.0002 ppm (1 ppm is equivalent to 1 part hydrogen cyanide in a million parts of air). The concentration range of cyanogen chloride in drinking water, which is formed following water chlorination, is 0.00045 to 0.0008 ppm. The total human intake of cyanide from eating foods that naturally contain cyanide is not known. Smoking is probably one of the major sources of cyanide exposure for people who do not work in cyanide-related industries. Breathing smoke-filled air during fires may also be a major source of cyanide exposure. People who live near hazardous waste sites that contain cyanides may also be exposed to higher amounts of cyanides compared to the general population.

Cyanides are used or produced in various occupational settings where activities include but are not limited to electroplating, metallurgy, metal cleaning, certain pesticide applications, tanning, blacksmithing, photography and photoengraving, firefighting, and gas works operations. Cyanides are also used in some dye and pharmaceutical industries or are produced by other cyanide chemical industries. The National Occupational Exposure Survey (NOES) estimated that 3,780 workers are potentially exposed to hydrogen cyanide; 63,584 workers are potentially exposed to sodium cyanide, and 59,225 workers are potentially exposed to potassium cyanide. More information on exposure to cyanide can be found in Chapter 5.

1.4 HOW CAN CYANIDE ENTER AND LEAVE MY BODY?

Cyanide can enter your body if you breathe air, eat food, or drink water that contains cyanide. Cyanide can enter your body through the skin, but this exposure route is common only in the workplace. Exposure to contaminated water or soil can occur at hazardous waste sites. Once it is in your body, cyanide can quickly enter the bloodstream. Cyanide is changed to a chemical (thiocyanate) that is not as harmful and leaves the body in the urine. Some of the cyanide that enters your body can also combine with a chemical (hydroxocobalamin) to form vitamin B_{12}. Some cyanide is converted in the body to carbon dioxide, which is breathed out. Most of the cyanide and its products leave the body within the first 24 hours after exposure. The way cyanide enters and leaves the body is similar in humans and animals. You can find more information about the movement of cyanide in the body in Chapter 2.

1.5 HOW CAN CYANIDE AFFECT MY HEALTH?

In large amounts, cyanide is very harmful to your body. Exposure to high levels of cyanide for a short time harms the brain, lungs, and heart, and may even cause coma and death. Individuals who breathed 546 ppm of hydrogen cyanide have died after a 10-minute exposure;

4. PRODUCTION, IMPORT, USE, AND DISPOSAL

4.1 PRODUCTION

The demand for hydrogen cyanide in the United States during 1989 was 1.14 billion pounds; this demand is projected to grow at ≈3% per year to 1.30 billion pounds in 1994. Historically, the growth of the hydrogen cyanide demand had been 4.8% per year during the period of 1980–1989 (CMR 1990). Producers of hydrogen cyanide include: American Cyanamid, Fortier, Louisiana; BP Chemicals, Green Lake, Texas and Lima, Ohio; Ciba-Geigy, St. Gabriel, Louisiana; Degussa/Du Pont, Theodore, Alabama; Dow, Freeport, Texas; Du Pont, Beaumont, Texas, Memphis, Tennessee, Orange, Texas, and Victoria, Texas; Monsanto, Chocolate Bayou, Texas; Rohm and Haas, Deer Park, Texas; and Sterling, Texas City, Texas. The combined annual production capacity of these plants is 1.541 billion pounds (CMR 1990).

As of January 1990, the following companies produced other cyanogen compounds in the United States (SRI 1990): cyanogen: Matheson Gas Products, Inc., Gloucester, Massachusetts; potassium cyanide: Du Pont, Memphis, Tennessee and W.R.Grace, Nashua, New Hampshire; and sodium cyanide: Dow, Freeport, Texas and Du Pont, Memphis, Tennessee and Texas City, Texas.

Facilities in each state that manufactured or processed cyanide in 1988 and the range of the maximum amounts on site are shown in Table 4-1 (TRI88 1990). The Toxics Release Inventory (TRI) should be used with caution since only certain types of facilities are required to report. This is not an exhaustive list.

There are two common methods of manufacturing hydrogen cyanide. The first results from the formation of hydrogen cyanide as a by-product during the synthesis of acrylonitrile from the reaction of propylene and ammonia with air. The second method results from direct synthesis by the reaction of methane and ammonia with air over platinum catalysts (CMR 1990; Jenks 1979). Of the total production capacity, the by-product of acrylonitrile production accounts for 20.5% of the hydrogen cyanide produced; direct synthesis accounts for the remaining 79.5% (CMR 1990). In recent years, the alkali cyanides have been manufactured by the neutralization or wet processes in which hydrogen cyanide reacts with alkaline hydroxide solutions (Jenks 1979).

4.2 IMPORT/EXPORT

The imports and exports of hydrogen cyanide to and from the United States are negligible (CMR 1990). Approximately 5.76 million pounds of potassium cyanide, ferricyanide, and ferrocyanide and 23.1 million pounds of sodium cyanide were imported into the United States during 1984 through principal U.S. customs districts. Italy, Germany, and Great Britain were the primary exporters of cyanide chemicals to the United States (USDC 1985). Data regarding the export of cyanide salts from the United States were not located in the available literature.

4.3 USE

The use pattern for hydrogen cyanide is the following: adiponitrile (for nylon 6/6), 43%; methyl methacrylate, 33%; sodium cyanide, 9%; cyanuric chloride, 6%; chelating agents, 5%; and miscellaneous uses, including methionine and nitriloacetic acid, 4% (CMR 1990). Miscellaneous applications also include the use of hydrogen cyanide as an insecticide and rodenticide for fumigating enclosed spaces (stored grain, etc.) and its use in the manufacture of ferrocyanides, acrylates, lactic acid, pharmaceuticals, and specialty chemicals (Jenks 1979; Worthing 1987). Cyanide salts have various uses. The most significant applications are used in electroplating and metal treatment, as an anticaking agent in road salts, and in gold and silver extraction from ores. Minor applications include use as insecticides and rodenticides, as chelating agents, and in the manufacture of dyes and pigments (Sax and Lewis 1987; Towill et al. 1978; Worthing 1987). In recent years, the use pattern of hydrogen

5. POTENTIAL FOR HUMAN EXPOSURE

5.1 OVERVIEW

Anthropogenic sources are responsible for most of the cyanide in the environment. Cyanide also occurs naturally in the fruits, roots, and leaves of numerous plants. The major cyanide releases to water are discharges from metal finishing industries, iron and steel mills, and organic chemical industries (Fiksel et al. 1981). Effluents from the cyanidation process used in precious metal extraction contain high amounts of cyanide (Huiatt 1985; Scott 1985). The contribution of this source to the total cyanide discharge in water, however, is insignificant (Fiksel et al. 1981). Vehicle exhaust is the major source of cyanide released into the air (Fiksel et al. 1981). The major sources of cyanide release to soil appear to be disposal of cyanide wastes in landfills and the use of cyanide-containing road salts. Cyanide has been identified in 159 of the 1,300 hazardous waste sites that have been proposed for inclusion on the NPL (MIS 1990). The frequency of these sites within the United States can be seen in Figure 5-1.

Cyanide is released into air mainly as hydrogen cyanide gas and, to a lesser extent, as particulate cyanides. Hydrogen cyanide can potentially be transported over long distances before reacting with photochemically generated hydroxyl radicals. The residence time of hydrogen cyanide in the troposphere has been estimated to be 1.4–4.3 years (Cicerone and Zellner 1983). Neither photolysis nor deposition by rainwater is expected to be a significant removal mechanism. Only 2% of the tropospheric hydrogen cyanide is expected to be transported to the stratosphere (Cicerone and Zellner 1983). In water, cyanide occurs most commonly as hydrogen cyanide. Hydrogen cyanide is expected to be removed from water primarily by volatilization. At low concentrations, some hydrogen cyanide may also be removed by aerobic or anaerobic biodegradation (Callahan et al. 1979). At soil surfaces, volatilization of hydrogen cyanide is a significant loss mechanism for cyanides. In subsurface soil, cyanide at low concentrations would probably biodegrade under both aerobic and anaerobic conditions. In cases where cyanide levels are toxic to microorganisms (i.e., landfills, spills), water-soluble cyanides may leach into groundwater.

Despite the various ways cyanide is thought to be released into the environment, available monitoring data are limited. It appears that the general population may be exposed to cyanide by inhalation of contaminated air, ingestion of contaminated drinking water, and consumption of foods that contain cyanides. The concentration of cyanide in the northern hemisphere's nonurban troposphere ranges from 160 to 166 ppt (Cicerone and Zellner 1983; Jaramillo et al. 1989). The mean cyanide concentration in most surface waters is not >3.5 µg/L (Fiksel et al. 1981). Cyanogen chloride is formed as drinking water is chlorinated (Jacangelo et al. 1989). The cyanogen chloride concentration in drinking water is 0.45–0.80 µg/L (Krasner et al. 1989). The cyanide content in certain varieties of lima beans can be as high as 3 mg/g (Honig et al. 1983), although values between 0.10 and 0.17 mg/g are common in U.S. lima beans (Towill et al. 1978). Due to the lack of data on cyanide content in total diet samples, the average daily intake could not be estimated.

The NOES conducted by the National Institute for Occupational Safety and Health (NIOSH) estimated that the number of workers who are potentially exposed to cyanides. Workers in various occupations may be exposed to cyanides, including workers involved in electroplating, metallurgy, pesticide application, firefighting, steel manufacturing, gas works operations, and metal cleaning (Fiksel et al. 1981). Exposure occurs primarily through inhalation and, less frequently, by skin absorption. Among the general population, subpopulations with the potential of exposure to cyanide at concentrations higher than background levels include cigarette smokers and nonsmokers who inhale secondary smoke, residents who live near industrial sites releasing cyanides to the environment, residents who live near cyanide-containing hazardous waste sites, and people who consume foods high in glycogenic glycosides.

The simple metal cyanides and hydrogen cyanide do not bioconcentrate in aquatic organisms (Callahan et al. 1979; EPA 1985a). However, fish from water with soluble silver and copper cyanide complexes had metal cyanides in their tissues. The bioconcentration factors for such compounds in fish tissues are not known (Callahan et al. 1979). There is no evidence of biomagnification of cyanides in the food chain (Towill et al. 1978).

Volatilization of hydrogen cyanide would be a significant loss mechanism for cyanides from soil surfaces at a pH <9.2. Although cyanide has a low soil sorption capability (Callahan et al. 1979), it is usually not detected in groundwater probably because of fixation by trace metals through complexation or transformation by soil microorganisms (Towill et al. 1978). In soils where cyanide levels are high enough to be toxic to microorganisms (i.e., landfills, spills), this compound may leach into groundwater (EPA 1984). The possibility of cyanide leaching into groundwater under certain conditions is confirmed by the detection of cyanides in groundwater samples from solid waste sites.

5.3.2 Transformation and Degradation

5.3.2.1 Air

Most cyanide in the atmosphere exists almost entirely as hydrogen cyanide gas, although small amounts of metal cyanides may be present as particulate matter in the air (EPA 1984). The most important reaction of hydrogen cyanide in air is the reaction with photochemically generated hydroxyl radicals (Cicerone and Zellnar 1983). Based on a reaction rate constant of $3x10^{-14}$ cm^3/(molecule-sec) at 25°C (Fritz et al. 1982) and assuming a daily average hydroxyl radical concentration of $5x10^5$ molecules/cm^3, the residence time for the reaction of hydrogen cyanide vapor with hydroxyl radicals in the atmosphere is ≈2 years. The rate of hydroxyl radical reaction with hydrogen cyanide in the air depends on the altitude, and the rate of the reaction is at least an order of magnitude faster at lower altitudes (Cicerone and Zellner 1983). The estimated residence time of hydrogen cyanide in air at different tropospheric altitudes when reaction with hydroxyl radicals is assumed to be the sole transformation mechanism varies between 0.5 and 14.0 years. Based on a maximum tropospheric singlet oxygen ($O\ ^1D$) concentration of $8x10^{-3}$/cm^3, the atmospheric residence time for hydrogen cyanide due to reaction with $O\ ^1D$ alone can be estimated to be ≈40,000 years (Cicerone and Zellner 1983). This reaction is, therefore, not an important transformation process in the troposphere. It may be important in the stratosphere where the concentration of singlet oxygen is much higher. It was also reported that the removal of tropospheric hydrogen cyanide by photolysis and by reaction with ozone is not important, and only 2% of tropospheric hydrogen cyanide is transferred to the stratosphere (Cicerone and Zellner 1983).

5.3.2.2 Water

Cyanide occurs most commonly as hydrogen cyanide in water, although it can also occur as the cyanide ion, alkali metal cyanides (e.g., potassium cyanide, sodium cyanide), relatively stable metallocyanide complexes (e.g., ferricyanide complex $[Fe(CN)_6]^{-3}$), moderately stable metallocyanide complexes (e.g., copper cyanide), or easily decomposable metallocyanide complexes (i.e., zinc cyanide $[Zn(CN)_2]$). The environmental fate of these cyanide compounds varies (Callahan et al., 1979).

The alkali metal salts are very soluble in water. As a result, they readily dissociate into their respective anions and cations when released into water. Depending on the pH of the water, the resulting cyanide ion may then form hydrogen cyanide or react with various metals in natural water. The proportion of hydrogen cyanide formed from soluble cyanides increases as the water pH decreases. At pH <7, >99% of the cyanide ions in water is converted to hydrogen cyanide. As the pH increases, cyanide ions in the water may form complex

metallocyanides in the presence of excess cyanides; however, if metals are prevalent, simple metal cyanides are formed. In clear water or at water surfaces, some metallocyanides, such as ferrocyanides and ferricyanides, may decompose to the cyanide ion by photodissociation and subsequently form hydrogen cyanide. Hydrogen cyanide itself is not expected to undergo direct photolysis. The hydrolysis rates of hydrogen cyanide in acidic solution and the hydrolysis of cyanides under alkaline conditions are so slow that hydrolysis is not competitive with volatilization and biodegradation. Unlike water-soluble metal cyanides, insoluble metal cyanides are not expected to degrade to hydrogen cyanide (Callahan et al. 1979).

Biodegradation is also a significant fate process in natural water systems. Although cyanide is toxic to microorganisms at concentrations ≤10 mg/L (Klecka et al. 1985; Malaney et al. 1959), acclimation appears to increase tolerance to this compound (Raef et al. 1977). A number of pure cultures of microorganisms degrade low concentrations of cyanide under both aerobic and anaerobic conditions (Callahan et al. 1979; Towill et al. 1978). Mixed microorganisms in sewage sludge or activated sludge acclimated to cyanide also significantly biodegrade concentrations ≤100 mg/L of most simple and complex cyanides (Gaudy et al. 1982; Pettet and Mills 1954; Richards and Shieh 1989; Shivaraman et al. 1985). The ferrocyanide complex was not easily biodegradable (Belly and Goodhue 1976; Pettet and Mills 1954). Under aerobic conditions, the biodegradation of cyanide initially produces ammonia, which is converted to nitrate in the presence of nitrifying bacteria (Richards and Shieh 1989). Anaerobic biodegradation of cyanides under denitrification conditions produces nitrogen (Richards and Shieh 1989). The biodegradation half-life of cyanide at a concentration ≤6 mg/L in two natural river waters ranged from <10 to 24 days (Ludzack et al. 1951).

5.3.2.3 Soil

By analogy to the fate of cyanides in water, it is predicted that the fate of cyanides in soil would be pH-dependent. Cyanide may occur as hydrogen cyanide, alkali metal salts, or as immobile metallocyanide complexes. In soil, cyanide present at low concentrations would biodegrade under aerobic conditions with the initial formation of ammonia, which will be converted to nitrate in the presence of nitrifying bacteria. Under anaerobic conditions, cyanides will denitrify to gaseous nitrogen. Cyanide ions in soil are not involved in oxidation-reduction reactions but may undergo complexation reactions with metal ions in soil (Towill et al. 1978).

5.4 LEVELS MONITORED OR ESTIMATED IN THE ENVIRONMENT

5.4.1 Air

The concentration of hydrogen cyanide in the northern hemisphere's nonurban troposphere ranges from 160 to 166 ppt (v/v) (Cicerone and Zellner 1983; Jaramillo et al. 1989). Although ambient monitoring data regarding cyanide in air near source areas (e.g., hydrogen cyanide manufacturing industries, coke production industries, waste disposal sites) were not located in the available literature, the hydrogen cyanide concentration in the vicinity of the source areas is higher than the nonurban tropospheric concentration. The semiquantitatively measured hydrogen cyanide concentrations in the offgas from shale oil retorting processes ranged from 6 to 39 ppm (Sklarew and Hayes 1984).

5.4.2 Water

Cyanide has been detected in waste waters from plating industries at a concentration ≤67,000 mg/L (Grosse 1986), in secondary effluent from a textile industry at a maximum concentration of 0.2 mg/L (Rawlings and Samfield 1979), and in the secondary effluent from a Los Angeles City waste water treatment plant at a concentration of 0.01 mg/L (Young 1978). In New York state alone, 47 industries discharged 3,877 pounds of cyanide into

ATSDR, 1990. WB

Toxicological Profile for

CARBON DISULFIDE

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry

Comment Period Ends:

February 15, 1991

1. PUBLIC HEALTH STATEMENT

The purpose of this Statement is to provide you with information about carbon disulfide and to emphasize the human health effects that may result from exposure. The Environmental Protection Agency (EPA) has identified 1,177 National Priorities List (NPL) sites. Carbon disulfide has been found at 25 of the sites evaluated by EPA. As more sites are evaluated by the EPA, this number may change. The information in this profile is important for you to know because these sites are potential or actual sources of human exposure to carbon disulfide and because carbon disulfide may cause harmful health effects.

When a chemical is released from a large area such as an industrial plant, or from a container such as a drum or bottle, it enters the environment as a chemical emission. This emission, which is also called a release, does not always lead to exposure. You are exposed only when you come into contact with the chemical. You can come into contact with it in the environment through breathing, eating, or drinking substances containing the chemical. Exposure may also result from skin contact with the chemical.

If you are exposed to a hazardous substance such as carbon disulfide, several factors determine whether harmful health effects will occur and the type and severity of those health effects. These factors include the dose (how much), the duration (how long), the route or pathway by which you are exposed (breathing, eating, drinking, or skin contact), the other chemicals to which you are exposed, and your individual characteristics such as age, sex, nutrition, family traits, life style, and state of health.

1.1 WHAT IS CARBON DISULFIDE?

Pure carbon disulfide is a colorless liquid with a pleasant odor that is like the smell of chloroform. The impure carbon disulfide that is usually used in most industry processes, however, is a yellowish liquid with an unpleasant odor like that of rotting radishes. Carbon disulfide evaporates at room temperature, and the gas is more than twice as heavy as air. Carbon disulfide easily forms explosive mixtures with air and catches fire very easily.

In nature, very small amounts of carbon disulfide are found in gases from volcanic eruptions and in marshy areas. Carbon disulfide is made for commercial use by combining carbon and sulfur at very high temperatures. Several industries use carbon disulfide as a raw material to make such things as rayon, cellophane, and carbon tetrachloride. Carbon disulfide is also used to dissolve rubber in the production of tires and as a raw material to make some pesticides. More information on the chemical and physical properties, use, and environmental fate of carbon disulfide is found in Chapters 3, 4, and 5.

1. PUBLIC HEALTH STATEMENT

1.2 HOW MIGHT I BE EXPOSED TO CARBON DISULFIDE?

The amount of carbon disulfide found in the atmosphere from natural sources such as volcanoes is so low that good measurements are not available from many areas. One measurement shows that carbon disulfide contributes less than 8% of sulfur in the upper atmosphere.

Small amounts of carbon disulfide can enter the air by evaporation and as a by-product of several manufacturing processes. It lasts about 14 days in the atmosphere. The people most often exposed to carbon disulfide are workers in plants that use carbon disulfide in their manufacturing processes. Carbon disulfide has also been found at 25 toxic waste sites in the United States and in small amounts in some drinking water in the United States. More information on how you might become exposed to carbon disulfide is found in Chapter 5.

1.3 HOW CAN CARBON DISULFIDE ENTER AND LEAVE MY BODY?

Most people who are exposed to carbon disulfide breathe air that contains it. Carbon disulfide easily and rapidly enters your bloodstream through the lungs. Carbon disulfide can enter your body through your skin, or you may drink it in contaminated drinking water. About 10%-30% of the absorbed carbon disulfide leaves the body through the lungs; less than 1% leaves in the urine. The rest of the absorbed carbon disulfide is changed in the body and leaves through the urine in the form of other chemicals. It takes about 4 days for the body to completely get rid of absorbed carbon disulfide. For more information, see Chapter 2.

1.4 HOW CAN CARBON DISULFIDE AFFECT MY HEALTH?

At very high levels (near 10,000 parts of carbon disulfide per million parts of air [ppm]) carbon disulfide may be life-threatening due to effects on the nervous system or heart. There is no evidence that carbon disulfide causes cancer in humans or animals. High doses of carbon disulfide given to some pregnant female rats resulted in increased numbers of birth defects in their babies. However, no evidence has been found that women exposed to lower doses (about 4 ppm) of carbon disulfide found in the workplace (or those married to exposed men) give birth to children with increased numbers of birth defects.

A Minimal Risk Level (MRL) of 0.003 ppm in air was derived from animal data for short-term and intermediate exposures. The MRL is further described in Chapter 2 and in Table 2-1. The MRL provides a basis for comparison with levels that people might encounter either in the air or in food or drinking water. If a person is exposed to carbon disulfide at an amount below the MRL, it is not expected that harmful (noncancer) health effects will occur. Because these levels are based only on information currently available, some uncertainty is always associated with them. Also, because the method for

4.2 IMPORT/EXPORT

Imports of carbon disulfide have fallen at a fairly steady rate from 2,700 metric tons in 1980 to 1,400 metric tons in 1985. Exports, on the other hand, fell sharply from 5,900 metric tons in 1980 to 900 metric tons in 1982. Exports continued to decline to 450 metric tons in 1983 and then stabilized at 1,400 metric tons in 1984 (Mannsville Chemical Products Corp. 1985). No information was found on export levels after 1985.

4.3 USE

Carbon disulfide has been an important industrial chemical since the 1800s because of its many useful properties, including its ability to solubilize fats, rubbers, phosphorus, sulfur, and other elements (Sine 1989; Timmerman 1978; Windholz 1983). Because of its ability to dissolve phosphorus, it was once widely used to produce matches, but was later replaced by another chemical. Carbon disulfide's fat-solvent properties also made it indispensable in preparing fats, lacquers, and camphor; in refining petroleum jelly and paraffin; and in extracting oil from bones, palmstones, olives, and rags. It was also used in processing India rubber sap from tropical trees. In all of these extraction processes, however, carbon disulfide has been replaced by other solvents (Davidson and Feinleib 1972).

Its fat, rubber, and metal solvent properties have made carbon disulfide highly suitable for a variety of other continuing industrial applications including the vulcanization and manufacture of rubber and rubber accessories; the production of resins, xanthanates, thiocyanates, plywood adhesives, and flotation agents; solvent and spinning-solution applications, polymerization inhibition of vinyl chloride; conversion and processing of hydrocarbons; petroleum-well cleaning; brightening of precious metals in electroplating; thin film deposition of nickel; as an agent to increase corrosion and wear-resistance in metals; rust removal from metals; and removal and recovery of metals and other elements from waste water and other media (Davidson and Feinleib 1972; Peyton et al. 1976; Sine 1989; WHO 1981; Windholz 1983; Worthing 1987). It has also been used in industry to promote sulfidation in the synthesis of rare earth sulfides used in semiconductors, as a regenerator for transition metal sulfide catalysts, as a development restrainer in photography and lithography, and as a solvent to remove printing on recycled plastics (Timmerman 1978).

Carbon disulfide's most important industrial use, however, has been in the manufacture of regenerated cellulose rayon by the viscose process (viscose rayon) and cellophane (Davidson and Feinleib 1972; NIOSH 1977; Timmerman 1978; Peyton et al. 1976; WHO 1981). In 1974, over 80% of carbon disulfide manufactured was used to make viscose rayon and cellophane (Austin 1974). This proportion fell to 50% in 1984, but the rayon and cellophane uses still

accounted for the greatest fraction of carbon disulfide production (Mannsville Chemical Products Corp. 1985).

Another principal industrial use for carbon disulfide has been as a feedstock for carbon tetrachloride production (Mannsville Chemical Products Corp. 1985; NIOSH 1977; Timmerman 1978). While only 10% of U.S. carbon disulfide production was used to produce carbon tetrachloride in 1960, this increased to 32% in 1974, largely due to a rapid increase in the demand for carbon tetrachloride for the production of fluorocarbon propellants and refrigerants (Timmerman 1978). Although most chemical manufacturers had switched to methanol as a raw material for carbon tetrachloride, Akzo America Inc. continued to use carbon disulfide for this purpose as of 1985 (Mannsville Chemical Products Corp. 1985).

In the food industry, carbon disulfide has been used to protect fresh fruit from insects and fungus during shipping, in adhesives for food packaging, and in the solvent extraction of growth inhibitors (Timmerman 1978).

In agriculture, carbon disulfide has been widely used as a fumigant to control insects in stored grain, normally when mixed with carbon tetrachloride to reduce fire hazard (Sine 1989; Worthing 1987). It has also be used to remove botfly larva infestations from the stomachs of horses and ectoparasites from swine (Rossof 1974).

In 1984, the estimated distribution of carbon disulfide utilization was as follows: 40% of production went to manufacture viscose rayon, 10% to produce cellophane, 25% to produce carbon tetrachloride, 10% to produce rubber chemicals, and 15% to produce pesticides and to solubilize waxes and oils (Mannsville Chemical Products Corp. 1985). Future use patterns remain uncertain, although it is expected that less may be used to produce viscose rayon, cellulose, and carbon tetrachloride, products for which demand has declined and for which alternate production processes may be found (Mannsville Chemical Products Corp. 1985; Timmerman 1978). Unless substitutes for carbon disulfide are found, its use levels may depend largely on relative import and export levels of textiles and apparel, at least in the short-term (Mannsville Chemical Products Corp. 1985). Carbon disulfide use for many other specialty industrial uses is expected to continue (Timmerman 1978).

4.4 DISPOSAL

No information was found on past or present disposal methods for carbon disulfide or on quantities and locations of disposal. The EPA CERCLA guideline for reportable quantity is 100 pounds (EPA 1986e).

5. POTENTIAL FOR HUMAN EXPOSURE

5.1 OVERVIEW

The primary disposition of carbon disulfide in the environment is related to its use as an industrial solvent and chemical intermediate. Releases from industrial processes are almost exclusively to the atmosphere. Releases of the compound to surface waters and soils are expected to partition rapidly to the atmosphere through volatilization. Hydrolysis and biodegradation do not appear to be important processes in determining the environmental fate of carbon disulfide. It has been detected at generally low levels in ambient air, surface water, groundwater, drinking water, food products, and human milk. Concentrations in environmental media are greatest near source areas (e.g., industrial point sources, oceans and marshes, volcanoes).

Inhalation of carbon disulfide in workplace air is generally the main route of human exposure to the compound.

EPA has identified 1,177 NPL sites. Carbon disulfide has been found at 25 of the sites evaluated for that compound. It is not known how many of the 1,177 sites have been evaluated for carbon disulfide. As more sites are evaluated by EPA, this number may change (View 1989). The frequency of these sites within the United States can be seen in Figure 5-1.

5.2 RELEASES TO THE ENVIRONMENT

According to the Superfund Amendments and Reauthorization Act (SARA), Section 313, Toxics Release Inventory (TRI), an estimated total of at least 92.3 million pounds of carbon disulfide were released to the environment from manufacturing and processing facilities in the United States in 1987 (see Table 5-1). This total includes an estimated 89,500 pounds that were released through underground injection. The TRI data must be viewed with caution since the 1987 data represent first-time, incomplete reporting of estimated releases by these facilities. Not all sources of chemical wastes are included, and not all pertinent facilities have submitted the required data.

According to the View Database (1989), carbon disulfide has been identified at 25 of the 1,177 NPL sites. The frequency of these sites within the United States can be seen in Figure 5-1.

5.2.1 Air

There are several known natural sources of carbon disulfide, including microbial activity in soils and ocean sediments and volcanic activity. The quantity of carbon disulfide emitted from such natural sources as volcanic and geothermal activity is not known, although it may be substantial (Peyton et al. 1976). Combustion of fossil fuels and other carbonaceous material in the presence of sulfur compounds releases carbon disulfide.

5. POTENTIAL FOR HUMAN EXPOSURE

Historically, carbon disulfide was used in the processing of rubber, but changing technology made the old practices outmoded. Currently, the largest single use of carbon disulfide is in the viscose rayon industry. For every kg of viscose used, 20-30 g of carbon disulfide are emitted (WHO 1979). The largest non-point source of man-made levels of carbon disulfide result from its use as a fumigant and in laboratory processes, and from the degradation of rubber products (Abrams et al. 1975). Small amounts of carbon disulfide have also been detected in a landfill simulator (Vogt and Walsh 1985) and the odorous emissions from a sewage treatment plant (Ruby et al. 1987).

Point sources of carbon disulfide include the biological degradation and incineration of wastes (municipal refuse, sewage sludge, and industrial wastes), although it is not formed during water treatment processes (Abrams et al. 1975).

Atmospheric levels of carbon disulfide are frequently not measurable due to the extremely low ambient concentrations. Many of the hypotheses about the role of carbon disulfide in the atmosphere and its interactions with other compounds have proven difficult to examine, and much attention has gone toward developing more sensitive analytical methods.

According to TRI, an estimated total of at least 92.1 million pounds of carbon disulfide were released to the atmosphere from manufacturing and processing facilities in the United States in 1987 (TRI 1989) (see Table 5-1).

Carbon disulfide has been detected in the magmatic gas over volcanoes, during the aging of roasted coffee, during the pressure cooking of grain-water mixtures, as a volatile constituent in the vapor of burning cigarettes, and in the vapor space above liquid sulfur (Peyton et al. 1976).

During analytical measurements of sulfur compounds at five wetland areas in Florida, carbon disulfide was often not detected while large amounts of dimethylsulfide were found (Cooper et al. 1987). De Mello et al. (1987) speculated that carbon disulfide generation from coastal areas in Florida was related to the concentration of organic matter in the sediment. Staubes et al. (1987) found that humus soils were stronger sources for biogenic sulfur than soils with lower organic content; however, a low humus content coupled with high moisture favors the production of carbon disulfide over dimethylsulfide.

Based on their measurements and assumptions in the study of sulfur emissions from a North Carolina salt marsh, Aneja et al. (1980) estimated that carbon disulfide produced by marshes (0.022 g sulfur/m^2-year) contributes less than 0.07% of biogenic sulfur and less than 8% to the stratospheric aerosol layer.

In order to avoid the difficulties of naturally occurring variations in study conditions, Fall et al. (1988) studied the emission of sulfur gases from several plant/soil systems using a flux chamber. The effects of light and temperature were observed. The study was designed so that emissions from soil could be separated from emissions from plants. Further work was proposed so that systematic investigation can accurately measure the contributions of a number of sulfur compounds under varying conditions.

Steudler et al. (1987) hypothesized a direct relationship between the levels of carbon disulfide emitted from forested soils and the amounts of sulfur and nitrogen entering them in acid rain precipitation.

Carbon disulfide has been measured in atmospheric samples collected during the major eruptions of Mount St. Helens. Low levels desorbed from volcanic ash were found to decrease with increasing distance from the volcanic activity (Rasmussen et al. 1982).

5.2.2 Water

According to TRI, an estimated total of at least 21,790 pounds of carbon disulfide were released to surface water from manufacturing and processing facilities in the United States in 1987 (TRI 1989) (see Table 5-1).

Carbon disulfide has been detected in surface water samples analyzed for about 0.7% of the 2,783 hazardous waste sites participating in the Contract Laboratory Program (CLP) at a geometric mean concentration of 0.58 parts-per-billion (ppb) in the positive samples. The compound has also been detected in the groundwater samples taken at approximately 3% of the sites participating in the CLP at a geometric mean concentration of 6.29 ppb in the positive samples (CLPSD 1989). Note that the CLP Statistical Database (CLPSD) includes data from both NPL and non-NPL sites.

Carbon disulfide is widely found in coastal and ocean waters and extensive study has been done to determine levels over the different types of water bodies. The measurements of Carroll (1985) show that the ocean appears to be a source of carbon disulfide.

Carbon disulfide was found at a concentration of ≥5 μg/L in groundwater samples collected from only 1 of 19 municipal, solid waste landfills examined by Battista and Connelly (1989).

South Carolina Department of Health (1986) found unspecified levels of carbon disulfide in groundwater samples collected from 1 of 11 wells constructed in a surficial aquifer near a recycling and disposal company that had been storing chemicals.

In a study of 63 industrial effluents collected from a wide range of chemical manufacturers from across the United States, carbon disulfide was

found in 6 of the effluents at concentrations less than 10 µg/L and in 2 effluents at 10-100 µg/L (Perry et al. 1978, 1979).

5.2.3 Soil

According to TRI, an estimated total of at least 3,480 pounds of carbon disulfide were released to soils from manufacturing and processing facilities in the United States in 1987 (TRI 1989) (see Table 5-1).

Carbon disulfide has been detected in soil samples taken at an estimated 2% of the 2,783 hazardous waste sites for which samples were analyzed by the Contract Laboratory Program (CLP). The geometric mean concentration in the positive samples was 8.66 ppb (CLPSD 1989). Note that the CLP Statistical Database (CLPSD) includes data from both NPL and non-NPL sites.

Little information was found regarding releases of carbon disulfide to soils. Fain et al. (1987) reported 0.9 mg/L carbon disulfide (dry weight basis) in a typical refinery oily waste applied to a land treatment unit.

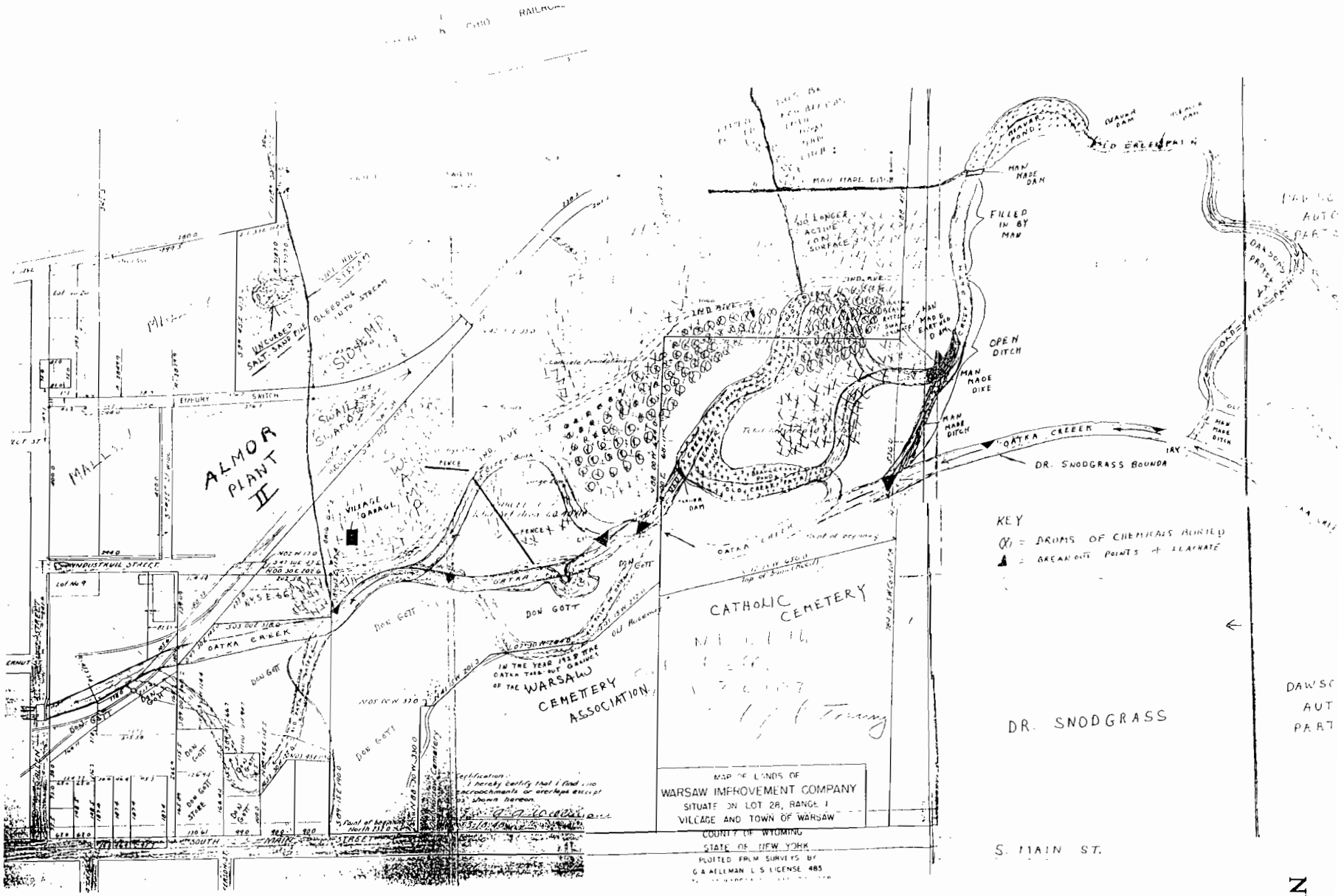
5.3 ENVIRONMENTAL FATE

5.3.1 Transport and Partitioning

Releases of carbon disulfide to the environment as a result of industrial activity are expected to be primarily to the atmosphere. Any carbon disulfide released to surface waters in effluent streams is expected to partition rapidly to the atmosphere as a result of the high vapor pressure and low solubility (Henry's law constant = 1.01×10^{-2} atm • m^3/mol) of the compound. Hydrolysis is not a significant removal mechanism since the evaporation half-life from a saturated solution is estimated to be 11 minutes (Peyton et al. 1976).

Although no information was found evaluating the partitioning of carbon disulfide from water onto sediments, it is not expected to be removed significantly from the aquatic phase through adsorption. The K_{oc} value, calculated from water solubility data for carbon disulfide is only 54 (EPA 1986b), indicating high soil mobility.

Although Roy and Griffin (1985) did not conduct absorption studies, they classified carbon disulfide as a mobile solvent exhibiting a low tendency to be retained by soils. Carbon disulfide released to soils in spills should rapidly volatilize to the atmosphere, but a portion of the compound remaining on soil surfaces could be available for transport into groundwater, since it does not have much affinity for soil particles. Farwell et al. (1979) indicated that carbon disulfide volatilizes from a variety of soils, although rates were not provided.



NYSDEC, no date(a)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Important Message

For PWD

Date 7/11 Time 2:45 AM PM

While You Were Away

Name [illegible]

Of

Phone No. [illegible]

- ☐ Telephoned You
- ☐ Visited You
- ☐ Wants To See You
- ☐ Urgent
- ☐ Please Phone Him/Her
- ☐ Will Phone Again
- ☐ Will Visit Again
- ☐ _____

Message:

00-12-60 Signed [illegible]

[illegible] of solvents in Degreaser operation

Materials put into Warsaw landfill?

693-[illegible]

NYS Route 703

[illegible] T17938 N.Y.

Dichlorethylene
Chromatic acid
electro plating acids
anti static solvent
Formaldehyde
anti freeze
nitric acid
PCBs Transformer oils
Halogenated Solvents
Sludge from recovery of solvents in Degreasing operation
Cyanide
formaldehyde

Materials put into
Warsaw Landfill

693-1 5 3

T 77 93 N.Y.

NYD 043815703

32 Z 0 3

New York State Department of Environmental Conservation

Thomas C. Jorling
Commissioner

MEMORANDUM

TO: Walter Demick

FROM: Gerald Pietraszek

SUBJECT: Review of PSA Work Plans dated, August 5, 1992 for
1. Warsaw Village Landfill (961006)
2. ETE Sanitation (961005)
3. Cuba Municipal Waste (902012)

DATE: September 3, 1992

I have reviewed the noted work plan outlined and offer the following comments:

Warsaw Village Landfill (961006)

1. The two overpacked drums were removed from the site by the Village of Warsaw at the request of Region 9. On September 16, 1991 the drums were physically removed for proper disposal by Tonawanda Tank Company.

2. Use of the ATV rig may be necessary at MW-4.

3. It is unclear whether or not 3 or 5 grain size analysis will be done.

4. The village workers have had concerns regarding dust or air born contaminants while working at the landfill. It is suggested that some additional surface soil sampling be done in the areas most frequented by village workers during the course of their duties. In this regard 0"-6" surface soil sampling might be done at these additional sampling points.

ETE Sanitation and Landfill (961005)

I concur with the proposed sampling plan.

Cuba Municipal Waste (902012)

I concur with the proposed sampling plan.

MARTY,
I AT TOOK US SO LONG

Buffalo

NYSDEC, 1991c.

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202

Thomas C. Jorling
Commissioner

May 22, 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Robert Stubley
Superintendent of Public Works
Village of Warsaw
Village Building, 15 South Main Street
P.O. Box 49
Warsaw, NY 14569

Dear Mr. Stubley:

Warsaw Village Landfill #961006
Removal of Drums

In January 1988 two drums were unearthed at the north central portion of the Warsaw Village Landfill as part of a proposed closure plan. Subsequent testing of the contents of these drums confirmed the presence of hazardous waste through failure of the test for Ignitability. These drums have since stood at the location where found enclosed only by an orange safety fence.

A final determination on site characterization has not yet been made through the recent Preliminary Site Assessment, Task 1 contract. Additional investigatory work is necessary to properly characterize the site with regards to offsite movement of potentially contaminated groundwater. Contracts for this work will be released through the main office in Albany.

The Village of Warsaw is hereby requested to contact the Buffalo Region 9 Office of the NYSDEC within 10 days of receipt of this letter to inform the DEC as to what course of action the Village of Warsaw will take to facilitate the removal of these drums from the site for proper disposal. Please be advised that the removal must be in accordance with applicable State and Federal laws, rules and regulations, including New York State Environmental Conservation Law.

If, however, the Village of Warsaw does not comply, State Superfund money is available in limited amounts for the cleanup of hazardous drum sites meeting certain criteria. Article 27, Title 13 of the New York State Environmental Conservation Law and Section 97-b of the State Finance Law describe the conditions for fund-financed removals. The law also requires the DEC to make every effort to recover all money expended for the removal from the responsible party (e.g. property owner, generator, hauler).

If there are any questions regarding the drum removal please call me at 716-847-4585.

Sincerely,

Gerald F. Pietraszek

Gerald F. Pietraszek
Senior Engineering Geologist

GFP/ad

NYSDEC, 1988.

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202

Thomas C. Jorling
Commissioner

February 29, 1988

The Honorable John H. Beresh
Mayor
Village of Warsaw
P.O. Box 19
Warsaw, NY 14569

Dear Mayor Beresh:

In response to the meeting of February 2, 1988 and subsequent inspection of part I, phase I construction on Warsaw Landfill, the following comments are made.

The writer is very pleased with the outcome of initial construction on Phase I remediation of the Warsaw Landfill. The Soil Conservation Service (SCS) and Jefferds Construction Company should be commended on the middle ditch construction, especially during poor winter conditions. It was important that this construction was performed prior to another spring's runoff and wet weather condition. The Village must now follow through with grading, final dressing and seeding of the middle ditch construction area. This work should be performed as soon as the ground can be worked on. Hopefully, this work will be done before Part II, south ditch construction begins and hot dry weather arrives preventing germination of the seed. Seeding specifications are in Appendix B of the PC&D Measure Plan. The writer requests prior notification to start up of this work and written certification that the seeding specifications were followed.

Drainage of the east beaver dam revealed a major leachate breakout that has caused staining of the middle ditch from its source down to Oatka Creek. Only time will tell if this breakout is from previous backup of the beaver dam or results from a spring breakout from an old pond that was filled with refuse or just poor cover material in this immediate area. In either case, it is an area that the Village will have to address when the beaver dam area is graded and seeded. Pete Wright (SCS) stated to the writer during the inspection walk that the beaver dam grading would have to be done by the Village.

The contaminated soil that resulted from rupturing several drums during the middle ditch excavation and grading will have to be disposed of as soon as results are received determining the contents of the drums. Even if the material is found to be non-hazardous, it still would be classified as an industrial waste and would have to be disposed at a permitted landfill. An Emergency Waste Transport Permit could be issued to the Village should you wish to transport the material yourselves and the writer would be willing to assist the Village in preparation of the necessary landfill disposal forms.

Part II of Phase I construction on the landfill will be much more taxing and demanding. South ditch excavation will definitely involve excavation of refuse that will have to be addressed daily. This material could be used to fill the voids and poor contour of the extreme southern and southwest corner of the landfill. This will be easier then transporting the waste back across the middle ditch and mounding near the old mechanical shovel. Regrading and covering of that area can be handled later during Phase II. The Village will have to assign labor and equipment to the landfill as soon as the SCS contractor is ready to start. Again I emphasize that no refuse can be left exposed and uncovered. Should the Village feel that they don't have the manpower or equipment to move and cover any excavated refuse, they may consider making arrangements with the SCS contractor to do the additional work. That part of the services would have to be funded by the Village. Should any hazardous waste or industrial waste be excavated from the south ditch project, it would have to be staged in a confined area until the necessary arrangements could be worked out for disposal at a permitted site. The Village must draft a Spill Prevention Control and Countermeasure (SPCC) [illegible] have containment equipment on hand in order to handle any unforeseen situations. See enclosed list of distributors of spill containment recovery and absorbent materials.

Unfortunately at the time of this correspondence, no results of the samples collected from the excavated barrels have been received. Should these results come back hazardous and with the recent right to know information received from Mallory, Inc., this site would have to be referred for listing on the State Registry of Hazardous Waste Sites. This would result in the State initiating a Phase I & II Study, a Remediation Investigation Report and if warranted, ultimately giving the Village an option of doing additional remediation and surveillance work or the State remediating the site on their own and then ultimately recovering said costs from the Village. The work presently being done under the Consent Order covers much of the work that would have to be done to remediate the landfill as a hazardous waste site.

Should you have any questions concerning these matters, please contact the writer at 716-347-4585.

Very truly yours,

Robert C. Wozniak
Solid Waste Specialist II

County-56

RTK# GX900501

ETE Sanitation

NYSDEC, 1984.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE

50 WOLF ROAD
ALBANY, NEW YORK 12233

GENERATOR FORM
PART - I

HAZARDOUS WASTE DISPOSAL QUESTIONNAIRE

PLEASE COMPLETE AN ICS #: 0100503 — SING UNIT, ROOM 525

COMPANY NAME: ALMOR CORPORATION **

CODE ID NUMBER: 0100503

COMPANY MAILING ADDRESS: PO BOX 270

CITY: WARSAW

STATE: NY

ZIP CODE: 14569

TELEPHONE: 716-786-222

PLANT NAME (if different):

PLANT ADDRESS (if different) STREET:

CITY:

STATE:

ZIP CODE:

PRINCIPAL BUSINESS OF PLANT: Mfg Kitchen Cabinets and Shelving for Super mkts.

PLEASE ANSWER THE FOLLOWING QUESTIONS:

CHECK ONE

1. SINCE JANUARY 1, 1952 THRU DECEMBER 31, 1981, HAVE YOU OR ANY PREVIOUS OWNERS/OPERATORS OF THIS FACILITY GENERATED ANY HAZARDOUS WASTE (SEE INSTRUCTIONS) AT YOUR PRESENT FACILITY, PLANT, PROPERTY, ETC?

☒ YES ☐ NO

IF THE ANSWER IS **YES** COMPLETE QUESTIONS **1, 2, 3, 4** AND **GENERATOR FORM PART - II**
IF THE ANSWER IS **NO** COMPLETE QUESTIONS 1 AND 4 AND RETURN THIS FORM

2. HAS THE FACILITY AT THIS LOCATION CHANGED ITS NAME OR IDENTIFICATION BECAUSE THERE WAS A CHANGE IN OWNERSHIP, CORPORATE NAME OR OPERATOR NAME, ETC. IF YES LIST THE NAMES BY WHICH THIS FACILITY HAS BEEN IDENTIFIED SINCE JANUARY 1, 1952 TO THE PRESENT.

☒ YES ☐ NO

NAME, ADDRESSES, AND TELEPHONE NUMBERS	DATES
Warsaw Elevator Co. to Watson Elevator Co.	1952
to Turnbull Elev. Co. to Dover Elev. Co.	1967
Almor Corp. 220 South Main St.	1967
Warsaw, N.Y. 716-786-2225	
	1982

3. DESCRIBE THE DOCUMENTS FROM WHICH DATA THAT IS INCLUDED ON PART-II WAS OBTAINED (SEE INSTRUCTIONS).

DOCUMENT DESCRIPTION	DATES
Almor Corporation shipping papers	1980 to 1982

4. I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT INFORMATION SUPPLIED IS TRUE AND COMPLETE. FALSE STATEMENTS SUBMITTED ON THIS DOCUMENT ARE PUNISHABLE PURSUANT TO SECTION 210.45 OF THE PENAL LAW.

Cassius D. Greene, Jr. — NAME OF OWNER/OPERATOR, PARTNER OFFICER OR AUTHORIZED REPRESENTATIVE

Supv. — TITLE

9-10-84 — DATE

Cassius D. Greene Jr. — SIGNATURE

716-786-2225 — BUSINESS PHONE

NAME	ICS NUMBER - EPA ID NUMBER
Almor Corporation	0100503
ADDRESS: 220 South Main Street	
CITY: Warsaw	STATE: N.Y. ZIP: 14569

ENTERED EDP DEC 0 4 1984

GENERATOR FORM
PART - II

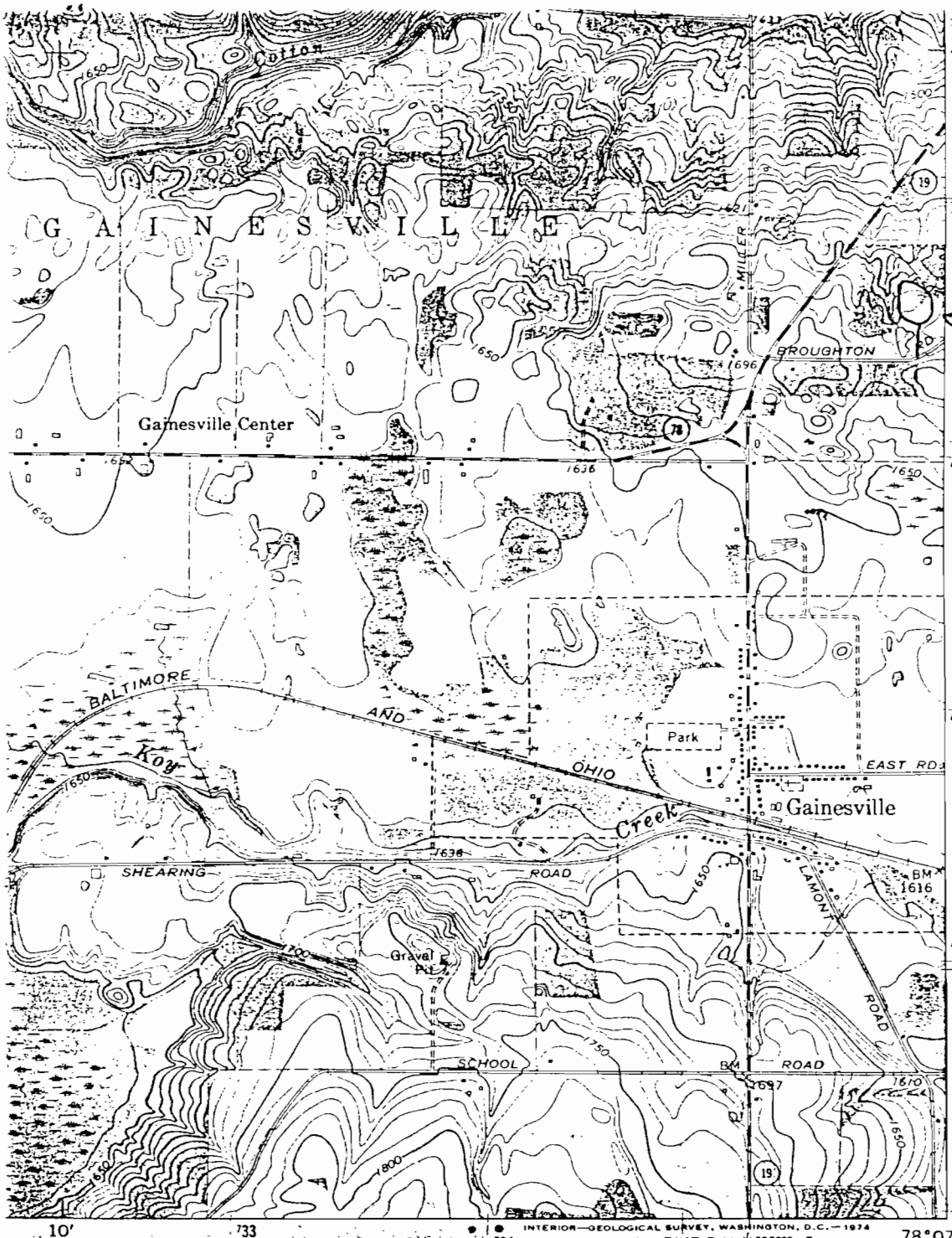
G

ENTERED EDP DEC 0 4 1984

DATE 9-10-84

1. HAZARDOUS WASTE DISPOSAL SITE (SEE INSTRUCTIONS)	2. DESCRIPTION OF HAZARDOUS WASTES DEPOSITED AT THIS LOCATION (SEE INSTRUCTIONS)	3. EPA WASTE CODE	4. WASTE DISPOSED OF QUANTITY OF WASTE (TONS)	FORM: LIQUID	FORM: SOLID	FORM: DRUMS	5. WASTE DISPOSAL DATES	6. TRANSPORTER OF HAZARDOUS WASTE (SEE INSTRUCTIONS)
unknown	unknown	un-known	unknown				1952 to 1967.	unknown
Warsaw Village Landfill Warsaw N.Y. Wyoming Cty.	Lightly Leaded Paint Sludge (1)	D008	unknown ± 30 tons/yr		X	X	7/67 to 6/74	Almor Corp. NYA161 and 0405
E.T.E. Sanitation & Landfill Inc. Gainesville, N.Y. Wyoming Cty.	Lightly Leaded Paint Sludge (2)	D008	unknown ± 30 tons/yr		X	X	6/74 to 4/79	Almor Corp.
CECOS Niagara Falls, N.Y.	Lead Free Paint Sludge (3)	D001 ~~N151~~	62.85 tons		X	X	6/80 to 4/82	Almor Corp.
	From 1952 to 1967, Warsaw and to Mr. Greene's wastes	Elevator Company was a knowledge did not produce					Cast Iron Foundry any hazardous	
	NOTE: Almor Corporation purchased the building from the Elevator Company							

Cont'd: Gen. D. Page



WARSAW, N. Y.
N4237.5—W7807.5/7.5

1972

AMS 5369 II NW—SERIES V821

H-14

Fill-SW Warsaw & Landfill Mr McMahon

NYSDEC, 1978.

Circulate ______
RD ______
CR ______
AA ______
EQ ______ File ______

New York State Department of Environmental Conservation
584 Delaware Avenue Buffalo, New York 14202

Mr. Friedman.

Peter A. A. Berle,
Commissioner

September 22, 1978

I have had calls from Mallory employees within the last 9 months who were alarmed at Mallorys dumping chemicals within a closed dump. having access to such midnight dumping with a Village supplied key

Mr. Donald Gott
Tri-Gott Auto Parts
270 South Main Street
Warsaw, New York 14569

Dear Mr. Gott:

The following is in response to the questions raised in your recent letter.

not true nor since

Prior to August, 1974, Mallory Timers did use the Warsaw landfill for disposal of some drummed metal hydroxides. While these materials are insoluble in water, monitoring of this site will be required along with additional remedial action. Erosion ofthe streambank at the landfill must be corrected and precluded. The streambank work undertaken this summer by the Village was in response to a June 1, 1978 letter from this Department noting that streambank erosion was occurring and a remedial plan was necessary. This work was undertaken without approval of this Department. A subsequent inspection on August 1, 1978 showed that the bank of the stream had been restored. The Village has stated that more permanent bank protection will be provided and that a permit for this work would be obtained. with salt impregnated street sweepings (has it been seeded?

We have had no reports of recent fishkills in this reach of the stream. We would appreciate any information you may have regarding any recent events.

The E.T.E. landfill in Gainesville was in operation when this Department was formed in 1970. The State Attorney General's office is in the process of commencing appropriate legal proceedings relative to this landfill. The owner and operator of this landfill has not complied with Departmental Orders to undertake the corrective actions required. Feel Warsaws emergency water (red creek) "yummie"

The referenced damming of Oatka Creek by the water line has been investigated by this office. Relocation of the waterline does not fall within this Department's jurisdiction. It is suggested that the Village of Warsaw be contacted relative to this matter. this effects the dump as well as my property

With regard to the New York State Department of Transportation facility on South Main Street, the septic tank serving this facility has been converted to a holding tank. This was assured by an inspection on September 13, 1978 by this office.

Your interest in the environment is appreciated. Please advise this office if you have further questions.

Sincerely,

W.M. Friedman, P.E.
Regional Director

JCM:JEB:egb

John – I want a good inspection of this site by John Beecher. Please advise me of the results. WMF 10-3-78

GFP

STATE OF NEW YORK DEPARTMENT OF HEALTH

NYSDOH, 1991a.

Regional Office 584 Delaware Avenue Buffalo, New York 14202

Lorna McBarnette
Executive Deputy Commissioner

OFFICE OF PUBLIC HEALTH
Sue Kelly
Executive Deputy Director
Olivia Smith-Blackwell, M.D., M.P.H.
Regional Health Director

December 30, 1991

Mr. Douglas Brown
112 Prospect Ave.
Warsaw, New York 14569

RE: Village of Warsaw Landfill
Site I.D. 961006
(V) Warsaw, Wyoming County

Dear Mr. Brown:

Please find attached the results of the analysis of the sample collected from your water well for the New York State Department of Health by Mr. Gary Bonanski of the Wyoming County Health Department. Your water was analyzed for volatile and semi-volatile compounds, polychlorinated biphenyis (PCBs) and inorganic (metals) chemicals in the New York State Wadsworth Center of Labs and Research in Albany.

The laboratory reports included in this letter lists the parameters (chemicals) analyzed in the left column and the corresponding results in the right column. The less-than (<) symbol in front of each results indicates that the chemicals were not present at the level of detection, which is the detection limit of the instrument used for analysis. The chemicals are measured in MCG/L (micrograms per liter), otherwise known as parts per billion (ppb), and in MG/L (milligrams per liter) or parts per million (ppm).

All of the parameters measured were found at concentrations within ranges that naturally occur in groundwater in New York State and are below the applicable State and Federal groundwater standards. More importantly, none of the contaminants associated with the site were detected. However, one inorganic chemical, iron, was found at a concentration of 543 ppb. The NYSDOH Maximum Contaminate Level (MCL) for this compound in public water supplies is 300 ppb. This standard was primarily set for aesthetic reasons and is not based on health concerns. Elevated levels may result in poor taste and fixtures staining.

Thank you for your interest and permission to sample. If your have any additional questions please contact me at 716-847-4502.

Sincerely,

Cameron O'Connor

Cameron O'Connor
Program Research Specialist III
Bureau of Environmental Exposure
Investigation

COC:bjw
cc: Dr. Carlson
Mr. Wakeman
Mr. Doster, NYSDEC
Mr. Bonanski

0308 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 912914 SAMPLE RECEIVED:91/08/16/ CHARGE: 35.50
PROGRAM: 110:STATE SUPERFUND ANALYTICAL SERVICES
SOURCE ID: DRAINAGE BASIN: GAZETTEER CODE:6027
POLITICAL SUBDIVISION:WARSAW V. COUNTY:WYOMING
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: WARSAW LANDFILL INVESTIGATION
DESCRIPTION:DOUGLAS & SANDRA BROWN, 112 PROSPECT ST., WARSAW,NY
DESCRIPTION:CELLAR WELL WATER TAP
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: AQUEOUS-1:VOLATILES,KETONES,PESTICIDES,PCB'S,PRIORITY POLLUTANTS
SAMPLE TYPE: 120:PRIVATE WATER SUPPLY -- DRILLED WELL
TIME OF SAMPLING: 91/08/15 14:00 DATE PRINTED:91/10/17

ANALYSIS: VH05021 VOLATILE HALOGENATED ORGANICS (DES 310-29)
DATE REPORTED: 91/09/12 REPORT MAILED OUT

PARAMETER	RESULT
CHLOROMETHANE	< 0.5 MCG/L
BROMOMETHANE	< 0.5 MCG/L
VINYL CHLORIDE	< 0.5 MCG/L
DICHLORODIFLUOROMETHANE (FREON-12)	< 0.5 MCG/L
[illegible]ETHANE	< 0.5 MCG/L
METHYLENE CHLORIDE (DICHLOROMETHANE)	1. MCG/L
TRICHLOROFLUOROMETHANE (FREON-11)	< 0.5 MCG/L
1,1-DICHLOROETHENE	< 0.5 MCG/L
BROMOCHLOROMETHANE	< 0.5 MCG/L
1,1-DICHLOROETHANE	< 0.5 MCG/L
TRANS-1,2-DICHLOROETHENE	< 0.5 MCG/L
CIS-1,2-DICHLOROETHENE	< 0.5 MCG/L
CHLOROFORM	< 0.5 MCG/L
1,2-DICHLOROETHANE	< 0.5 MCG/L
DIBROMOMETHANE	< 0.5 MCG/L
2,2-DICHLOROPROPANE	< 0.5 MCG/L
1,1,1-TRICHLOROETHANE	< 0.5 MCG/L
CARBON TETRACHLORIDE	< 0.5 MCG/L
BROMODICHLOROMETHANE	< 0.5 MCG/L
1,2-DICHLOROPROPANE	< 0.5 MCG/L
CIS-1,3-DICHLOROPROPENE	< 0.5 MCG/L
1,1-DICHLOROPROPENE	< 0.5 MCG/L
TRICHLOROETHENE	< 0.5 MCG/L
1,3-DICHLOROPROPANE	< 0.5 MCG/L
DIBROMOCHLOROMETHANE	< 0.5 MCG/L
TRANS-1,3-DICHLOROPROPENE	< 0.5 MCG/L
1,1,2-TRICHLOROETHANE	< 0.5 MCG/L
1,2-DIBROMOETHANE (EDB)	< 0.5 MCG/L
BROMOFORM	< 0.5 MCG/L

**** CONTINUED ON NEXT PAGE ****

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REGIONAL DIRECTOR OF PH ENGINEERING
NEW YORK STATE DEPARTMENT OF HEALTH
584 DELAWARE AVE. SUBMITTED BY:BONARSKI
BUFFALO, N.Y.

0512 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 RESULTS OF EXAMINATION FINAL REPORT(REV)

SAMPLE ID: 911002062 SAMPLE RECEIVED:91/08/16/14 CHARGE: 5.10
POLITICAL SUBDIVISION:WARSAW V. COUNTY;WYOMING
LOCATION: WARSAW LANDFILL INVESTIGATION #961006
TIME OF SAMPLING: 91/08/15 14:00 DATE PRINTED:91/10/04

REVISION DATE 91/10/02, FOLLOWING PARAMETERS ADDED AFTER SAMPLE REPORTED

FOLLOWING PARAMETERS NOT PART OF TEST PATTERN

PARAMETER	RESULT
CO PHONED MJ DAY TIME	10-1 JD

**** END OF REPORT ****

09 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

GE 2 RESULTS OF EXAMINATION FINAL REPORT

MPLE ID: 912914 SAMPLE RECEIVED:91/08/16/ CHARGE: 35.50
LITICAL SUBDIVISION:WARSAW V. COUNTY:WYOMING
CATION: WARSAW LANDFILL INVESTIGATION
ME OF SAMPLING: 91/08/15 14:00 DATE PRINTED:91/10/17

PARAMETER	RESULT
1,1,1,2-TETRACHLOROETHANE	< 0.5 MCG/L
1,2,3-TRICHLOROPROPANE	< 0.5 MCG/L
1,1,2,2-TETRACHLOROETHANE	< 0.5 MCG/L
TETRACHLOROETHENE	< 0.5 MCG/L
CHLOROBENZENE	< 0.5 MCG/L
BROMOBENZENE	< 0.5 MCG/L
O-CHLOROTOLUENE	< 0.5 MCG/L
P-CHLOROTOLUENE	< 0.5 MCG/L
1,3-DICHLOROBENZENE	< 0.5 MCG/L
1,2-DICHLOROBENZENE	< 0.5 MCG/L
1,4-DICHLOROBENZENE	< 0.5 MCG/L
PH OF HALOGENATED ALIQUOT	2

ANALYSIS: 5031 AROMATIC PURGEABLES, EPA METHOD 503.1 (DES 310-22)
DATE REPORTED: 91/08/29 REPORT MAILED OUT

PARAMETER	RESULT
BENZENE	< 0.5 MCG/L
TOLUENE	< 0.5 MCG/L
ETHYLBENZENE	< 0.5 MCG/L
P-XYLENE	< 0.5 MCG/L
M-XYLENE	< 0.5 MCG/L
O-XYLENE	< 0.5 MCG/L
ISOPROPYLBENZENE (CUMENE)	< 0.5 MCG/L
STYRENE	< 0.5 MCG/L
N-PROPYLBENZENE	< 0.5 MCG/L
TERT-BUTYLBENZENE	< 0.5 MCG/L
M-CHLOROTOLUENE	< 0.5 MCG/L
1,3,5-TRIMETHYLBENZENE	< 0.5 MCG/L
1,2,4-TRIMETHYLBENZENE	< 0.5 MCG/L
4-ISOPROPYLTOLUENE (P-CYMENE)	< 0.5 MCG/L
SEC-BUTYLBENZENE	< 0.5 MCG/L
N-BUTYLBENZENE	< 0.5 MCG/L
HEXACHLOROBUTADIENE (C-46)	< 0.5 MCG/L
1,2,4-TRICHLOROBENZENE	< 0.5 MCG/L
NAPHTHALENE	< 0.5 MCG/L
1,2,3-TRICHLOROBENZENE	< 0.5 MCG/L
PH OF AROMATIC ALIQUOT	2

ANALYSIS: KET KETONES - PURGE & TRAP TECHNIQUE (DES 310-25)
DATE REPORTED: 91/08/22 REPORT MAILED OUT

PARAMETER	RESULT
2-BUTANONE (METHYL ETHYL KETONE)	< 10. MCG/L
4-METHYL-2-PENTANONE (MIBK)	< 10. MCG/L
ACETONE	< 10. MCG/L
METHYL TERT BUTYL ETHER	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

0310 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 912914 SAMPLE RECEIVED:91/08/16/ CHARGE: 35.50
POLITICAL SUBDIVISION:WARSAW V. COUNTY:WYOMING
LOCATION: WARSAW LANDFILL INVESTIGATION
TIME OF SAMPLING: 91/08/15 14:00 DATE PRINTED:91/10/17

ANALYSIS: XPEST-PCB ORGANOCHLORINE PESTICIDES & PCB'S (DES310-2)
DATE REPORTED: 91/10/03 REPORT MAILED OUT

PARAMETER	RESULT
HCH,ALPHA	< 0.04 MCG/L
HCH,BETA	< 0.04 MCG/L
HCH,GAMMA (LINDANE)	< 0.04 MCG/L
HCH,DELTA	< 0.04 MCG/L
HEPTACHLOR	< 0.05 MCG/L
ALDRIN	< 0.02 MCG/L
HEPTACHLOR EPOXIDE	< 0.05 MCG/L
ENDOSULFAN I	< 0.05 MCG/L
4,4'-DDE	< 0.05 MCG/L
DIELDRIN	< 0.02 MCG/L
ENDRIN	< 0.02 MCG/L
4,4'-DDD	< 0.05 MCG/L
ENDOSULFAN II	< 0.05 MCG/L
ENDRIN ALDEHYDE	< 0.02 MCG/L
ENDOSULFAN SULFATE	< 0.05 MCG/L
4,4'-DDT	< 0.05 MCG/L
METHOXYCHLOR	< 0.5 MCG/L
TOXAPHENE	< 1.0 MCG/L
CHLORDANE	< 0.1 MCG/L
MIREX	< 0.05 MCG/L
PCB,AROCLOR 1221	< 0.05 MCG/L
PCB,AROCLOR 1016/1242	< 0.05 MCG/L
PCB,AROCLOR 1248	< 0.05 MCG/L
PCB,AROCLOR 1254	< 0.05 MCG/L
PCB,AROCLOR 1260	< 0.05 MCG/L

ANALYSIS: GC-FID-A PRIORITY POLLUTANTS*ACIDS*GC/FID RESULTS
DATE PRINTED: 91/10/17 FINAL REPORT

PARAMETER	RESULT
PHENOL	< 10. MCG/L
2-CHLOROPHENOL	< 10. MCG/L
2-NITROPHENOL	< 10. MCG/L
2,4-DIMETHYLPHENOL	< 10. MCG/L
2,4-DICHLOROPHENOL	< 10. MCG/L
4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
2,4,6-TRICHLOROPHENOL	< 10. MCG/L
2,4,5-TRICHLOROPHENOL	< 10. MCG/L
2,4-DINITROPHENOL	< 10. MCG/L
4-NITROPHENOL	< 10. MCG/L
2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
PENTACHLOROPHENOL	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

0311

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 4 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 912914 SAMPLE RECEIVED:91/08/16/ CHARGE: 35.50
POLITICAL SUBDIVISION:WARSAW V. COUNTY:WYOMING
LOCATION: WARSAW LANDFILL INVESTIGATION
TIME OF SAMPLING: 91/08/15 14:00 DATE PRINTED:91/10/17

ANALYSIS: GC-FID-BN PRIORITY POLLUTANTS*BASE/NEUTRALS*GC/FID RESULTS
DATE PRINTED: 91/10/17 FINAL REPORT

PARAMETER	RESULT
BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
HEXACHLOROETHANE	< 10. MCG/L
NITROBENZENE	< 10. MCG/L
ISOPHORONE	< 10. MCG/L
BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
2-CHLORONAPHTHALENE	< 10. MCG/L
2,6-DINITROTOLUENE	< 10. MCG/L
ACENAPHTHYLENE	< 10. MCG/L
DIMETHYLPHTHALATE	< 10. MCG/L
ACENAPHTHENE	< 10. MCG/L
2,4-DINITROTOLUENE	< 10. MCG/L
DIETHYLPHTHALATE	< 10. MCG/L
FLUORENE	< 10. MCG/L
N-NITROSODIPHENYLAMINE	< 10. MCG/L
1,2-DIPHENYLHYDRAZINE	< 10. MCG/L
4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L
HEXACHLOROBENZENE	< 10. MCG/L
PHENANTHRENE	< 10. MCG/L
ANTHRACENE	< 10. MCG/L
DI-N-BUTYL PHTHALATE	< 10. MCG/L
FLUORANTHENE	< 10. MCG/L
PYRENE	< 10. MCG/L
BENZIDINE	< 30. MCG/L
BUTYL BENZYL PHTHALATE	< 30. MCG/L
BENZO(A)ANTHRACENE	< 10. MCG/L
3,3'-DICHLOROBENZIDINE	< 10. MCG/L
CHRYSENE	< 10. MCG/L
BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L
DI-N-OCTYL PHTHALATE	< 30. MCG/L
BENZO(B)FLUORANTHENE	< 20. MCG/L
BENZO(K)FLUORANTHENE	< 20. MCG/L
BENZO(A)PYRENE	< 20. MCG/L
INDENO(1,2,3-CD)PYRENE	< 20. MCG/L
DIBENZO(AH)ANTHRACENE	< 20. MCG/L
BENZO(GHI)PERYLENE	< 20. MCG/L

**** END OF REPORT ****

0511

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT(REV)

SAMPLE ID: 911002062 SAMPLE RECEIVED:91/08/16/14 CHARGE: 5.10
PROGRAM: 110:STATE SUPERFUND ANALYTICAL SERVICES
SOURCE ID: DRAINAGE BASIN: GAZETTEER CODE:6027
POLITICAL SUBDIVISION:WARSAW V. COUNTY:WYOMING
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: WARSAW LANDFILL INVESTIGATION #961006
DESCRIPTION:DOUGLAS & SANDRA BROWN 112 PROSPECT ST CELLAR WELL WATER T
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBAN
TEST PATTERN: 10-001:SAFE DRINKING WATER ACT -- METALS ONLY
SAMPLE TYPE: 120:PRIVATE WATER SUPPLY - DRILLED WELL
TIME OF SAMPLING: 91/08/15 14:00 DATE PRINTED:91/10/04

<> CHAIN-OF-CUSTODY FORM ACCOMPANIED THIS SAMPLE. <>

ANALYSIS: ICP-1 ICP GROUPING 1

PARAMETER	RESULT
MERCURY	< 0.2 MCG/L
ARSENIC	< 10. MCG/L
SELENIUM	< 5. MCG/L
LEAD	< 10. MCG/L
BERYLLIUM	< 1. MCG/L
SILVER	< 10. MCG/L
BARIUM	51. MCG/L
CADMIUM	< 5. MCG/L
COBALT	< 5. MCG/L
CHROMIUM	< 5. MCG/L
COPPER	< 5. MCG/L
IRON	543. MCG/L
MANGANESE	17. MCG/L
NICKEL	< 5. MCG/L
STRONTIUM	235. MCG/L
TITANIUM	< 5. MCG/L
VANADIUM	< 5. MCG/L
ZINC	14. MCG/L
MOLYBDENUM	< 20. MCG/L
ANTIMONY	< 80. MCG/L
TIN	< 50. MCG/L
THALLIUM	< 80. MCG/L
ALUMINUM	< 100. MCG/L
CALCIUM	62.1 MG/L
POTASSIUM	1.3 MG/L
MAGNESIUM	15.4 MG/L
SODIUM	25.0 MG/L

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REGIONAL DIRECTOR OF PH ENGINEERING
NEW YORK STATE DEPARTMENT OF HEALTH
584 DELAWARE AVE.
BUFFALO, N.Y.

SUBMITTED BY:BONARSKI

NYSDOH, 1991b.

0304 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 912891 SAMPLE RECEIVED:91/08/15/ CHARGE: 35.50
PROGRAM: 110:STATE SUPERFUND ANALYTICAL SERVICES
SOURCE ID: DRAINAGE BASIN: GAZETTEER CODE:6027
POLITICAL SUBDIVISION:WARSAW V. COUNTY:WYOMING
LATITUDE: . LONGITUDE: , Z DIRECTION:
LOCATION: WARSAW LANDFILL INVESTIGATION
DESCRIPTION:AMOR CORP, 220 S. MAIN ST., WARSAW,NY ARTESAN WELL SOURCE
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: AQUEOUS-1:VOLATILES,KETONES,PESTICIDES,PCB'S,PRIORITY POLLUTANTS
SAMPLE TYPE: 120:PRIVATE WATER SUPPLY - DRILLED WELL
TIME OF SAMPLING: 91/08/14 10:00 DATE PRINTED:91/10/17

ANALYSIS: VH05021 VOLATILE HALOGENATED ORGANICS (DES 310-29)
DATE REPORTED: 91/09/12 REPORT MAILED OUT

PARAMETER	RESULT
CHLOROMETHANE	< 0.5 MCG/L
BROMOMETHANE	< 0.5 MCG/L
VINYL CHLORIDE	< 0.5 MCG/L
DICHLORODIFLUOROMETHANE (FREON-12)	< 0.5 MCG/L
CHLOROETHANE	< 0.5 MCG/L
METHYLENE CHLORIDE (DICHLOROMETHANE)	< 0.5 MCG/L
TRICHLOROFLUOROMETHANE (FREON-11)	< 0.5 MCG/L
1,1-DICHLOROETHENE	< 0.5 MCG/L
BROMOCHLOROMETHANE	< 0.5 MCG/L
1,1-DICHLOROETHANE	< 0.5 MCG/L
TRANS-1,2-DICHLOROETHENE	< 0.5 MCG/L
CIS-1,2-DICHLOROETHENE	< 0.5 MCG/L
CHLOROFORM	< 0.5 MCG/L
1,2-DICHLOROETHANE	< 0.5 MCG/L
DIBROMOMETHANE	< 0.5 MCG/L
2,2-DICHLOROPROPANE	< 0.5 MCG/L
1,1,1-TRICHLOROETHANE	< 0.5 MCG/L
CARBON TETRACHLORIDE	< 0.5 MCG/L
BROMODICHLOROMETHANE	< 0.5 MCG/L
1,2-DICHLOROPROPANE	< 0.5 MCG/L
CIS-1,3-DICHLOROPROPENE	< 0.5 MCG/L
1,1-DICHLOROPROPENE	< 0.5 MCG/L
TRICHLOROETHENE	< 0.5 MCG/L
1,3-DICHLOROPROPANE	< 0.5 MCG/L
DIBROMOCHLOROMETHANE	< 0.5 MCG/L
TRANS-1,3-DICHLOROPROPENE	< 0.5 MCG/L
1,1,2-TRICHLOROETHANE	< 0.5 MCG/L
1,2-DIBROMOETHANE (EDB)	< 0.5 MCG/L
BROMOFORM	< 0.5 MCG/L
1,1,1,2-TETRACHLOROETHANE	< 0.5 MCG/L

**** CONTINUED ON NEXT PAGE ****

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OCT 23 1991
NYS Health Department
Buffalo Regional Office

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584 DELAWARE AVE. SUBMITTED BY:BONARSKI
BUFFALO, N.Y.

0305 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 912891 SAMPLE RECEIVED:91/08/15/ CHARGE: 35.50
POLITICAL SUBDIVISION:WARSAW-V. COUNTY:WYOMING
LOCATION: WARSAW LANDFILL INVESTIGATION
TIME OF SAMPLING: 91/08/14 10:00 DATE PRINTED:91/10/17

PARAMETER	RESULT
1,2,3-TRICHLOROPROPANE	< 0.5 MCG/L
1,1,2,2-TETRACHLOROETHANE	< 0.5 MCG/L
TETRACHLOROETHENE	< 0.5 MCG/L
CHLOROBENZENE	< 0.5 MCG/L
BROMOBENZENE	< 0.5 MCG/L
O-CHLOROTOLUENE	< 0.5 MCG/L
P-CHLOROTOLUENE	< 0.5 MCG/L
1,3-DICHLOROBENZENE	< 0.5 MCG/L
1,2-DICHLOROBENZENE	< 0.5 MCG/L
1,4-DICHLOROBENZENE	< 0.5 MCG/L
PH OF HALOGENATED ALIQUOT	2

ANALYSIS: 5031 AROMATIC PURGEABLES, EPA METHOD 503.1 (DES 310-22)
DATE REPORTED: 91/08/22 REPORT MAILED OUT

PARAMETER	RESULT
	< 0.5 MCG/L
TOLUENE	< 0.5 MCG/L
ETHYLBENZENE	< 0.5 MCG/L
P-XYLENE	< 0.5 MCG/L
M-XYLENE	< 0.5 MCG/L
O-XYLENE	< 0.5 MCG/L
ISOPROPYLBENZENE (CUMENE)	< 0.5 MCG/L
STYRENE	< 0.5 MCG/L
N-PROPYLBENZENE	< 0.5 MCG/L
TERT-BUTYLBENZENE	< 0.5 MCG/L
M-CHLOROTOLUENE	< 0.5 MCG/L
1,3,5-TRIMETHYLBENZENE	< 0.5 MCG/L
1,2,4-TRIMETHYLBENZENE	< 0.5 MCG/L
4-ISOPROPYLTOLUENE (P-CYMENE)	< 0.5 MCG/L
SEC-BUTYLBENZENE	< 0.5 MCG/L
N-BUTYLBENZENE	< 0.5 MCG/L
HEXACHLOROBUTADIENE (C-46)	< 0.5 MCG/L
1,2,4-TRICHLOROBENZENE	< 0.5 MCG/L
NAPHTHALENE	< 0.5 MCG/L
1,2,3-TRICHLOROBENZENE	< 0.5 MCG/L
PH OF AROMATIC ALIQUOT	2

ANALYSIS: KET KETONES - PURGE & TRAP TECHNIQUE (DES 310-25)
DATE REPORTED: 91/08/22 REPORT MAILED OUT

PARAMETER	RESULT
2-BUTANONE (METHYL ETHYL KETONE)	< 10. MCG/L
4-METHYL-2-PENTANONE (MIBK)	< 10. MCG/L
ACETONE	< 10. MCG/L
METHYL TERT BUTYL ETHER	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 912891 SAMPLE RECEIVED:91/08/15/ CHARGE: 35.50
POLITICAL SUBDIVISION:WARSAW-V. COUNTY:WYOMING
LOCATION: WARSAW LANDFILL INVESTIGATION
TIME OF SAMPLING: 91/08/14 10:00 DATE PRINTED:91/10/17

ANALYSIS: XPEST-PCB ORGANOCHLORINE PESTICIDES & PCB'S (DES310-2)
DATE REPORTED: 91/10/03 REPORT MAILED OUT

PARAMETER	RESULT
HCH,ALPHA	< 0.04 MCG/L
HCH,BETA	< 0.04 MCG/L
HCH,GAMMA (LINDANE)	< 0.04 MCG/L
HCH,DELTA	< 0.04 MCG/L
HEPTACHLOR	< 0.05 MCG/L
ALDRIN	< 0.02 MCG/L
HEPTACHLOR EPOXIDE	< 0.05 MCG/L
ENDOSULFAN I	< 0.05 MCG/L
4,4'-DDE	< 0.05 MCG/L
DIELDRIN	< 0.02 MCG/L
ENDRIN	< 0.02 MCG/L
4,4'-DDD	< 0.05 MCG/L
ENDOSULFAN II	< 0.05 MCG/L
[illegible]ALDEHYDE	< 0.02 MCG/L
[illegible]OSULFAN SULFATE	< 0.05 MCG/L
4,4'-DDT	< 0.05 MCG/L
METHOXYCHLOR	< 0.5 MCG/L
TOXAPHENE	< 1.0 MCG/L
CHLORDANE	< 0.1 MCG/L
MIREX	< 0.05 MCG/L
PCB,AROCLOR 1221	< 0.05 MCG/L
PCB,AROCLOR 1016/1242	< 0.05 MCG/L
PCB,AROCLOR 1248	< 0.05 MCG/L
PCB,AROCLOR 1254	< 0.05 MCG/L
PCB,AROCLOR 1260	< 0.05 MCG/L

ANALYSIS: GC-FID-A PRIORITY POLLUTANTS*ACIDS*GC/FID RESULTS
DATE PRINTED: 91/10/17 FINAL REPORT

PARAMETER	RESULT
PHENOL	< 10. MCG/L
2-CHLOROPHENOL	< 10. MCG/L
2-NITROPHENOL	< 10. MCG/L
2,4-DIMETHYLPHENOL	< 10. MCG/L
2,4-DICHLOROPHENOL	< 10. MCG/L
4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
2,4,6-TRICHLOROPHENOL	< 10. MCG/L
2,4,5-TRICHLOROPHENOL	< 10. MCG/L
2,4-DINITROPHENOL	< 10. MCG/L
4-NITROPHENOL	< 10. MCG/L
2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
PENTACHLOROPHENOL	< 10. MCG/L

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0307

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 4 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 912891 SAMPLE RECEIVED:91/08/15/ CHARGE: 35.50
POLITICAL SUBDIVISION:WARSAW V. COUNTY:WYOMING
LOCATION: WARSAW LANDFILL INVESTIGATION
TIME OF SAMPLING: 91/08/14 10:00 DATE PRINTED:91/10/17

ANALYSIS: GC-FID-BN PRIORITY POLLUTANTS*BASE/NEUTRALS*GC/FID RESULTS
DATE PRINTED: 91/10/17 FINAL REPORT

PARAMETER	RESULT
BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
HEXACHLOROETHANE	< 10. MCG/L
NITROBENZENE	< 10. MCG/L
ISOPHORONE	< 10. MCG/L
BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
2-CHLORONAPHTHALENE	< 10. MCG/L
2,6-DINITROTOLUENE	< 10. MCG/L
ACENAPHTHYLENE	< 10. MCG/L
DIMETHYLPHTHALATE	< 10. MCG/L
ACENAPHTHENE	< 10. MCG/L
[illegible]NITROTOLUENE	< 10. MCG/L
[illegible]EHTHALATE	< 10. MCG/L
FLUORENE	< 10. MCG/L
N-NITROSODIPHENYLAMINE	< 10. MCG/L
1,2-DIPHENYLHYDRAZINE	< 10. MCG/L
4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L
HEXACHLOROBENZENE	< 10. MCG/L
PHENANTHRENE	< 10. MCG/L
ANTHRACENE	< 10. MCG/L
DI-N-BUTYL PHTHALATE	< 10. MCG/L
FLUORANTHENE	< 10. MCG/L
PYRENE	< 10. MCG/L
BENZIDINE	< 30. MCG/L
BUTYL BENZYL PHTHALATE	< 30. MCG/L
BENZO(A)ANTHRACENE	< 10. MCG/L
3,3'-DICHLOROBENZIDINE	< 10. MCG/L
CHRYSENE	< 0. MCG/L
BIS(2-ETHYLHEXYL)PHTHALATE	< 0. MCG/L
DI-N-OCTYL PHTHALATE	< 30. MCG/L
BENZO(B)FLUORANTHENE	< 20. MCG/L
BENZO(K)FLUORANTHENE	< 20. MCG/L
BENZO(A)PYRENE	< 20. MCG/L
INDENO(1,2,3-CD)PYRENE	< 20. MCG/L
DIBENZO(AH)ANTHRACENE	< 20. MCG/L
BENZO(GHI)PERYLENE	< 20. MCG/L

****END OF REPORT****

0509 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT(REV)

SAMPLE ID: 911002045 SAMPLE RECEIVED:91/08/16/10 CHARGE: 5.10
PROGRAM: 110:STATE SUPERFUND ANALYTICAL SERVICES
SOURCE ID: DRAINAGE BASIN: GAZETTEER CODE:6027
POLITICAL SUBDIVISION:WARSAW V. COUNTY:WYOMING
LATITUDE:42 43 52. LONGITUDE:78 07 41. Z DIRECTION:
LOCATION: WARSAW LANDFILL INVESTIGATION 96/006
DESCRIPTION:ALMOR CORP 220 S. MAIN ST WARSAW NY ARTESIAN WELL SOURCE
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
TEST PATTERN: 10-001:SAFE DRINKING WATER ACT - METALS ONLY
SAMPLE TYPE: 120:PRIVATE WATER SUPPLY - DRILLED WELL
TIME OF SAMPLING: 91/08/14 10:00 DATE PRINTED:91/10/04

ANALYSIS: ICP-1 ICP GROUPING 1

PARAMETER	RESULT
MERCURY	< 0.2 MCG/L
ARSENIC	< 10. MCG/L
SELENIUM	< 5. MCG/L
LEAD	< 10. MCG/L
BERYLLIUM	< 1. MCG/L
SILVER	< 10. MCG/L
BARIUM	502. MCG/L
CADMIUM	< 5. MCG/L
[illegible]	< 5. MCG/L
CHROMIUM	< 5. MCG/L
COPPER	< 5. MCG/L
IRON	933. MCG/L
MANGANESE	24. MCG/L
NICKEL	< 5. MCG/L
STRONTIUM	760. MCG/L
TITANIUM	< 5. MCG/L
VANADIUM	< 5. MCG/L
ZINC	228. MCG/L
MOLYBDENUM	< 20. MCG/L
ANTIMONY	< 80. MCG/L
TIN	< 50. MCG/L
THALLIUM	< 80. MCG/L
ALUMINUM	< 100. MCG/L
CALCIUM	78.0 MG/L
POTASSIUM	1.6 MG/L
MAGNESIUM	23.4 MG/L
SODIUM	22.0 MG/L

**** CONTINUED ON NEXT PAGE ****

COPIES SENT TO: CO(2), RO(1), LPHE(1), FED( ), INFO-P( ), INFO-L( )

REGIONAL DIRECTOR OF PH ENGINEERING
NEW YORK STATE DEPARTMENT OF HEALTH
584 DELAWARE AVE.
BUFFALO, N.Y.

SUBMITTED BY:BONARSKI

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 RESULTS OF EXAMINATION FINAL REPORT(REV)

SAMPLE ID: 911002045 SAMPLE RECEIVED:91/08/16/10 CHARGE: 5.10
POLITICAL SUBDIVISION:WARSAW V. COUNTY:WYOMING
LOCATION: WARSAW LANDFILL INVESTIGATION
TIME OF SAMPLING: 91/08/14 10:00 DATE PRINTED:91/10/04

REVISION DATE 91/10/02, FOLLOWING PARAMETERS ADDED AFTER SAMPLE REPORTED

FOLLOWING PARAMETERS NOT PART OF TEST PATTERN

PARAMETER	RESULT
CO PHONED MO DAY TIME	10-1 JD

**** END OF REPORT ****

NEW YORK STA NYSDOT, 1986.

DEPARTMENT OF TRANSPORTATION

Region 4 Office: 1530 Jefferson Road, Rochester, New York 14623

PO BOX 370
3879 ROUTE 19
WARSAW, N.Y. 14569
JANUARY 15, 1986

FILE: 61J11

EDWIN WAGENBLASS, MAYOR
VILLAGE OF WARSAW
15 SOUTH MAIN STREET
WARSAW, N.Y. 14569

DEAR MR. WAGENBLASS:

I WAS RECENTLY CONTACTED BY ROBERT MITREY, OF THE STATE D.E.C., ABOUT SNOW DUMPED AT THE OLD WARSAW LANDFILL. OUR DEPARTMENT RECENTLY AUTHORIZED AND PARTICIPATED IN THE REMOVAL OF SNOW FROM (ROUTE 19) MAIN STREET AND BUFFALO STREET (ROUTE 20A), IN THE VILLAGE OF WARSAW. BEFORE WE STARTED THIS OPERATION, TOM GABEL TOLD ME THAT D.E.C. HAD GIVEN PERMISSION TO DUMP SNOW IN A NEW AREA AT THE OLD LANDFILL SITE. BOB MITREY INFORMED ME ON JANUARY 15, 1986 THAT THERE IS NO WAY THAT D.E.C. WOULD AUTHORIZE SNOW DUMPING AT THE LANDFILL. HAD I KNOWN THIS I WOULD HAVE INSISTED THAT AN ALTERNATE DUMP SITE WAS USED.

PLEASE BE AWARE THAT IN THE FUTURE THAT AN ALTERNATE DUMP SITE MUST BE FOUND. I NEED THE VILLAGE'S ASSISTANCE IN THIS AREA. I WILL NOT AUTHORIZE, PARTICIPATE IN OR PAY FOR COMPLETE SNOW REMOVAL ON THE STATE HIGHWAYS IN THE VILLAGE OF WARSAW. IF TRAFFIC IS AFFECTED BY EXCESS SNOW IN THE PARKING LANES, WE WILL ONLY REMOVE WHAT IS NECESSARY TO RESTORE SAFE OPERATION OF THE HIGHWAY .

PLEASE LET ME KNOW IF AN ALTERNATE SITE IS AVAILABLE.

VERY TRULY YOURS,

LEO M. CAMPAGNA, TMEI
WYOMING COUNTY

LMC/jg
cc: R. Mitrey
P. White
file

ES ENGINEERING-SCIENCE COMPANIES

MEMORANDUM TO FILE

Parsons ES, 1993a.

JOB NO. _____

FILE DESIGNATION Warsaw

DATE 7/22/93 TIME _____

PHONE CALL FROM _____ PHONE NO. _____

PHONE CALL TO Robert Wozniak NYSDEC - Region 9 PHONE NO. (716) 851-7220

CONFERENCE WITH _____

PLACE _____

SUBJECT - Drums were found during grading as part of the construction of the east-west ditch.

- Cut into the drums when doing some grading in the south end.
- washed gravel underlies the landfill; with substantial flow.
- Drums were reportedly disposed on-site, documentation in files.
- Contact Jerry Petriziak for additional information.

SIGNED _____

ES ENGINEERING-SCIENCE COMPANIES

Parsons ES, 1993b.

MEMORANDU...

JOB NO. _____

FILE DESIGNATION _____

DATE 7/19/93 TIME _____

PHONE CALL FROM _____ PHONE NO. _____

PHONE CALL TO Gerard Miller PHONE NO. (716) 786-3554
Former Highway Dept. superintendent

CONFERENCE WITH _____

PLACE _____

SUBJECT Superintendent from 1972-1988

- On-site burning limited to wood
- Mallory Timer dumped a few drums
- Doesn't remember Ahnor dumping drums on-site. Says Ahnor was just getting started when landfill closed. Used to be an elevator company
- no consistent progression of filling
- Fire mentioned by Tom Gebel was old piles of wood. Happened sometime between 1965-68
- Buried drum was found during construction of E-W drainage ditch. No other drums were found. Note: the E-W drainage ditch runs through center of landfill and required excavation of fill.
- were no designated areas for certain types of waste (i.e. just dumped anywhere).

SIGNED _____

ES-COR-77 (12/91)

ES ENGINEERING-SCIENCE COMPANIES

MEMORANDUM TO FILE

Parsons ES, 1993c.

JOB NO. Warsaw

FILE DESIGNATION

DATE 7/19/93 TIME

PHONE CALL FROM PHONE NO.

PHONE CALL TO Redford Parkhurst PHONE NO. (716) 786-8454
Former Sanitation worker

CONFERENCE WITH

PLACE

SUBJECT - Worked for Warsaw 1959-1973

- General pattern of filling was from ~~No~~ South to North. In general no digging because of shallow groundwater; just filling.
- Site always had a gate and was locked at night. However site was opened during day with no supervision (while workers were out on routes).
- Remembers at least two fires in 1960's
- Only remembers seeing one or two drums (empty)

SIGNED

ES ENGINEERING-SCIENCE COMPANIES

MEMORANDUM TO FILE

Parsons ES, 1993e.

JOB NO. S4327.06.05

FILE DESIGNATION Warsaw

DATE 7/27/93 TIME

PHONE CALL FROM _____ PHONE NO. _____

PHONE CALL TO Don Gott PHONE NO. (716) 786-8197

CONFERENCE WITH _____

PLACE _____

SUBJECT Called to check on background information.

(1) Map showing locations of drums

Drum locations were identified by a Mr. Callfield (Mr. Gotts is not sure if he is still alive). Mr. Callfield supposedly operated the bull dozer at the facility. Listed in phone book (716) 786-5076.

Mr. Gott never actually saw drums disposed at site.

(2) Mallory Timer made timers for appliances. Disposed of alot of plastics at site. Mallory Timer use to be located where Amor A facility is on c/o Main and Industrial

(3) Progression of land fill was north to south.

Note: I called Tom Gobel from Village of Warsaw. He confirmed that Bob Callfield did work at site (for Village) but is no longer here.

SIGNED _____

Tallamy, VanKuren, Gertis, and Thielman, 1979.

VILLAGE OF WARSAW

SANITARY LANDFILL

CLOSURE PLAN

December, 1979

By:

Tallamy, Van Kuren, Gertis and Thielman
70 Linwood Avenue
Orchard Park, New York 14127

790730

TABLE OF CONTENTS

LIST OF EXHIBITS

LIST OF APPENDICES

1.0 AUTHORIZATION

The firm of Tallamy, Van Kuren, Gertis and Thielman was authorized by the Village of Warsaw at its regular Village Board Meeting of October 15, 1979, to proceed with preparation of a final closure plan as per the letter of authorization dated August 1, 1979.

2.0 PROBLEM DESCRIPTION AND BACKGROUND

In the past, the Village maintained a landfill for the disposal of the residential wastes produced by Village residents. A site plan of the landfill is shown in Exhibit 1. The landfill was closed in 1974 and refuse disposal contracted out. The landfill, closed before adoption of Part 360 of the New York State Conservation Law, has not been officially closed by the New York State Department of Environmental Conservation.

In its current state, three problem areas exist at the site. Each of these is discussed separately below.

2.1 Cover, Grading and Vegetation --

Since the site was closed without the aid of the current guidelines for refuse disposal, some areas of the site were left without two feet of final cover. In addition to these areas, some areas have adequate cover but are not property graded or lack adequate vegetative growth.

2.2 Stream Bank Erosion --

At the northeast corner of the site, the Oatka Creek has begun to erode the stream bank. As the erosion took more of the bank, old decayed refuse appeared about 1½ feet below the top of the bank. During periods of high flow, the creek undermines the bank causing the refuse to drop into the stream bed.

2.3 Leachate Discharges --

As a result of a landfill inspection by the New York State Department of Environmental Conservation, it was reported that leachate discharges were occuring in a drainage ditch located on the west side of the road about 2000 feet south of the access gate (along road) and along the creek bank about 800 feet south of the access gate. Other leachate discharges were found in a drainage channel just north of the previously described ditch. These discharges appear as a red or orange discoloration on the stream bed or in some cases as a small reddish flow.

The leachate discharges appear to be the result of two conditions. The first is that improper grading allows runoff to pocket on the landfill surface and slowly percolate through the cover material and refuse producing leachate. This condition can be easily corrected by proper grading of the cover material.

The second and more extensive problem is that ground and surface water draining from the hill to the east apparently travels through the soil layer or in the shale bedrock and enters the landfill subsurfacely. The water travels through deposited refuse and reaches sand and gravel deposits from which it leaves the landfill and appears in the drainage ditches.

3.0 FIELD INVESTIGATIONS

In order to further examine the extent of the previously described problems and methods for their solutions, field investigations were carried out. Numerous test holes were dug in the areas where leachate discharges were located. Additional shallow holes were dug throughout the site to determine cover depths and, in the area of stream bank erosion, to determine the depth of refuse deposited. Appendix 1 is a log of the test hole results.

Also, with the assistance of Village officials, the approximate boundaries of the areas which to the best of their knowledge have actually received refuse were mapped. These areas are shown on Exhibit 3.

3.1 Leachate Investigation --

The test hole logs in Appendix 1 indicate various subsurface conditions exist in the area originally cited for a leachate discharge. On top of the slope, which is a predominate surface feature, test hole no. 1 shows some fill material (extra fill material has been added throughout a large part of the site from a recent sewer construction project) over the original clayey silt soil material. This layer is underlain by a sandy gravel vein, which is about 1 foot deep, in which clear water was found flowing. Test holes no. 3 and 6, also located above the slope, both show a similar sand and gravel layer with red discoloration. Test hole no. 3 had water movement while test hole no. 6 was dry. Test hole no. 3 had refuse deposited in it.

Below the slope, test holes no. 2, 4 and 5 indicate the same varied conditions as were found above the slope. Test holes no. 2 and 5 had a sand and gravel layer underlying clayey silt. This gravel layer had a red discoloration with test hole no. 2 having a flow and test hole no. 5 being dry. Test hole no. 4 had a similar soil horizen with a clear water flow in the gravel layer.

Based on the similar soil structures and various flow and leachate conditions, it appears that a combination of ground and surface water enters the landfill and leaves via various sand and gravel routes. The ground water would appear to enter laterally through the gravel layer or vertically through the weathered shale substratum which reportedly underlies the site (see Wyoming County Soil Survey). Surface water may enter where ponding occurs, but the main flows are throught to be ground water oriented.

Along the stream bank, no direct cause was located for the leachate discharge (indicated by small area of reddish stream bank). Other leachate discharges were found along both sides of the drainage channel south of this indicated area. Since this area is known to have a seasonal high ground water level at the original ground surface, the conditions which apparently cause the previously described problem are likely to occur here.

3.2 Cover Investigation --

The test holes dug indicated adequate cover throughout the site except in the vicinity of test holes no. 11 and 12. Here, cover depth ranges from 6 inches to 1 foot. The portion involved consists of an area about 100 feet wide by 250 feet deep and must receive from 1 to 1½ feet of cover material.

3.3 Stream Bank Erosion --

In the area where Oatka Creek has eroded the stream bank and uncovered refuse, numerous shallow holes were dug to determine the extent of refuse landfilled here. The holes indicate that about 1½ feet of fill exists over a 1 foot depth of refuse. This refuse is not known to be of Village origin. A strong possibility exists that a Civilian Conservation Corps camp, once located at this site, may have used this area as a dumping ground. The affected area covers approximately 150 feet along the stream bank.

4.0 ALTERNATIVES

4.1 Leachate --

Three alternatives were examined for handling the leachate problems at the site. The first consists of construction of clay berms around the entire site in a step by step process blocking leachate breakouts as they occur. Due to the nature of the subsurface conditions, this would be a long and costly

process and eventually would result in an overflowing effect since the ground-water flow is most likely under some pressure due to the relative height of the hill to the east. This overflow would necessitate collection and treatment.

The second alternative would be to eliminate the surface and ground-water flows. The surface flows will be eliminated or reduced as much as possible by the final closure plan. The elimination of ground water would require extremely deep excavations due to the nature of ground water flow in shale bedrock (bedding planes, etc.). This process is felt to be far too costly with the possibility of not being able to remove all of the subsurface flow.

The last alternative would involve the conversion of the two drainage ditches experiencing leachate discharges to treatment lagoons and providing for the re-routing of the surface runoff currently reaching these ditches. A clay berm would be constructed along the top of the stream bank previously indicated as having a leachate discharge. The berm will be constructed deep enough to cut off direct flow to the creek and allow the flow to follow the channels which lead to the proposed treatment lagoon.

4.2 Stream Bank Erosion --

Two alternatives were considered for handling the stream bank erosion problem. The United States Department of Agriculture's Soil Conservation Service was contacted and developed plans for relocating the stream bed to protect the eroding area.

The second alternative would involve the removal and disposal of the refuse in the affected area and protection of the stream bank only where the leachate discharge occurred. Both of these are feasible alternatives and as such a decision based on cost will be used to select the recommended method.

5.0 RECOMMENDATIONS AND COSTS

5.1 Leachate --

In order to handle the leachate conditions at the site, it is recommended that the lagoon method be selected. This plan is depicted in Exhibit 4. The berm method would require eventual treatment after expending a high construction cost. The ground water removal method is at best poor due to the high uncertainty of being able to remove the entire subsurface flow.

The estimated cost for construction of the lagoons, restructuring the drainage pattern and building the clay berm is approximately $9500. (See Appendix 2 for detailed estimate).

5.2 Stream Bed Erosion --

As previously mentioned, the method of handling the stream bed erosion would be selected based on cost. With this in mind the refuse removal method is selected based on a cost of approximately $13,500 including protection of the existing stream bank as previously indicated. The cost of stream relocation as provided by the Soil Conservation Service is approximately $38,000.

The refuse removal scheme has the added environmental benefit of allowing the stream to follow its natural course.

5.3 Cover, Grading and Seeding --

In accordance with the previously discussed problems in this area, the Village shall provide proper cover where required and regrade and seed the areas indicated in Exhibit 4. All final slopes shall be not less than 2% or greater than 5%. The cost of this portion of the final closure plan is approximately $8,200.

6.0 FINAL CLOSURE

6.1 Grading and Seeding --

As part of its final closure plan, the Village must maintain adequate slope and vegetation on all areas of the landfill which have received refuse. Semi-annual inspections must be carried to assure conformance with Part 360. Any areas found to be eroded or ponded must be promptly filled, graded and seeded.

6.2 Use --

As a final use, the Village plans to construct its Public Works Department Offices and Highway Garage as located on Exhibit 4. This will be undertaken as monies become available to the Village for this purpose.

The Village also plans to use this site for depositon of snow removed from the Village streets and for disposal of leaves and brush as the need arises yearly.

7.0 IMPLEMENTATION

December 21, 1979	- Submission of Report to DEC
March 21, 1979	- Approval by DEC
June 1, 1979	- Begin final closure work (may require adjustment based on weather)
August 31, 1979	- Complete final closure based on three month work schedule and June 1, 1979 construction start.

Respectfully Submitted,

TALLAMY, VAN KUREN, GERTIS AND THIELMAN

Nicholas J. Pinto

By: Nicholas J. Pinto, Project Manager

Thomas P Casey

Thomas P. Casey, Associate Partner

APPENDIX 1
TEST HOLE LOG

#1	0-9'	- Fill material over clayey silt
		- No refuse located
	9-10'	- Sandy gravel vein - some water
#2	0-5'	- Clayey Silt Material
	5-6'	- Sandy gravel vein - red coloration to water flowing to drainage ditch
#3	0-5'	- Fill Material
	5-9'	- Refuse
	9-11'	- Clayey silt soils
	11-12'	- Sandy gravel vein w/water - no discoloration
#4	0-7'	- Clayey silt
	7-8'	- Sandy w/gravel - water - no discoloration
		- Walls collapsed before backfill
#5	0-3'	- Clayey Silt
	3-4'	- Some refuse mixed w/soil material
	4-9'	- Clayey Silt
	9-9½'	- Sandy w/gravel - red coloration - no water
#6	0-5'	- Fill material
	5-8'	- Silt w/some clay
	8-9'	- Gravel w/some sand red coloration - no water
	9'	- Mucky clay
#7	0-2'	- Fill material
	2-5'	- Refuse
#8	0-2'	- Cover Material
	2'	- Refuse
#9	0-2'	- Cover Material
	2'	- Refuse
#10	0-2½'	- Cover Material
	2½'	- Refuse
#11	0-1'	- Cover
	1'	- Refuse
#12	South Side	
	0-6'	- Cover Material
	6-8"	- Refuse
	8"	- Silty Material
	North Side	
	0-3'	- Silty Material
	3'	- Clayey Silt

#13	0-5'	- Fill Material
	5-8'	- Refuse
	8'	- Clayey Silt
#14	0-5'	- Fill Material
	5-9'	- Clayey Silt
#15	0-1½'	- Fill Material
	1½-2½'	- Old Well Decayed Refuse
	2½'	- Silty Material

Note: Numerous hole produced the same results for approximately 150' along stream bed.

APPENDIX 2

1979 CONSTRUCTION COSTS

A) SCS Estimate - Stream Relocation

350 LF Preparation @ $10/Ft.	$ 3,500
500 LF Laying Rock @ $10/Ft.	5,000
20 Man Days Chinking Rock @ $50/Day	1,000
1590 Tons Rock @ $14/Ton	22,300
	$31,800
Contingencies	3,200
Engineering	3,200
Total	$38,200

B) Stream Bed Protection - Refuse Removal

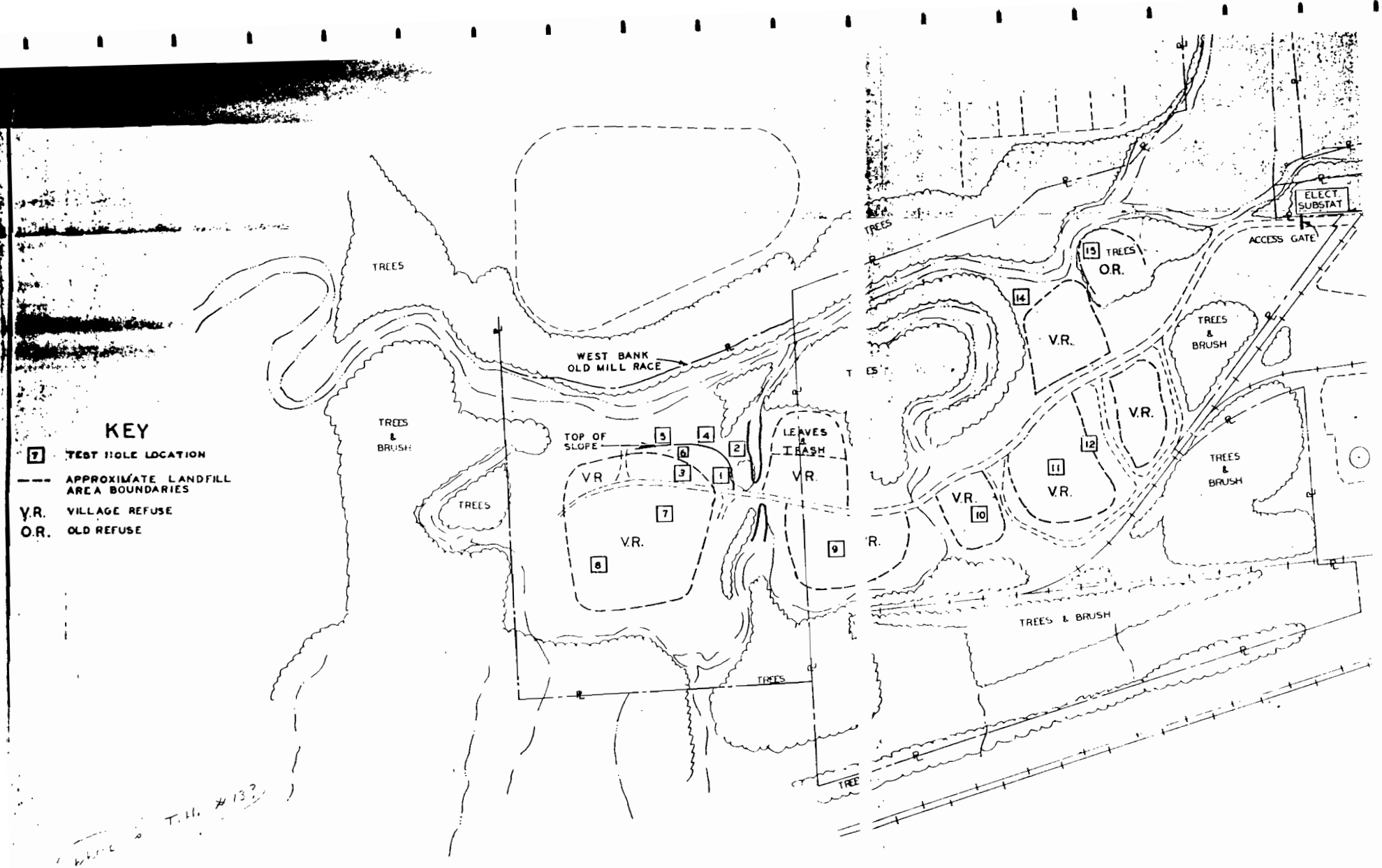
LS Clear, Grub and Regrade area 150'x40'	$ 2,000
555 CY Refuse Removal and Disposal - $600/CY	3,340
100 LF Preparation @ $10/Ft.	1,000
100 LF Laying Rock @ $10/Ft.	1,000
4 Man Days Chinking Rock @ $50/Day	200
250 Ton Rock @ $14/Ton	3,500
	$11,040
Contingencies	1,100
Engineering	1,100
	$13,240

C) Lagoon Construction

LS Dike Construction	$ 2,600
11 CY Clay Barrier @ $7/CY	800
60 LF 8" CMP Discharge Pipe @ $8/Ft.	500
2 EA Concrete Headwall @ $250/EA	500
LS Establish Vegetation	500
1000 LF Ditch Regrading @ $1/Ft.	1,000
1250 LF Ditch Excavation @ $2.00/Ft.	2,500
LS Lagoon Cleaning, Brush Removal, etc.	1,100
	$ 9,500

D) Other Costs

Cover Material - 460 CY @ $4/CY	$ 1,840
Grading and Seeding - 8 acres @ $800/acre	$ 2,400



VILLAGE OF WARSAW

SANITARY LAND FILL
FIELD INVESTIGATION

SCALE: 1" = 250'

D.M.T. 12-18-79
ADDED KEY & INFO.

WCHD, 1991.

WYOMING COUNTY HEALTH DEPARTMENT
39 NORTH MAIN STREET
WARSAW, NEW YORK 14569
ENVIRONMENTAL HEALTH (716) 786-8894

June 5, 1991

Mr. Cameron O'Connor
New York State Department of Health
Western Regional Office
584 Delaware Avenue
Buffalo, New York 14202

RE: Warsaw Landfill
Water Sampling

Dear Mr. O'Connor:

Per our conversation of June 5, 1991 please find enclosed a map of the Village Warsaw locating the alleged wells, currently in operation in the village, given by Mr. Don Gott. Supposedly none of these wells supply water for consumption or are connected to the Warsaw Village Supply.

The residences noted are as follows:

1) Almor - industrial cooling tower
2) Almor - artesian well
3) A. Gardner - 15 Jefferson St. Lo 57
4) E. Jordan - 98 N. Maple St.
5) D. Webster - 106 N. Maple St.
6) W. Miller - 109 N. Maple St.
7) D. Prince - 123 N. Maple St.
8) L. Putnam - 129 N. Maple St.
9) D. Gott - 95 N. Maple St.

Please note the locations in reference to the landfill and let me know which locations you would choose to sample. To date, only Mr. Gott has been contacted and agrees to the suggested sampling previously mentioned.

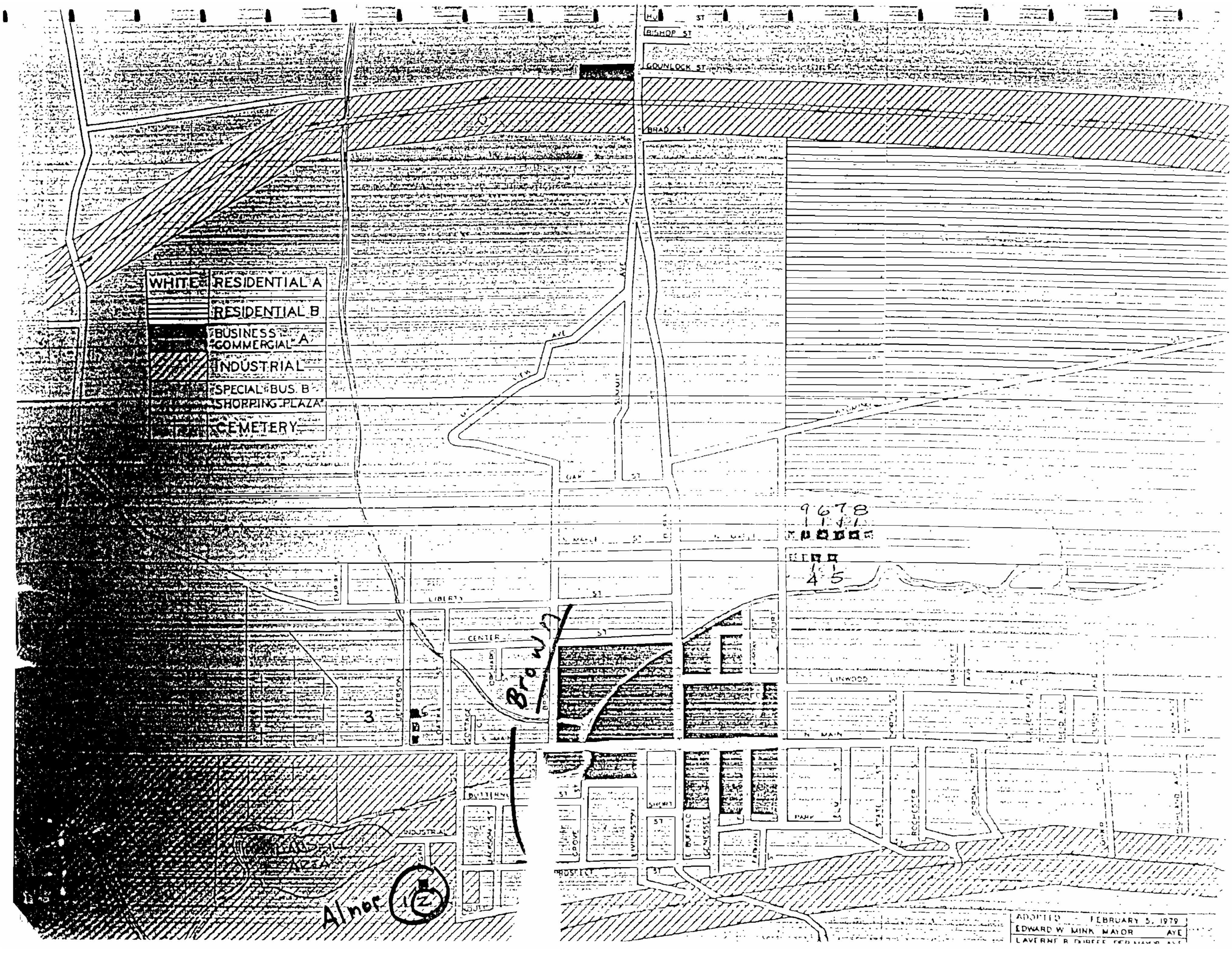
Should you have any questions don't hesitate to call.

Very truly yours,

Gary E. Bonarski
Public Health Engineer

mla
enclosure

RECEIVED
JUN 7 1991
BUFFALO REGIONAL OFFICE


WHITE
RESIDENTIAL A
RESIDENTIAL B
BUSINESS COMMERCIAL A
INDUSTRIAL
SPECIAL BUS. B
SHOPPING PLAZA
CEMETERY
BISHOP ST
GOUNLOCK ST
BRAD ST
AVE
JEFFERSON
LIBERTY
CENTER
ST
N. MAIN
LINWOOD
COURT
STATE
ROCHESTER
GROVE
LIVINGSTON
E. BUFFALO
GENESSEE
INDUSTRIAL
PARK
Brown
Alnor
3
9678
4 5
ADOPTED FEBRUARY 5, 1979
EDWARD W. MINK MAYOR