FUSRAP
Maywood Superfund Site

Annual Environmental Monitoring Report, 2003

Formerly Utilized Sites Remedial Action Program
Maywood Superfund Site

Prepared by:

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Prepared for:

US Army Corps
of Engineers®

Contract No. DACW41-99-D-9001

July 2004, Revision 0

ANNUAL ENVIRONMENTAL MONITORING REPORT, 2003

FUSRAP MAYWOOD SUPERFUND SITE
MAYWOOD, LODI, AND ROCHELLE PARK, NEW JERSEY

SITE-SPECIFIC ENVIRONMENTAL RESTORATION
CONTRACT No. DACW41-99-D-9001
TASK ORDER 0002
WAD 01, WBS 07

Submitted to:

Department of the Army
U.S. Army Engineer District, Kansas City
Corps of Engineers
700 Federal Building
Kansas City, Missouri 64106

Department of the Army
U.S. Army Engineer District, New York
Corps of Engineers
FUSRAP Project Office
26 Federal Plaza
New York, New York 10007

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RECORD OF REVISIONS

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Revision 0	Issue to regulators for review	July 2004

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ABBREVIATIONS AND ACRONYMS

AEC	Atomic Energy Commission
AL	Action Level
ASTM	American Society for Testing and Materials
BEE	Baseline Ecological Evaluation
BNI	Bechtel National, Incorporated
Bq	Becquerel
CAA	Clean Air Act
CAP88-PC	Clean Air Act Assessment Package 1988 – Personal Computer
CDQMP	Chemical Data Quality Management Plan
CFR	Code of Federal Regulations
cm	centimeter
DCE	dichloroethene
DOE	U.S. Department of Energy
DTW	Depth to Water
Eh	oxidation / reduction potential
EML	Environmental Measurements Laboratory
EMP	Environmental Monitoring Program
EPA	U.S. Environmental Protection Agency
fl oz	Fluid Ounce
FMSS	FUSRAP Maywood Superfund Site
ft	feet
ft/ft	feet/feet
FUSRAP	Formerly Utilized Sites Remedial Action Program
g	gram
gal	gallon
GW	Groundwater
GWQC	Groundwater Quality Criteria
GWQS	Groundwater Quality Standard
GWRI	Groundwater Remedial Investigation
ha	hectare
HEPA	High Efficiency Particulate Air
ICRP	International Commission on Radiological Protection
IG	Instruction Guides
in.	inches
kg	kilogram
km	kilometers
L	liters
lb	pound
LEL	Lowest Effects Level
m	meters
m^3	cubic meters
mg/L	milligrams per liter
mi	miles
MCL	Maximum Contaminant Level
MCW	Maywood Chemical Works
MeV	million electron volts
mg/kg	milligram per kilogram
MISS	Maywood Interim Storage Site
mL	milliliter

mSv	millisievert
mrem	millirem
mrem/yr	millirem per year
µg	micrograms
µg/L	micrograms per liter
NA	Not Applicable
NJ	New Jersey
NJAC	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NGVD	National Geodetic Vertical Datum
NRC	Nuclear Regulatory Commission
oz	ounces
PCE	tetrachloroethene
pCi	picocurie
pCi/g	picocuries per gram
pCi/L	picocuries per liter
ppm	parts per million
PQL	Practical Quantitation Limit
Ra	radium
Ra-226	radium-226
Ra-228	radium-228
RCRA	Resource Conservation and Recovery Act
Rn	radon
Rn-220	radon-220
Rn-222	radon-222
ROD	Record of Decision
SCC	Soil Cleanup Criteria
SEL	Severe Effects Level
SDWA	Safe Drinking Water Act
SI	Systeme Internationale
SMCL	Secondary Maximum Contaminant Level
SOP	Standard Operation Procedure
SQL	Sample Quantitation Limit
TCE	trichloroethene
TCRA	Time Critical Removal Action
TDS	total dissolved solids
TEDE	Total Effective Dose Equivalent
TETLD	Tissue-equivalent Thermo-luminescent Dosimeter
Th	thorium
Th-228	thorium-228
Th-230	thorium-230
Th-232	thorium-232
TOC	Top of Inner Casing
U	uranium
U-238	uranium-238
$U_{(tot)}$	total uranium
USACE	U. S. Army Corps of Engineers
VOC	Volatile Organic Compound
VP	Vicinity Property
WL	Working Level
yd^3	cubic yard

EXECUTIVE SUMMARY

This report presents and interprets analytical results and measurements obtained from the year 2003 Environmental Monitoring Program (EMP) for the Maywood Interim Storage Site (MISS) located in Bergen County, New Jersey (NJ), under the Formerly Utilized Sites Remedial Action Program (FUSRAP). The FY 1998 Energy and Water Appropriations Bill, signed into law on October 13, 1997, transferred management of FUSRAP from the U.S. Department of Energy (DOE) to the U.S. Army Corps of Engineers (USACE). Consistent with USACE policy, the U.S. Nuclear Regulatory Commission (NRC) and U.S. Environmental Protection Agency (EPA) criteria for radionuclides have been used to evaluate analytical results. The cleanup criteria established in the Record of Decision (ROD) for soils at the FUSRAP Maywood Superfund Site (FMSS), which was approved by the USEPA on September 22, 2003, are used to evaluate the radiological results for sediment.

In the early history of the site, from 1916 to 1959, Maywood Chemical Works (MCW) extracted radioactive thorium (Th) and rare earth metals from monazite sand resulting in contamination of the property with low levels of Th and lower levels of uranium (U) and radium (Ra). The EMP for the site includes sampling of the air, water, and streambed sediment to aid in the evaluation of potential hazards to the off-site population presented by these materials. This report compares the results taken in the year 2003 for external gamma radiation measurements, radon (Rn) gas measurements, and samples of various environmental media to the historical background conditions and to applicable regulatory and other criteria.

The ROD soil cleanup criteria, Federal and State regulations, and other criteria are used to evaluate concentrations of radioactive constituents and doses at the site (DOE 1997a and 1997b). The calculated doses to the hypothetically maximally exposed resident and worker from direct gamma radiation at the MISS in 2003, based on the measured Tissue-equivalent Thermo-luminescent Dosimeter (TETLD) results, are 29.3 millirems per year (mrem/yr) and 6.74 mrem/yr, respectively. This is well below the NRC standard of 100 mrem/yr. Measured radon-222 (Rn-222) concentrations for 2003 ranged from non-detect to 0.4 picocuries per liter (pCi/L), which is well below the New Jersey Department of Environmental Protection (NJDEP) guideline of 3 pCi/L and EPA action level (AL) of 4 pCi/L. Radon-220 (Rn-220) concentrations ranged from non-detect to a maximum of 3.12 pCi/L, which is also below the EPA AL.

The airborne particulate dose to the hypothetically maximally exposed individual in the year 2003 was 0.0011 mrem/year, which is well below the 10 mrem/year standard specified in the Code of Federal Regulations Title 40, Part 61 (40CFR61), Subpart H. No radiological parameters measured in sediment, surface water or groundwater exceeded relevant criteria except as discussed below:

- The measured concentration of various radionuclides in sediment samples collected in Lodi Brook exceeded the ROD soil cleanup criteria at two locations, SWSD006 and SWSD007. The maximum concentrations of radium-226 (Ra-226) [3.77 pCi/g] and thorium-232 (Th-232) [5.50 pCi/g] were found in the eastern tributary of Lodi Brook at location SWSD007. In the absence of regulatory criteria for sediment, the limits established in the ROD were used to evaluate the concentrations of radioactive constituents in shallow streambed sediment. Upstream in Lodi Brook at location SWSD006, the combined concentration of Ra-226 (2.54 pCi/g) and Th-232 (3.14 pCi/g) exceeded the soil cleanup criteria. Downstream at the confluence of the eastern and western tributaries of Lodi Brook (SWSD005), the detected concentrations for all measured radionuclides were above background, but below the ROD soil cleanup criteria. Further downstream at SWSD010, SWSD012, and SWSD015 along Lodi Brook, the detected concentrations of all analyzed radionuclides were below the ROD soil cleanup criteria. In

Westerly Brook, the concentrations of all analyzed radionuclides for sediment samples collected in 2003 at SWSD001 and SWSD002 were below the ROD soil cleanup criteria. The measured radionuclide concentrations at SWSD003, the upstream monitoring location in Westerly Brook, were at background levels. The results for 2003 are within the historical range for these radionuclides and confirm the continued presence of radiological contamination in the streambed sediment of the eastern tributary of Lodi Brook.

- The same conservative Federal and State drinking water Standards for radiological contaminants were used as criteria to evaluate monitoring results for groundwater. In 2003, there were two exceedances of the Ra criteria in groundwater samples with a maximum concentration of 6.08 pCi/L reported at MISS06A for the combined Ra-226 and Ra-228. There was one exceedance of the U criteria with a measured U concentration of 109.60 pCi/L or 160.48 micrograms per liter (µg/L) at monitoring well MISS05A. There were six exceedances of the gross alpha criteria with the highest measured concentration of 220.00 pCi/L reported at monitoring well B38W15S. All other gross alpha exceedances ranged from 16.00 to 151.00 pCi/L. There were also eight exceedances of the gross beta criteria with the highest measured concentration of 2,910 pCi/L occurring at monitoring well B38W15S. The results for 2003 are within the historical range for Ra, Th, and U (gross alpha and gross beta have been monitored only in the past 3 years).

The Federal and State standards for chemical contamination in soil and water were conservatively used as criteria to evaluate monitoring results for streambed sediments, surface water, and groundwater. Some metals exceeded the NJ soil cleanup criteria in sediment samples. Some metals exceeded the State standards in surface water. Some metals in groundwater samples exceeded the Federal and State standards. Some volatile organic compounds (VOCs) in groundwater exceeded the State standards:

- The concentration of arsenic in sediment from Lodi Brook at SWSD006 of 20.5 milligrams per kilogram (mg/kg) was slightly above the applicable State soil cleanup criteria (20 mg/kg). The elevated concentration of arsenic at SWSD006 was the only location along Lodi Brook where the sediment concentration of any metal exceeded the corresponding State soil cleanup criteria. At the upstream (background) location for Westerly Brook (SWSD003), the sediment concentration of zinc (4,090 mg/kg) was considerably above the State soil cleanup criteria (1,500 mg/kg). This was the only exceedance of the State proposed soil cleanup criteria in Westerly Brook. There were exceedances of the Severe Effects Level (SEL) for chromium, copper, and lead in Lodi Brook at location SWSD006. The chromium and lead concentrations in sediment also exceeded the SEL at SWSD007. Exceedances of the SEL for lead, copper, nickel and zinc were also found in Westerly Brook at SWSD003. There were also several exceedances of the Lowest Effects Level (LEL) for lead, copper, zinc, chromium, and nickel in both Lodi Brook and Westerly Brook. Elevated concentrations of metals are expected given the generally industrialized nature of the area surrounding the site. Off-site contributors of these metals are likely. Concentrations of heavy metals at upstream and downstream environmental monitoring locations have frequently exceeded the NJ soil cleanup criteria. The somewhat sporadic nature of the fluctuations in metal concentrations implies that contaminants present in local areas are dispersed during heavy runoff.
- Federal Safe Drinking Water Act (SDWA) maximum contaminant levels (MCLs) and NJ Groundwater Quality Standards for Class IIA aquifers were used as conservative criteria to evaluate monitoring results for chemical contaminants in surface water. Metals that exceeded both the Federal and State standards in Lodi Brook and Westerly Brook include iron and manganese. The concentration of arsenic exceeded the State standards in Westerly Brook at SWSD004 while the lead concentration exceeded the State standards in Lodi Brook at SWSD006.

- Arsenic exceeded the SDWA MCLs and NJ Groundwater Quality Standards for Class IIA aquifers in many wells. Arsenic was detected in both on-site and off-site wells. Although groundwater at the MISS is not used as a public drinking water supply, State groundwater quality limits and Federal drinking water standards were used as a conservative basis of comparison for chemical concentrations in groundwater.
- The detection of VOCs in groundwater in 2003 is consistent with historical results. The detected VOCs in groundwater at the MISS are tetrachloroethene (PCE) and its degradation products: trichloroethene (TCE) and dichloroethenes (DCEs). VOCs are present in both on-site (primarily in bedrock) and off-site (shallow and bedrock) groundwater. The presence of VOCs in downgradient monitoring wells B38W14D, B38W14S, B38W15D, and MISS01B is due to either groundwater movement or infiltration from Westerly Brook to these wells. Vinyl chloride was reported at wells MISS07B (0.8 µg/L) and MISS01B (0.4 µg/L) at concentrations below the Federal SDWA MCLs of 5 µg/L, but above the NJ Class IIA Groundwater Quality standards of 0.08 µg/L. Benzene was not detected in the shallow wells. In the deep wells, benzene was identified in four wells (B38W17B, B38W19D, MISS02B and MISS05B) at concentrations between 0.2 µg/L at MISS02B to 2.0 µg/L at MISS05B. In the deep wells, the benzene concentration equaled or exceeded the State groundwater quality standard of 0.2 µg/L, but not the Federal drinking water limit of 5 µg/L. In 2002, a considerably higher benzene concentration of 680 µg/L was reported at MISS05B.

Overall, the results described in this Executive Summary are within the historical ranges and comparable to results reported in previous years. No significant changes were observed. The source analytical data, historical results, and water level measurements can be found in Appendices A, B, and C, respectively.

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1.0 INTRODUCTION

The MISS is located in Bergen County, NJ, approximately 12 mi (20 km) northwest of New York City and 13 mi (21 km) northeast of Newark, NJ (Appendix D, **Figure D-1**). The FMSS includes the 11.7-acre (4.7-hectare [ha]) federally-owned MISS and over 85 vicinity properties (VPs) in Maywood, Lodi, and Rochelle Park. The MISS is bordered to the west by NJ Route 17, to the north by the New York Susquehanna and Western Railway line, and to the south and east by commercial and industrial properties.

The MCW site was constructed in 1895. During the years 1916 to 1959, MCW extracted radioactive Th and rare earth metals from monazite sand for production of mantles for gas lanterns. The waste materials generated during this process contained Th-232 and associated decay products, with lesser amounts of radionuclides in the uranium-238 (U-238) decay series. Slurry containing waste from these operations was pumped into two earthen-diked retention ponds west of the plant. Some process waste sands were combined with tea and coca leaves from other MCW operations, and then removed from the site and used as mulch and fill material on nearby properties. Additional waste was transported off-site by the Lodi Brook, which ran southward along the facility property line and into the Borough of Lodi. Thorium residues in the brook settled onto adjacent properties where buildings and residences were subsequently built. In 1959, the MCW facility was sold to the Stepan Company.

In 1961, the Atomic Energy Commission (AEC) issued a radioactive material license to the Stepan Company for radioactive material storage and remediation of the facility. Between 1966 and 1968, contaminated material was removed from the property west of NJ Route 17 and buried in three pits on the Stepan Company site.

In 1983, the EPA added the Maywood site to the National Priorities List, and the following year cleanup of radioactive contamination at the Maywood Site was assigned to the DOE by Congress. To expedite remediation of the Maywood site and its VPs, the DOE purchased an 11.7-acre (4.7-ha) portion of the Stepan Company property for use as an interim storage facility for radiologically-contaminated materials (DOE 1992). This property was referred to as the MISS. On October 13, 1997, the FY 1998 Energy and Water Appropriations Bill transferred management of FUSRAP from the DOE to the USACE. The USACE became a successor to the DOE as of March 17, 1999. FUSRAP activities presently continue with the USACE.

In keeping with the remedial activities and objectives of FUSRAP, an ongoing EMP has been conducted over the years at the MISS. This program has been designed to ensure the following objectives:

- To ensure that the public and the environment are adequately protected from radiological and chemical contamination present at the MISS.
- To verify compliance with the applicable Federal, State, and local environmental laws.
- To characterize and define trends in the physical and chemical condition of the environmental media.
- To identify and quantify new or existing environmental quality problems.

These monitoring activities include the monitoring of all credible transport pathways; the selection of suitable monitoring locations; and the location of appropriate sampling methods, techniques, and analyses.

This report has been prepared to satisfy all applicable monitoring requirements and to address the above objectives. A detailed description of the measured parameters, evaluation criteria, sampling locations, monitoring methodology, interpretation of results, and conclusions is presented in this report.

1.1 MEASURED PARAMETERS

The key elements of the 2003 EMP at the MISS were:

- Continuous Monitoring
  - Measurement of external gamma radiation.
  - Measurement of Rn gas concentrations in air (from Rn-220 and Rn-222).
- Quarterly Monitoring
  - Groundwater level measurements of 35 monitoring wells.
- Annual Monitoring / Sampling
  - Sampling and analysis of streambed sediment for radioactive constituents and metals.
  - Sampling and analysis of surface water for radioactive constituents and metals.
  - Sampling and analysis of groundwater for radioactive constituents, metals, and VOCs.
  - Measurement of Rn flux for soil stockpile at MISS.

1.2 CALCULATED ELEMENTS

As part of the EMP, calculations were performed to determine the dose to the hypothetically maximally exposed individual (off-site) from external gamma radiation at the MISS as well as airborne particulate dose to the hypothetical maximally exposed individual (off-site) from airborne particulates generated from activities associated with the MISS. In addition, the cumulative dose to the hypothetical maximally exposed individual from external gamma radiation at MISS as well as airborne particulates generated by activities associated with MISS was calculated.

The following briefly describes the methodology for performing the above calculations and the results. More detailed discussions of these calculations and the results with regard to regulatory compliance issues are provided in Sections 5.0, 6.0, and Appendix E.

- External gamma radiation dose rates are measured continuously at various locations at MISS using TETLDs. When the readings are corrected for shelter / absorption and background concentration, and normalized to exactly 1 year's exposure, these detectors provide a measurement of the annual external gamma radiation at that location.
- The corrected readings from the TETLDs are used to calculate the external gamma radiation dose to a hypothetical maximally exposed resident and worker conservatively assumed to be located 50 feet (ft) from the side of the property with the highest radiation readings. This is a conservative approach since the nearest receptor is located over 200 ft from the monitoring location with the highest radiation readings.
- The computer program used to model potential off-site exposure from airborne emissions is the Clean Air Act Assessment Package - 1988 Personal Computer program (CAP88-PC), Version 2.0. Airborne emissions contributing to off-site exposure can occur from areas where the radioactively contaminated soil is exposed to the elements and from operations that generate airborne emissions.

- The CAP88-PC, Version 2.0 model determines the hypothetical maximally exposed individual based on the radionuclide emissions, local meteorological data, and other factors. The model can calculate the effective dose equivalent for any receptor of interest (e.g., residences, schools, workers).
- Although the emission of Rn gas is not considered in this analysis, the daughters of Rn gas generated by the decay of Rn-226 in dust off-site are accounted for by the model in the computation of the effective dose equivalents for the various internal and external exposure pathways.

1.3 UNIT CONVERSIONS

Tables 1-1 and **1-2** list the units of measurement and appropriate abbreviations used in this document. Conventional units for radioactivity are used because the regulatory guidelines are generally provided in these terms; Système Internationale (SI) units of measurement are used in the discussion of all other parameters. Unit conversions are provided in the text for water level information only.

Table 1-1
Units of Measurement and Conversion Factors - Radioactivity

Parameter	Conventional Units	SI Units	Conversion Factor
Dose	millirem (mrem)	milliSievert (mSv)	1 mrem = 0.01 mSv
Activity	picocurie (pCi)	Becquerel (Bq)	1 pCi = 0.037 Bq

Table 1-2
Units of Measurement and Conversion Factors - Mass, Length, Area, and Volume

Parameter	SI Units	English Units	Conversion Factor
Mass	gram (g)	ounce (oz)	1 g = 0.035 oz
	kilogram (kg)	pound (lb)	1 kg = 2.2046 lb
Length	centimeter (cm)	inch (in.)	1 cm = 0.394 in.
	meter (m)	feet (ft)	1 m = 3.281 ft
	kilometer (km)	mile (mi)	1 km = 0.621 mi
Area	hectare (ha)	Acre	1 ha = 2.47 acres
Volume	milliliter (mL)	fluid ounce (fl oz)	1 mL = 0.0338 fl oz
	liter (L)	gallon (gal)	1 L = 0.264 gal
	cubic meter (m^3)	cubic yard (yd^3)	1 m^3 = 1.307 yd^3

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2.0 EVALUATION CRITERIA

Regulatory and other criteria used to evaluate the results of the 2003 EMP program at the MISS are summarized as follows, categorized by media and parameters.

2.1 EXTERNAL GAMMA RADIATION AND AIR (RADON GAS AND AIRBORNE PARTICULATES)

The criteria for evaluating the calculated maximum doses from external gamma radiation and inhalation of radioactive particulates, and the measured concentrations of Rn gas are shown in **Table 2-1** and discussed below:

- **10CFR20**
  Dose limits for members of the public from NRC licensed activities are presented in this NRC standard. While the FMSS project is not licensed by the NRC, the project is contractually required to meet the requirements of 10CFR20. The primary dose limit is expressed as a total effective dose equivalent (TEDE). The limit of 100 mrem/yr TEDE above background from all sources for a period of a year is specified in this standard. External gamma radiation dose and the calculated doses from all releases are included in the calculation of the TEDE. The 100 mrem/yr TEDE above background specified in this standard includes all pathways.
- **40CFR192**
  The applicable limit for Rn in air is provided in this standard as 0.02 Working Levels (WLs), including background. A working level is any combination of short-lived Rn decay products in 1 L of air that will result in the ultimate emission of 1.3×10^5 million electron volts (MeV) of potential alpha energy. The WL of 0.02 is applied to buildings only, where ventilation and other effective methods could be provided to maintain this limit. EPA guidance documents related to Rn in homes refer to an AL of 4 pCi/L. Rn concentrations that exceed the AL of 4 pCi/L require mitigation (EPA 1992b).
- **New Jersey Administrative Code (NJAC) 7:28-12**
  The applicable limit for Rn-222 is 3.0 pCi/L (111 Bq/m^3). This guideline was established by the NJDEP as the standard for remediation of real property contaminated by radioactive materials.
- **40CFR61, Subparts H & Q**
  Section 112 of the Clean Air Act (CAA) authorized EPA to promulgate the National Emission Standards for Hazardous Air Pollutants (NESHAP), which is applicable at the MISS under Subpart H (i.e., for non-Rn, radioactive constituents) and Subpart Q (for Rn emissions). Compliance with Subpart H is verified by applying the EPA-approved CAP88-PC, Version 2.0 (DOE 1997c). Until the storage pile was removed in 1996, compliance with Subpart Q was verified by semi-annual monitoring for Rn-222 flux. Rn flux monitoring was resumed in 2000 for the storage pile created as a result of a Time Critical Removal Action (TCRA) for the swale, remediation and restoration of the Ballod property, and operation of the pilot facility. Rn flux monitoring was performed during the year 2003 in the fabric structure that is used to store the soil stockpiles at MISS for only a short period of time (see Appendix E, Section 4).

Table 2-1
Summary of Radiological Criteria Used for External Gamma Radiation and Air[j]

Parameter	NRC Standard	EPA Standard or Guideline	NJDEP Guideline
Rn-222	10 pCi/L[h]	4 pCi/L [a]	3.0 pCi/L[i]
Rn-220	20 pCi/L[h]	--[b]	
Rn Flux	---	20 pCi/m^2/s [g]	
Radionuclide Emissions (airborne particulates and radioactive gases)	10 mrem/yr[c]	10 mrem/yr[d]	
TEDE (total contribution from all sources [e])	100 mrem/yr[f]	---	

Notes:
[a] EPA standard from Code of Federal Regulations Title 40 Part 192 (40 CFR 192).
[b] Provisions applicable to Rn-222 shall apply to Rn-220 (40CFR192.41, provisions).
[c] NRC standard from 10CFR20.1101(d) for particulate and Rn-220 emissions only; excludes Rn-222.
[d] EPA standard from 40CFR61, Subpart H, for particulate emissions only; excludes Rn-222 and Rn-220.
[e] Contributing sources at the MISS consist of external gamma radiation exposure, radionuclide emissions listed above, and ingested radionuclides in water and soil / sediment.
[f] NRC standard from 10CFR20.1301(a); background is excluded in the calculation of dose.
[g] EPA standard 40CFR61, Subpart Q.
[h] NRC 10CFR20 Appendix B assuming no Rn daughters are present.
[i] The strictest standards or guidelines for each parameter are used to assess/evaluate regulatory compliance issues.

2.2 SEDIMENT, SURFACE WATER, AND GROUNDWATER - RADIOLOGICAL CONSTITUENTS

The criteria for evaluating the measured concentrations of radionuclides in sediment, surface water, and groundwater at the MISS are shown in **Table 2-2** and discussed below:

- **Soil Cleanup Criteria for the Maywood Site**
  The cleanup criteria established in the ROD for soils at the FMSS were used to evaluate the radiological results for sediment. Specifically, an average of 5 pCi/g of Ra-226 and Th-232 combined above background was used to evaluate sediment concentrations. In addition, an average of 100 pCi/g above background for total uranium, which equates to 50 pCi/g of U-238 for all properties addressed in the ROD, was used to evaluate sediment concentrations.

- **40CFR141**
  The regulations in 40CFR141 set maximum permissible levels of organic, inorganic, radiological, and microbial contaminants in drinking water by specifying the MCL for each. MCLs have been promulgated for $U_{(tot)}$, combined concentrations of Ra-226 and Ra-228, and gross alpha. Although groundwater at the MISS is not a public drinking water supply, the MCLs for drinking water are considered relevant and appropriate and are used as a conservative basis for evaluating analytical results. The NJ drinking water regulations (NJAC 7:10) incorporate, by reference, all the Federal drinking water standards unless a more stringent State standard for a hazardous contaminant has been promulgated. The NJDEP has adopted all the MCLs and have added a maximum contaminant level for gross beta of 50 pCi/L. The MCLs for drinking water were also used to conservatively evaluate surface water. Sampling was performed for specific radiological contaminants known to exist at the MISS (gross alpha, gross beta, Ra-226 and Ra-228, Th-230 and Th-232, and $U_{(tot)}$). For $U_{(tot)}$, comparisons will be made to the Federal / State MCL (NJAC 7:9-6) of 30 µg/L. **Table 2-2** summarizes these radiological criteria for water and sediment.

Table 2-2
Summary of Radiological Criteria Used for Water and Sediment

Parameter	NJ Groundwater Quality Standards	EPA Drinking Water Standard	Sediment Criteria
Gross Alpha	15 pCi/L	15 pCi/L	NA
Gross Beta	NA	50 pCi/L[c]	NA
Ra-226	5 pCi/L[a]	5 pCi/L[a]	5 pCi/g[b]
Ra-228	5 pCi/L[a]	5 pCi/L[a]	
Th-230	NA	NA	
Th-232	NA	NA	5 pCi/g[b]
$U_{(tot)}$	30 µg/L[d]	30 µg/L	100 pCi/g[b]

Notes:
[a] Current SDWA, MCL for the combined concentration of Ra-226 and Ra-228 in drinking water.
[b] Soil cleanup criteria established in the ROD for the combined Ra-226 and Th-232 concentration as well as the $U_{(tot)}$ concentration are used as the basis for evaluating the analytical results for sediment.
[c] If the gross beta particle activity exceeds 50 pCi/L, an analysis of the sample must be performed to identify the major radioactive constituents present and the appropriate organ and total body doses shall be calculated (40CFR141.26). Naturally occurring potassium-40 [K-40] beta particle activity may be excluded from the calculation of gross beta activity per Federal register Vol. 65 No. 236.
[d] The NJ Department of Environmental Protection (NJDEP) has established a MCL for $U_{(tot)}$ in drinking water of 30 µg/L. The reported U-238 concentration in pCi/L was divided by the specific activity of U-238 (0.3365 pCi/µg) to obtain the $U_{(tot)}$ in µg/L and then compared to the equivalent NJDEP MCL for $U_{(tot)}$ in drinking water of 30 µg/L.
NA: not available

2.3 SEDIMENT - CHEMICAL PARAMETERS

The criteria for evaluating the detected concentrations of chemical parameters in sediment at the MISS are the following:

- **NJ Proposed Cleanup Standards for Contaminated Sites**
  These standards are currently being provided as guidance by the NJDEP. Because there are no standards for sediment, the NJDEP proposed cleanup standards for residential and nonresidential properties that were used as a conservative basis for evaluating results of analyses for metals in sediment (NJDEP 1992).
- **Sediment Screening Values for use in the Baseline Ecological Evaluation (BEE) (NJDEP 1998)**
  To aid in the identification of contaminants of potential ecological concern, site-related sediment data are compared to established screening level criteria in the BEE. An exceedance above the LEL in the BEE indicates a potential risk (not cleanup) to the benthic community and a need for further investigation.

2.4 GROUNDWATER AND SURFACE WATER - CHEMICAL PARAMETERS

Although the groundwater at the MISS is not used as a public drinking water supply, Federal standards for contaminated soils on drinking water and State groundwater standards are used in this document as a conservative basis for comparison of chemical analytical results. The more stringent of the Federal or State standards are used to evaluate regulatory compliance issues for groundwater and surface water.

- **40CFR141**
  As noted above, the SDWA is the primary Federal law applicable to the operation of a public water system and the development of drinking water quality standards. The regulations establish MCLs for organic, inorganic, and microbial contaminants in drinking water. In some cases, secondary maximum contaminant levels (SMCLs), which are not Federally enforceable

(40CFR143), are provided as guidelines for the various states. MCLs for drinking water were used to conservatively evaluate groundwater and surface water monitoring results.

- **NJ Groundwater Quality Criteria - Class IIA**
  Groundwater in NJ is classified according to its hydrogeological characteristics and uses. The primary designated use for Class IIA groundwater is as a potable water supply, although Class IIA uses also include agricultural and industrial water. The NJ groundwater quality standards (NJAC7:9-6) specify the groundwater quality criteria (GWQC) for various constituents and the corresponding practical quantitation limits (PQLs) for Class II groundwater.

3.0 SAMPLING LOCATIONS AND RATIONALE

Contamination at the MISS is present in the former retention ponds, on the ground surface, and in on-site structures. Exposure to members of the public by this radioactively-contaminated material at the MISS is unlikely because of site access restrictions (e.g., fences) and engineering controls (e.g., pile covers). Potential pathways include direct exposure to external gamma radiation, inhalation of Rn or radioactively-contaminated particulates in air, and contact with or ingestion of contaminated streambed sediments, surface water, or groundwater. The EMP at the MISS has been developed in order to evaluate and monitor these potential exposure routes through periodic sampling and analysis for radioactive and chemical constituents. In Appendix D, **Figures D-2**, **D-3A**, and **D-3B** show the EMP sampling locations at the MISS and vicinity properties, and indicate the type of media sampled at each location. In Appendix A, **Table A-1** summarizes the 2003 monitoring program at the MISS for external gamma radiation, Rn gas, groundwater, surface water, and sediment.

Measurements of external gamma radiation are taken along fence line locations surrounding the MISS in order to assess potential exposure levels to the public and site workers (Appendix D, **Figure D-2**).

Atmospheric monitoring of Rn gas is conducted on-site, both in known areas of contamination and at fence line locations (Appendix D, **Figure D-2**).

Surface water and sediment sampling includes the analysis for radioactive constituents and metals along Westerly Brook and Lodi Brook (Appendix D, **Figures D-3A** and **D-3B**). Sampling locations along Lodi and Westerly Brook are used to assess both upstream and downstream conditions. Because Lodi Brook receives drainage from areas of known contamination, sampling is also conducted along the eastern and western tributaries of this stream.

Water level measurements and groundwater samples from monitoring wells enable the assessment of groundwater flow patterns and are used to evaluate groundwater quality upgradient and downgradient of the site, in the source area and at the MISS / Stepan Company boundary (Appendix D, **Figure D-2**). Groundwater in both the surficial unconsolidated sediments and bedrock is monitored at the MISS.

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4.0 MONITORING METHODOLOGY

Under the MISS EMP conducted in 2003, standard analytical methods approved and published by EPA and the American Society for Testing and Materials (ASTM) were used for chemical (i.e., all non-radiological) analyses. The laboratories conducting the radiological analyses adhere to EPA-approved methods and procedures developed by the Environmental Measurements Laboratory (EML) and ASTM. All laboratories analyzing FUSRAP chemical samples are certified by NJDEP. A detailed listing of the specific procedures and the data quality objectives for the monitoring conducted in the 2003 program is provided in the FMSS Chemical Data Quality Management Plan (CDQMP) (USACE 2003).

Environmental monitoring activities at the MISS in 2003 were conducted in accordance with the CDQMP and Standard Operating Procedures (SOPs) listed in **Table 4-1**. The monitoring activities are based on guidelines provided in *RCRA Ground Water Monitoring: Draft Technical Guidance* (EPA 1992a); *Test Methods for Evaluating Solid Waste, Physical / Chemical Methods,* SW-846 (EPA 1997); and *A Compendium of Superfund Field Operations Methods* (EPA 1987). Groundwater samples were collected using the USEPA Region II memo dated March 20, 1988, titled *Final USEPA Region II Low Stress (Low Flow) Groundwater Sampling Standard Operating Procedure* (EPA 1988).

Table 4-1
FUSRAP Standard Operating Procedures (SOPs) and Instruction Guides (IG) used for Environmental Monitoring Activities

SOP Number	SOP Title
SOP 410-1	Groundwater Level Measurement (Shaw Environmental 2003)
SOP 506-1	Decontamination (Shaw Environmental 2003)
SOP 302-1	Surface Water Sampling (Shaw Environmental 2003)
SOP 301-1	Sediment sampling (Shaw Environmental 2003)
191-IG-029	Radon / Thoron and TETLD Exchange (Bechtel National, Incorporated [BNI] 1993)
SOP 304-1	Purging and Sampling Monitoring Wells (Shaw Environmental 2003)

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5.0 ANALYTICAL DATA AND INTERPRETATION OF RESULTS

This section presents the data and interpretation of results for the 2003 EMP at the MISS. Data for 2003 are presented in Appendix A, **Tables A-2** through **A-13**.

The most precise analytical method for analysis of $U_{(tot)}$ yields results in values expressed as µg/L and µg/g for water and sediment samples, respectively. To allow direct comparison of results to relevant standards and the ROD soil cleanup criteria, the data must be converted to pCi/L and pCi/g units, as appropriate. The NJDEP has established a MCL for $U_{(tot)}$ in drinking water of 30 µg/L. Regulatory compliance was determined by comparing the measured value for $U_{(tot)}$ to the MCL of 30 µg/L. The reported U-238 concentration in pCi/L was divided by the specific activity of U-238 (0.3365 pCi/µg) to obtain the $U_{(tot)}$ in µg/L and then compared to the equivalent NJDEP MCL for $U_{(tot)}$ in drinking water of 30 µg/L. The historic data for sediment and groundwater are presented in Appendix B, **Tables B-1** through **B-4**.

5.1 EXTERNAL GAMMA RADIATION

External gamma radiation dose rates are measured using TETLDs in place at the MISS continuously throughout the year. Locations of TETLDs are shown on Appendix D, **Figure D-2**. Each TETLD measures a cumulative dose over the period of exposure (approximately 1 year). When corrected for shelter / absorption and background, and normalized to exactly 1 year's exposure, these detectors provide a measurement of the annual external gamma radiation dose at that location. TETLD results for the 2003 external gamma radiation dose (i.e., both raw and corrected data) are summarized in Appendix A, **Table A-2**.

The corrected data are used to calculate the external gamma radiation dose to a hypothetical maximally exposed individual conservatively assumed to be located 50 ft from the fenceline. Identification of this hypothetical individual is a function of the fenceline dose, the distance of the individual from the fenceline, and the amount of time that the individual spends at the specific location. The data from the side of the site displaying the highest radiation readings (i.e., location 21) are averaged, and the external gamma dose rate at the distance to individuals at the nearest commercial / industrial facility and residence is then determined. The calculated doses to the hypothetical maximally exposed resident (assuming 100% occupancy) and worker (assuming 23% occupancy) from direct gamma radiation at the MISS in 2003 were 29.3 mrem/yr and 6.74 mrem/yr, respectively (see Calc 610041-0107-005 in Appendix F) which are well below the NRC standard of 100 mrem/yr. The calculated doses to the hypothetical maximally exposed resident and worker from direct gamma radiation at the MISS in 2002 were 33.7 mrem/yr and 7.75 mrem/yr, respectively.

5.2 RADON-220 (RN-220) AND RADON-222 (RN-222)

Results of the 2003 monitoring for Rn gas (Rn-220 and Rn-222) are presented in Appendix A, **Table A-3**; detector locations are shown on Appendix D, **Figure D-2**. At each location, two types of detectors are exposed. One detector type, the RadTrack®, allows both isotopes of Rn to enter. The other detector type, the RadTrack®-modified, contains a membrane that specifically excludes Rn-220. Rn-222 results are reported as received from the laboratory (i.e., the data are obtained directly from the RadTrack®-modified detectors). Rn-220 concentrations are calculated using the RadTrack® and RadTrack®-modified data.

Rn-222 concentrations for 2003 ranged from non-detect to 0.4 pCi/L, below the NJDEP remedial action requirement (NJAC 7:28-12) of 3.0 pCi/L and EPA AL of 4 pCi/L. Rn-220 concentrations ranged from non-detect to a maximum of 3.12 pCi/L (location 24) and 2.26 pCi/L (location 31), which is below the EPA AL of 4 pCi/L. The maximum concentration of Rn-222 and Rn-220 combined is 3.32 pCi/L (location 24).

As with most low concentrations of gases in an open, unconfined area, the Rn emitted from this area dissipates quickly and does not significantly affect the general population, which is located off-site. The closest residential inhabitants live to the northeast. Locations 32 and 33 (Appendix D, **Figure D-2**) were installed in 1996 in order to examine Rn gas concentrations in this area. Rn-220 results at these two off-site locations were well below the NJDEP's guideline and EPA's AL and were significantly lower than the concentrations detected on-site.

5.3 AIRBORNE PARTICULATE DOSE

To determine the annual effective dose from airborne emissions of radioactive particulates generated during the year 2003 at the MISS and adjacent properties, multiple potential sources were considered (see Appendix E):

- In situ wind erosion at the MISS,
- Ten soil load-outs at the MISS,
- Cluster Nos. 4A, 5B, 5C, and 6C removal actions,
- Excavations performed for the drainage line replacement at Cluster 9A,
- Excavations performed for the water line repairs at Cluster 9A, and
- Cluster No. 2D remedial action.

The particulate release rates from the preceding multiple potential sources were calculated using the methodology contained in the "Industrial Wind Erosion" section of EPA's AP-42 (EPA 1995). The emissions of particulate matter from the exhaust system for the soil sample preparation laboratory was determined based on the number of soil samples prepared, the average quantity of particulate emissions resulting from the grinding of the samples, and the removal efficiency of the High Efficiency Particulate Air (HEPA) filter.

The radionuclide emission rates were based on the particulate release rates and the average radionuclide source concentrations obtained from soil measurements for each of the above operations. Specifically, the source concentrations for the isotopes U-238, Ra-226, and Th-232 were based on the average values obtained from the measurements of these radionuclides in surface soil samples for the in situ soil (DOE 1987), and average values measured in soil samples for the ten soil load-outs, Cluster Nos. 4A, 5B, 5C and 6C removal actions, excavations performed for the drainage line replacement and water line repairs at Cluster 9A, and the Cluster No. 2D remedial action. Unknown radionuclide source concentrations were based on the known source concentrations assuming secular equilibrium in the decay chains (Shlein 1992).

Although the emission of Rn gas is not considered in this analysis, the daughters of Rn generated by the decay of Rn-226 in dust off-site is accounted for by the model in the computation of the effective dose equivalents for the various internal and external exposure pathways. The radionuclide emissions for the year from each of the above sources were entered into the CAP88-PC, Version 2.0 to perform the following two calculations:

1. Estimation of the hypothetical doses from airborne radioactive particulates at downwind distances corresponding to individuals located at the nearest residences and nearest commercial / industrial facilities as measured from the centers of the above sources. Analyses were performed separately

for the ten soil load-outs, Cluster Nos. 4A, 5B, 5C and 6D removal actions, excavations performed for the drainage line replacement and water line repairs at Cluster 9A, and Cluster No. 2D remedial action given the differences in receptor locations most affected by each of these areas. The in situ wind erosion and the exhaust hood emissions were found to be negligible, and thus were not included in the modeling analyses. Where individual receptors are affected by more than one emission source, doses caused by those sources were added. The hypothetical doses were based on the CAP88-PC, Version 2.0 default assumption that the receptor occupies the location 100% of the time (i.e., 24 hours per day, 7 days per week, 52 weeks per year). The occupancy factor of 100%, although conservative, is considered to be appropriate for a resident. To estimate the dose to an employee working normal hours, an occupancy factor of 27% (i.e., 9 hours per day, 5 days per week, 52 weeks per year) was applied to the CAP88-PC, Version 2.0 result. The hypothetical individual receiving the highest of these calculated doses was then identified as the individual maximally exposed to the airborne particulate dose. Since this dose is based in part on wind direction and not simply the distance from the site, this hypothetical maximally–exposed individual may not be the same as the person identified in the dose calculation for external gamma radiation (Section 5.1).

2. The hypothetical collective dose from airborne radioactive particulates for the population within 50 mi (80 km) of the site was estimated using a population file (generated from county population densities) to determine the number of people in graduated, concentric grid sections radiating outward to 50 mi (80 km) from the center of the site.

The CAP88-PC, Version 2.0 model determines the maximally exposed individual based on the radionuclide emissions, local meteorological data, and other factors. The model can calculate the effective dose equivalent for any receptor of interest (e.g., residences, schools, workers).

The CAP88-PC, Version 2.0 program computes radionuclide concentrations in air, rates of deposition on ground surfaces, concentrations in food, and intake rates to people from ingestion of food produced in the assessment area. By coupling the output of the atmospheric transport models with terrestrial food chain models from the U.S. NRC Regulatory Guide 1.109 ("Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10CFRPart 50, Appendix I"), the program estimates the radionuclide concentrations in produce, leafy vegetables, milk, and meat consumed by humans. The population distribution array used in the computer model was calculated from known land surrounding the site and the year 2000 census figures. The program calculates the effective dose equivalent by combining the inhalation and ingestion intake rates and the air and ground surface concentrations with dose conversion factors, using the weighting factors in "Recommendations of the International Commission on Radiological Protection" (International Commission on Radiological Protection [ICRP] 1977). CAP88-PC, Version 2.0 calculates dose to the gonads, breast, lungs, red marrow, thyroid, and endosteum in addition to the 50-year effective dose equivalent. Doses can be tabulated as a function of radionuclide, pathway, location, and organ as shown in the calculation presented in Appendix E.

The hypothetical maximally exposed individual in 2003 was a resident with 100% occupancy time located approximately 771 ft (235 m) north-northeast of the MISS. The 2003 airborne particulate dose to that individual, considering all site contributions throughout the year, was 0.0011 mrem/yr, which is well below the 10 mrem/yr standard specified in 40CFR61, Subpart H. The second calculation indicates that the hypothetical airborne particulate collective dose to the population in 2003, within 50 mi (80 km) of the site, was 0.006 person-rem/yr.

5.4 SURFACE WATER AND SEDIMENT

Surface watercourses and drainage near the MISS include Westerly and Lodi Brooks (Appendix D, **Figures D-3A** and **D-3B**). Westerly Brook flows through a culvert after it enters the northwestern corner of the MISS. The subsurface culvert redirects Westerly Brook to the west, south, and then to the west again, along the northern and western property boundaries. After leaving the MISS, the culvert remains below grade for approximately 335 m before it terminates. At this point, Westerly Brook reemerges and resumes its westward course. Ultimately, Westerly Brook discharges into the Saddle River. Lodi Brook begins on the property located at 149-151 Maywood Avenue in a low marshy area that collects runoff from the 149-151 Maywood Avenue and Stepan Company properties; from there it flows southward under NJ Route 17 remaining underground most of its course. Exceptions to this are small sections on both sides of Interstate 80 and a small section along NJ Route 17. From this area, the Lodi Brook flows approximately 1.8 miles downstream of the confluence of Westerly Brook and the Saddle River before joining the Saddle River.

5.4.1 Surface Water

Sampling locations in 2003 (Appendix D, **Figures D-3A** and **D-3B**) included SWSD004, SWSD003, SWSD002, and SWSD001 (downstream of the site along Westerly Brook); SWSD006 and SWSD007 (on the eastern tributary of Lodi Brook); and SWSD005 (at the confluence of the eastern and western tributaries of Lodi Brook); SWSD010, SWSD011, SWSD012, SWSD013, and SWSD014 (downstream of the site along Lodi Brook). Locations SWSD008 and SWSD009 were not sampled due to stagnant water. The western branch of Lodi Brook drains portions of the MISS, Stepan Company, and 149-151 Maywood Avenue properties. Location SWSD015, which is not shown on the Appendix D **Figures D-3A** or **D-3B**, was also sampled (where Lodi Brook meets the Saddle River). Background sampling was conducted in Westerly Brook, upstream (north) of the site, at SWSD003.

Surface water samples in 2003 were collected and analyzed for metals and radioactive constituents. According to the 1992 Environmental Surveillance Report submitted by BNI, the radiological results for surface water samples were at background levels for the previous 5 years (1986-1991). Thus, surface water sampling for radionuclides and metals (except for lithium) was discontinued at that time. However, because the surface water samples collected during the Groundwater Remedial Investigation (GWRI) in 1999 indicated the presence of contamination in both Lodi and Westerly Brook, the surface water sampling was resumed (USACE 1999). In addition, it is a prudent and protective practice to sample surface water during the ongoing remedial activities that started in 1999. All samples were analyzed for gross alpha, gross beta, Ra, Th, U, and metals.

Radioactive Constituents

Surface water samples collected in 2003 at Westerly Brook (SWSD001, SWSD002, SWSD003, and SWSD004) and Lodi Brook (SWSD005, SWSD006, SWSD007, SWSD010, SWSD011, SWSD012, SWSD013, SWSD014, and SWSD015) did not exhibit elevated concentrations of the analyzed radionuclides (Appendix D, **Figures D-3A** and **D-3B**). Results for these locations were below the Federal and State drinking water standards, and the results are comparable to background measurements at SWSD003 (Appendix A, **Table A-4**).

Metals

Federal drinking water and NJ groundwater standards are used for evaluating metal concentrations in surface water. Although surface water is not used as a source of potable water, Federal and State drinking water standards are used as a conservative basis for evaluation of the results. These regulatory standards are provided in Appendix A, **Table A-5** along with detected concentrations of metals in surface water.

Monitoring results revealed elevated concentrations in surface water for iron and manganese above the Federal and State Criteria. Most locations sampled (on Lodi Brook or Westerly Brook) had an exceedance for at least one of these metals and several locations had exceedances of the two metals.

The State criterion for arsenic of 8 µg/L was exceeded in Westerly Brook at SWSD004 (12.3 µg/L). Lead exceeded the State criterion of 5 µg/L at SWSD006 (10.1 µg/L).

5.4.2 Sediment

The sediment sampling program was extended in 2001 to include more sample locations downstream of both Westerly and Lodi Brook to identify the pattern of contaminant migration downstream from the MISS. As shown on Appendix D, **Figures D-3A** and **D-3B**, sediment samples were collected at one upstream location (SWSD003) and two downstream locations (SWSD001, SWSD002) in Westerly Brook, and one upstream location and five downstream locations in Lodi Brook. Sediment samples at SWSD008, and SWSD009 (aboveground location) could not be collected due to stagnant water; at the underground locations (SWSD011, SWSD013, SWSD014, and SWSD004), sediment samples could not be collected due to significant flow.

Radioactive Constituents

- Consistent with historical results, the sediment samples collected in Westerly Brook (SWSD001, SWSD002) were below the ROD soil cleanup criteria and comparable to background measurements at SWSD003 (see Appendix A, **Table A-6A**).
- In the eastern tributary of Lodi Brook (see Appendix D, **Figure D-3A**), at location SWSD006, the combined concentration of Ra-226 (2.54 pCi/g) and Th-232 (3.14 pCi/g) exceeded the soil cleanup criteria of 5 pCi/g. The measured concentrations of Ra-228 (3.39 pCi/g) and Th-230 (1.27 pCi/g) were above background. In 2002, the combined concentration of Ra-226 (3.51 pCi/g) and Th-232 (15.2 pCi/g) considerably exceeded the soil cleanup criteria.
- Downstream in Lodi Brook, at location SWSD007, the combined concentration of Ra-226 (3.77 pCi/g) and Th-232 (5.50 pCi/g) exceeded the soil cleanup criteria of 5 pCi/g. The measured concentration of Ra-228 (5.02 pCi/g) and Th-230 (1.59 pCi/g) was above background. In 2002, the combined concentration of Ra-226 (6.58 pCi/g) and Th-232 (17.6 pCi/g) considerably exceeded the soil cleanup criteria.
- Downstream in Lodi Brook, at location SWSD005, the combined concentration of Ra-226 (1.95 pCi/g) and Th-232 (1.32 pCi/g) were above background, but below the soil cleanup criteria. The measured concentrations of Ra-228 (2.68 pCi/g) and Th-230 (0.82 pCi/g) were above background. In 2002, the combined concentration of Ra-226 (0.64 pCi/g) and Th-232 (1.16 pCi/g) were also below the soil cleanup criteria.
- Further downstream in Lodi Brook at SWSD010, SWSD012 and SWSD015 (Appendix D, **Figures D-3A** and **D-3B**) in Lodi Brook, the combined concentrations of Ra-226 and Th-232 were below the soil cleanup criteria. The highest combined concentration of Ra-226 (0.94 pCi/g) and Th-232 (1.28 pCi/g) occurred at SWSD010. The measured concentrations of Ra-228 and Th-230 were above background at these locations. Similarly, the highest measured concentration of Ra-228 (1.65 pCi/g) and Th-230 (0.59 pCi/g) occurred at SWSD010. In 2002, the highest combined concentration of Ra-226 (0.88 pCi/g) and Th-232 (1.96 pCi/g) also occurred at SWSD010.

- The reported total uranium concentrations at all monitoring locations were well below the ROD soil cleanup criteria of 100 pCi/g with a maximum total uranium concentration of 4.06 pCi/g occurring at SWSD007. In 2002, the total uranium concentrations at all monitoring locations were also below the ROD soil cleanup criteria with a maximum reported total uranium concentration of 15.15 pCi/g at SWSD009.

The sampling results for 2003 confirm the continued presence of localized contamination in the streambed sediment of the upstream location where Lodi Brook originates and downstream at the eastern tributary of Lodi Brook. Variation of sediment concentrations from one year to another is typical and due to various factors such as local disturbances during and prior to sampling, rainfall amounts/intensity and the time since the last rainfall event.

Metals

Metals concentrations in sediment are compared to the proposed NJ Soil Cleanup Criteria (SCC) and to the Sediment Screening Values in the BEE (NJDEP 1998) to evaluate their significance.

The NJ residential, and less stringent nonresidential, soil cleanup standards provide a basis for evaluating metal concentrations in sediment for the mixed land use area around MISS (NJDEP 1992). These standards, as appropriate for the zoning of a given sampling location, are provided in Appendix A, **Table A-6B** along with the detected concentrations of metals in sediment. Sampling locations SWSD003 (background), SWSD005, SWSD006, SWSD007, SWSD010, and SWSD015 are in areas zoned as light industrial (nonresidential), while sampling locations SWSD001, SWSD002, and SWSD012 are in areas zoned for residential use.

In Lodi Brook, the concentration of arsenic at location SWSD006 (20.5 mg/kg) slightly exceeded the corresponding NJ SCC (20 mg/kg). This was the only location in Lodi Brook where the sediment concentration of a metal exceeded the corresponding NJ SCC. At the upstream location for Westerly Brook (SWSD003), the sediment concentration of zinc was above the corresponding NJ SCC. There were no other exceedances of the NJ SCC in Westerly Brook. The sampling results for the 2003 sampling locations are summarized as follows:

- The zinc concentration (4,090 mg/kg) considerably exceeded the corresponding soil cleanup criteria (1,500 mg/kg) at SWSD003, the upstream (background) monitoring location along Westerly Brook in an area zoned for nonresidential use. In 2002, the reported zinc concentration at SWSD003 (220 mg/kg) was well below the soil cleanup criteria. Consistent with the past several years, no other metal concentrations exceeded the soil cleanup criteria at SWSD003.
- No metal concentrations exceeded the soil cleanup criteria at SWSD001 or SWSD002, the downstream monitoring locations along Westerly Brook in an area zoned for residential use. In 2002, the detected concentrations of metals at SWSD001 and SWSD002 were also below the soil cleanup criteria.
- At SWSD006, upstream of SWSD007, in the eastern tributary of Lodi Brook, the measured concentration of arsenic (20.5 mg/kg) slightly exceeded the corresponding soil cleanup criteria of 20 mg/kg. The concentrations of all other metals at this location were below their respective residential or nonresidential soil cleanup criteria.
- At SWSD007, in the eastern tributary of Lodi Brook, the measured concentration arsenic (16.4 mg/kg) was elevated, but below the corresponding soil cleanup criteria of 20 mg/kg. The concentrations of all other metals were below their respective residential or nonresidential soil cleanup criteria. Although SWSD007 is an upstream location in an area zoned for nonresidential use, two downstream locations are located in an area zoned for residential use; therefore, it is

prudent to evaluate upstream data against residential cleanup standards as well as nonresidential standards. In 2002, the measured arsenic concentration at SWS007 exceeded the soil cleanup criteria.

- At SWSD005, at the confluence of the eastern and western tributaries of Lodi Brook, no metal concentrations exceeded the residential or nonresidential soil cleanup criteria. These results are consistent with the past several years.
- At SWSD010 and SWSD12, the downstream locations along Lodi Brook, no metal concentrations exceeded either the residential or nonresidential soil cleanup criteria. In 2002, the measured metal concentrations at SWSD010 and SWSD012 also did not exceed either the residential or nonresidential soil cleanup criteria
- At SWSD015, a downstream location at the confluence of Lodi Brook and Saddle River, no metal concentrations exceeded the residential or nonresidential soil cleanup criteria. In 2002, the measured metal concentrations also did not exceed either the residential or nonresidential soil cleanup criteria.

Sediment Screening Values in the BEE

To aid in the identification of contaminants of potential ecological concern, site-related metal concentrations in sediment are compared to the LEL and SEL concentrations listed in the screening level criteria presented in the "Guidance for Sediment Quality Evaluations" (NJDEP 1998). Note that LEL and SEL values are only established for seven metals.

Various metal concentrations exceeded the LEL used in the BEE at every sampling location. There were exceedances of the LEL concentrations for lead, arsenic, chromium, copper, lead, nickel and zinc in both Westerly Brook and Lodi Brook. The metal concentrations exceeded the SEL concentrations in Westerly Brook at one location (SWSD003) and in Lodi Brook at two locations, SWSD006 and SWSD007 (Appendix D, **Figure D-3A** and **D-3B**).

- At SWSD003, the nonresidential upstream location along Westerly Brook, the concentrations of copper, lead, nickel and zinc exceeded the SEL with values of 494, 387, 79.8 and 4,090 mg/kg, respectively. The chromium concentration of 50.9 mg/kg exceeded the LEL.
- At SWSD001, a residential downstream location along Westerly Brook, the concentrations of arsenic, chromium, copper, lead, nickel and zinc exceeded the LEL. None of the metals exceeded the SEL.
- At SWSD002, a residential downstream location along Westerly Brook, the concentrations of arsenic, copper, lead, nickel and zinc exceeded the LEL. None of the metals exceeded the SEL.
- At SWSD006, the concentrations of chromium, copper, and lead exceeded the SEL with values of 115 mg/kg, 130 mg/kg and 347 mg/kg; respectively. The arsenic, nickel and zinc concentrations exceeded only the LEL.
- At SWSD007, the concentrations of chromium and lead exceeded the SEL with values of 129 mg/kg and 295 mg/kg, respectively. The chromium and lead concentrations also exceeded the SEL in the sample SWSD007 duplicate. The concentrations of arsenic, copper, nickel and zinc exceeded only the LEL at SWSD007 and in the sample SWSD007 duplicate.
- At SWSD005, at the confluence of the eastern and western tributaries of Lodi Brook, all metal concentrations except cadmium exceeded the LEL, but none exceeded the SEL.

- At SWSD010, a downstream location along Lodi Brook, the concentrations of copper, lead, and zinc exceeded the LEL. However, none of the metal concentrations at these locations exceeded the SEL.
- At SWSD012, a downstream location along Lodi Brook, the concentrations of chromium, copper, lead, nickel and zinc exceeded the LEL. At SWSD015, the concentrations of copper and lead exceeded the LEL; however, none of the metal concentrations at these locations exceeded the SEL.

5.5 GROUNDWATER

The locations of groundwater monitoring wells at the MISS are shown on Appendix D, **Figure D-2**. Background information, descriptions of activities performed under the groundwater monitoring program, and monitoring results are discussed below.

5.5.1 Groundwater Quality

Natural System

Groundwater in the Maywood area flows in both the bedrock and the overlying unconsolidated sediments. Bedrock is composed of fractured sandstone and shale belonging to the Passaic Formation. Unconsolidated sediments are composed of interbedded sand and clay of glacial origin. Although there is no continuous confining layer present across the Maywood Site, the Remedial Investigation report for the Maywood Site indicated that the unconsolidated overburden deposits may be divided into three units that interfinger with the underlying and overlying unit (DOE 1992). The lower lithostratigraphic unit is characterized as consisting of stratified, moderately well sorted to well sorted fine grained sands and silts, with varying amounts of organic material. The middle lithostratigraphic unit consists of layers of clayey silt and silty clay with clayey to clean sand. The upper lithostratigraphic unit consists of undifferentiated deposits of sand, silt, and gravel. These deposits are poorly to moderately sorted.

Bulk groundwater flow is predominantly horizontal; however, hydraulic head elevations obtained within the FMSS indicate that there is a downward component of groundwater flow within the MISS /Stepan property, and an apparent upward component of groundwater flow near groundwater discharge points such as the Saddle River and Lodi Brook. This information is further presented in the following sections.

Water Level Measurements

Water level measurements are obtained quarterly from 34 monitoring wells (Appendix D, **Figure D-2**). Of these 34 monitoring wells, 15 are completed in unconsolidated overburden deposits, while 19 are completed in bedrock. In previous years, water levels were obtained from well B38W06B. However, this well was damaged and was abandoned by a licensed driller in 2002. During the synoptic gauging year 2003, four rounds of water levels were obtained as part of the EMP. The four synoptic gauging rounds were performed in March, May, August, and October 2003. Water Level Record Sheets for the four synoptic water level gauging rounds are provided in Appendix C. Water levels fluctuate in response to short and long term seasonal changes in precipitation and evapo-transpiration. In the unconsolidated deposits, groundwater levels measured during the four gauging rounds varied as shown in **Table 5-1**:

Table 5-1
Minimum and Maximum Water Level Elevations in Overburden Monitoring Wells
Synoptic Gauging Year 2003

Parameter	Measurement Date			
	3/12/02	**5/23/03**	**8/15/03**	**10/17/03**
Minimum Groundwater (GW) Elevation (ft National Geodetic Vertical Datum [NGVD])*	42.45	39.28	42.10	41.01
Maximum GW Elevation (ft NGVD)*	54.92	52.33	52.48	51.67
Well Depicting Minimum (GW Elevation) **	B38W15S	B38W14S	B38W15S	B38W15S
Well Depicting Maximum (GW Elevation) **	MISS-2A	MISS-2A	B38W25S	MISS-2A

Table A-7 in Appendix A, presents the surveyed elevation of the top of inner casing (TOC), depth to water (DTW) below TOC, and groundwater elevations for the 15 monitoring wells gauged and completed in the unconsolidated deposits. Minimum water level fluctuations (1.27 ft) were measured in well B38W01S. The minimum groundwater elevation (49.95 ft NGVD) and maximum groundwater elevation (51.22 ft NGVD) were measured in well B38W01S on October 17, 2003, and March 12, 2003, respectively. The maximum water level fluctuation (3.99 ft) was measured in well MISS-4A. The minimum groundwater elevation (47.28 ft NGVD) and maximum groundwater elevation (51.27 ft NGVD) for well MISS-4A were measured on October 17, 2003 and March 12, 2003, respectively.

In the bedrock aquifer, groundwater levels measured during the four gauging rounds ranged as given in **Table 5-2**:

Table 5-2
Minimum and Maximum Water Level Elevations in Bedrock Monitoring Wells
Synoptic Gauging Year 2003

Parameter	Measurement Date			
	3/12/03	**5/23/03**	**8/15/03**	**10/17/03**
Minimum GW Elevation (ft NGVD)	40.69	40.80	43.24	42.34
Maximum GW Elevation (ft NGVD)	63.99	60.33	63.24	59.96
Well Depicting Minimum GW Elevation	B38W14D	B38W14D	B38W15D	B38W15D
Well Depicting Maximum GW Elevation	B38W02D	B38W02D	B38W02D	B38W02D

Notes: * NGVD – National Geodetic Vertical Datum – 1929
** GW – Groundwater Elevation

Table A-8 in Appendix A, presents the surveyed elevation of the TOC, DTW below TOC, and groundwater elevations for the 19 bedrock monitoring wells. As depicted in **Table A-8**, wells B38W15D and B38W02D showed the minimum and maximum water level fluctuations that occurred through out the course of the year 2003 synoptic gauging program. Well B38W15D varied by 0.95 ft, and B38W02D varied by 4.03 ft. For monitoring well B38W15D, the minimum (42.29 NGVD) and maximum (43.24 NGVD) groundwater elevations occurred during the months of August and May 2003, respectively. With respect to B38W02D, the minimum (59.96 NGVD) and maximum (63.99 NGVD) groundwater elevations occurred during the months of October and March 2003, respectively.

Groundwater Flow System

Water table contour maps for the unconsolidated deposits and bedrock potentiometric surface maps are presented in Appendix D, **Figures D-4** through **D-7**. **Figures D-4** and **D-5** present the groundwater flow for wells completed in the overburden soils; **Figures D-6** and **D-7** present the potentiometric surface maps for the wells completed in bedrock. Water table contour maps and potentiometric surface contour maps were prepared for March 12, 2003 and October 17, 2003. These two gauging rounds were chosen to depict the groundwater flow directions since the maximum water level fluctuations occurred during those two gauging rounds. Lateral groundwater flow at the MISS is strongly controlled by the morphology of the bedrock surface. The bedrock slopes westward across the site, flattens, and then rises to a subtle ridge along the Saddle River (DOE 1992). Horizontal hydraulic gradients reflect this configuration and flatten off-site, to the west. A figure depicting the contours of the bedrock surface excerpted from the Remedial Investigation Report, are presented in Appendix D, **Figure D-8** (BNI 1992). Bedrock highs exist in the northeast portion of the FMSS within the Stepan Company property and locally within the MISS. These bedrock highs form a local groundwater divide and control the direction of groundwater flow in the overburden and bedrock aquifers.

During the year 2003 synoptic gauging rounds, the horizontal hydraulic gradient within the overburden varied spatially, but typically ranged from approximately 0.007 to 0.01 ft/ft off-site and 0.015 to 0.017 ft/ft within the MISS / Stepan Company property. The direction of groundwater flow in the overburden aquifer is predominantly to the west-southwest towards the Saddle River, with a component of groundwater flow towards the northwest (Appendix D, **Figures D-4** and **D-5)**.

The direction of groundwater flow in bedrock is presented in Appendix D, **Figures D-6** and **D-7**. As depicted in these figures, groundwater flow is dictated by the presence of a groundwater high. This roughly coincides with a bedrock high located in the northeast corner of the site in the vicinity of the Stepan Company property, as shown on Appendix D, **Figure D-8**. In Appendix D, **Figures D-6** and **D-7** depict the groundwater divide, with groundwater flowing predominantly to the west-southwest, with a component of groundwater flow to the northwest. In the bedrock aquifer, the horizontal hydraulic gradients ranged between 0.005 ft/ft to 0.008 ft/ft west of Route 17, and varied between 0.015 ft/ft to 0.020 ft/ft within the MISS / Stepan Company property.

Based on the synoptic gauging rounds, information regarding the vertical component of groundwater flow may be inferred. As depicted in Appendix A, **Table A-9**, 13 well clusters were used to determine if a horizontal or vertical gradient (either upward or downward) exists between overburden and bedrock wells or whether the groundwater is in a transitional "horizontal" flow system. Of the nine well clusters located within the MISS / Stepan Company property, the overburden well depicted a greater hydraulic head than the wells completed in bedrock in 8 of the 9 well clusters. Data obtained from well cluster B38W24S/D appears to be consistent with previous years data and indicates an upward gradient, based on data collected in August and October 2003. The data presented in Appendix A, **Table A-9** principally indicates that the MISS / Stepan Company property represents a recharge area for the unconsolidated/overburden aquifer. At well cluster B38W24, bedrock may be recharging the overburden aquifer, or the bedrock aquifer may be under confined conditions.

Water levels measured in off-site monitoring wells in 2003 principally indicate that for well clusters B38W12A/12B and B38W15S/15D, the hydraulic heads in the bedrock aquifer were consistently higher than the heads in the overburden aquifer, indicating flow from the bedrock aquifer to the overburden aquifer. These wells are located in proximity to a drainage swale/Lodi Brook (B38W12A/12B) and the

Saddle River (B38W15S/15D). Access to well cluster B38W14S/D was an issue during the 2003 synoptic gauging year, however, the May 23, 2003 water levels indicates an upward gradient. This well is also located in proximity to the Saddle River. The other off-site well cluster, B38W17A/17B, displayed a transitional or horizontal component of groundwater flow. Water levels were either the same between the overburden/bedrock wells or within measurement error. This well appears to be located transitionally between a recharge and a discharge area.

Field Parameters

In Appendix A, **Table A-10** presents a summary of field parameters measured during annual sampling activities at the MISS. Field parameters include temperature, pH, oxidation / reduction potential (Eh), turbidity, specific conductance, and dissolved oxygen. These parameters are monitored during the purging of the wells to determine when to commence sample collection. Field procedures require these parameters to reach a stable condition prior to sampling. Measurements are taken systematically during the purging procedure and are recorded in field logbooks. In Appendix A, **Table A-10** represents the stabilized values.

Water Quality Parameters

Groundwater quality at the MISS has been evaluated historically for the standard parameters carbonate, bicarbonate, chloride, nitrate, sulfate, and total dissolved solids (TDS). Analyses for these parameters were discontinued after 1996 since the above compounds had not been detected in the groundwater for several years.

5.5.2 Groundwater - Radiological Constituents

Groundwater samples collected from monitoring wells both on-site and off-site (Appendix D, **Figure D-2**) between June and July 2003 were analyzed for radioactive constituents. Eleven (11) shallow wells and 12 deep wells are included in the monitoring plan to be sampled for radionuclides, metals, and VOCs. The location of these wells, with respect to the MISS, is given in **Table 5-3**:

Table 5-3
Locations of Wells with Respect to the MISS

Well Type	Location
Upgradient Wells	B38W-01S, 02D
On-site Wells	MISS-1AA, 1B, 2A, 2B, 5A, 5B, 6A, 7B B38W-19S, 19D, 18D, 24S, 24D, 25S, 25D
Downgradient Wells	B38W-14S, 14D, 15S, 15D, 17A, 17B

Although groundwater at the site is not used as a source of potable water, Federal and State drinking water standards are used as a conservative basis for evaluation of the results. Results are provided in Appendix A, **Table A-11** and discussed below.

- Gross alpha concentrations exceeded the Federal and State drinking water standards in four on-site wells (MISS05A, B38W18D, MISS07B, and B38W25D) and one down-gradient well (B38W15S). The concentrations of gross alpha in these wells ranged from a minimum of 16.0 pCi/L at well MISS07B to a maximum of 220 pCi/L at B38W15S. As per the Federal Standards, the U results were subtracted from the gross alpha results to obtain corrected gross alpha values. In 2002, gross alpha concentrations were exceeded in eight wells with a maximum concentration of 127.08 pCi/L at MISS05A; seven wells were on-site wells and one well was downgradient.

- Gross beta results exceeded the Federal and State standards in two down-gradient wells (B38W15S, B38W17B) and four on-site wells (B38W25D, B38W19D, MISS05B, and MISS07B). The concentrations in these six wells ranged from a minimum of 54.5 pCi/L at MISS05B to a maximum of 2,910 pCi/L at B38W15S. In 2002, gross beta concentrations were also exceeded in six wells with a maximum concentration of 336.0 pCi/L at MISS05B; four of these wells were on-site and two were down-gradient.
- Consistent with historical results, Ra-226 was detected in most groundwater samples, but at concentrations that are less than the Federal and State drinking water standard for combined Ra (Ra-226 and Ra-228) of 5 pCi/L. The measured concentrations ranged from non-detected to a maximum of 1.33 pCi/L at B38W25D. In 2002, the maximum Ra-226 concentration occurred at B38W14D with a value of 1.34 pCi/L.
- The Ra-228 concentration exceeded the Federal and State drinking water standards for combined radium in well MISS06A (5.47 pCi/L). All other detected concentrations were below the Federal and State drinking water standards for combined Ra. The concentration at B38W19S was elevated, but below the Federal and State drinking water standard for combined Ra of 5 pCi/L. In 2002, the maximum Ra-228 concentration was detected at MISS05A with a value of 4.02 pCi/L.
- The combined Ra (Ra-226 and Ra-228) concentrations exceeded the Federal and State drinking water standards in two wells; B38W19S (5.05 pCi/L) and MISS06A (6.08 pCi/L). For the rest of the wells, the combined concentrations of Ra-226 and Ra-228 were less than the Federal and State drinking water standard of 5 pCi/L (for combined Ra-226 and Ra-228). The maximum combined Ra concentration was detected at MISS06A (6.08 pCi/L). Although the SWDA does not apply because groundwater at the MISS is not used as a source of drinking water, the combined Ra-226 and Ra-228 concentrations were compared to the SWDA Ra standard to evaluate groundwater quality. In 2002, the combined Ra concentrations were detected at MISS05A (4.38 pCi/L).
- Consistent with historical results, the detected concentrations of Th-228 at the various sampling locations were not elevated. The maximum concentration of Th-228 (0.32 pCi/L) occurred at B38W18D. In 2002, the maximum Th-228 concentration also occurred at B38W18D with a measured value of 0.58 pCi/L.
- Consistent with historical results, Th-230 was detected in almost all of the groundwater samples with low concentrations. The maximum concentration of Th-230 (0.71 pCi/L) occurred at B38W19D. In 2002, Th-230 was also detected in most of the groundwater samples with a maximum concentration of 1.40 pCi/L at B38W14D.
- Consistent with historical results, the detected concentrations of Th-232 at the various sampling locations were low. The maximum concentration of Th-232 (0.22 pCi/L) was detected at B38W18D. In 2002, the maximum Th-232 concentration also occurred at B38W18D with a measured concentration of 0.68 pCi/L.
- The combined concentrations of Th-228, Th-230, and Th-232 were low at all of the monitoring locations. The maximum combined concentrations of Th-228, Th-230, and Th-232 occurred at MISS06A with a value of 0.72 pCi/L. In 2002, the maximum combined concentration of Th-228, Th-230, and Th-232 occurred at B38W18D with a value of 1.99 pCi/L.
- Consistent with historical results, the $U_{(tot)}$ concentrations in groundwater were much less than the SDWA standards with one exception. The maximum $U_{(tot)}$ concentration occurred at MISS05A with a value of 109.60 pCi/L (160.48 µg/L). The $U_{(tot)}$ concentration at MISS05A is well above

the Federal and State drinking water standard of 30 µg/L. MISS05A is an overburden monitoring well located on-site near a former retention pond and areas of contaminated soil. Monitoring well B38W18D (bedrock well) located near Building 76 contained 3.24 pCi/L of $U_{(tot)}$ compared to 3.02 pCi/L in 2002. The maximum concentration of $U_{(tot)}$ detected off-site was 6.30 pCi/L at monitoring well B38W15D, located southwest (down-gradient) of the site. In 2002, the maximum concentration of $U_{(tot)}$ detected off-site was also found at B38W15D with a concentration of 6.39 pCi/L.

5.5.3 Groundwater - Metals

Although groundwater at the MISS is not used as a source for public drinking water, the SDWA MCLs and the NJ groundwater quality standard (GWQS) for Class IIA aquifers were used as a basis for comparison for metal analytical data at the MISS. Metals detected in groundwater are reported in Appendix A, **Table A-12**.

Common metals that occur in abundance at the background locations (B38W01S and B38W02D) and in most of the monitoring wells include iron and manganese. These metals often exceed NJ Groundwater Quality Standards for Class IIA aquifers. Results for other metals are discussed below.

In 2003, arsenic concentrations in groundwater exceeded the SDWA MCL (50 µg/L) in three on-site wells MISS02A (2770 µg/L), B38W19D (53.9 µg/L), and MISS07B (82.9 µg/L). Four other wells; MISS05B (29.0 µg/L), B38W15D (9.9 µg/L), B38W18D (9.6 µg/L), and B38W25S (24.1 µg/L) exceeded the State water quality limit (0.02 µg/L) with a PQL of 8 µg/L. These wells have historically exhibited comparable concentrations for the metal. Although the measured concentrations from the other wells exceeded the more stringent State groundwater quality criteria, all but those discussed above were less than the PQL, which is published by the State as that concentration that can reasonably be quantified by standard analytical methods. In such cases, where the PQL is higher than the groundwater quality criterion, the NJ regulations do not consider a discharge to be causing a contravention of that constituent standard as long as the concentration of the constituent in the affected groundwater is less than the relevant PQL (NJAC 7:9-6.9). Therefore, only at wells mentioned above, was the State limit exceeded.

- Antimony was not detected in any of the monitoring wells during the year 2003. In 2002, antimony was also not detected in any of the monitoring wells. Historically, there have been occasional exceedances of the Federal drinking water limit for antimony at various monitoring wells (B38W17A, MISS05A, MISS06A, and MISS07B).
- Consistent with the past several years, the maximum beryllium concentration reported was at well B38W01S (1.8 µg/L) in 2003. Beryllium was also detected in wells B38W18D and B38W24S at concentrations less than the Federal limit of 4 µg/L as was the case for the past several years. Overall, the reported beryllium concentrations ranged from non detect to a maximum of 1.8 µg/L which exceeds the State GWQC (0.008 µg/L); however, all results were well below the PQL (20 µg/L) and therefore do not constitute a “contravention of that constituent standard” according to State regulations. In 2002, the maximum beryllium concentration also occurred at B38W01S with a value of 1.6 µg/L.
- Cadmium was detected in two wells, B38W24D and MISS06A, with concentrations of 1.1 µg/L and 5.6 µg/L, respectively. The concentration of cadmium at MISS06A exceeded the Federal limit of 5 µg/L and State limit of 4 µg/L. In 2002, cadmium was not detected in any of the monitoring wells. .
- Chromium was detected in many of the wells with all reported concentrations below the Federal and State limits of 100 µg/L. The only elevated concentration was detected at B38W18D (72.4 µg/L). In 2002, chromium was found in most of the wells at concentrations below the

Federal and State limits with the exception of an exceedance reported at B38W17A (102 µg/L). Historically, the highest chromium concentrations have occurred most frequently at B38W17A.

- Lead was detected in well B38W14D with a concentration of 16.8 µg/L that exceeded the Federal limit of 15 µg/L and State limit of 10 µg/L Lead was not detected in any of the other wells. In 2002, lead was not detected in any of the monitoring wells. Historically, there have been occasional exceedances of the Federal drinking water limit for lead at various wells (B38W14S, B38W15D, B38W17A, and MISS06A).
- Lithium is a metal present at the site as a result of MCW site processing activities. However, no State or Federal limits have been set. Samples are analyzed for this parameter to establish a database of information on its distribution. Lithium was detected in many wells with the highest concentrations reported at MISS02B (9,590 µg/L), MISS07B (7,770 µg/L) and MISS02A (6,200 µg/L). In 2002, lithium was detected in almost all monitoring wells with the highest concentrations reported at MISS02A (8,950 µg/L) and MISS02B (8,160 µg/L). Historically, lithium concentrations have consistently been highest at MISS02B.
- Consistent with historical results, the highest concentration of nickel was detected in well B38W17A at a value of 57.7 µg/L. This concentration is elevated but below the State water quality limit of 100 µg/L. In 2002, the only exceedance of the State water quality limit for nickel occurred at monitoring well B38W17A with a value of 102 µg/L. During the last 10 years, nickel concentrations at B38W17A have consistently been the highest ranging from a low of 56.3 µg/L in June 2001 to a high of 824 µg/L in July 1993.

5.5.4 Groundwater - Volatile Organic Compounds

Groundwater samples were also analyzed for VOCs. The pattern of groundwater contamination with VOCs in 2003 (Appendix A, **Table A-13**) is consistent with historical results (Appendix B, **Table B-4**).

The prevalent organic constituents in groundwater at the MISS are PCE and its degradation products: TCE, DCEs, and vinyl chloride. As seen historically at off-site wells B38W14D, B38W14S, and B38W15D, some or all of these compounds were detected in concentrations that exceeded the State GWQS for Class IIA waters and Federal drinking water limits. The denser compounds were all detected in higher concentrations in the deep wells.

- Historically PCE, TCE, and DCEs have been identified in on-site deep wells MISS01B and MISS07B, but not in their shallow counterparts.
- Vinyl chloride was reported at wells MISS07B (0.8 µg/L) and MISS01B (0.4 µg/L) at concentrations below the Federal criterion of 5 µg/L, but above the NJ criterion of 0.08 µg/L. In 2002, vinyl chloride was reported at MISS07B at a concentration of 0.90 µg/L.
- Benzene was not detected in the shallow wells. In the deep wells, benzene was identified in four wells (B38W17B, B38W19D, MISS02B and MISS05B) at concentrations between 0.2 µg/L at MISS02B to 2.0 µg/L at MISS05B. In every case, the benzene concentration equaled or exceeded the State groundwater quality standard of 0.2 µg/L, but not the Federal drinking water limit of 5 µg/L. In 2002, benzene was identified in three deep wells (B38W19D, MISS02B, and MISS05B) at concentrations from 0.2 µg/L at MISS02B to a relatively high concentration of 680 µg/L at MISS05B.

6.0 CONCLUSIONS

6.1 EXTERNAL GAMMA RADIATION

The 2003 monitors for gamma radiation (TETLDs) were collected at 14 site locations and 1 off-site background location (Appendix D, **Figure D-2**). Site results, corrected for background, exposure duration, and attenuation, ranged from a minimum equal to background (locations 32 and 33) to a maximum of 620.8 mrem/yr (above background) at location 21 (Appendix A, **Table A-2**). At 5 of the 14 locations, measured external gamma radiation exceeded the 100 mrem annual dose limit specified by the NRC.

At Stepan property locations 30 and 31, south of the lawn, external gamma results were 52.5 and 91.1 mrem/yr, respectively. North of the lawn at locations 32 and 33, results were lower than background. These four locations are closest to potential receptors, and when time and distance are factored, any doses would likely be less than regulatory limits. The doses measured at these locations represent the potential dose a person could receive if they spent the entire year at that location. This scenario is highly implausible; any received doses would be considerably lower than these measured results because the potential receptors would spend much less time at these locations.

The calculated doses from direct gamma exposure at the MISS to a hypothetical maximally-exposed resident and worker assumed to be located 50 ft from the fenceline at location 21 were 29.3 mrem/yr and 6.74 mrem/yr, respectively (Calc. 610041-0107-005) (see Appendix F). This is a conservative approach since the nearest receptor is located approximately 200 ft from location 21. The results obtained from the gamma radiation monitors are consistent with historical data and all locations will continue to be monitored during 2004.

6.2 RADON-220 (RN-220) AND RADON-222 (RN-222)

Cumulative Rn measurements were collected at 14 site locations and 1 off-site background location (Appendix D, **Figure D-2** and Appendix A, **Table A-3**). Measured Rn-222 concentrations ranged from non-detect to 0.4 pCi/L and therefore were well below the NJDEP's remedial action requirement of 3.0 pCi/L and the EPA's AL of 4 pCi/L(EPA 1992b).

Rn-220 concentrations ranged from non-detect to a maximum of 3.12 pCi/L (location 24), which is below the EPA's AL of 4 pCi/L. This value is the highest concentration obtained from any of the 15 monitoring locations. The next highest values are 2.26 pCi/L (location 31) and 2.21 pCi/L (location 4). The maximum combined concentration of Rn-222 and Rn-220 is 3.32 pCi/L (location 24). The results of Rn monitoring are consistent with last year results and all locations will continue to be monitored during 2004.

6.3 AIRBORNE PARTICULATE DOSE

The airborne particulate dose to the hypothetical maximally exposed individual in 2003 was a resident with 100% occupancy located approximately 771 ft (235 m) north-northeast of the MISS. The 2003 airborne particulate dose to that individual, considering all site contributions throughout the year, was 0.0011 mrem/yr. This is well below the 10 mrem/yr standard specified in 40CFR61, Subpart H. The hypothetical airborne particulate collective dose to the population within 50 mi (80 km) of the site was 0.006 person-rem/yr.

6.4 CUMULATIVE DOSE FROM EXTERNAL GAMMA RADIATION AND AIRBORNE PARTICULATE

The location of the maximally exposed individual from direct gamma radiation and the location of the maximally exposed individual from airborne particulates are different. The calculated maximally exposed resident and worker from direct gamma radiation emitted at MISS in 2003 occurred 50 ft from location 21, which is located on the southern perimeter of the site. The calculated doses from external gamma radiation exposure at the above location for the maximally exposed resident and worker were 29.3 mrem/yr and 6.74 mrem/yr, respectively (see Section 5.1).

The location of the maximally exposed individual as determined by the dispersion modeling performed for the Annual NESHAP Compliance Report – Year 2003 occurred at a residence located approximately 771 ft (235 m) north-northeast of the MISS (see Appendix E). The calculated annual effective dose to the maximally exposed individual was 0.0011 mrem/yr. The maximum annual effective dose is almost entirely the result of the internal doses received from the inhalation of dust particles with a small contribution from the ingestion of plant borne dust.

In light of the above, the calculated cumulative doses from external gamma radiation and airborne particulates to a hypothetical maximally exposed resident and worker are essentially the external gamma radiation doses. The maximum calculated cumulative dose from external gamma radiation and airborne particulates of 29.3 mrem/yr for the year 2003 is well below the NRC standard of 100 mrem/yr (from all sources, excluding Rn).

6.5 SURFACE WATER

Surface water samples in 2003 were collected and analyzed for radioactive constituents and metals (Appendix A, **Tables A-4** and **A-5**, respectively). Radionuclide concentrations in surface water samples collected in 2003 were below the Federal and State Standards. The maximum concentration for combined Ra-226 and Ra-228 was 1.99 pCi/L (SWSD007). All other radioactive constituents were below the Federal and State standards. Historically, surface water has not exhibited above-background concentrations of radionuclides during past environmental sampling rounds. The measured concentrations of iron and manganese exceeded the State criteria at almost every location. The State criterion for arsenic of 8 µg/L was exceeded in Westerly Brook at SWSD004 (12.3 µg/L). The State criterion of 5 µg/L for lead was exceeded in SWSD006 (10.1 µg/L). Surface water will continue to be monitored during 2004.

6.6 SEDIMENT

Because there are no standards for sediment, the soil cleanup criteria as stated in Section 2.2 are used as a basis for evaluating the analytical results. In 2003, radionuclide concentrations in sediment samples collected in Westerly Brook (SWSD001, SWSD002) were within the background concentration and below the ROD soil cleanup criteria. In Lodi Brook, at SWSD006, the combined concentration of Ra-226 and Th-232 exceeded the soil cleanup criteria. At SWSD007 (in the eastern tributary of Lodi Brook), the combined concentration of Ra-226 and Th-232 also exceeded the soil cleanup criteria of 5 pCi/g. At SWSD005 (at the confluence of the eastern and western tributaries of Lodi Brook), the combined concentration of Ra-226 and Th-232 was above background, but below the soil cleanup criteria. Further downstream at SWSD010 and SWSD012, the combined concentrations of Ra-226 and Th-232 were also above background, but below the soil cleanup criteria. At SWSD015, the combined concentration of Ra-226 and Th-232 was similar to background and below the soil cleanup criteria. At the above locations, the measured concentrations of Ra-228 and Th-230 were above background with the highest concentrations reported at SWSD007. Also, the total uranium concentrations at all monitoring locations were well below the ROD soil cleanup criteria of 100 pCi/g. The results for 2003 confirm the continued presence of localized radiological contamination in the streambed sediment of the eastern tributary of Lodi Brook.

In Lodi Brook, only the sediment concentration of arsenic at location SWSD006 exceeded the NJ soil cleanup criteria. At the upstream location for Westerly Brook (SWSD003), the sediment concentration of zinc was considerably above the soil cleanup criteria. There were no other exceedances of the soil cleanup criteria in Westerly Brook. Various metal concentrations in sediment samples collected in Westerly Brook and Lodi Brook exceeded the LEL. There were exceedances of the LEL concentrations for lead, arsenic, chromium, copper, lead, nickel and zinc in both Westerly and Lodi Brook. The metal concentrations exceeded the SEL concentrations in Westerly Brook at one location (SWSD003) and in Lodi Brook at two locations, SWSD006 and SWSD007 (Appendix A, **Table A-6B**). Sediment will continue to be monitored for radionuclides and metals during 2004.

6.7 GROUNDWATER

Concentrations of gross alpha and gross beta in groundwater exceeded the Federal and State drinking water in many wells. Concentrations of all other radionuclides sampled in groundwater in 2003 (Ra-226, Ra-228, Th-230, Th-232, and $U_{(tot)}$) were well below the Federal and State drinking water standards except for wells MISS05A, MISS06A and B38W19S. The Ra-228 concentration exceeded the Federal and State drinking water standards for combined radium in well MISS06A (5.47 pCi/L). The combined Ra (Ra-226 and Ra-228) concentrations exceeded the Federal and State drinking water standards in two wells; B38W19S (5.05 pCi/L) and MISS06A (6.08 pCi/L). The concentration of $U_{(tot)}$ at location MISS05A was 109.60 pCi/L (160.48 µg/L) which exceeded the Federal and State drinking water standards. Consistent with historical results, the highest concentration of $U_{(tot)}$ was detected in well MISS05A.

Although groundwater at the MISS is not a source of drinking water, Federal and State drinking water standards are used for evaluating groundwater data. The presence of arsenic at concentrations above Federal SDWA drinking water standards was identified in three on-site wells; MISS02A (2,770 µg/L), B38W19D (53.9 µg/L), and MISS07B (82.9 µg/L). Four other wells – MISS05B (29.0 µg/L), B38W15D (9.9 µg/L), B38W18D (9.6 µg/L), and B38W15S (24.1 µg/L) – exceeded the State water quality limit for arsenic (0.02 µg/L) with a PQL of 8 µg/L. Beryllium was detected in several wells with all concentrations less than the Federal limit of 4 µg/L. The maximum concentration was found at B38W01S (1.8 µg/L), which exceeds the State GWQC (0.008 µg/L), but below the PQL of 20 µg/L.

Cadmium was detected in two wells, B38W24D and MISS06A with concentrations of 1.1 µg/L and 5.6 µg/L; respectively. The concentration of cadmium at MISS06A exceeded the Federal limit of 5 µg/L and State limit of 4 µg/L. Chromium was detected in most wells, but all detected concentrations were below the Federal and State limits.

Lead was detected in well B38W14D at a concentration of 16.8 µg/L that exceeded the Federal limit of 15 µg/L and State limit of 10 µg/L. Lithium was detected in many wells with the highest concentrations reported at MISS02B (9,590 µg/L), MISS07B (7,770 µg/L) and MISS02B (8,160 µg/L). Historically, lithium concentrations have consistently been the highest at MISS02B. No Federal or State drinking water limits have been established for lithium. Nickel was present in many wells at concentrations below the State water quality limit of 100 µg/L with the maximum concentration reported at B38W17A (57.7 µg/L). Historically, nickel concentrations have consistently been the highest at B38W17A.

PCE and its degradation products were present in monitoring wells both on-site and off-site at concentrations exceeding the NJ GWQS for Class IIA aquifers and SDWA MCLs. Overall, the results for

VOCs are within the historical range; no significant increases or decreases in contaminant concentrations were observed. Vinyl chloride was reported at wells MISS07B (0.8 µg/L) and MISS01B (0.4 µg/L) at concentrations below the Federal criterion of 5 µg/L, but above the NJ criterion of 0.08 µg/L. In 2002, vinyl chloride was reported at MISS07B at a concentration of 0.90 µg/L.

Benzene was not detected in the shallow wells. In the deep wells, benzene was identified in four wells (B38W17B, B38W19D, MISS02B and MISS05B) at concentrations between 0.2 µg/L at MISS02B to 2.0 µg/L at MISS05B. In 2002, a considerably higher benzene concentration of 680 µg/L was reported at MISS05B.

7.0 REFERENCES / BIBLIOGRAPHY

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APPENDIX A
ANALYTICAL DATA FOR THE YEAR 2003

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APPENDIX A ANALYTICAL DATA FOR THE YEAR 2003

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Table A-1
2003 Environmental Monitoring Program Summary
for
External Gamma Radiation and Radon Gas
Maywood Interim Storage Site - 2003

Air Monitoring																										
Measured Parameter	Station Identification	Number of Analyses or Measurements																								Total Analyses per Year
		No. of Sample Locations				Sample Duplicate				Ship Blank				Contingency Sample				Matrix Spike				Matrix Spike Duplicate				
		CY Quarter				CY Quarter				CY Quarter				CY Quarter				CY Quarter				CY Quarter				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
LABORATORY MEASUREMENTS																										
External gamma radiation (TETLDs)	4, 5, 10, 12, 19, 20,	15		15						1		1		16		16										64
Radon-222/Radon-220	21, 22, 23, 24, 25,	15		15		1		1																		32
Radon-222	30, 31, 32, 33	15		15		1		1																		32

Table A-1 (cont)
2003 Environmental Monitoring Program Summary
for
Groundwater
Maywood Interim Storage Site - 2003

Measured Parameter	Station Identification	Number of Analyses or Measurements: No. of Sample Locations, CY Quarter 1	2	3	4	Rinsate Blank, CY Quarter 1	2	3	4	Trip Blank, CY Quarter 1	2	3	4	Sample Duplicate, CY Quarter 1	2	3	4	Matrix Spike, CY Quarter 1	2	3	4	Matrix Spike Duplicate, CY Quarter 1	2	3	4	Total Analyses per Year
FIELD MEASUREMENTS																										
Chemical/Physical	MISS01AA, MISS01B, MISS02A,																									
Dissolved oxygen	MISS02B, MISS05A, MISS05B,		23																							23
Eh[a]	MISS06A, MISS07B, MISS07A,		23																							23
Turbidity	B38W02D, B38W14S, B38W14D,		23																							23
Temperature	B38W15S, B38W15D, B38W17A,		23																							23
Specific conductivity	B38W17B, B38W18D, B38W19S,		23																							23
pH	B38W19D, B38W24S, B38W24D,		23																							23
	B38W25S, B38W25D, B38W01S																									
LABORATORY MEASURMENTS																										
Radiological																										
Total uranium			23				14								3											40
Thorium-230/232	MISS01AA, MISS01B, MISS02A,		23				14								3											40
Radium-226/228	MISS02B, MISS05A, MISS05B,		23				14								3											40
Gross Alpha	MISS06A, MISS07B, MISS07A,		23				14								3											40
Gross Beta	B38W02D, B38W14S, B38W14D,		23				14								3											40
Chemical	B38W15S, B38W15D, B38W17A,																									
TAL Metals[b]	B38W17B, B38W18D, B38W19S,		23				14				12				3				3				3			58
	B38W19D, B38W24S, B38W24D,																									
	B38W25S, B38W25D, B38W01S																									
Volatile organic compounds[b]			23				14				12				3				3				3			

Table A-1 (cont)
2003 Environmental Monitoring Program Summary
for
Surface Water and Sediment
Maywood Interim Storage Site - 2003

Surface Water and Sediment Monitoring																										
		Number of Analyses or Measurements																								
Measured Parameter	Station Identification	Samples				Rinsate Blank				Trip Blank				Sample Duplicate				Matrix Spike				Matrix Spike Duplicate				Total Analyses per Year
		CY Quarter				CY Quarter				CY Quarter				CY Quarter				CY Quarter				CY Quarter				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
FIELD MEASUREMENTS																										
Chemical/Physical																										
Dissolved oxygen	SWSD-001, SWSD-002,		13																							13
Eh[a]	SWSD-003, SWSD-004,		13																							13
Turbidity	SWSD-005, SWSD-006,		13																							13
Temperature	SWSD-007, SWSD-010,		13																							13
Specific conductivity	SWSD-011, SWSD-012,		13																							13
pH	SWSD-013, SWSD-014,		13																							13
	SWSD-015.																									
LABORATORY MEASURMENTS																										
SEDIMENT																										
Radiological																										
Iso/Total uranium	SWSD-001, SWSD-002,		9				2								2											13
Thorium-228/230/232	SWSD-003, SWSD-005,		9				2								2											13
Radium-226/228	SWSD-006, SWSD-007,		9				2								2											13
Chemical	SWSD-010, SWSD-012,																									
MET-TAL	SWSD-015.		9				2								2				2				2			17
SURFACE WATER																										
Radiological																										
Iso/Total uranium	SWSD-001, SWSD-002,		13				2								2											17
Thorium-228/230/232	SWSD-003, SWSD-004,		13				2								2											17
Radium-226/228	SWSD-005, SWSD-006,		13				2								2											17
Gross Alpha	SWSD-007, SWSD-010,		13				2								2											17
Gross Beta	SWSD-011, SWSD-012,		13				2								2											17
Chemical	SWSD-013, SWSD-014,																									
MET-TAL	SWSD-015.		13				2								2				2				2			21

[a] Oxidation/reduction potential (Eh).

[b] See Table 14 for a comprehensive list of metals.

Table A-2
2003 External Gamma Radiation Dose Rates
Maywood Interim Storage Site - 2003

2/3/2003 to 8/05/2003 TETLD[a]			2/3/2003 to 2/2/04 TETLD[a]		
Monitoring Location[b]	**Readings** (mrem)	**Corrected**[c] (mrem/yr)	**Monitoring Location**[b]	**Readings** (mrem)	**Corrected**[c] (mrem/yr)
MISS Perimeter					
4	77.0	76.1	4	165.0	104.9
	93.0	110.4		146.0	84.4
5	80.0	82.5	5	149.0	87.4
	75.0	78.3		149.0	86.8
10	119.0	166.2	10	222.0	166.1
	116.0	159.7		217.0	160.3
12	65.0	50.4	12	119.0	55.3
	66.0	52.5		121.0	57.0
20	52.0	22.5	20	92.0	25.8
	49.0	16.0		84.0	17.6
21	330.0	618.6	21	644.0	620.8
	324.0	605.7		628.0	604.0
22	82.0	86.8	22	155.0	93.2
	81.0	84.7		156.0	94.8
23	87.0	97.6	23	149.0	87.4
	80.0	82.5		153.0	91.1
24	174.0	284.1	24	333.0	285.3
	169.0	273.4		327.0	279.1
25	324.0	605.7	25	609.0	583.3
	307.0	569.3		561.0	531.8
30	64.0	48.2	30	115.0	51.0
	66.0	52.5		109.0	43.9
31	84.0	91.1	31	150.0	88.1
	82.0	86.8		150.0	88.1
32	37.0	0.0	32	63.0	0.0
	41.0	0.0		61.0	0.0
33	45.0	7.5	33	68.0	0.0
	43.0	3.2		68.0	0.0
Background	40.0	avg. bkg		71.0	avg. bkg
19	43.0	89.0	19	65.0	73.4

[a] TETLD = Tissue-equivalent thermoluminescent dosimeter. There are two TETLDs per station.

[b] Monitoring locations are shown on Figure D-2.

[c] All TETLD readings are corrected for shelter/absorption factor (s/a = 1.075) and are normalized to exactly one year's exposure. Average corrected background is then subtracted from all other corrected readin

* TETLD was lost or damaged in Processing. Unable to report a reading.

Table A-3
2003 Radon Gas Concentrations
Maywood Interim Storage Site - 2003

Monitoring Location[a]		Average Daily Concentration (pCi/L) 02/3/2003 to 08/05/2003		Average Daily Concentration (pCi/L) 08/05/2003 to 2/2/2004	
		Radon-220[b]	Radon-222[c]	Radon-220[b]	Radon-222[c]
MISS perimeter	4	1.85	0.2*	2.21	0.2*
	5	0.49	0.2*	0.88	0.2*
	10	0.49	0.2*	0.54	0.2*
	12	1.07	0.2*	0.96	0.2*
	20	0.78	0.2*	0.74	0.2*
	21	1.49	0.2*	1.52	0.2*
Duplicate[d]	21	0.97	0.2*	1.51	0.2*
	22	0.24	0.2*	0.29	0.2*
	23	0.77	0.2*	0.90	0.2*
	24	1.69	0.2*	3.12	0.2*
	25	0.04	0.40	0.56	0.2*
	30	0.67	0.2*	0.30	0.40
	31	2.26	0.2*	1.09	0.2*
	32	0.24	0.2*	0.59	0.2*
	33	0.00	0.2*	0.02	0.2*
Background	19	0.27	0.2*	0.2*	0.2*

(*) Indicates detection limit is reported. Actual result is less than this value.

[a] Monitoring locations are shown on Figure 2.

[b] Radon-220 gas concentrations are calculated according to the method outlined in FUSRAP committed calculation 191-CV-028, Rev. 1, using data from RadTrack® and RadTack®-modified detectors.

[c] The EPA Action Level for radon-222 is 4.0 pCi/L and assumes that radon 220 is present and in equilibrium, 40 CFR 192 (October 1999).

[d] A quality control duplicate is collected at the same time and location, and is analyzed by the same method in order to evaluate precision in sampling and analysis.

Table A-4
2003 Surface Water Analytical Results - Radioactive Constituents
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte	Result[a] (pCi/L)	Result[f] (µg/L)	Error	Qualifier[b]	MDA[c] (pCi/L)	State/Federal[d] Standards (pCi/L)	State/Federal[d] Standards (µg/L)
Samples collected in Westerly Brook:									
SWSD001	7/8/2003	Gross Alpha	2.50		2.7	UJ	4.20	15	
	7/8/2003	Gross Beta	12.70		3		3.70	50	
	7/8/2003	Radium-226	0.19		0.13	J	0.17	5[g]	
	7/8/2003	Radium-228	0.44		0.39	UJ	0.63	5[g]	
	7/8/2003	Thorium-228	0.04		0.13	U	0.33		
	7/8/2003	Thorium-230	0.92		0.42	J	0.20		
	7/8/2003	Thorium-232	0.00		0	U	0.10		
		Total Thorium	0.96						
	7/8/2003	Uranium-234	0.63		0.3	J	0.18		
	7/8/2003	Uranium-235	0.00		0	U	0.20		
	7/8/2003	Uranium-238	0.38		0.23	J	0.19		
		Total Uranium	1.01	1.13					30
SWSD002	7/8/2003	Gross Alpha	1.60		1.8	UJ	2.80	15	
	7/8/2003	Gross Beta	9.80		2.1		2.50	50	
	7/8/2003	Radium-226	0.16		0.14	UJ	0.20	5[g]	
	7/8/2003	Radium-228	0.27		0.5	U	0.82	5[g]	
	7/8/2003	Thorium-228	0.04		0.082	UJ	0.11		
	7/8/2003	Thorium-230	0.73		0.38	J	0.20		
	7/8/2003	Thorium-232	0.04		0.082	UJ	0.11		
		Total Thorium	0.81						
	7/8/2003	Uranium-234	0.74		0.34	J	0.27		
	7/8/2003	Uranium-235	0.06		0.11	U	0.18		
	7/8/2003	Uranium-238	0.31		0.21	J	0.20		
		Total Uranium	1.11	0.92					30
SWSD002 Duplicate	7/8/2003	Gross Alpha	2.20		2.7	UJ	4.40	15	
	7/8/2003	Gross Beta	13.20		3		3.50	50	
	7/8/2003	Radium-226	0.17		0.11	J	0.15	5[g]	
	7/8/2003	Radium-228	0.41		0.37	UJ	0.60	5[g]	
	7/8/2003	Thorium-228	0.11		0.15	UJ	0.24		
	7/8/2003	Thorium-230	0.50		0.31	J	0.20		
	7/8/2003	Thorium-232	0.04		0.084	UJ	0.11		
		Total Thorium	0.65						
	7/8/2003	Uranium-234	0.68		0.32	J	0.20		
	7/8/2003	Uranium-235	0.03		0.088	U	0.18		
	7/8/2003	Uranium-238	0.34		0.24	J	0.22		
		Total Uranium	1.05	1.01					30
SWSD003	7/8/2003	Gross Alpha	0.80		1.3	UJ	2.20	15	
	7/8/2003	Gross Beta	2.50		1.2	J	1.90	50	
	7/8/2003	Radium-226	0.04		0.092	UJ	0.17	5[g]	
	7/8/2003	Radium-228	0.25		0.37	U	0.61	5[g]	
	7/8/2003	Thorium-228	-0.08		0.13	U	0.46		
	7/8/2003	Thorium-230	0.41		0.27	J	0.18		
	7/8/2003	Thorium-232	0.00		0	U	0.10		
		Total Thorium	0.33						
	7/8/2003	Uranium-234	0.34		0.22	J	0.16		
	7/8/2003	Uranium-235	0.03		0.087	U	0.17		
	7/8/2003	Uranium-238	0.31		0.21	J	0.14		
		Total Uranium	0.68	0.92					30

Table A-4
2003 Surface Water Analytical Results - Radioactive Constituents
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte	Result[a] (pCi/L)	Result[f] (µg/L)	Error	Qualifier[b]	MDA[c] (pCi/L)	State/Federal[d] Standards (pCi/L)	State/Federal[d] Standards (µg/L)
SWSD004	7/8/2003	Gross Alpha	1.40		2.3	U	3.90	15	
	7/8/2003	Gross Beta	18.00		3.5		4.00	50	
	7/8/2003	Radium-226	0.22		0.13	J	0.16	5[g]	
	7/8/2003	Radium-228	0.65		0.41	J	0.63	5[g]	
	7/8/2003	Thorium-228	0.12		0.23	U	0.50		
	7/8/2003	Thorium-230	0.82		0.41	J	0.11		
	7/8/2003	Thorium-232	-0.01		0.016	U	0.20		
		Total Thorium	0.93						
	7/8/2003	Uranium-234	0.62		0.27	J	0.14		
	7/8/2003	Uranium-235	0.03		0.075	U	0.15		
	7/8/2003	Uranium-238	0.36		0.22	J	0.18		
		Total Uranium	1.01	1.07					30
Samples collected in Lodi Brook:									
SWSD005	7/8/2003	Gross Alpha	0.10		1.4	U	2.80	15	
	7/8/2003	Gross Beta	2.70		1.7	J	2.60	50	
	7/8/2003	Radium-226	0.16		0.13	UJ	0.19	5[g]	
	7/8/2003	Radium-228	0.50		0.4	UJ	0.64	5[g]	
	7/8/2003	Thorium-228	0.06		0.37	R	0.94		
	7/8/2003	Thorium-230	0.29		0.32	R	0.37		
	7/8/2003	Thorium-232	-0.02		0.031	R	0.37		
		Total Thorium	0.34						
	7/8/2003	Uranium-234	0.40		0.24	J	0.18		
	7/8/2003	Uranium-235	0.02		0.095	U	0.20		
	7/8/2003	Uranium-238	0.21		0.18	J	0.16		
		Total Uranium	0.63	0.62					30
SWSD006	7/8/2003	Gross Alpha	1.50		2.5	U	4.30	15	
	7/8/2003	Gross Beta	2.10		2.4	U	4.00	50	
	7/8/2003	Radium-226	0.18		0.11	J	0.15	5[g]	
	7/8/2003	Radium-228	0.17		0.44	U	0.74	5[g]	
	7/8/2003	Thorium-228	0.27		0.26	UJ	0.36		
	7/8/2003	Thorium-230	0.34		0.28	J	0.32		
	7/8/2003	Thorium-232	0.04		0.096	U	0.22		
		Total Thorium	0.65						
	7/8/2003	Uranium-234	0.25		0.21	J	0.22		
	7/8/2003	Uranium-235	0.03		0.096	U	0.19		
	7/8/2003	Uranium-238	0.17		0.16	J	0.16		
		Total Uranium	0.45	0.51					30
SWSD007	7/8/2003	Gross Alpha	3.90		2.7		3.80	15	
	7/8/2003	Gross Beta	3.30		2.3	UJ	3.70	50	
	7/8/2003	Radium-226	0.20		0.2	UJ	0.31	5[g]	
	7/8/2003	Radium-228	1.79		0.65	J	0.92	5[g]	
	7/8/2003	Thorium-228	0.02		0.11	U	0.32		
	7/8/2003	Thorium-230	0.25		0.24	J	0.25		
	7/8/2003	Thorium-232	0.04		0.1	U	0.25		
		Total Thorium	0.31						
	7/8/2003	Uranium-234	0.49		0.27	J	0.18		
	7/8/2003	Uranium-235	0.01		0.1	U	0.22		
	7/8/2003	Uranium-238	0.55		0.28	J	0.20		
		Total Uranium	1.05	1.63					30

Table A-4
2003 Surface Water Analytical Results - Radioactive Constituents
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte	Result[a] (pCi/L)	Result[f] (µg/L)	Error	Qualifier[b]	MDA[c] (pCi/L)	State/Federal[d] Standards (pCi/L)	State/Federal[d] Standards (µg/L)
SWSD007 Duplicate	7/8/2003	Gross Alpha	1.30		2.3	U	3.90	15	
	7/8/2003	Gross Beta	2.30		2.5	UJ	4.00	50	
	7/8/2003	Radium-226	0.12		0.13	UJ	0.20	5[g]	
	7/8/2003	Radium-228	0.58		0.44	UJ	0.70	5[g]	
	7/8/2003	Thorium-228	-0.04		0.038	R	0.30		
	7/8/2003	Thorium-230	0.78		0.39	J	0.11		
	7/8/2003	Thorium-232	0.04		0.12	U	0.30		
		Total Thorium	0.78						
	7/8/2003	Uranium-234	0.22		0.17	J	0.15		
	7/8/2003	Uranium-235	0.03		0.072	U	0.14		
	7/8/2003	Uranium-238	0.09		0.11	UJ	0.15		
		Total Uranium	0.34	0.27					30
SWSD010	7/8/2003	Gross Alpha	2.40		1.8	UJ	2.60	15	
	7/8/2003	Gross Beta	4.10		1.7		2.40	50	
	7/8/2003	Radium-226	0.20		0.17	UJ	0.26	5[g]	
	7/8/2003	Radium-228	1.58		0.48	J	0.66	5[g]	
	7/8/2003	Thorium-228	0.10		0.15	UJ	0.14		
	7/8/2003	Thorium-230	0.35		0.28	J	0.25		
	7/8/2003	Thorium-232	0.00		0	U	0.10		
		Total Thorium	0.45						
	7/8/2003	Uranium-234	0.37		0.22	J	0.18		
	7/8/2003	Uranium-235	0.06		0.1	UJ	0.16		
	7/8/2003	Uranium-238	0.02		0.1	U	0.20		
		Total Uranium	0.45	0.06					30
SWSD011	7/8/2003	Gross Alpha	0.90		1.8	U	3.10	15	
	7/8/2003	Gross Beta	3.50		1.7	J	2.60	50	
	7/8/2003	Radium-226	0.14		0.14	UJ	0.21	5[g]	
	7/8/2003	Radium-228	0.73		0.45	J	0.71	5[g]	
	7/8/2003	Thorium-228	-0.01		0.02	U	0.23		
	7/8/2003	Thorium-230	0.23		0.22	J	0.23		
	7/8/2003	Thorium-232	0.00		0	U	0.10		
		Total Thorium	0.22						
	7/8/2003	Uranium-234	0.46		0.24	J	0.15		
	7/8/2003	Uranium-235	0.03		0.081	U	0.16		
	7/8/2003	Uranium-238	0.26		0.18	J	0.13		
		Total Uranium	0.75	0.77					30
SWSD012	7/8/2003	Gross Alpha	1.60		2.7	U	4.60	15	
	7/8/2003	Gross Beta	6.10		2.6		3.80	50	
	7/8/2003	Radium-226	0.20		0.13	J	0.18	5[g]	
	7/8/2003	Radium-228	0.87		0.41	J	0.62	5[g]	
	7/8/2003	Thorium-228	0.10		0.22	R	0.50		
	7/8/2003	Thorium-230	0.13		0.22	R	0.42		
	7/8/2003	Thorium-232	-0.01		0.025	R	0.29		
		Total Thorium	0.22						
	7/8/2003	Uranium-234	0.44		0.24	J	0.15		
	7/8/2003	Uranium-235	0.00		0	U	0.20		
	7/8/2003	Uranium-238	0.30		0.21	J	0.20		
		Total Uranium	0.74	0.89					30

Table A-4
2003 Surface Water Analytical Results - Radioactive Constituents
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte	Result[a] (pCi/L)	Result[f] (µg/L)	Error	Qualifier[b]	MDA[c] (pCi/L)	State/Federal[d] Standards (pCi/L)	State/Federal[d] Standards (µg/L)
SWSD013	7/8/2003	Gross Alpha	2.00		2	UJ	3.10	15	
	7/8/2003	Gross Beta	4.60		2.2		3.30	50	
	7/8/2003	Radium-226	0.06		0.12	U	0.20	5[g]	
	7/8/2003	Radium-228	0.92		0.44	J	0.67	5[g]	
	7/8/2003	Thorium-228	0.14		0.2	U	0.35		
	7/8/2003	Thorium-230	0.57		0.35	J	0.13		
	7/8/2003	Thorium-232	0.00		0.1	U	0.35		
		Total Thorium	0.71						
	7/8/2003	Uranium-234	0.65		0.3	J	0.17		
	7/8/2003	Uranium-235	0.00		0	U	0.20		
	7/8/2003	Uranium-238	0.32		0.21	J	0.16		
		Total Uranium	0.97	0.95					30
SWSD014	7/8/2003	Gross Alpha	2.00		2.9	U	4.80	15	
	7/8/2003	Gross Beta	3.00		2.4	UJ	3.80	50	
	7/8/2003	Radium-226	0.13		0.15	UJ	0.25	5[g]	
	7/8/2003	Radium-228	0.50		0.52	UJ	0.84	5[g]	
	7/8/2003	Thorium-228	0.08		0.17	U	0.37		
	7/8/2003	Thorium-230	0.70		0.44	J	0.28		
	7/8/2003	Thorium-232	-0.01		0.024	U	0.28		
		Total Thorium	0.77						
	7/8/2003	Uranium-234	0.44		0.25	J	0.19		
	7/8/2003	Uranium-235	0.00		0	U	0.20		
	7/8/2003	Uranium-238	0.36		0.24	J	0.20		
		Total Uranium	0.80	1.07					30
SWSD015	7/8/2003	Gross Alpha	2.00		2.7	U	4.40	15	
	7/8/2003	Gross Beta	6.00		2.6		3.80	50	
	7/8/2003	Radium-226	0.11		0.11	UJ	0.17	5[g]	
	7/8/2003	Radium-228	0.51		0.39	UJ	0.61	5[g]	
	7/8/2003	Thorium-228	0.02		0.17	R	0.46		
	7/8/2003	Thorium-230	0.62		0.37	R	0.26		
	7/8/2003	Thorium-232	0.05		0.091	R	0.12		
		Total Thorium	0.69						
	7/8/2003	Uranium-234	0.68		0.31	J	0.19		
	7/8/2003	Uranium-235	0.03		0.084	U	0.17		
	7/8/2003	Uranium-238	0.17		0.16	J	0.16		
		Total Uranium	0.88	0.51					30

[a]Results reported with ± radiological error equal to 2 sigma (95% confidence level),
[b]USACE data qualifier flags based on the CDQMP-QAPP.
U = The analyte was not detected.
J = Reported as an estimated value.
R= Rejected by validation.
[c] Minimum Detectable Activity (MDA)
[d] SDWA standards (40CFR141), New Jersey Groundwater Standards (NJAC 7:9-6).
[e]Location SWSD008 was not sampled due to stagnant water.
[f]The NJDEP has established a MCL for total uranium in drinking water of 30 ug/L.
The reported U-238 in pCi/L was divided by the specific activity of U-238
(0.3365 pCi/ug) to obtain the total uranium in ug/L and then compared to NJDEP MCL of 30 ug/L.
[g] 5 pCi/L is the New Jersey and Federal standard for the combined concentration of Radium-226 and Radium-228 in in drinking water.

Table A-5
2003 Surface Water Anaytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Data Collected	Analyte[a]	Result (µg/L)	Data Qualifier[b] S&W	Reporting Limits (ug/L)	Related Regulations Federal[c] (ug/L)	State[d] (ug/L)
Samples collected in Westerly Brook:							
SWSD001	7/8/2003	Aluminum, Total	130		60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	4.4	J	3.5	50	0.02/8
	7/8/2003	Barium, Total	134		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	121		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	98000		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	3.6	J	2.6	1300	1000
	7/8/2003	Iron, Total	589		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	273				
	7/8/2003	Magnesium, Total	12900		24		
	7/8/2003	Manganese, Total	232		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	16600		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	67200		93		
	7/8/2003	Thallium, Total	2	U		2	0.5
	7/8/2003	Vanadium, Total	1	U	1		
	7/8/2003	Zinc, Total	17.8	J	11	500	5000
SWSD002	7/8/2003	Aluminum, Total	60	U	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	7	J	3.5	50	0.02/8
	7/8/2003	Barium, Total	139		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	122		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	97400		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	2.6	U	2.6	1300	1000
	7/8/2003	Iron, Total	938		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	282				
	7/8/2003	Magnesium, Total	12700		24		
	7/8/2003	Manganese, Total	430		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	16900		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	67400		93		
	7/8/2003	Thallium, Total	2	U		2	0.5
	7/8/2003	Vanadium, Total	1	U	1		
	7/8/2003	Zinc, Total	12.7	J	11	500	5000

Table A-5
2003 Surface Water Anaytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Data Collected	Analyte[a]	Result (µg/L)	Data Qualifier[b] S&W	Reporting Limits (ug/L)	Related Regulations Federal[c] (ug/L)	State[d] (ug/L)
SWSD002 Duplicate	7/8/2003	Aluminum, Total	60	U	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	6.7	J	3.5	50	0.02/8
	7/8/2003	Barium, Total	139		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	120		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	98100		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	2.6	U	2.6	1300	1000
	7/8/2003	Iron, Total	946		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	279				
	7/8/2003	Magnesium, Total	12800		24		
	7/8/2003	Manganese, Total	431		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	16800	J	100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	67000		93		
	7/8/2003	Thallium, Total	2	U		2	0.5
	7/8/2003	Vanadium, Total	1	U	1		
	7/8/2003	Zinc, Total	12.9	J	11	500	5000
SWSD003	7/8/2003	Aluminum, Total	60	U	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	167		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	53.1		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	75900		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	2.6	U	2.6	1300	1000
	7/8/2003	Iron, Total	394		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	14.2	U			
	7/8/2003	Magnesium, Total	8740		24		
	7/8/2003	Manganese, Total	131		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	2770		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	52900		93		
	7/8/2003	Thallium, Total	2.4	U		2	0.5
	7/8/2003	Vanadium, Total	1	U	1		
	7/8/2003	Zinc, Total	11.5	J	11	500	5000

Table A-5
2003 Surface Water Anaytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Data Collected	Analyte[a]	Result (µg/L)	Data Qualifier[b] S&W	Reporting Limits (ug/L)	Related Regulations Federal[c] (ug/L)	State[d] (ug/L)
SWSD004	7/8/2003	Aluminum, Total	68.9	J	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	12.3		3.5	50	0.02/8
	7/8/2003	Barium, Total	160		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	131		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	101000		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	2.6	U	2.6	1300	1000
	7/8/2003	Iron, Total	1320		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	319				
	7/8/2003	Magnesium, Total	12200		24		
	7/8/2003	Manganese, Total	845		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	2.1	J	1.8		100
	7/8/2003	Potassium, Total	19200		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	71900		93		
	7/8/2003	Thallium, Total	1.3	U		2	0.5
	7/8/2003	Vanadium, Total	1	U	1		
	7/8/2003	Zinc, Total	34.1		11	500	5000
Samples collected in Lodi Brook:							
SWSD005	7/8/2003	Aluminum, Total	60	U	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	106		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	92.7		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	59500		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	10		2.6	1300	1000
	7/8/2003	Iron, Total	274		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	23.5	U			
	7/8/2003	Magnesium, Total	14900		24		
	7/8/2003	Manganese, Total	125		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	4580		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	62700		93		
	7/8/2003	Thallium, Total	2	U		2	0.5
	7/8/2003	Vanadium, Total	1	U	1		
	7/8/2003	Zinc, Total	14.9	J	11	500	5000

Table A-5
2003 Surface Water Anaytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Data Collected	Analyte[a]	Result (µg/L)	Data Qualifier[b] S&W	Reporting Limits (ug/L)	Related Regulations Federal[c] (ug/L)	State[d] (ug/L)
SWSD006	7/8/2003	Aluminum, Total	143		60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	95.8		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	79.7		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	95200		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	4.2	J	2.6	1300	1000
	7/8/2003	Iron, Total	727		53	300	300
	7/8/2003	Lead, Total	10.1		3.6	15	5
	7/8/2003	Lithium, Total	22.1	U			
	7/8/2003	Magnesium, Total	7700		24		
	7/8/2003	Manganese, Total	209		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	2220		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	57500		93		
	7/8/2003	Thallium, Total	2	U		2	0.5
	7/8/2003	Vanadium, Total	2.5		1		
	7/8/2003	Zinc, Total	22.1		11	500	5000
SWSD007	7/8/2003	Aluminum, Total	60	U	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	82.8		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	67.8		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	95500		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	2.6	J	2.6	1300	1000
	7/8/2003	Iron, Total	339		53	300	300
	7/8/2003	Lead, Total	4.3	J	3.6	15	5
	7/8/2003	Lithium, Total	17.7	U			
	7/8/2003	Magnesium, Total	7640		24		
	7/8/2003	Manganese, Total	190		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	2230		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	57200		93		
	7/8/2003	Thallium, Total	3.1	U		2	0.5
	7/8/2003	Vanadium, Total	3		1		
	7/8/2003	Zinc, Total	11	U	11	500	5000

Table A-5
2003 Surface Water Anaytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Data Collected	Analyte[a]	Result (µg/L)	Data Qualifier[b] S&W	Reporting Limits (ug/L)	Related Regulations Federal[c] (ug/L)	State[d] (ug/L)
SWSD007 Duplicate	7/8/2003	Aluminum, Total	60	U	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	83.4		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	68.4		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	96400		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	2.7	J	2.6	1300	1000
	7/8/2003	Iron, Total	346		53	300	300
	7/8/2003	Lead, Total	3.9	U	3.6	15	5
	7/8/2003	Lithium, Total	17.3	U			
	7/8/2003	Magnesium, Total	7710		24		
	7/8/2003	Manganese, Total	192		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	2260		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	57600		93		
	7/8/2003	Thallium, Total	2	U		2	0.5
	7/8/2003	Vanadium, Total	3		1		
	7/8/2003	Zinc, Total	11	U	11	500	5000
SWSD010	7/8/2003	Aluminum, Total	60	U	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	101		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	91.5		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	63600		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	9.6		2.6	1300	1000
	7/8/2003	Iron, Total	298		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	28	U			
	7/8/2003	Magnesium, Total	14300		24		
	7/8/2003	Manganese, Total	132		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	4370		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	62400		93		
	7/8/2003	Thallium, Total	2.4	U		2	0.5
	7/8/2003	Vanadium, Total	1.1	J	1		
	7/8/2003	Zinc, Total	16.4	J	11	500	5000

Table A-5
2003 Surface Water Anaytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Data Collected	Analyte[a]	Result (µg/L)	Data Qualifier[b] S&W	Reporting Limits (ug/L)	Related Regulations Federal[c] (ug/L)	State[d] (ug/L)
SWSD011	7/8/2003	Aluminum, Total	83	J	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	104		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	93		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	69500		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	8.7		2.6	1300	1000
	7/8/2003	Iron, Total	424		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	51.8	U			
	7/8/2003	Magnesium, Total	15000		24		
	7/8/2003	Manganese, Total	228		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	4560		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	68000		93		
	7/8/2003	Thallium, Total	1.4	U		2	0.5
	7/8/2003	Vanadium, Total	2	J	1		
	7/8/2003	Zinc, Total	21.5	J	11	500	5000
SWSD012	7/8/2003	Aluminum, Total	83.4	J	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	105		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	93.6		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	70300		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	8.1		2.6	1300	1000
	7/8/2003	Iron, Total	393		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	53.5	U			
	7/8/2003	Magnesium, Total	15200		24		
	7/8/2003	Manganese, Total	269		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	4500		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	67600		93		
	7/8/2003	Thallium, Total	0.98	U		2	0.5
	7/8/2003	Vanadium, Total	1.4	J	1		
	7/8/2003	Zinc, Total	18.2	J	11	500	5000

Table A-5
2003 Surface Water Anaytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Data Collected	Analyte[a]	Result (µg/L)	Data Qualifier[b] S&W	Reporting Limits (ug/L)	Related Regulations Federal[c] (ug/L)	State[d] (ug/L)
SWSD013	7/8/2003	Aluminum, Total	77.5	J	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	102		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	89		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	68300		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	7.8		2.6	1300	1000
	7/8/2003	Iron, Total	400		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	54.5	U			
	7/8/2003	Magnesium, Total	14800		24		
	7/8/2003	Manganese, Total	279		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	4260		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	65100		93		
	7/8/2003	Thallium, Total	2	U		2	0.5
	7/8/2003	Vanadium, Total	1.2	J	1		
	7/8/2003	Zinc, Total	17.5	J	11	500	5000
SWSD014	7/8/2003	Aluminum, Total	82	J	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	106		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	90.4		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	69500		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	8.1		2.6	1300	1000
	7/8/2003	Iron, Total	482		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	53	U			
	7/8/2003	Magnesium, Total	15000		24		
	7/8/2003	Manganese, Total	321		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	4390		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	67500		93		
	7/8/2003	Thallium, Total	2	U		2	0.5
	7/8/2003	Vanadium, Total	1.2	J	1		
	7/8/2003	Zinc, Total	19.3	J	11	500	5000

Table A-5
2003 Surface Water Anaytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Data Collected	Analyte[a]	Result (µg/L)	Data Qualifier[b] S&W	Reporting Limits (ug/L)	Related Regulations Federal[c] (ug/L)	State[d] (ug/L)
SWSD015	7/8/2003	Aluminum, Total	64.1	J	60	200	200
	7/8/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/8/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/8/2003	Barium, Total	109		0.86	2000	2000
	7/8/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/8/2003	Boron, Total	100		27		
	7/8/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/8/2003	Calcium, Total	73500		54		
	7/8/2003	Chromium, Total	1.4	U	1.4	100	100
	7/8/2003	Cobalt, Total	1.7	U	1.7		
	7/8/2003	Copper, Total	8.2		2.6	1300	1000
	7/8/2003	Iron, Total	506		53	300	300
	7/8/2003	Lead, Total	3.6	U	3.6	15	5
	7/8/2003	Lithium, Total	70.4				
	7/8/2003	Magnesium, Total	15200		24		
	7/8/2003	Manganese, Total	238		2.8	50	50
	7/8/2003	Mercury, Total	0.18	U	0.18	2	2
	7/8/2003	Nickel, Total	1.8	U	1.8		100
	7/8/2003	Potassium, Total	5150		100		
	7/8/2003	Selenium, Total	5	U	5	50	50
	7/8/2003	Silver, Total	0.93	U	0.93	1007	
	7/8/2003	Sodium, Total	70500		93		
	7/8/2003	Thallium, Total	2	U		2	0.5
	7/8/2003	Vanadium, Total	1.4	J	1		
	7/8/2003	Zinc, Total	18.3	J	11	500	5000

[a]All analytes were reported, detected and undetected
[b] USACE qualifier flags based on the CDQMP-QAPP: J = Reported as an estimated value, U= analyte was not detected.
[c] Federal SDWA MCLs, 40 CFR 141. Regulations pertain to drinking water quality and are listed for comparison purposes only. Not established (NE).
[d] New Jersey Class IIA Groundwater Quality Standards NJAC 7:9-6. Analytes. The New Jersey limit is the higher of the GWQC and the PQL.
[e]Locations SWSD008, SWSD009 were not sampled due to stagnant water.
[f]Monitoring well SWSD003 is the background location for surface water locations

Table A-6A
2003 Sediment Analytical Results - Radioactive Constituents
Maywood Interim Storage Site - 2003

Sampling Locationf	Date Collected	Analyte	Result[a] (pCi/g)	Error	Qualifier[b]	MDA[c] (pCi/g)	Cleanup Criteria[d] (pCi/g)
Samples collected in Westerly Brook:							
SWSD001	7/8/2003	Radium-226	0.57	0.2	J	0.15	5[g]
	7/8/2003	Radium-228	0.54	0.33	J	0.51	
	7/8/2003	Thorium-228	0.55	0.21	J	0.16	
	7/8/2003	Thorium-230	0.63	0.22	J	0.06	
	7/8/2003	Thorium-232	0.36	0.16	J	0.04	5[g]
	7/8/2003	Uranium-234	0.42	0.18	J	0.09	
	7/8/2003	Uranium-235	0.07	0.087	UJ	0.11	
	7/8/2003	Uranium-238	0.36	0.16	J	0.09	
		Total Uranium	0.85				100
SWSD002	7/8/2003	Radium-226	1.07	0.29	J	0.21	5[g]
	7/8/2003	Radium-228	1.06	0.44		0.65	
	7/8/2003	Thorium-228	0.53	0.21	J	0.17	
	7/8/2003	Thorium-230	0.50	0.2	J	0.04	
	7/8/2003	Thorium-232	0.44	0.18	J	0.07	5[g]
	7/8/2003	Uranium-234	0.52	0.19	J	0.10	
	7/8/2003	Uranium-235	0.04	0.058	UJ	0.09	
	7/8/2003	Uranium-238	0.45	0.18	J	0.07	
		Total Uranium	1.01				100
SWSD002 Duplicate	7/8/2003	Radium-226	0.89	0.25	J	0.20	5[g]
	7/8/2003	Radium-228	0.87	0.36	J	0.53	
	7/8/2003	Thorium-228	0.58	0.22	J	0.09	
	7/8/2003	Thorium-230	0.51	0.2	J	0.09	
	7/8/2003	Thorium-232	0.47	0.19	J	0.04	5[g]
	7/8/2003	Uranium-234	0.37	0.16	J	0.09	
	7/8/2003	Uranium-235	0.02	0.043	U	0.09	
	7/8/2003	Uranium-238	0.43	0.17	J	0.09	
		Total Uranium	0.82				100
SWSD003	7/8/2003	Radium-226	1.02	0.27		0.18	5[g]
	7/8/2003	Radium-228	0.59	0.34	J	0.52	
	7/8/2003	Thorium-228	0.39	0.18	J	0.15	
	7/8/2003	Thorium-230	0.57	0.22	J	0.07	
	7/8/2003	Thorium-232	0.40	0.17	J	0.04	5[g]
	7/8/2003	Uranium-234	0.45	0.19	J	0.11	
	7/8/2003	Uranium-235	0.06	0.077	UJ	0.10	
	7/8/2003	Uranium-238	0.46	0.19	J	0.09	
		Total Uranium	0.97				100

Table A-6A
2003 Sediment Analytical Results - Radioactive Constituents
Maywood Interim Storage Site - 2003

Sampling Locationf	Date Collected	Analyte	Result[a] (pCi/g)	Error	Qualifier[b]	MDA[c] (pCi/g)	Cleanup Criteria[d] (pCi/g)
Samples collected in Lodi Brook:							
SWSD005	7/8/2003	Radium-226	1.95	0.39		0.20	5[g]
	7/8/2003	Radium-228	2.68	0.54		0.61	
	7/8/2003	Thorium-228	1.60	0.44	J	0.11	
	7/8/2003	Thorium-230	0.82	0.27	J	0.09	
	7/8/2003	Thorium-232	1.32	0.38	J	0.07	5[g]
	7/8/2003	Uranium-234	0.77	0.25	J	0.09	
	7/8/2003	Uranium-235	0.08	0.09	UJ	0.10	
	7/8/2003	Uranium-238	0.90	0.27	J	0.08	
		Total Uranium	1.75				100
SWSD006	7/8/2003	Radium-226	2.54	0.45		0.18	5[g]
	7/8/2003	Radium-228	3.39	0.56		0.53	
	7/8/2003	Thorium-228	3.64	0.89	J	0.11	
	7/8/2003	Thorium-230	1.27	0.39	J	0.12	
	7/8/2003	Thorium-232	3.14	0.78	J	0.07	5[g]
	7/8/2003	Uranium-234	1.18	0.29		0.08	
	7/8/2003	Uranium-235	0.08	0.086	UJ	0.10	
	7/8/2003	Uranium-238	0.89	0.25	J	0.09	
		Total Uranium	2.15				100
SWSD007	7/8/2003	Radium-226	3.77	0.6		0.22	5[g]
	7/8/2003	Radium-228	4.78	0.68		0.52	
	7/8/2003	Thorium-228	5.80	1.3	J	0.20	
	7/8/2003	Thorium-230	1.30	0.38	J	0.07	
	7/8/2003	Thorium-232	5.10	1.2	J	0.07	5[g]
	7/8/2003	Uranium-234	2.01	0.41		0.15	
	7/8/2003	Uranium-235	0.16	0.12	J	0.10	
	7/8/2003	Uranium-238	1.55	0.35		0.11	
		Total Uranium	3.72				100
SWSD007 Duplicate	7/8/2003	Radium-226	3.28	0.49		0.13	5[g]
	7/8/2003	Radium-228	5.02	0.71		0.54	
	7/8/2003	Thorium-228	5.60	1.3	J	0.10	
	7/8/2003	Thorium-230	1.59	0.44		0.04	
	7/8/2003	Thorium-232	5.50	1.3	J	0.10	5[g]
	7/8/2003	Uranium-234	2.09	0.42		0.09	
	7/8/2003	Uranium-235	0.10	0.092	J	0.09	
	7/8/2003	Uranium-238	1.87	0.39		0.07	
		Total Uranium	4.06				100
SWSD010	7/8/2003	Radium-226	0.94	0.27	J	0.22	5[g]
	7/8/2003	Radium-228	1.65	0.42		0.54	
	7/8/2003	Thorium-228	0.88	0.31	J	0.11	
	7/8/2003	Thorium-230	0.59	0.24	J	0.10	
	7/8/2003	Thorium-232	1.28	0.4	J	0.05	5[g]
	7/8/2003	Uranium-234	0.44	0.17	J	0.08	
	7/8/2003	Uranium-235	0.05	0.068	UJ	0.08	
	7/8/2003	Uranium-238	0.35	0.15	J	0.07	
		Total Uranium	0.84				100

Table A-6A
2003 Sediment Analytical Results - Radioactive Constituents
Maywood Interim Storage Site - 2003

Sampling Locationf	Date Collected	Analyte	Result[a] (pCi/g)	Error	Qualifier[b]	MDA[c] (pCi/g)	Cleanup Criteria[d] (pCi/g)
SWSD012	7/8/2003	Radium-226	1.35	0.32		0.21	5[g]
	7/8/2003	Radium-228	1.00	0.4	J	0.59	
	7/8/2003	Thorium-228	1.22	0.37	J	0.13	
	7/8/2003	Thorium-230	0.53	0.21	J	0.10	
	7/8/2003	Thorium-232	0.99	0.31	J	0.04	5[g]
	7/8/2003	Uranium-234	0.46	0.18	J	0.08	
	7/8/2003	Uranium-235	0.09	0.091	J	0.09	
	7/8/2003	Uranium-238	0.45	0.18	J	0.11	
		Total Uranium	1.00				100
SWSD015	7/8/2003	Radium-226	0.73	0.2	J	0.17	5[g]
	7/8/2003	Radium-228	0.57	0.33	J	0.51	
	7/8/2003	Thorium-228	0.62	0.23	J	0.09	
	7/8/2003	Thorium-230	0.40	0.17	J	0.07	
	7/8/2003	Thorium-232	0.47	0.19	J	0.07	5[g]
	7/8/2003	Uranium-234	0.01	0.039	U	0.09	
	7/8/2003	Uranium-235	0.01	0.041	U	0.08	
	7/8/2003	Uranium-238	0.08	0.078	UJ	0.09	
		Total Uranium	0.10				100

[a]Results reported with ± radiological error equal at 2 sigma (95% confidence level),

[b] USACE data qualifier flags based on the CDQMP-QAPP;
U = The analyte was not detected.
J = Reported as an estimated value.

[c]Minimum Detectable Activity (MDA)

[d] Soil cleanup criteria established by DOE and EPA are used as the basis fot evaluating analytical results for sediment.

[e] A quality control duplicate is collected at the same time and location and is analyzed by the same method in order to evaluate precision in sampling and analysis.

[f] Sediment samples could not be collected at above ground locations SWSD008 and SWSD009 in Lodi Brook due to stagnant w
Sediment samples could not be collected at the underground locations SWSD011, SWSD013 and SWSD014 in Lodi Brook anc

[g]The ROD soil cleanup criteria for the combined concentration of Ra-226 and Th-232.

Table A-6B
2003 Sediment Analytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Detected Analyte	Results (mg/kg)	Data Qualifier	Reporting Limits (mg/kg)	State Proposed Criteria (mg/kg)	Lowest Effects Level (LEL) (mg/kg)	Severe Effects Level (SEL) (mg/kg)
Samples collected in Westerly Brook:								
SWSD001 (residential)	7/8/2003	Aluminum, Total	7690		86.7	NE		
	7/8/2003	Antimony, Total	3.6	UJ	3.6	14		
	7/8/2003	Arsenic, Total	10.1		3	20	6	33
	7/8/2003	Barium, Total	123		0.9	700		
	7/8/2003	Beryllium, Total	1.5	U	1.5	1		
	7/8/2003	Boron, Total	29900	U	29900	NE		
	7/8/2003	Cadmium, Total	3	U	3	1	0.6	10
	7/8/2003	Calcium, Total	6610		25.7	NE		
	7/8/2003	Chromium, Total	31.2		1.5	NE	26	110
	7/8/2003	Cobalt, Total	5.2		0.9	NE		
	7/8/2003	Copper, Total	71.5		1.5	600	16	110
	7/8/2003	Iron, Total	16200		65.8	NE		
	7/8/2003	Lead, Total	116		3	400	31	250
	7/8/2003	Lithium, Total	12.5		9.2	NE		
	7/8/2003	Magnesium, Total	2750		10.8	NE		
	7/8/2003	Manganese, Total	463		0.9	NE		
	7/8/2003	Mercury, Total	0.16	J	0.13	14		
	7/8/2003	Nickel, Total	16.2		1.5	250	16	75
	7/8/2003	Potassium, Total	659	J	129	NE		
	7/8/2003	Selenium, Total	4.8	U	4.8	63		
	7/8/2003	Silver, Total	0.9	U	0.9	110		
	7/8/2003	Sodium, Total	417		28.1	NE		
	7/8/2003	Thallium, Total	4.6	U	4.6	2		
	7/8/2003	Vanadium, Total	26		1.2	370		
	7/8/2003	Zinc, Total	285		7.2	1500	120	820
SWSD002 (residential)	7/8/2003	Aluminum, Total	8000	J	43.4	NE		
	7/8/2003	Antimony, Total	1.8	UJ	1.8	14		
	7/8/2003	Arsenic, Total	9.2	J	1.5	20	6	33
	7/8/2003	Barium, Total	81.1	J	0.45	700		
	7/8/2003	Beryllium, Total	0.75	UJ	0.75	1		
	7/8/2003	Boron, Total	15000	U	15000	NE		
	7/8/2003	Cadmium, Total	1.5	UJ	1.5	1	0.6	10
	7/8/2003	Calcium, Total	6180	J	12.9	NE		
	7/8/2003	Chromium, Total	18.2	J	0.75	NE	26	110
	7/8/2003	Cobalt, Total	9	J	0.45	NE		
	7/8/2003	Copper, Total	105	J	0.75	600	16	110
	7/8/2003	Iron, Total	25900		33	NE		
	7/8/2003	Lead, Total	95.1	J	1.5	400	31	250
	7/8/2003	Lithium, Total	13.4		6.2	NE		
	7/8/2003	Magnesium, Total	4360	J	5.4	NE		
	7/8/2003	Manganese, Total	1330	J	0.45	NE		
	7/8/2003	Mercury, Total	0.049	U	0.049	14		
	7/8/2003	Nickel, Total	48.8	J	0.75	250	16	75
	7/8/2003	Potassium, Total	558	J	64.4	NE		
	7/8/2003	Selenium, Total	2.4	U	2.4	63		
	7/8/2003	Silver, Total	0.45	U	0.45	110		
	7/8/2003	Sodium, Total	737	J	14.1	NE		
	7/8/2003	Thallium, Total	3.1	U	3.1	2		
	7/8/2003	Vanadium, Total	24.5		0.6	370		
	7/8/2003	Zinc, Total	226		3.6	1500	120	820

Table A-6B
2003 Sediment Analytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Detected Analyte	Results (mg/kg)	Data Qualifier	Reporting Limits (mg/kg)	State Proposed Criteria (mg/kg)	Lowest Effects Level (LEL) (mg/kg)	Severe Effects Level (SEL) (mg/kg)
SWSD002 Duplicate	7/8/2003	Aluminum, Total	9930	J	43.8	NE		
	7/8/2003	Antimony, Total	1.8	UJ	1.8	14		
	7/8/2003	Arsenic, Total	7.1	J	1.5	20	6	33
	7/8/2003	Barium, Total	53.8	J	0.45	700		
	7/8/2003	Beryllium, Total	0.75	UJ	0.75	1		
	7/8/2003	Boron, Total	15100	U	15100	NE		
	7/8/2003	Cadmium, Total	1.5	UJ	1.5	1	0.6	10
	7/8/2003	Calcium, Total	8050	J	13	NE		
	7/8/2003	Chromium, Total	17.5	J	0.75	NE	26	110
	7/8/2003	Cobalt, Total	10	J	0.45	NE		
	7/8/2003	Copper, Total	41.8		0.75	600	16	110
	7/8/2003	Iron, Total	21700		33.2	NE		
	7/8/2003	Lead, Total	34.5	J	1.5	400	31	250
	7/8/2003	Lithium, Total	8.6		6.4	NE		
	7/8/2003	Magnesium, Total	7290	J	5.4	NE		
	7/8/2003	Manganese, Total	467	J	0.45	NE		
	7/8/2003	Mercury, Total	0.055	U	0.055	14		
	7/8/2003	Nickel, Total	20.7	J	0.75	250	16	75
	7/8/2003	Potassium, Total	527	J	64.9	NE		
	7/8/2003	Selenium, Total	2.4	U	2.4	63		
	7/8/2003	Silver, Total	0.45	U	0.45	110		
	7/8/2003	Sodium, Total	937	J	14.2	NE		
	7/8/2003	Thallium, Total	1.1		3.2	2		
	7/8/2003	Vanadium, Total	33.3		0.6	370		
	7/8/2003	Zinc, Total	133		3.6	1500	120	820
SWSD003 (nonresidential)	7/8/2003	Aluminum, Total	8290	J	43.8	NE		
	7/8/2003	Antimony, Total	1.8	UJ	1.8	340		
	7/8/2003	Arsenic, Total	5.2	J	1.5	20	6	33
	7/8/2003	Barium, Total	107	J	0.45	47000		
	7/8/2003	Beryllium, Total	4.3	J	0.76	1		
	7/8/2003	Boron, Total	28400		15100	NE		
	7/8/2003	Cadmium, Total	1.5	UJ	1.5	100	0.6	10
	7/8/2003	Calcium, Total	6200	J	13	NE		
	7/8/2003	Chromium, Total	50.9	J	0.76	NE	26	110
	7/8/2003	Cobalt, Total	23.3	J	0.45	NE		
	7/8/2003	Copper, Total	494	J	0.76	600	16	110
	7/8/2003	Iron, Total	54800		33.3	NE		
	7/8/2003	Lead, Total	387	J	1.5	600	31	250
	7/8/2003	Lithium, Total	6.6		5.5	NE		
	7/8/2003	Magnesium, Total	4500	J	5.4	NE		
	7/8/2003	Manganese, Total	643	J	0.45	NE		
	7/8/2003	Mercury, Total	0.047	U	0.047	270		
	7/8/2003	Nickel, Total	79.8	J	0.76	2400	16	75
	7/8/2003	Potassium, Total	544	J	65	NE		
	7/8/2003	Selenium, Total	2.4	U	2.4	3100		
	7/8/2003	Silver, Total	0.45	U	0.45	4100		
	7/8/2003	Sodium, Total	1110	J	14.2	NE		
	7/8/2003	Thallium, Total	4.5	U	4.5	2		
	7/8/2003	Vanadium, Total	45.9		0.6	7100		
	7/8/2003	Zinc, Total	4090		18.1	1500	120	820

Table A-6B
2003 Sediment Analytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Detected Analyte	Results (mg/kg)	Data Qualifier	Reporting Limits (mg/kg)	State Proposed Criteria (mg/kg)	Lowest Effects Level (LEL) (mg/kg)	Severe Effects Level (SEL) (mg/kg)
Samples collected in Lodi Brook:								
SWSD005 (nonresidential)	7/8/2003	Aluminum, Total	7690		109	NE		
	7/8/2003	Antimony, Total	4.5	UJ	4.5	340		
	7/8/2003	Arsenic, Total	6.1	J	3.8	20	6	33
	7/8/2003	Barium, Total	268		1.1	47000		
	7/8/2003	Beryllium, Total	1.9	U	1.9	1		
	7/8/2003	Boron, Total	37500	U	37500	NE		
	7/8/2003	Cadmium, Total	3.8	UJ	3.8	100	0.6	10
	7/8/2003	Calcium, Total	7990		32.3	NE		
	7/8/2003	Chromium, Total	36		1.9	NE	26	110
	7/8/2003	Cobalt, Total	5.5		1.1	NE		
	7/8/2003	Copper, Total	101		1.9	600	16	110
	7/8/2003	Iron, Total	19100		82.6	NE		
	7/8/2003	Lead, Total	83.3		3.8	600	31	250
	7/8/2003	Lithium, Total	37.8		14.9	NE		
	7/8/2003	Magnesium, Total	3230		13.5	NE		
	7/8/2003	Manganese, Total	1630		1.1	NE		
	7/8/2003	Mercury, Total	1.8		0.12	270		
	7/8/2003	Nickel, Total	17.5		1.9	2400	16	75
	7/8/2003	Potassium, Total	683	J	161	NE		
	7/8/2003	Selenium, Total	6	U	6	3100		
	7/8/2003	Silver, Total	1.4	J	1.1	4100		
	7/8/2003	Sodium, Total	675		35.3	NE		
	7/8/2003	Thallium, Total	7.4	U	7.4	2		
	7/8/2003	Vanadium, Total	27.9		1.5	7100		
	7/8/2003	Zinc, Total	327		9	1500	120	820
SWSD006 (nonresidential)	7/8/2003	Aluminum, Total	16000		118	NE		
	7/8/2003	Antimony, Total	4.9	UJ	4.9	340		
	7/8/2003	Arsenic, Total	20.5		4.1	20	6	33
	7/8/2003	Barium, Total	370		1.2	47000		
	7/8/2003	Beryllium, Total	2	U	2	1		
	7/8/2003	Boron, Total	40800	U	40800	NE		
	7/8/2003	Cadmium, Total	4.1	UJ	4.1	100	0.6	10
	7/8/2003	Calcium, Total	14700		35.1	NE		
	7/8/2003	Chromium, Total	115		2	NE	26	110
	7/8/2003	Cobalt, Total	15		1.2	NE		
	7/8/2003	Copper, Total	130		2	600	16	110
	7/8/2003	Iron, Total	45800		89.7	NE		
	7/8/2003	Lead, Total	347		4.1	600	31	250
	7/8/2003	Lithium, Total	24.7		14.8	NE		
	7/8/2003	Magnesium, Total	11100		14.7	NE		
	7/8/2003	Manganese, Total	369		1.2	NE		
	7/8/2003	Mercury, Total	0.4		0.15	270		
	7/8/2003	Nickel, Total	40.3		2	2400	16	75
	7/8/2003	Potassium, Total	737	J	175	NE		
	7/8/2003	Selenium, Total	6.5	U	6.5	3100		
	7/8/2003	Silver, Total	1.2	U	1.2	4100		
	7/8/2003	Sodium, Total	984		38.3	NE		
	7/8/2003	Thallium, Total	12.2	U	12.2	2		
	7/8/2003	Vanadium, Total	91.5		1.6	7100		
	7/8/2003	Zinc, Total	506		9.8	1500	120	820

Table A-6B
2003 Sediment Analytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Detected Analyte	Results (mg/kg)	Data Qualifier	Reporting Limits (mg/kg)	State Proposed Criteria (mg/kg)	Lowest Effects Level (LEL) (mg/kg)	Severe Effects Level (SEL) (mg/kg)
SWSD007 (nonresidential)	7/8/2003	Aluminum, Total	12300		130	NE		
	7/8/2003	Antimony, Total	5.4	UJ	5.4	340		
	7/8/2003	Arsenic, Total	16.4		4.5	20	6	33
	7/8/2003	Barium, Total	389		1.3	47000		
	7/8/2003	Beryllium, Total	2.2	U	2.2	1		
	7/8/2003	Boron, Total	44900	U	44900	NE		
	7/8/2003	Cadmium, Total	4.5	UJ	4.5	100	0.6	10
	7/8/2003	Calcium, Total	11300		38.6	NE		
	7/8/2003	Chromium, Total	129		2.2	NE	26	110
	7/8/2003	Cobalt, Total	6.9		1.3	NE		
	7/8/2003	Copper, Total	106		2.2	600	16	110
	7/8/2003	Iron, Total	20300		98.8	NE		
	7/8/2003	Lead, Total	295		4.5	600	31	250
	7/8/2003	Lithium, Total	31.6		14.3	NE		
	7/8/2003	Magnesium, Total	2850		16.2	NE		
	7/8/2003	Manganese, Total	261		1.3	NE		
	7/8/2003	Mercury, Total	0.55		0.14	270		
	7/8/2003	Nickel, Total	23.9		2.2	2400	16	75
	7/8/2003	Potassium, Total	778	J	193	NE		
	7/8/2003	Selenium, Total	7.2	U	7.2	3100		
	7/8/2003	Silver, Total	1.3	U	1.3	4100		
	7/8/2003	Sodium, Total	842		42.2	NE		
	7/8/2003	Thallium, Total	1.4		7.1	2		
	7/8/2003	Vanadium, Total	44.4		1.8	7100		
	7/8/2003	Zinc, Total	494		10.8	1500	120	820
SWSD007 Duplicate	7/8/2003	Aluminum, Total	11800		124	NE		
	7/8/2003	Antimony, Total	5.1	UJ	5.1	340		
	7/8/2003	Arsenic, Total	12.7		4.3	20	6	33
	7/8/2003	Barium, Total	387		1.3	47000		
	7/8/2003	Beryllium, Total	2.1	U	2.1	1		
	7/8/2003	Boron, Total	42800	U	42800	NE		
	7/8/2003	Cadmium, Total	4.3	UJ	4.3	100	0.6	10
	7/8/2003	Calcium, Total	10800		36.9	NE		
	7/8/2003	Chromium, Total	122		2.1	NE	26	110
	7/8/2003	Cobalt, Total	6.2		1.3	NE		
	7/8/2003	Copper, Total	104		2.1	600	16	110
	7/8/2003	Iron, Total	19200		94.3	NE		
	7/8/2003	Lead, Total	285		4.3	600	31	250
	7/8/2003	Lithium, Total	30.6		14.4	NE		
	7/8/2003	Magnesium, Total	2740		15.4	NE		
	7/8/2003	Manganese, Total	246		1.3	NE		
	7/8/2003	Mercury, Total	0.5		0.17	270		
	7/8/2003	Nickel, Total	21.8		2.1	2400	16	75
	7/8/2003	Potassium, Total	741	J	184	NE		
	7/8/2003	Selenium, Total	6.9	U	6.9	3100		
	7/8/2003	Silver, Total	1.3	U	1.3	4100		
	7/8/2003	Sodium, Total	793		40.3	NE		
	7/8/2003	Thallium, Total	7.2	U	7.2	2		
	7/8/2003	Vanadium, Total	41.6		1.7	7100		
	7/8/2003	Zinc, Total	485		10.3	1500	120	820

Table A-6B
2003 Sediment Analytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Detected Analyte	Results (mg/kg)	Data Qualifier	Reporting Limits (mg/kg)	State Proposed Criteria (mg/kg)	Lowest Effects Level (LEL) (mg/kg)	Severe Effects Level (SEL) (mg/kg)
SWSD010 (nonresidential)	7/8/2003	Aluminum, Total	5950	J	43.2	NE		
	7/8/2003	Antimony, Total	1.8	UJ	1.8	340		
	7/8/2003	Arsenic, Total	2	J	1.5	20	6	33
	7/8/2003	Barium, Total	98	J	0.45	47000		
	7/8/2003	Beryllium, Total	0.74	UJ	0.74	1		
	7/8/2003	Boron, Total	14900	U	14900	NE		
	7/8/2003	Cadmium, Total	1.5	UJ	1.5	100	0.6	10
	7/8/2003	Calcium, Total	18400	J	12.8	NE		
	7/8/2003	Chromium, Total	15.5	J	0.74	NE	26	110
	7/8/2003	Cobalt, Total	4.5	J	0.45	NE		
	7/8/2003	Copper, Total	33.1	J	0.74	600	16	110
	7/8/2003	Iron, Total	14900		32.8	NE		
	7/8/2003	Lead, Total	47.1	J	1.5	600	31	250
	7/8/2003	Lithium, Total	7.3		6.5	NE		
	7/8/2003	Magnesium, Total	8190	J	5.4	NE		
	7/8/2003	Manganese, Total	362	J	0.45	NE		
	7/8/2003	Mercury, Total	0.057	U	0.057	270		
	7/8/2003	Nickel, Total	10.8	J	0.74	2400	16	75
	7/8/2003	Potassium, Total	563	J	64	NE		
	7/8/2003	Selenium, Total	2.4	U	2.4	3100		
	7/8/2003	Silver, Total	0.45	U	0.45	4100		
	7/8/2003	Sodium, Total	448	J	14	NE		
	7/8/2003	Thallium, Total	0.53	J	3.2	2		
	7/8/2003	Vanadium, Total	21.3		0.6	7100		
	7/8/2003	Zinc, Total	131		3.6	1500	120	820
SWSD012 (residential)	7/8/2003	Aluminum, Total	8930	J	45.6	NE		
	7/8/2003	Antimony, Total	1.9	UJ	1.9	14		
	7/8/2003	Arsenic, Total	3.4	J	1.6	20	6	33
	7/8/2003	Barium, Total	76.4	J	0.47	700		
	7/8/2003	Beryllium, Total	0.79	UJ	0.79	1		
	7/8/2003	Boron, Total	15700	U	15700	NE		
	7/8/2003	Cadmium, Total	1.6	UJ	1.6	1	0.6	10
	7/8/2003	Calcium, Total	10500	J	13.5	NE		
	7/8/2003	Chromium, Total	26.7	J	0.79	NE	26	110
	7/8/2003	Cobalt, Total	8.9	J	0.47	NE		
	7/8/2003	Copper, Total	48.1	J	0.79	600	16	110
	7/8/2003	Iron, Total	28100		34.6	NE		
	7/8/2003	Lead, Total	72.8	J	1.6	400	31	250
	7/8/2003	Lithium, Total	11.2		6.6	NE		
	7/8/2003	Magnesium, Total	6300	J	5.7	NE		
	7/8/2003	Manganese, Total	764	J	0.47	NE		
	7/8/2003	Mercury, Total	0.053	U	0.053	14		
	7/8/2003	Nickel, Total	23.8	J	0.79	250	16	75
	7/8/2003	Potassium, Total	528	J	67.6	NE		
	7/8/2003	Selenium, Total	2.5	U	2.5	63		
	7/8/2003	Silver, Total	0.47	U	0.47	110		
	7/8/2003	Sodium, Total	575	J	14.8	NE		
	7/8/2003	Thallium, Total	3.3	U	3.3	2		
	7/8/2003	Vanadium, Total	31.1		0.63	370		
	7/8/2003	Zinc, Total	223		3.8	1500	120	820

Table A-6B
2003 Sediment Analytical Results - Metals
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Detected Analyte	Results (mg/kg)	Data Qualifier	Reporting Limits (mg/kg)	State Proposed Criteria (mg/kg)	Lowest Effects Level (LEL) (mg/kg)	Severe Effects Level (SEL) (mg/kg)
SWSD015 (nonresidential)	7/8/2003	Aluminum, Total	4170	J	49.5	NE		
	7/8/2003	Antimony, Total	2	UJ	2	340		
	7/8/2003	Arsenic, Total	2.1	J	1.7	20	6	33
	7/8/2003	Barium, Total	57.1	J	0.51	47000		
	7/8/2003	Beryllium, Total	0.85	UJ	0.85	1		
	7/8/2003	Boron, Total	17100	U	17100	NE		
	7/8/2003	Cadmium, Total	1.7	UJ	1.7	100	0.6	10
	7/8/2003	Calcium, Total	2810	J	14.7	NE		
	7/8/2003	Chromium, Total	21.9	J	0.85	NE	26	110
	7/8/2003	Cobalt, Total	2.9	J	0.51	NE		
	7/8/2003	Copper, Total	24.9	J	0.85	600	16	110
	7/8/2003	Iron, Total	9720		37.6	NE		
	7/8/2003	Lead, Total	43.6	J	1.7	600	31	250
	7/8/2003	Lithium, Total	7.1		6.9	NE		
	7/8/2003	Magnesium, Total	1640	J	6.1	NE		
	7/8/2003	Manganese, Total	235	J	0.51	NE		
	7/8/2003	Mercury, Total	0.23		0.062	270		
	7/8/2003	Nickel, Total	8.6	J	0.85	2400	16	75
	7/8/2003	Potassium, Total	354	J	73.4	NE		
	7/8/2003	Selenium, Total	2.7	U	2.7	3100		
	7/8/2003	Silver, Total	0.51	U	0.51	4100		
	7/8/2003	Sodium, Total	172	J	16.1	NE		
	7/8/2003	Thallium, Total	3.4	U	3.4	2		
	7/8/2003	Vanadium, Total	16		0.68	7100		
	7/8/2003	Zinc, Total	94.3		4.1	1500	120	820

[a] All analytes were reported, detected and undetected.
[b] USACE qualifier flags based on the CDQMP-QAPP: J = Reported as an estimated value, U= analyte was not detected.
[c] New Jersey Proposed Cleanup Standards for Contaminated Sites: Residential and Non-residential Soil Cleanup Standards (N.J.A.C. 7:26). Residential or non-residential limits are presented, depending upon the zoning of the sampling location.
[d] A quality control duplicate is collected at the same time and location, and is analyzed by the same method in order to evaluate precision in sampling and analysis.
[e] Sediment samples could not be collected at locations SWSD008, SWSD009, SWSD011, SWSD013 and SWSD014 in Lodi Brook and SWSD004 in Westerly Brook due to significant flow.
NE= Not established.

Table A-7
Depth to Groundwater and Groundwater Elevation for Overburden Monitoring Wells
Maywood Interim Storage Site - 2003

Well	Surveyed Easting	Surveyed Northing	Top of Inner Casing, ft NGVD	Water Level, ft TOC	Groundwater Elv. NGVD	Fluctuation, ft.	Measurement Date
B38W01S	2164807.07	752837.37	56.57	6.62	49.95	1.27	10/17/2003
B38W01S	2164807.07	752837.37	56.57	5.93	50.64		8/15/2003
B38W01S	2164807.07	752837.37	56.57	6.5	50.07		5/23/2003
B38W01S	2164807.07	752837.37	56.57	5.35	51.22		3/12/2003
B38W12A	2165389.47	750774.64	49.96	6.32	43.64	1.61	10/17/2003
B38W12A	2165389.47	750774.64	49.96	5.05	44.91		8/15/2003
B38W12A	2165389.47	750774.64	49.96	6.04	43.92		5/23/2003
B38W12A	2165389.47	750774.64	49.96	4.71	45.25		3/12/2003
B38W14S	2163384.82	752600.98	43.89	4.61	39.28	NA	5/23/2003
B38W15S	2163472.30	752364.90	46.75	5.74	41.01	1.44	10/17/2003
B38W15S	2163472.30	752364.90	46.75	4.65	42.10		8/15/2003
B38W15S	2163472.30	752364.90	46.75	5.51	41.24		5/23/2003
B38W15S	2163472.30	752364.90	46.75	4.3	42.45		3/12/2003
B38W17A	2163922.90	752019.80	53.24	9.36	43.88	1.51	10/17/2003
B38W17A	2163922.90	752019.80	53.24	7.85	45.39		8/15/2003
B38W17A	2163922.90	752019.80	53.24	9.1	44.14		5/23/2003
B38W17A	2163922.90	752019.80	53.24	8.1	45.14		3/12/2003
B38W19S	2164049.13	752513.62	59.91	15.76	44.15	2.19	10/17/2003
B38W19S	2164049.13	752513.62	59.91	14.05	45.86		8/15/2003
B38W19S	2164049.13	752513.62	59.91	15.6	44.31		5/23/2003
B38W19S	2164049.13	752513.62	59.91	13.57	46.34		3/12/2003
B38W24S	2164291.43	752193.57	55.04	9.65	45.39	1.54	10/17/2003
B38W24S	2164291.43	752193.57	55.04	8.11	46.93		8/15/2003
B38W25S	2164346.85	752513.00	57.50	7.19	50.31	2.48	10/17/2003
B38W25S	2164346.85	752513.00	57.50	5.02	52.48		8/15/2003
B38W25S	2164346.85	752513.00	57.50	7.5	50.00		5/23/2003
B38W25S	2164346.85	752513.00	57.50	5.05	52.45		3/12/2003
MISS01AA	2164101.98	752963.64	62.70	15.45	47.25	1.66	10/17/2003
MISS01AA	2164101.98	752963.64	62.70	13.79	48.91		8/15/2003
MISS01AA	2164101.98	752963.64	62.70	15.1	47.60		5/23/2003
MISS01AA	2164101.98	752963.64	62.70	14.4	48.30		3/12/2003
MISS02A	2164706.13	752788.00	61.47	9.8	51.67	3.25	10/17/2003
MISS02A	2164706.13	752788.00	61.47	9.02	52.45		8/15/2003
MISS02A	2164706.13	752788.00	61.47	9.14	52.33		5/23/2003
MISS02A	2164706.13	752788.00	61.47	6.55	54.92		3/12/2003

Table A-7
Depth to Groundwater and Groundwater Elevation for Overburden Monitoring Wells
Maywood Interim Storage Site - 2003

Well	Surveyed Easting	Surveyed Northing	Top of Inner Casing, ft NGVD	Water Level, ft TOC	Groundwater Elv. NGVD	Fluctuation, ft.	Measurement Date
MISS03A	2164437.77	752302.00	58.52	8.78	49.74	3.75	10/17/2003
MISS03A	2164437.77	752302.00	58.52	6.3	52.22		8/15/2003
MISS03A	2164437.77	752302.00	58.52	8.9	49.62		5/23/2003
MISS03A	2164437.77	752302.00	58.52	5.15	53.37		3/12/2003
MISS04A	2164349.46	752109.73	57.17	9.89	47.28	3.99	10/17/2003
MISS04A	2164349.46	752109.73	57.17	7	50.17		8/15/2003
MISS04A	2164349.46	752109.73	57.17	9.65	47.52		5/23/2003
MISS04A	2164349.46	752109.73	57.17	5.9	51.27		3/12/2003
MISS05A	2164044.20	752360.40	58.65	13.42	45.23	3.25	10/17/2003
MISS05A	2164044.20	752360.40	58.65	10.17	48.48		8/15/2003
MISS05A	2164044.20	752360.40	58.65	13	45.65		5/23/2003
MISS05A	2164044.20	752360.40	58.65	10.3	48.35		3/12/2003
MISS06A	2164224.78	752645.21	58.26	11.2	47.06	2.40	10/17/2003
MISS06A	2164224.78	752645.21	58.26	9.7	48.56		8/15/2003
MISS06A	2164224.78	752645.21	58.26	11.4	46.86		5/23/2003
MISS06A	2164224.78	752645.21	58.26	9	49.26		3/12/2003
MISS07A	2164053.10	752657.57	55.60	8.59	47.01	2.58	10/17/2003
MISS07A	2164053.10	752657.57	55.60	7.42	48.18		8/15/2003
MISS07A	2164053.10	752657.57	55.60	9.05	46.55		5/23/2003
MISS07A	2164053.10	752657.57	55.60	6.47	49.13		3/12/2003

Notes

Elv. - Elevation
NA - Not Applicable
NG - Not Gauged
TOC - Top of Casing
NGVD - National Geodetic Vertical Datum of 1929
ft. - Feet

Table A-8
Depth to Groundwater and Groundwater Elevation for Bedrock Monitoring Wells
Maywood Interim Storage Site - 2003

Well	Surveyed Easting	Surveyed Northing	Top of Inner Casing, ft NGVD	Water Level, ft TOC	Groundwater Elv. NGVD	Fluctuation, ft.	Measurement Date
B38W02D	2165243.12	752558.09	78.04	18.08	59.96	4.03	10/17/2003
B38W02D	2165243.12	752558.09	78.04	14.8	63.24		8/15/2003
B38W02D	2165243.12	752558.09	78.04	17.71	60.33		5/23/2003
B38W02D	2165243.12	752558.09	78.04	14.05	63.99		3/12/2003
B38W03B	2164513.81	752253.19	58.27	10.2	48.07	2.13	10/17/2003
B38W03B	2164513.81	752253.19	58.27	8.68	49.59		8/15/2003
B38W03B	2164513.81	752253.19	58.27	10.25	48.02		5/23/2003
B38W03B	2164513.81	752253.19	58.27	8.12	50.15		3/12/2003
B38W04B	2164950.28	752093.58	65.64	10.64	55.00	1.79	10/17/2003
B38W04B	2164950.28	752093.58	65.64	8.98	56.66		8/15/2003
B38W04B	2164950.28	752093.58	65.64	10.1	55.54		5/23/2003
B38W04B	2164950.28	752093.58	65.64	8.85	56.79		3/12/2003
B38W05B	2165366.54	752175.88	70.98	12.9	58.08	2.72	10/17/2003
B38W05B	2165366.54	752175.88	70.98	10.18	60.80		8/15/2003
B38W05B	2165366.54	752175.88	70.98	11.4	59.58		5/23/2003
B38W07B	2164168.21	751974.70	54.98	9.8	45.18	3.04	10/17/2003
B38W07B	2164168.21	751974.70	54.98	7.95	47.03		8/15/2003
B38W07B	2164168.21	751974.70	54.98	9.75	45.23		5/23/2003
B38W07B	2164168.21	751974.70	54.98	6.76	48.22		3/12/2003
B38W12B	2165393.54	750766.32	49.64	5.85	43.79	1.73	10/17/2003
B38W12B	2165393.54	750766.32	49.64	4.46	45.18		8/15/2003
B38W12B	2165393.54	750766.32	49.64	5.5	44.14		5/23/2003
B38W12B	2165393.54	750766.32	49.64	4.12	45.52		3/12/2003
B38W14D	2163391.63	752597.24	43.79	2.99	40.80	NA	5/23/2003
B38W14D	2163391.63	752597.24	43.79	3.1	40.69		3/12/2003
B38W15D	2163475.63	752368.54	47.04	4.7	42.34	0.95	10/17/2003
B38W15D	2163475.63	752368.54	47.04	3.8	43.24		8/15/2003
B38W15D	2163475.63	752368.54	47.04	4.75	42.29		5/23/2003
B38W15D	2163475.63	752368.54	47.04	4	43.04		3/12/2003
B38W17B	2163927.32	752021.78	53.28	9.35	43.93	2.25	10/17/2003
B38W17B	2163927.32	752021.78	53.28	7.89	45.39		8/15/2003
B38W17B	2163927.32	752021.78	53.28	9.15	44.13		5/23/2003
B38W17B	2163927.32	752021.78	53.28	7.1	46.18		3/12/2003
B38W18D	2164783.97	752505.39	57.85	4.5	53.35	1.50	10/17/2003
B38W18D	2164783.97	752505.39	57.85	3.37	54.48		8/15/2003
B38W18D	2164783.97	752505.39	57.85	4.3	53.55		5/23/2003
B38W18D	2164783.97	752505.39	57.85	3	54.85		3/12/2003
B38W19D	2164045.10	752522.83	59.98	16	43.98	1.95	10/17/2003
B38W19D	2164045.10	752522.83	59.98	14.69	45.29		8/15/2003
B38W19D	2164045.10	752522.83	59.98	15.8	44.18		5/23/2003
B38W19D	2164045.10	752522.83	59.98	14.05	45.93		3/12/2003

Well	Surveyed Easting	Surveyed Northing	Top of Inner Casing, ft NGVD	Water Level, ft TOC	Groundwater Elv. NGVD	Fluctuation, ft.	Measurement Date
B38W24D	2164291.33	752193.57	54.91	9.3	45.61	2.50	10/17/2003
B38W24D	2164291.33	752193.57	54.91	7.7	47.21		8/15/2003
B38W24D	2164291.33	752193.57	54.91	9.17	45.74		5/23/2003
B38W24D	2164291.33	752193.57	54.91	6.8	48.11		3/12/2003
B38W25D	2164346.85	752513.00	57.66	7.6	50.06	2.35	10/17/2003
B38W25D	2164346.85	752513.00	57.66	5.66	52.00		8/15/2003
B38W25D	2164346.85	752513.00	57.66	7.89	49.77		5/23/2003
B38W25D	2164346.85	752513.00	57.66	5.54	52.12		3/12/2003
MISS01B	2164092.32	752964.86	61.98	16.05	45.93	2.15	10/17/2003
MISS01B	2164092.32	752964.86	61.98	15	46.98		8/15/2003
MISS01B	2164092.32	752964.86	61.98	16.75	45.23		5/23/2003
MISS01B	2164092.32	752964.86	61.98	14.6	47.38		3/12/2003
MISS02B	2164709.45	752771.91	61.38	11.62	49.76	1.32	10/17/2003
MISS02B	2164709.45	752771.91	61.38	10.75	50.63		8/15/2003
MISS02B	2164709.45	752771.91	61.38	11.5	49.88		5/23/2003
MISS02B	2164709.45	752771.91	61.38	10.3	51.08		3/12/2003
MISS03B	2164451.46	752296.78	57.66	10.03	47.63	2.14	10/17/2003
MISS03B	2164451.46	752296.78	57.66	8.55	49.11		8/15/2003
MISS03B	2164451.46	752296.78	57.66	10.15	47.51		5/23/2003
MISS03B	2164451.46	752296.78	57.66	8.01	49.65		3/12/2003
MISS04B	2164353.55	752096.08	56.42	11.09	45.33	1.79	10/17/2003
MISS04B	2164353.55	752096.08	56.42	9.8	46.62		8/15/2003
MISS04B	2164353.55	752096.08	56.42	11.09	45.33		5/23/2003
MISS04B	2164353.55	752096.08	56.42	9.3	47.12		3/12/2003
MISS05B	2164044.40	752371.68	59.76	15.8	43.96	2.16	10/17/2003
MISS05B	2164044.40	752371.68	59.76	14.4	45.36		8/15/2003
MISS05B	2164044.40	752371.68	59.76	15.55	44.21		5/23/2003
MISS05B	2164044.40	752371.68	59.76	13.64	46.12		3/12/2003
MISS07B	2164048.77	752652.98	55.77	10.97	44.80	1.72	10/17/2003
MISS07B	2164048.77	752652.98	55.77	9.75	46.02		8/15/2003
MISS07B	2164048.77	752652.98	55.77	10.85	44.92		5/23/2003
MISS07B	2164048.77	752652.98	55.77	9.25	46.52		3/12/2003

Notes

Elv. - Elevation
NA - Not Applicable
NG - Not Gauged
TOC - Top of Casing
NGVD - National Geodetic Vertical Datum of 1929
ft. - Feet

Table A-9
Vertical Gradient Calculations for Monitoring Well Clusters
Maywood Interim Storage Site - 2003

Well	Source	Well Type	GW Elv. NGVD - 3/12/2003	GW Elv. NGVD - 5/23/2003	GW Elv. NGVD - 8/15/2003	GW Elv. NGVD - 10/17/2003
On-Site (MISS/Stepan Property) Well Clusters						
B38W19S	cluster	Overburden	46.34	44.31	45.86	44.15
B38W19D	cluster	Bedrock	45.93	44.18	45.29	43.98
	Hydraulic Head Difference, ft.		0.41	0.13	0.57	0.17
	Gradient Direction		Downward	Downward	Downward	Downward
B38W24S	cluster	Overburden	NG	NG	46.93	45.39
B38W24D	cluster	Bedrock	48.11	45.74	47.21	45.61
	Hydraulic Head Difference, ft.		NA	NA	-0.28	-0.22
	Gradient Direction		NA	NA	Upward	Upward
B38W25S	cluster	Overburden	52.45	50.00	52.48	50.31
B38W25D	cluster	Bedrock	52.12	49.77	52.00	50.06
	Hydraulic Head Difference, ft.		0.33	0.23	0.48	0.25
	Gradient Direction		Downward	Downward	Downward	Downward
MISS01AA	cluster	Overburden	48.30	47.60	48.91	47.25
MISS01B	cluster	Bedrock	47.38	45.23	46.98	45.93
	Hydraulic Head Difference, ft.		0.92	2.37	1.93	1.32
	Gradient Direction		Downward	Downward	Downward	Downward
MISS02A	cluster	Overburden	54.92	52.33	52.45	51.67
MISS02B	cluster	Bedrock	51.08	49.88	50.63	49.76
	Hydraulic Head Difference, ft.		3.84	2.45	1.82	1.91
	Gradient Direction		Downward	Downward	Downward	Downward
MISS03A	cluster	Overburden	53.37	49.62	52.22	49.74
MISS03B	cluster	Bedrock	49.65	47.51	49.11	47.63
	Hydraulic Head Difference, ft.		3.72	2.11	3.11	2.11
	Gradient Direction		Downward	Downward	Downward	Downward
MISS04A	cluster	Overburden	51.27	47.52	50.17	47.28
MISS04B	cluster	Bedrock	47.12	45.33	46.62	45.33
	Hydraulic Head Difference, ft.		4.15	2.19	3.55	1.95
	Gradient Direction		Downward	Downward	Downward	Downward
MISS05A	cluster	Overburden	48.35	45.65	48.48	45.23
MISS05B	cluster	Bedrock	46.12	44.21	45.36	43.96
	Hydraulic Head Difference, ft.		2.23	1.44	3.12	1.27
	Gradient Direction		Downward	Downward	Downward	Downward
MISS07A	cluster	Overburden	49.13	46.55	48.18	47.01
MISS07B	cluster	Bedrock	46.52	44.92	46.02	44.80
	Hydraulic Head Difference, ft.		2.61	1.63	2.16	2.21
	Gradient Direction		Downward	Downward	Downward	Downward
Off-Site Well Clusters						
B38W12A	cluster	Overburden	45.25	43.92	44.91	43.64
B38W12B	cluster	Bedrock	45.52	44.14	45.18	43.79
	Hydraulic Head Difference, ft.		-0.27	-0.22	-0.27	-0.15
	Gradient Direction		Upward	Upward	Upward	Upward
B38W14S	cluster	Overburden	NG	39.28	NG	NG
B38W14D	cluster	Bedrock	40.69	40.80	NG	NG
	Hydraulic Head Difference, ft.		NA	-1.52	NA	NA
	Gradient Direction		NA	Upward	NA	NA
B38W15S	cluster	Overburden	42.45	41.24	42.10	41.01
B38W15D	cluster	Bedrock	43.04	42.29	43.24	42.34
	Hydraulic Head Difference, ft.		-0.59	-1.05	-1.14	-1.33
	Gradient Direction		Upward	Upward	Upward	Upward
B38W17A	cluster	Overburden	45.14	44.14	45.39	43.88
B38W17B	cluster	Bedrock	46.18	44.13	45.39	43.93
	Hydraulic Head Difference, ft.		-1.04	0.01	0.00	-0.05
	Gradient Direction		Upward	Horizontal	Horizontal	Upward

Notes

Elv. - Elevation
NA - Not Applicable
NG - Not Gauged
NGVD - National Geodetic Vertical Datum of 1929
ft. - Feet
Negative Hydraulic Head Difference depicts an upward vertical gradient
Positive Hydraulic Head Difference depicts a downward vertical gradient

Table A-10
2003 Field Parameter Summary
Maywood Interim Storage Site - 2003

Sampling Location	Date	Temp (C)	Spec. Cond.[a] (mS/cm)	pH	Eh (mV)[b]	DO mg/l	Turbidity (NTU)[c]	Discharge (mL/min)[e]
GROUNDWATER								
MISS01AA	07/09/03	16.61	2276	6.68	-207.20	0.55	1.10	110
MISS01B	07/09/03	16.86	801	6.99	-134.8	0.20	104.0	240
MISS02A	06/30/03	16.14	3330	6.78	-121.2	0.63	1.7	150
MISS02B	06/30/03	15.66	4867	6.85	-199.9	0.29	6.6	240
MISS05A	07/14/03	16.58	2401	6.07	96.2	0.83	-0.7	115
MISS05B	07/16/03	15.71	2088	7.08	-214.1	0.22	34.20	280
MISS06A	07/02/03	19.20	1819	6.73	-14.8	0.71	0.0	250
MISS07B	07/14/03	15.65	7035	6.84	-173.5	0.47	23.8	240
B38W01S	06/27/03	15.85	1909	6.63	-151.6	0.59	0.3	350
B38W02D	06/27/03	16.00	371	6.39	55.8	0.40	1.0	140
B38W14S	07/10/03	14.96	842	7.13	174.6	0.31	2.1	190
B38W14D	07/10/03	14.80	1002	7.02	-140.5	0.27	2.1	390
B38W15S	07/01/03	15.29	1895	7.22	-177	0.33	2.6	200
B38W15D	07/01/03	15.71	2276	7.29	-43.7	0.30	0.4	220
B38W17A	06/26/03	15.16	729	6.52	4.3	0.96	0.2	240
B38W17B	06/26/03	14.75	2030	6.93	-217.0	0.46	0.2	420
B38W18D	07/02/03	18.24	1580	5.70	2.1	0.54	3.4	160
B38W19S	07/11/03	14.68	2380	7.01	-206.7	0.94	0.5	160
B38W19D	07/11/03	15.91	3018	6.65	-200.3	0.33	0.1	300
B38W24S	07/07/03	23.63	386	5.81	-80.5	0.39	15.9	230
B38W24D	07/07/03	18.96	724	6.09	-183.5	0.34	3.2	180
B38W25S	07/15/03	17.40	1280	6.21	-243.8	0.35	0.1	260
B38W25D	07/15/03	16.54	3100	5.63	-170.0	0.32	0.1	280

Table A-10
2003 Field Parameter Summary
Maywood Interim Storage Site - 2003

Sampling Location	Date	Temp (C)	Spec. Cond.[a] (mS/cm)	pH	Eh (mV)[b]	DO mg/l	Turbidity (NTU)[c]	Discharge (mL/min)[e]
SURFACE WATER								
SWSD001	07/08/03	22.3	0.98	8.47	125.5	11.05	3	--[f]
SWSD002	07/08/03	23.0	0.99	8.04	98.6	10.68	10	--[f]
SWSD003	07/08/03	24.0	0.673	8.42	97.9	11.10	8	--[f]
SWSD004	07/08/03	21.8	0.905	8.20	108.8	11.89	183	--[f]
SWSD005	07/08/03	27.2	0.724	8.48	117.8	9.03	8	--[f]
SWSD006	07/08/03	25.9	0.760	7.80	88.9	9.56	10	--[f]
SWSD007	07/08/03	26.6	0.758	8.27	130.6	9.71	8	--[f]
SWSD008	[g]	[g]	[g]	[g]	[g]	[g]	[g]	
SWSD009	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--[f]
SWSD010	07/08/03	27.5	0.727	8.52	107.4	8.95	10	--[f]
SWSD011	07/08/03	24.9	0.80	6.92	110.7	9.16	131	--[f]
SWSD012	07/08/03	24.9	0.823	6.98	113.6	9.44	6	--[f]
SWSD013	07/08/03	24.6	0.776	7.53	160	10.05	10	--[f]
SWSD014	07/08/03	24.7	0.772	7.80	120.5	9.70	8	--[f]
SWSD015	07/08/03	24.4	.787	8.03	118.7	10.10	8	--[f]

[a] Specific conductance, measured in milliSiemens/centimeter (mS/cm).
[b] Oxidation/reduction potential (Eh), measured in milliVolts (mV).
[c] Nephelometric turbidity units.
[d] Well is dry.
[e] Milliliters per Minute (mL/min).
[f] Parameter not applicable.

Table A-11
2003 Groundwater Analytical Results - Radioactive Costituents
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte	Result (pCi/L)	Result[a] (µg/L)	Error (pCi/L)	Data Qualifier	MDA (pCi/L)	State/Federal Standards (pCi/L)	State/Federal Standards (ug/L)
Monitoring wells completed in unconsolidated sediment:									
B38W01S	6/27/2003	Gross Alpha	2.80		± 4	U	6.70	15	
	6/27/2003	Gross Beta	35.10		± 6		5.90	50	
	6/27/2003	Radium-226	0.18		± 0.15	UJ	0.21	5 (h)	
	6/27/2003	Radium-228	1.08		± 0.43		0.63	5 (h)	
	6/27/2003	Thorium-228	0.13		± 0.13	UJ	0.18		
	6/27/2003	Thorium-230	0.32		± 0.2	J	0.08		
	6/27/2003	Thorium-232	0.14		± 0.012	U	0.14		
		Total Thorium	0.59						
	6/27/2003	Uranium-234	0.07		± 0.1	UJ	0.14		
	6/27/2003	Uranium-235	0.07		± 0.098	UJ	0.09		
	6/27/2003	Uranium-238	0.15		± 0.14	J	0.15		
		Total Uranium	0.29	0.45					30
B38W14S	7/10/2003	Gross Alpha	2.20		± 2.4	UJ	3.70	15	
	7/10/2003	Gross Beta	6.40		± 2.6		3.80	50	
	7/10/2003	Radium-226	0.04		± 0.12	U	0.22	5 (h)	
	7/10/2003	Radium-228	0.45		± 0.37	UJ	0.60	5 (h)	
	7/10/2003	Thorium-228	0.04		± 0.09	U	0.21		
	7/10/2003	Thorium-230	0.12		± 0.12	J	0.08		
	7/10/2003	Thorium-232	0.00		± 0.067	U	0.22		
		Total Thorium	0.16						
	7/10/2003	Uranium-234	1.17		± 0.45		0.09		
	7/10/2003	Uranium-235	0.04		± 0.078	UJ	0.11		
	7/10/2003	Uranium-238	0.47		± 0.26	J	0.09		
		Total Uranium	1.68	1.40					30
B38W15S	7/1/2003	Gross Alpha	220.00		± 160	UJ	230.00	15	
	7/1/2003	Gross Beta	2910.00		± 360	J	200.00	50	
	7/1/2003	Radium-226	0.12		± 0.11	UJ	0.17	5 (h)	
	7/1/2003	Radium-228	0.35		± 0.44	UJ	0.72	5 (h)	
	7/1/2003	Thorium-228	0.09		± 0.12	UJ	0.19		
	7/1/2003	Thorium-230	0.17		± 0.16	J	0.09		
	7/1/2003	Thorium-232	0.03		± 0.07	U	0.16		
		Total Thorium	0.29						
	7/1/2003	Uranium-234	0.77		± 0.34	J	0.17		
	7/1/2003	Uranium-235	0.02		± 0.1	U	0.22		
	7/1/2003	Uranium-238	0.24		± 0.19	J	0.17		
		Total Uranium	1.03	0.71					30
B38W17A	6/26/2003	Gross Alpha	0.90		± 2.1	UJ	3.60	15	
	6/26/2003	Gross Beta	15.30		± 3.2	J	3.80	50	
	6/26/2003	Radium-226	0.13		± 0.14	UJ	0.22	5 (h)	
	6/26/2003	Radium-228	0.66		± 0.57	UJ	0.92	5 (h)	
	6/26/2003	Thorium-228	0.08		± 0.15	U	0.32		
	6/26/2003	Thorium-230	0.11		± 0.12	UJ	0.14		
	6/26/2003	Thorium-232	-0.01		± 0.011	U	0.14		
		Total Thorium	0.18						
	6/26/2003	Uranium-234	0.29		± 0.19	J	0.17		
	6/26/2003	Uranium-235	0.03		± 0.07	U	0.14		
	6/26/2003	Uranium-238	0.00		± 0	U	0.10		
		Total Uranium	0.32	0.00					30

Table A-11
2003 Groundwater Analytical Results - Radioactive Costituents
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte	Result (pCi/L)	Result[a] (µg/L)	Error (pCi/L)	Data Qualifier	MDA (pCi/L)	State/Federal Standards (pCi/L)	State/Federal Standards (ug/L)
B38W19S	7/11/2003	Gross Alpha	14.90		± 8.5	J	10.00	15	
	7/11/2003	Gross Beta	19.40		± 7.3	J	11.00	50	
	7/11/2003	Radium-226	0.72		± 0.3	J	0.33	5 (h)	
	7/11/2003	Radium-228	4.33		± 0.81		0.85	5 (h)	
	7/11/2003	Thorium-228	0.01		± 0.07	U	0.21		
	7/11/2003	Thorium-230	0.48		± 0.28	J	0.19		
	7/11/2003	Thorium-232	0.07		± 0.094	U	0.09		
		Total Thorium	0.56						
	7/11/2003	Uranium-234	0.03		± 0.076	U	0.18		
	7/11/2003	Uranium-235	0.00		± 0	U	0.10		
	7/11/2003	Uranium-238	0.10		± 0.13	UJ	0.18		
		Total Uranium	0.13	0.30					30
B38W24S	7/7/2003	Gross Alpha	2.00		± 1.3	J	1.90	15	
	7/7/2003	Gross Beta	6.70		± 1.5		1.90	50	
	7/7/2003	Radium-226	0.14		± 0.14	UJ	0.22	5 (h)	
	7/7/2003	Radium-228	0.64		± 0.41	J	0.63	5 (h)	
	7/7/2003	Thorium-228	0.04		± 0.085	U	0.18		
	7/7/2003	Thorium-230	0.20		± 0.16	J	0.14		
	7/7/2003	Thorium-232	0.00		± 0	U	0.08		
		Total Thorium	0.24						
	7/7/2003	Uranium-234	0.19		± 0.19	UJ	0.21		
	7/7/2003	Uranium-235	0.07		± 0.12	UJ	0.17		
	7/7/2003	Uranium-238	0.05		± 0.1	U	0.17		
		Total Uranium	0.31	0.15					30
B38W25S	7/15/2003	Gross Alpha	2.20		± 2.1	UJ	3.10	±	
	7/15/2003	Gross Beta	12.20		± 2.6	J	3.10	±	
	7/15/2003	Radium-226	0.56		± 0.25	J	0.28	±	
	7/15/2003	Radium-228	0.06		± 0.39	U	0.66	±	
	7/15/2003	Thorium-228	0.03		± 0.066	UJ	0.09	±	
	7/15/2003	Thorium-230	0.16		± 0.15	J	0.16	±	
	7/15/2003	Thorium-232	0.07		± 0.093	UJ	0.09	±	
		Total Thorium	0.26						
	7/15/2003	Uranium-234	0.20		± 0.17	J	0.09	±	
	7/15/2003	Uranium-235	0.00		± 0	U	0.10	±	
	7/15/2003	Uranium-238	0.19		± 0.17	J	0.16	±	
		Total Uranium	0.39	0.56					30
MISS01AA	7/9/2003	Gross Alpha	7.00		± 9.2	UJ	15.00	15	
	7/9/2003	Gross Beta	5.20		± 6.6	UJ	11.00	50	
	7/9/2003	Radium-226	0.30		± 0.16	J	0.19	5 (h)	
	7/9/2003	Radium-228	0.98		± 0.45	J	0.67	5 (h)	
	7/9/2003	Thorium-228	0.08		± 0.16	U	0.34		
	7/9/2003	Thorium-230	0.56		± 0.28	J	0.13		
	7/9/2003	Thorium-232	0.06		± 0.08	UJ	0.08		
		Total Thorium	0.70						
	7/9/2003	Uranium-234	0.16		± 0.16	UJ	0.19		
	7/9/2003	Uranium-235	0.00		± 0	U	0.10		
	7/9/2003	Uranium-238	0.10		± 0.12	J	0.09		
		Total Uranium	0.26	0.30					30

Table A-11
2003 Groundwater Analytical Results - Radioactive Costituents
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Sampling Location	Date Collected	Analyte	Result (pCi/L)	Result[a] (µg/L)	Error (pCi/L)	Data Qualifier	MDA (pCi/L)	State/Federal Standards (pCi/L)	State/Federal Standards (ug/L)
MISS02A	6/30/2003	Gross Alpha	2.00		± 8.9	UJ	16.00	15	
	6/30/2003	Gross Beta	3.70		± 8.2	UJ	14.00	50	
	6/30/2003	Radium-226	-0.02		± 0.11	U	0.24	5 (h)	
	6/30/2003	Radium-228	-0.33		± 0.44	U	0.78	5 (h)	
	6/30/2003	Thorium-228	0.22		± 0.26	R	0.40		
	6/30/2003	Thorium-230	0.24		± 0.26	R	0.31		
	6/30/2003	Thorium-232	0.00		± 0	R	0.20		
		Total Thorium	0.46						
	6/30/2003	Uranium-234	0.26		± 0.2	J	0.19		
	6/30/2003	Uranium-235	0.00		± 0	U	0.20		
	6/30/2003	Uranium-238	0.43		± 0.25	J	0.17		
		Total Uranium	0.69	1.28					30
MISS05A	7/14/2003	Gross Alpha	151.00		± 26	J	11.00	15	
	7/14/2003	Gross Beta	41.70		± 8.8	J	10.00	50	
	7/14/2003	Radium-226	0.32		± 0.28	UJ	0.43	5 (h)	
	7/14/2003	Radium-228	1.25		± 0.87	UJ	1.40	5 (h)	
	7/14/2003	Thorium-228	-0.02		± 0.021	U	0.19		
	7/14/2003	Thorium-230	0.53		± 0.28	J	0.17		
	7/14/2003	Thorium-232	0.00		± 0	U	0.08		
		Total Thorium	0.51						
	7/14/2003	Uranium-234	53.00		± 11		0.20		
	7/14/2003	Uranium-235	2.60		± 0.87		0.12		
	7/14/2003	Uranium-238	54.00		± 11		0.10		
		Total Uranium	109.60	160.48					30
MISS06A	7/2/2003	Gross Alpha	10.40		± 3.9	J	3.70	15	
	7/2/2003	Gross Beta	8.50		± 2.8	J	3.90	50	
	7/2/2003	Radium-226	0.61		± 0.24	J	0.26	5 (h)	
	7/2/2003	Radium-228	5.47		± 0.94		0.94	5 (h)	
	7/2/2003	Thorium-228	0.29		± 0.2	J	0.09		
	7/2/2003	Thorium-230	0.44		± 0.26	J	0.15		
	7/2/2003	Thorium-232	-0.01		± 0.013	U	0.15		
		Total Thorium	0.72						
	7/2/2003	Uranium-234	2.18		± 0.54		0.10		
	7/2/2003	Uranium-235	0.02		± 0.066	U	0.13		
	7/2/2003	Uranium-238	1.77		± 0.47	J	0.07		
		Total Uranium	3.97	5.26					30
Monitoring wells completed in bedrock:									
B38W02D	6/27/2003	Gross Alpha	0.80		± 1.5	U	2.60	15	
	6/27/2003	Gross Beta	2.00		± 1.2	J	1.90	50	
	6/27/2003	Radium-226	0.51		± 0.3	J	0.40	5 (h)	
	6/27/2003	Radium-228	0.38		± 0.52	U	0.86	5 (h)	
	6/27/2003	Thorium-228	0.06		± 0.087	UJ	0.08		
	6/27/2003	Thorium-230	0.45		± 0.25	J	0.15		
	6/27/2003	Thorium-232	0.12		± 0.12	UJ	0.15		
		Total Thorium	0.63						
	6/27/2003	Uranium-234	0.20		± 0.17	J	0.17		
	6/27/2003	Uranium-235	0.10		± 0.12	UJ	0.09		
	6/27/2003	Uranium-238	0.12		± 0.14	U	0.16		
		Total Uranium	0.42	0.36					30

Table A-11
2003 Groundwater Analytical Results - Radioactive Costituents
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Sampling Location	Date Collected	Analyte	Result (pCi/L)	Result[a] (µg/L)	Error (pCi/L)	Data Qualifier	MDA (pCi/L)	State/Federal Standards (pCi/L)	State/Federal Standards (ug/L)
B38W14D	7/10/2003	Gross Alpha	1.40		± 2.2	U	3.80	15	
	7/10/2003	Gross Beta	2.00		± 2.4	U	4.00	50	
	7/10/2003	Radium-226	0.13		± 0.13	UJ	0.19	5 (h)	
	7/10/2003	Radium-228	0.27		± 0.35	U	0.58	5 (h)	
	7/10/2003	Thorium-228	0.13		± 0.16	UJ	0.25		
	7/10/2003	Thorium-230	0.26		± 0.22	J	0.22		
	7/10/2003	Thorium-232	0.03		± 0.08	U	0.19		
		Total Thorium	0.42						
	7/10/2003	Uranium-234	0.82		± 0.36	J	0.09		
	7/10/2003	Uranium-235	0.08		± 0.11	UJ	0.11		
	7/10/2003	Uranium-238	0.28		± 0.2	J	0.15		
		Total Uranium	1.18	0.83					30
B38W15D	7/1/2003	Gross Alpha	0.80		± 0.73	UJ	1.10	15	
	7/1/2003	Gross Beta	2.90		± 1.2	J	1.80	50	
	7/1/2003	Radium-226	0.18		± 0.13	J	0.18	5 (h)	
	7/1/2003	Radium-228	0.73		± 0.45	J	0.71	5 (h)	
	7/1/2003	Thorium-228	0.02		± 0.069	U	0.17		
	7/1/2003	Thorium-230	0.21		± 0.15	J	0.11		
	7/1/2003	Thorium-232	0.00		± 0	U	0.06		
		Total Thorium	0.23						
	7/1/2003	Uranium-234	4.28		± 0.89		0.17		
	7/1/2003	Uranium-235	0.07		± 0.0998	UJ	0.10		
	7/1/2003	Uranium-238	1.95		± 0.54		0.16		
		Total Uranium	6.30	5.79					30
B38W17B	6/26/2003	Gross Alpha	8.00		± 6.5	UJ	9.30	15	
	6/26/2003	Gross Beta	82.00		± 12	J	9.00	50	
	6/26/2003	Radium-226	0.39		± 0.2	J	0.25	5 (h)	
	6/26/2003	Radium-228	1.33		± 0.58		0.87	5 (h)	
	6/26/2003	Thorium-228	-0.01		± 0.12	U	0.34		
	6/26/2003	Thorium-230	0.49		± 0.26	J	0.13		
	6/26/2003	Thorium-232	-0.02		± 0.019	U	0.17		
		Total Thorium	0.47						
	6/26/2003	Uranium-234	0.08		± 0.11	UJ	0.13		
	6/26/2003	Uranium-235	0.07		± 0.11	UJ	0.16		
	6/26/2003	Uranium-238	0.10		± 0.13	UJ	0.16		
		Total Uranium	0.25	0.30					30
B38W17B Duplicate	6/26/2003	Gross Alpha	14.30		± 7.2	J	8.40	15	
	6/26/2003	Gross Beta	81.00		± 11	J	8.00	50	
	6/26/2003	Radium-226	0.45		± 0.21	J	0.25	5 (h)	
	6/26/2003	Radium-228	1.79		± 0.58		0.80	5 (h)	
	6/26/2003	Thorium-228	0.03		± 0.056	UJ	0.08		
	6/26/2003	Thorium-230	0.20		± 0.15	J	0.08		
	6/26/2003	Thorium-232	-0.01		± 0.011	U	0.13		
		Total Thorium	0.22						
	6/26/2003	Uranium-234	0.20		± 0.16	J	0.09		
	6/26/2003	Uranium-235	0.00		± 0	U	0.10		
	6/26/2003	Uranium-238	0.09		± 0.12	UJ	0.14		
		Total Uranium	0.29	0.27					30

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Sampling Location	Date Collected	Analyte	Result (pCi/L)	Result[a] (µg/L)	Error (pCi/L)	Data Qualifier	MDA (pCi/L)	State/Federal Standards (pCi/L)	State/Federal Standards (ug/L)
B38W18D	7/2/2003	Gross Alpha	86.00		± 23	J	17.00	15	
	7/2/2003	Gross Beta	30.00		± 11	J	15.00	50	
	7/2/2003	Radium-226	0.61		± 0.2	J	0.17	5 (h)	
	7/2/2003	Radium-228	0.71		± 0.49	UJ	0.77	5 (h)	
	7/2/2003	Thorium-228	0.18		± 0.14	J	0.16		
	7/2/2003	Thorium-230	0.28		± 0.17	J	0.11		
	7/2/2003	Thorium-232	0.22		± 0.15	J	0.06		
		Total Thorium	0.68						
	7/2/2003	Uranium-234	1.64		± 0.43		0.06		
	7/2/2003	Uranium-235	0.10		± 0.11	UJ	0.11		
	7/2/2003	Uranium-238	1.50		± 0.4		0.09		
		Total Uranium	3.24	4.46					30
B38W18D Duplicate	7/2/2003	Gross Alpha	24.20		± 5.8	J	3.90	15	
	7/2/2003	Gross Beta	9.30		± 2.9	J	4.00	50	
	7/2/2003	Radium-226	0.61		± 0.2	J	0.18	5 (h)	
	7/2/2003	Radium-228	0.81		± 0.47	J	0.73	5 (h)	
	7/2/2003	Thorium-228	0.32		± 0.21	J	0.23		
	7/2/2003	Thorium-230	0.03		± 0.077	U	0.18		
	7/2/2003	Thorium-232	0.03		± 0.053	UJ	0.07		
		Total Thorium	0.38						
	7/2/2003	Uranium-234	1.31		± 0.37		0.06		
	7/2/2003	Uranium-235	0.11		± 0.11	J	0.07		
	7/2/2003	Uranium-238	1.33		± 0.38	J	0.06		
		Total Uranium	2.75	3.95					30
B38W19D	7/11/2003	Gross Alpha	7.20		± 6.8	UJ	10.00	15	
	7/11/2003	Gross Beta	302.00		± 34	J	10.00	50	
	7/11/2003	Radium-226	0.46		± 0.2	J	0.22	5 (h)	
	7/11/2003	Radium-228	0.71		± 0.38	J	0.58	5 (h)	
	7/11/2003	Thorium-228	-0.03		± 0.095	U	0.35		
	7/11/2003	Thorium-230	0.71		± 0.38	J	0.28		
	7/11/2003	Thorium-232	0.00		± 0	U	0.10		
		Total Thorium	0.69						
	7/11/2003	Uranium-234	0.15		± 0.17	UJ	0.23		
	7/11/2003	Uranium-235	0.00		± 0	U	0.10		
	7/11/2003	Uranium-238	0.16		± 0.16	J	0.11		
		Total Uranium	0.31	0.48					30
B38W24D	7/7/2003	Gross Alpha	4.30		± 3		4.00	15	
	7/7/2003	Gross Beta	11.50		± 3		4.00	50	
	7/7/2003	Radium-226	0.36		± 0.16	J	0.17	5 (h)	
	7/7/2003	Radium-228	0.51		± 0.4	UJ	0.64	5 (h)	
	7/7/2003	Thorium-228	0.08		± 0.11	U	0.10		
	7/7/2003	Thorium-230	0.18		± 0.18	J	0.18		
	7/7/2003	Thorium-232	0.04		± 0.077	U	0.10		
		Total Thorium	0.30						
	7/7/2003	Uranium-234	0.25		± 0.19	J	0.16		
	7/7/2003	Uranium-235	0.00		± 0	U	0.20		
	7/7/2003	Uranium-238	0.10		± 0.13	U	0.16		
		Total Uranium	0.35	0.30					30

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B38W25D	7/15/2003	Gross Alpha	19.00		± 11	J	14.00	15	
	7/15/2003	Gross Beta	71.00		± 12	J	12.00	50	
	7/15/2003	Radium-226	0.89		± 0.29	J	0.27	5 (h)	
	7/15/2003	Radium-228	2.56		± 0.64		0.81	5 (h)	
	7/15/2003	Thorium-228	0.05		± 0.096	U	0.21		
	7/15/2003	Thorium-230	0.16		± 0.15	J	0.16		
	7/15/2003	Thorium-232	0.03		± 0.067	U	0.16		
		Total Thorium	0.23						
	7/15/2003	Uranium-234	0.20		± 0.19	J	0.20		
	7/15/2003	Uranium-235	-0.01		± 0.02	U	0.24		
	7/15/2003	Uranium-238	0.07		± 0.12	U	0.23		
		Total Uranium	0.26	0.21					30
B38W25D Duplicate	7/15/2003	Gross Alpha	8.80		± 8.6	J	13.00	15	
	7/15/2003	Gross Beta	59.00		± 11	J	12.00	50	
	7/15/2003	Radium-226	1.33		± 0.27		0.15	5 (h)	
	7/15/2003	Radium-228	2.93		± 0.63		0.74	5 (h)	
	7/15/2003	Thorium-228	0.03		± 0.1	U	0.25		
	7/15/2003	Thorium-230	0.24		± 0.17	J	0.16		
	7/15/2003	Thorium-232	0.00		± 0	U	0.07		
		Total Thorium	0.27						
	7/15/2003	Uranium-234	0.20		± 0.17	J	0.09		
	7/15/2003	Uranium-235	-0.01		± 0.017	U	0.20		
	7/15/2003	Uranium-238	0.03		± 0.068	UJ	0.09		
		Total Uranium	0.23	0.10					30
MISS01B	7/9/2003	Gross Alpha	1.70		± 1.7	UJ	2.60	15	
	7/9/2003	Gross Beta	7.60		± 1.7	J	2.10	50	
	7/9/2003	Radium-226	0.22		± 0.16	J	0.22	5 (h)	
	7/9/2003	Radium-228	0.52		± 0.45	UJ	0.73	5 (h)	
	7/9/2003	Thorium-228	0.12		± 0.13	UJ	0.18		
	7/9/2003	Thorium-230	0.35		± 0.21	J	0.16		
	7/9/2003	Thorium-232	0.00		± 0	U	0.08		
		Total Thorium	0.47						
	7/9/2003	Uranium-234	0.81		± 0.37	J	0.16		
	7/9/2003	Uranium-235	-0.01		± 0.017	U	0.20		
	7/9/2003	Uranium-238	0.39		± 0.25	J	0.19		
		Total Uranium	1.19	1.16					30
MISS02B	6/30/2003	Gross Alpha	-6.00		± 17	UJ	36.00	15	
	6/30/2003	Gross Beta	47.00		± 18	J	26.00	50	
	6/30/2003	Radium-226	0.18		± 0.16	UJ	0.23	5 (h)	
	6/30/2003	Radium-228	0.44		± 0.44	UJ	0.72	5 (h)	
	6/30/2003	Thorium-228	0.08		± 0.12	U	0.25		
	6/30/2003	Thorium-230	0.13		± 0.12	J	0.13		
	6/30/2003	Thorium-232	-0.01		± 0.011	U	0.13		
		Total Thorium	0.21						
	6/30/2003	Uranium-234	0.17		± 0.16	J	0.16		
	6/30/2003	Uranium-235	0.04		± 0.075	UJ	0.10		
	6/30/2003	Uranium-238	0.09		± 0.11	J	0.08		
		Total Uranium	0.30	0.27					30

Table A-11
2003 Groundwater Analytical Results - Radioactive Costituents
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte	Result (pCi/L)	Result[a] (µg/L)	Error (pCi/L)	Data Qualifier	MDA (pCi/L)	State/Federal Standards (pCi/L)	State/Federal Standards (ug/L)
MISS05B	7/16/2003	Gross Alpha	1.30		± 2.5	U	4.30	15	
	7/16/2003	Gross Beta	54.50		± 6.8		3.80	50	
	7/16/2003	Radium-226	0.23		± 0.15	J	0.21	5 (h)	
	7/16/2003	Radium-228	0.56		± 0.57	U	0.92	5 (h)	
	7/16/2003	Thorium-228	0.04		± 0.12	U	0.21		
	7/16/2003	Thorium-230	0.48		± 0.26	J	0.09		
	7/16/2003	Thorium-232	0.00		± 0	U	0.20		
		Total Thorium	0.52						
	7/16/2003	Uranium-234	0.14		± 0.17	UJ	0.21		
	7/16/2003	Uranium-235	0.00		± 0	U	0.20		
	7/16/2003	Uranium-238	0.11		± 0.18	UJ	0.27		
		Total Uranium	0.25	0.33					30
MISS07B	7/14/2003	Gross Alpha	16.00		± 20	UJ	33.00	15	
	7/14/2003	Gross Beta	399.00		± 51	J	31.00	50	
	7/14/2003	Radium-226	0.20		± 0.2	UJ	0.31	5 (h)	
	7/14/2003	Radium-228	0.22		± 0.45	U	0.76	5 (h)	
	7/14/2003	Thorium-228	0.07		± 0.12	U	0.25		
	7/14/2003	Thorium-230	0.23		± 0.18	J	0.09		
	7/14/2003	Thorium-232	-0.01		± 0.013	U	0.16		
		Total Thorium	0.29						
	7/14/2003	Uranium-234	3.43		± 0.95		0.08		
	7/14/2003	Uranium-235	0.08		± 0.11	UJ	0.10		
	7/14/2003	Uranium-238	1.99		± 0.64		0.08		
		Total Uranium	5.50	5.91					30

U = The analyte was not detected.
UJ = Analyte was not detected; estimated value reported. The result is below the MDA or less than the associated error term.
J= Reported as an estimated value. R= Rejected by validation.
[a] Results reported with (±) radiological error quoted at 2 sigma (95 percent confidence level).
[b] USACE data qualifier flags based on the CDQMP-QAPP;
[c] Minimum Detectable Activity (MDA).
[d] Federal and State SDWA standards.
[e] Monitoring wells B38W01S and B38W02D are the background locations for wells that are completed in overburden and bedrock wells respectively.
[f] A quality control duplicate is collected at the same time and location, and is analyzed by the same method in order to evaluate precision in sampling and analysis.
[g] The federal MCL of 50 pCi/L was used as standard to evaluate measured gross beta.
[h] 5 pCi/L is the New Jersey and Federal standard for the combined concentration of Radium-226 and Radium-228 in in drinking water.
[i] The NJDEP has established a MCL for total uranium in drinking water of 30 mg/L.
The reported U-238 in pCi/L was divided by the specific activity of U-238 (0.3365 pCi/mg) to obtain the total uranium in mg/L and then compared to NJDEP MCL of 30 mg/L.

Table A-12
2003 Groundwater Analytical Results - Metals
Maywood Interim Storage Site

Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	Related Regulations State ug/L
B38W01S	6/27/2003	Aluminum, Total	101	J	60	200	200
	6/27/2003	Antimony, Total	4.6	U	4.6	6	2/20
	6/27/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	6/27/2003	Barium, Total	16.1		0.86	2000	2000
	6/27/2003	Beryllium, Total	1.8		0.64	4	0.008/20
	6/27/2003	Boron, Total	282		27		
	6/27/2003	Cadmium, Total	0.94	U	0.94	5	4
	6/27/2003	Calcium, Total	363000		54		
	6/27/2003	Chromium, Total	1.4	U	1.4	100	100
	6/27/2003	Cobalt, Total	1.7	U	1.7		
	6/27/2003	Copper, Total	2.6	U	2.6	1300	1000
	6/27/2003	Iron, Total	24600		53	300	300
	6/27/2003	Lead, Total	3.6	U	3.6	15	5/10
	6/27/2003	Lithium, Total	1250		50		
	6/27/2003	Magnesium, Total	32000		24		
	6/27/2003	Manganese, Total	2670		2.8	50	50
	6/27/2003	Mercury, Total	0.18	U	0.18	2	2
	6/27/2003	Nickel, Total	1.8	U	1.8		100
	6/27/2003	Potassium, Total	44100		100		
	6/27/2003	Selenium, Total	5	U	5	50	50
	6/27/2003	Silver, Total	0.93	U	0.93	1007	
	6/27/2003	Sodium, Total	45600		93		
	6/27/2003	Thallium, Total	1.8	U	2	2	0.5/10
	6/27/2003	Vanadium, Total	1	U	1		
	6/27/2003	Zinc, Total	11	U	11	500	5000
B38W14S	7/10/2003	Aluminum, Total	60	U	60	200	200
	7/10/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/10/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/10/2003	Barium, Total	103		0.86	2000	2000
	7/10/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/10/2003	Boron, Total	56.4		27		
	7/10/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/10/2003	Calcium, Total	102000		54		
	7/10/2003	Chromium, Total	1.4	U	1.4	100	100
	7/10/2003	Cobalt, Total	1.7	U	1.7		
	7/10/2003	Copper, Total	2.7	J	2.6	1300	1000
	7/10/2003	Iron, Total	53	U	53	300	300
	7/10/2003	Lead, Total	3.6	U	3.6	15	5/10
	7/10/2003	Lithium, Total	96.6		50		
	7/10/2003	Magnesium, Total	29500		24		
	7/10/2003	Manganese, Total	330		2.8	50	50
	7/10/2003	Mercury, Total	0.18	U	0.18	2	2
	7/10/2003	Nickel, Total	7.3		1.8		100
	7/10/2003	Potassium, Total	4670		100		
	7/10/2003	Selenium, Total	5	U	5	50	50
	7/10/2003	Silver, Total	0.93	U	0.93	1007	
	7/10/2003	Sodium, Total	35200		93		
	7/10/2003	Thallium, Total	1	U	1	2	0.5/10
	7/10/2003	Vanadium, Total	2.1		1		
	7/10/2003	Zinc, Total	11	U	11	500	5000

Table A-12
2003 Groundwater Analytical Results - Metals
Maywood Interim Storage Site

Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	Related Regulations State ug/L
B38W15S	7/1/2003	Aluminum, Total	60	U	60	200	200
	7/1/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/1/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/1/2003	Barium, Total	29		0.86	2000	2000
	7/1/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/1/2003	Boron, Total	616		27		
	7/1/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/1/2003	Calcium, Total	66700		54		
	7/1/2003	Chromium, Total	1.4	U	1.4	100	100
	7/1/2003	Cobalt, Total	1.7	U	1.7		
	7/1/2003	Copper, Total	2.6	U	2.6	1300	1000
	7/1/2003	Iron, Total	329		53	300	300
	7/1/2003	Lead, Total	3.6	U	3.6	15	5/10
	7/1/2003	Lithium, Total	2240		50		
	7/1/2003	Magnesium, Total	22100		24		
	7/1/2003	Manganese, Total	1750		2.8	50	50
	7/1/2003	Mercury, Total	0.18	U	0.18	2	2
	7/1/2003	Nickel, Total	2.8	U	1.8		100
	7/1/2003	Potassium, Total	136000	J	500		
	7/1/2003	Selenium, Total	5	U	5	50	50
	7/1/2003	Silver, Total	0.93	U	0.93	1007	
	7/1/2003	Sodium, Total	253000		465		
	7/1/2003	Thallium, Total	1	U	1	2	0.5/10
	7/1/2003	Vanadium, Total	1	U	1		
	7/1/2003	Zinc, Total	11	U	11	500	5000
B38W17A	6/26/2003	Aluminum, Total	60	U	60	200	200
	6/26/2003	Antimony, Total	4.6	U	4.6	6	2/20
	6/26/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	6/26/2003	Barium, Total	64.3		0.86	2000	2000
	6/26/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	6/26/2003	Boron, Total	66.3		27		
	6/26/2003	Cadmium, Total	0.94	U	0.94	5	4
	6/26/2003	Calcium, Total	83000		54		
	6/26/2003	Chromium, Total	3.4		1.4	100	100
	6/26/2003	Cobalt, Total	1.7	U	1.7		
	6/26/2003	Copper, Total	3.5	J	2.6	1300	1000
	6/26/2003	Iron, Total	126		53	300	300
	6/26/2003	Lead, Total	3.6	U	3.6	15	5/10
	6/26/2003	Magnesium, Total	8730		24		
	6/26/2003	Manganese, Total	212		2.8	50	50
	6/26/2003	Mercury, Total	0.18	U	0.18	2	2
	6/26/2003	Nickel, Total	57.7		1.8		100
	6/26/2003	Potassium, Total	23600		100		
	6/26/2003	Selenium, Total	5	U	5	50	50
	6/26/2003	Silver, Total	0.93	U	0.93	1007	
	6/26/2003	Sodium, Total	52100		93		
	6/26/2003	Vanadium, Total	1	U	1		
	6/26/2003	Zinc, Total	14.5	J	11	500	5000

Table A-12
2003 Groundwater Analytical Results - Metals
Maywood Interim Storage Site

Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	Related Regulations State ug/L
B38W19S	7/11/2003	Aluminum, Total	300	U	300	200	200
	7/11/2003	Antimony, Total	23	U	23	6	2/20
	7/11/2003	Arsenic, Total	17.5	U	17.5	50	0.02/8
	7/11/2003	Barium, Total	31.1		4.3	2000	2000
	7/11/2003	Beryllium, Total	3.2	U	3.2	4	0.008/20
	7/11/2003	Boron, Total	631		135		
	7/11/2003	Cadmium, Total	4.7	U	4.7	5	4
	7/11/2003	Calcium, Total	661000		270		
	7/11/2003	Chromium, Total	7	U	7	100	100
	7/11/2003	Cobalt, Total	8.5	U	8.5		
	7/11/2003	Copper, Total	13	U	13	1300	1000
	7/11/2003	Iron, Total	2880		265	300	300
	7/11/2003	Lead, Total	18	U	18	15	5/10
	7/11/2003	Lithium, Total	960		50		
	7/11/2003	Magnesium, Total	31400		120		
	7/11/2003	Manganese, Total	514		14	50	50
	7/11/2003	Mercury, Total	0.18	U	0.18	2	2
	7/11/2003	Nickel, Total	9	U	9		100
	7/11/2003	Potassium, Total	14100		500		
	7/11/2003	Selenium, Total	25	U	25	50	50
	7/11/2003	Silver, Total	4.6	U	4.6	1007	
	7/11/2003	Sodium, Total	17100		465		
	7/11/2003	Thallium, Total	2	U	2	2	0.5/10
	7/11/2003	Vanadium, Total	5	U	5		
	7/11/2003	Zinc, Total	55	U	55	500	5000
B38W24S	7/7/2003	Aluminum, Total	60	U	60	200	200
	7/7/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/7/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/7/2003	Barium, Total	40.8		0.86	2000	2000
	7/7/2003	Beryllium, Total	1.4		0.64	4	0.008/20
	7/7/2003	Boron, Total	101		27		
	7/7/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/7/2003	Calcium, Total	40000		54		
	7/7/2003	Chromium, Total	1.4	U	1.4	100	100
	7/7/2003	Cobalt, Total	1.7	U	1.7		
	7/7/2003	Copper, Total	2.6	U	2.6	1300	1000
	7/7/2003	Iron, Total	22000		53	300	300
	7/7/2003	Lead, Total	3.6	U	3.6	15	5/10
	7/7/2003	Lithium, Total	34.6	U	50		
	7/7/2003	Magnesium, Total	5490		24		
	7/7/2003	Manganese, Total	2710		2.8	50	50
	7/7/2003	Mercury, Total	0.18	U	0.18	2	2
	7/7/2003	Nickel, Total	1.8	U	1.8		100
	7/7/2003	Potassium, Total	7080	J	100		
	7/7/2003	Selenium, Total	5	U	5	50	50
	7/7/2003	Silver, Total	0.93	U	0.93	1007	
	7/7/2003	Sodium, Total	12800	J	93		
	7/7/2003	Thallium, Total	2	U	2	2	0.5/10
	7/7/2003	Vanadium, Total	1	U	1		
	7/7/2003	Zinc, Total	11	U	11	500	5000

Table A-12
2003 Groundwater Analytical Results - Metals
Maywood Interim Storage Site

Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	Related Regulations State ug/L
B38W25S	7/15/2003	Aluminum, Total	300	U	300	200	200
	7/15/2003	Antimony, Total	23	U	23	6	2/20
	7/15/2003	Arsenic, Total	24.1	J	17.5	50	0.02/8
	7/15/2003	Barium, Total	339		4.3	2000	2000
	7/15/2003	Beryllium, Total	3.2	U	3.2	4	0.008/20
	7/15/2003	Boron, Total	135	U	135		
	7/15/2003	Cadmium, Total	4.7	U	4.7	5	4
	7/15/2003	Calcium, Total	122000		270		
	7/15/2003	Chromium, Total	7	U	7	100	100
	7/15/2003	Cobalt, Total	8.5	U	8.5		
	7/15/2003	Copper, Total	13	U	13	1300	1000
	7/15/2003	Iron, Total	53000		265	300	300
	7/15/2003	Lead, Total	18	U	18	15	5/10
	7/15/2003	Lithium, Total	531		50		
	7/15/2003	Magnesium, Total	9300		120		
	7/15/2003	Manganese, Total	5540		14	50	50
	7/15/2003	Mercury, Total	0.18	U	0.18	2	2
	7/15/2003	Nickel, Total	9	U	9		100
	7/15/2003	Potassium, Total	19500		500		
	7/15/2003	Selenium, Total	25	UJ	25	50	50
	7/15/2003	Silver, Total	4.6	U	4.6	1007	
	7/15/2003	Sodium, Total	69800		465		
	7/15/2003	Thallium, Total	2	U	2	2	0.5/10
	7/15/2003	Vanadium, Total	5	U	5		
	7/15/2003	Zinc, Total	55	U	55	500	5000
MISS01AA	7/9/2003	Aluminum, Total	300	U	300	200	200
	7/9/2003	Antimony, Total	23	U	23	6	2/20
	7/9/2003	Arsenic, Total	17.5	U	17.5	50	0.02/8
	7/9/2003	Barium, Total	7.7	J	4.3	2000	2000
	7/9/2003	Beryllium, Total	3.2	U	3.2	4	0.008/20
	7/9/2003	Boron, Total	293		135		
	7/9/2003	Cadmium, Total	4.7	U	4.7	5	4
	7/9/2003	Calcium, Total	640000		270		
	7/9/2003	Chromium, Total	7	U	7	100	100
	7/9/2003	Cobalt, Total	8.5	U	8.5		
	7/9/2003	Copper, Total	13	U	13	1300	1000
	7/9/2003	Iron, Total	331	J	265	300	300
	7/9/2003	Lead, Total	18	U	18	15	5/10
	7/9/2003	Lithium, Total	165		50		
	7/9/2003	Magnesium, Total	30100		120		
	7/9/2003	Manganese, Total	102		14	50	50
	7/9/2003	Mercury, Total	0.18	U	0.18	2	2
	7/9/2003	Nickel, Total	9	U	9		100
	7/9/2003	Potassium, Total	851		500		
	7/9/2003	Selenium, Total	25	U	25	50	50
	7/9/2003	Silver, Total	4.6	U	4.6	1007	
	7/9/2003	Sodium, Total	4500		465		
	7/9/2003	Thallium, Total	1	U	1	2	0.5/10
	7/9/2003	Vanadium, Total	5	U	5		
	7/9/2003	Zinc, Total	55	U	55	500	5000

Table A-12
2003 Groundwater Analytical Results - Metals
Maywood Interim Storage Site

Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	Related Regulations State ug/L
MISS02A	6/30/2003	Aluminum, Total	96.7	J	60	200	200
	6/30/2003	Antimony, Total	4.6	U	4.6	6	2/20
	6/30/2003	Arsenic, Total	2770		3.5	50	0.02/8
	6/30/2003	Barium, Total	2.1	U	0.86	2000	2000
	6/30/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	6/30/2003	Boron, Total	1070		27		
	6/30/2003	Cadmium, Total	0.94	U	0.94	5	4
	6/30/2003	Calcium, Total	184000		54		
	6/30/2003	Chromium, Total	4.9		1.4	100	100
	6/30/2003	Cobalt, Total	1.7	U	1.7		
	6/30/2003	Copper, Total	34.9		2.6	1300	1000
	6/30/2003	Iron, Total	165		53	300	300
	6/30/2003	Lead, Total	3.6	U	3.6	15	5/10
	6/30/2003	Lithium, Total	6200		50		
	6/30/2003	Magnesium, Total	29900		24		
	6/30/2003	Manganese, Total	85.4		2.8	50	50
	6/30/2003	Mercury, Total	0.19	J	0.18	2	2
	6/30/2003	Nickel, Total	8.5	U	1.8		100
	6/30/2003	Potassium, Total	4160		100		
	6/30/2003	Selenium, Total	5	U	5	50	50
	6/30/2003	Silver, Total	0.93	U	0.93	1007	
	6/30/2003	Sodium, Total	637000		2320		
	6/30/2003	Thallium, Total	2	U	2	2	0.5/10
	6/30/2003	Vanadium, Total	1	U	1		
	6/30/2003	Zinc, Total	11	U	11	500	5000
MISS05A	7/14/2003	Aluminum, Total	300	U	300	200	200
	7/14/2003	Antimony, Total	23	U	23	6	2/20
	7/14/2003	Arsenic, Total	17.5	U	17.5	50	0.02/8
	7/14/2003	Barium, Total	15.4		4.3	2000	2000
	7/14/2003	Beryllium, Total	3.2	U	3.2	4	0.008/20
	7/14/2003	Boron, Total	303		135		
	7/14/2003	Cadmium, Total	4.7	U	4.7	5	4
	7/14/2003	Calcium, Total	636000		270		
	7/14/2003	Chromium, Total	7	U	7	100	100
	7/14/2003	Cobalt, Total	8.5	U	8.5		
	7/14/2003	Copper, Total	14.6	J	13	1300	1000
	7/14/2003	Iron, Total	293	J	265	300	300
	7/14/2003	Lead, Total	18	U	18	15	5/10
	7/14/2003	Lithium, Total	560		50		
	7/14/2003	Magnesium, Total	37300		120		
	7/14/2003	Manganese, Total	234		14	50	50
	7/14/2003	Mercury, Total	0.18	U	0.18	2	2
	7/14/2003	Nickel, Total	9	U	9		100
	7/14/2003	Potassium, Total	31300		500		
	7/14/2003	Selenium, Total	25	UJ	25	50	50
	7/14/2003	Silver, Total	4.6	U	4.6	1007	
	7/14/2003	Sodium, Total	15400		465		
	7/14/2003	Thallium, Total	2	U	2	2	0.5/10
	7/14/2003	Vanadium, Total	5	U	5		
	7/14/2003	Zinc, Total	55	U	55	500	5000

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Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	Related Regulations State ug/L
MISS06A	7/2/2003	Aluminum, Total	60	U	60	200	200
	7/2/2003	Antimony, Total	4.6	UJ	4.6	6	2/20
	7/2/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/2/2003	Barium, Total	67.5		0.86	2000	2000
	7/2/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/2/2003	Boron, Total	147		27		
	7/2/2003	Cadmium, Total	5.6		0.94	5	4
	7/2/2003	Calcium, Total	295000		54		
	7/2/2003	Chromium, Total	1.4	U	1.4	100	100
	7/2/2003	Cobalt, Total	1.7	U	1.7		
	7/2/2003	Copper, Total	11.9		2.6	1300	1000
	7/2/2003	Iron, Total	99.3	J	53	300	300
	7/2/2003	Lead, Total	3.6	U	3.6	15	5/10
	7/2/2003	Lithium, Total	1450		50		
	7/2/2003	Magnesium, Total	13400		24		
	7/2/2003	Manganese, Total	371		2.8	50	50
	7/2/2003	Mercury, Total	0.18	U	0.18	2	2
	7/2/2003	Nickel, Total	9.2	U	1.8		100
	7/2/2003	Potassium, Total	16500	J	100		
	7/2/2003	Selenium, Total	5	U	5	50	50
	7/2/2003	Silver, Total	0.93	U	0.93	1007	
	7/2/2003	Sodium, Total	64000		93		
	7/2/2003	Thallium, Total	1	U	1	2	0.5/10
	7/2/2003	Vanadium, Total	1.2	U	1		
	7/2/2003	Zinc, Total	3580		11	500	5000
B38W02D	6/27/2003	Aluminum, Total	60	U	60	200	200
	6/27/2003	Antimony, Total	4.6	U	4.6	6	2/20
	6/27/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	6/27/2003	Barium, Total	368		0.86	2000	2000
	6/27/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	6/27/2003	Boron, Total	27	U	27		
	6/27/2003	Cadmium, Total	0.94	U	0.94	5	4
	6/27/2003	Calcium, Total	73500		54		
	6/27/2003	Chromium, Total	3.9		1.4	100	100
	6/27/2003	Cobalt, Total	28.8		1.7		
	6/27/2003	Copper, Total	2.6	U	2.6	1300	1000
	6/27/2003	Iron, Total	53	U	53	300	300
	6/27/2003	Lead, Total	3.6	U	3.6	15	5/10
	6/27/2003	Lithium, Total	16	U	50		
	6/27/2003	Magnesium, Total	3720		24		
	6/27/2003	Manganese, Total	409		2.8	50	50
	6/27/2003	Mercury, Total	0.18	U	0.18	2	2
	6/27/2003	Nickel, Total	5.7		1.8		100
	6/27/2003	Potassium, Total	761		100		
	6/27/2003	Selenium, Total	5	U	5	50	50
	6/27/2003	Silver, Total	0.93	U	0.93	1007	
	6/27/2003	Sodium, Total	9660		93		
	6/27/2003	Thallium, Total	3.5	J	2	2	0.5/10
	6/27/2003	Vanadium, Total	1	U	1		
	6/27/2003	Zinc, Total	11	U	11	500	5000

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Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	State ug/L
B38W14D	7/10/2003	Aluminum, Total	1010		60	200	200
	7/10/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/10/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/10/2003	Barium, Total	144		0.86	2000	2000
	7/10/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/10/2003	Boron, Total	54.2		27		
	7/10/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/10/2003	Calcium, Total	124000		54		
	7/10/2003	Chromium, Total	6.9		1.4	100	100
	7/10/2003	Cobalt, Total	1.7	U	1.7		
	7/10/2003	Copper, Total	11		2.6	1300	1000
	7/10/2003	Iron, Total	980		53	300	300
	7/10/2003	Lead, Total	16.8		3.6	15	5/10
	7/10/2003	Lithium, Total	21.4	U	50		
	7/10/2003	Magnesium, Total	30500		24		
	7/10/2003	Manganese, Total	32.5		2.8	50	50
	7/10/2003	Mercury, Total	0.18	U	0.18	2	2
	7/10/2003	Nickel, Total	4.4		1.8		100
	7/10/2003	Potassium, Total	3020		100		
	7/10/2003	Selenium, Total	5	U	5	50	50
	7/10/2003	Silver, Total	0.93	U	0.93	1007	
	7/10/2003	Sodium, Total	42500		93		
	7/10/2003	Thallium, Total	1	U	1	2	0.5/10
	7/10/2003	Vanadium, Total	2.4		1		
	7/10/2003	Zinc, Total	37.4		11	500	5000
B38W15D	7/1/2003	Aluminum, Total	60	U	60	200	200
	7/1/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/1/2003	Arsenic, Total	9.9		3.5	50	0.02/8
	7/1/2003	Barium, Total	26.1		0.86	2000	2000
	7/1/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/1/2003	Boron, Total	700		27		
	7/1/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/1/2003	Calcium, Total	101000		54		
	7/1/2003	Chromium, Total	1.4	U	1.4	100	100
	7/1/2003	Cobalt, Total	2.8	J	1.7		
	7/1/2003	Copper, Total	2.8	J	2.6	1300	1000
	7/1/2003	Iron, Total	53	U	53	300	300
	7/1/2003	Lead, Total	3.6	U	3.6	15	5/10
	7/1/2003	Lithium, Total	2940		50		
	7/1/2003	Magnesium, Total	39400		24		
	7/1/2003	Manganese, Total	1060		2.8	50	50
	7/1/2003	Mercury, Total	0.18	U	0.18	2	2
	7/1/2003	Nickel, Total	8.6	U	1.8		100
	7/1/2003	Potassium, Total	72500		100		
	7/1/2003	Selenium, Total	5	U	5	50	50
	7/1/2003	Silver, Total	0.93	U	0.93	1007	
	7/1/2003	Sodium, Total	370000		2320		
	7/1/2003	Thallium, Total	1	U	1	2	0.5/10
	7/1/2003	Vanadium, Total	2.8		1		
	7/1/2003	Zinc, Total	11	U	11	500	5000

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Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	State ug/L
B38W18D	7/2/2003	Aluminum, Total	497		60	200	200
	7/2/2003	Antimony, Total	4.6	UJ	4.6	6	2/20
	7/2/2003	Arsenic, Total	9.6		3.5	50	0.02/8
	7/2/2003	Barium, Total	27.8		0.86	2000	2000
	7/2/2003	Beryllium, Total	1.3	J	0.64	4	0.008/20
	7/2/2003	Boron, Total	382		27		
	7/2/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/2/2003	Calcium, Total	229000		54		
	7/2/2003	Chromium, Total	72.4		1.4	100	100
	7/2/2003	Cobalt, Total	19.6		1.7		
	7/2/2003	Copper, Total	5.9		2.6	1300	1000
	7/2/2003	Iron, Total	22400		53	300	300
	7/2/2003	Lead, Total	7.4	U	3.6	15	5/10
	7/2/2003	Lithium, Total	3020		50		
	7/2/2003	Magnesium, Total	19300		24		
	7/2/2003	Manganese, Total	5250		2.8	50	50
	7/2/2003	Mercury, Total	0.18	U	0.18	2	2
	7/2/2003	Nickel, Total	30.1		1.8		100
	7/2/2003	Potassium, Total	10800	J	100		
	7/2/2003	Selenium, Total	5	U	5	50	50
	7/2/2003	Silver, Total	0.93	U	0.93	1007	
	7/2/2003	Sodium, Total	68100		93		
	7/2/2003	Thallium, Total	1.3	J	1	2	0.5/10
	7/2/2003	Vanadium, Total	2	U	1		
	7/2/2003	Zinc, Total	102		11	500	5000
B38W18D Duplicate	7/2/2003	Aluminum, Total	253		60	200	200
	7/2/2003	Antimony, Total	4.6	UJ	4.6	6	2/20
	7/2/2003	Arsenic, Total	9.3		3.5	50	0.02/8
	7/2/2003	Barium, Total	28		0.86	2000	2000
	7/2/2003	Beryllium, Total	1.3	J	0.64	4	0.008/20
	7/2/2003	Boron, Total	387		27		
	7/2/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/2/2003	Calcium, Total	232000		54		
	7/2/2003	Chromium, Total	55.2		1.4	100	100
	7/2/2003	Cobalt, Total	20.3		1.7		
	7/2/2003	Copper, Total	5.1		2.6	1300	1000
	7/2/2003	Iron, Total	21500		53	300	300
	7/2/2003	Lead, Total	7.9	U	3.6	15	5/10
	7/2/2003	Lithium, Total	3020		50		
	7/2/2003	Magnesium, Total	19300		24		
	7/2/2003	Manganese, Total	5330		2.8	50	50
	7/2/2003	Mercury, Total	0.18	U	0.18	2	2
	7/2/2003	Nickel, Total	29.3		1.8		100
	7/2/2003	Potassium, Total	10900	J	100		
	7/2/2003	Selenium, Total	5	U	5	50	50
	7/2/2003	Silver, Total	0.93	U	0.93	1007	
	7/2/2003	Sodium, Total	68100		93		
	7/2/2003	Thallium, Total	1	UJ	1	2	0.5/10
	7/2/2003	Vanadium, Total	1.5	U	1		
	7/2/2003	Zinc, Total	102		11	500	5000

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Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	State ug/L
B38W19D	7/11/2003	Aluminum, Total	300	U	300	200	200
	7/11/2003	Antimony, Total	23	U	23	6	2/20
	7/11/2003	Arsenic, Total	53.9		17.5	50	0.02/8
	7/11/2003	Barium, Total	36.9		4.3	2000	2000
	7/11/2003	Beryllium, Total	3.2	U	3.2	4	0.008/20
	7/11/2003	Boron, Total	563		135		
	7/11/2003	Cadmium, Total	4.7	U	4.7	5	4
	7/11/2003	Calcium, Total	224000		270		
	7/11/2003	Chromium, Total	7	U	7	100	100
	7/11/2003	Cobalt, Total	8.5	U	8.5		
	7/11/2003	Copper, Total	13	U	13	1300	1000
	7/11/2003	Iron, Total	3950		265	300	300
	7/11/2003	Lead, Total	18	U	18	15	5/10
	7/11/2003	Lithium, Total	3480		50		
	7/11/2003	Magnesium, Total	30100		120		
	7/11/2003	Manganese, Total	2330		14	50	50
	7/11/2003	Mercury, Total	0.18	U	0.18	2	2
	7/11/2003	Nickel, Total	9	U	9		100
	7/11/2003	Potassium, Total	343000		500		
	7/11/2003	Selenium, Total	25	U	25	50	50
	7/11/2003	Silver, Total	4.6	U	4.6	1007	
	7/11/2003	Sodium, Total	227000		465		
	7/11/2003	Thallium, Total	2	U	2	2	0.5/10
	7/11/2003	Vanadium, Total	5	U	5		
	7/11/2003	Zinc, Total	55	U	55	500	5000
B38W24D	7/7/2003	Aluminum, Total	60	U	60	200	200
	7/7/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/7/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/7/2003	Barium, Total	71.7		0.86	2000	2000
	7/7/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/7/2003	Boron, Total	96.2		27		
	7/7/2003	Cadmium, Total	1.1	J	0.94	5	4
	7/7/2003	Calcium, Total	85000		54		
	7/7/2003	Chromium, Total	3.3	U	1.4	100	100
	7/7/2003	Cobalt, Total	1.7	U	1.7		
	7/7/2003	Copper, Total	3.7	UJ	2.6	1300	1000
	7/7/2003	Iron, Total	30300		53	300	300
	7/7/2003	Lead, Total	3.6	U	3.6	15	5/10
	7/7/2003	Lithium, Total	62.2	U	50		
	7/7/2003	Magnesium, Total	11700		24		
	7/7/2003	Manganese, Total	6460		2.8	50	50
	7/7/2003	Mercury, Total	0.18	U	0.18	2	2
	7/7/2003	Nickel, Total	2.1	UJ	1.8		100
	7/7/2003	Potassium, Total	12600		100		
	7/7/2003	Selenium, Total	5	U	5	50	50
	7/7/2003	Silver, Total	0.93	U	0.93	1007	
	7/7/2003	Sodium, Total	37500		93		
	7/7/2003	Thallium, Total	2	U	2	2	0.5/10
	7/7/2003	Vanadium, Total	1	U	1		
	7/7/2003	Zinc, Total	11	U	11	500	5000

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Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	Related Regulations State ug/L
B38W25D	7/15/2003	Aluminum, Total	300	U	300	200	200
	7/15/2003	Antimony, Total	23	U	23	6	2/20
	7/15/2003	Arsenic, Total	17.5	U	17.5	50	0.02/8
	7/15/2003	Barium, Total	312		4.3	2000	2000
	7/15/2003	Beryllium, Total	3.2	U	3.2	4	0.008/20
	7/15/2003	Boron, Total	135	U	135		
	7/15/2003	Cadmium, Total	4.7	U	4.7	5	4
	7/15/2003	Calcium, Total	361000		270		
	7/15/2003	Chromium, Total	7	U	7	100	100
	7/15/2003	Cobalt, Total	8.5	U	8.5		
	7/15/2003	Copper, Total	13	U	13	1300	1000
	7/15/2003	Iron, Total	23700		265	300	300
	7/15/2003	Lead, Total	18	U	18	15	5/10
	7/15/2003	Lithium, Total	1210		50		
	7/15/2003	Magnesium, Total	19400		120		
	7/15/2003	Manganese, Total	5010		14	50	50
	7/15/2003	Mercury, Total	0.18	U	0.18	2	2
	7/15/2003	Nickel, Total	9	U	9		100
	7/15/2003	Potassium, Total	74500		500		
	7/15/2003	Selenium, Total	25	UJ	25	50	50
	7/15/2003	Silver, Total	4.6	U	4.6	1007	
	7/15/2003	Sodium, Total	185000		465		
	7/15/2003	Thallium, Total	2	U	2	2	0.5/10
	7/15/2003	Vanadium, Total	5	U	5		
	7/15/2003	Zinc, Total	55	U	55	500	5000
B38W25D Duplicate	7/15/2003	Aluminum, Total	300	U	300	200	200
	7/15/2003	Antimony, Total	23	U	23	6	2/20
	7/15/2003	Arsenic, Total	17.5	U	17.5	50	0.02/8
	7/15/2003	Barium, Total	312		4.3	2000	2000
	7/15/2003	Beryllium, Total	3.2	U	3.2	4	0.008/20
	7/15/2003	Boron, Total	135	U	135		
	7/15/2003	Cadmium, Total	4.7	U	4.7	5	4
	7/15/2003	Calcium, Total	356000		270		
	7/15/2003	Chromium, Total	7	U	7	100	100
	7/15/2003	Cobalt, Total	8.5	U	8.5		
	7/15/2003	Copper, Total	13	U	13	1300	1000
	7/15/2003	Iron, Total	23600		265	300	300
	7/15/2003	Lead, Total	18	U	18	15	5/10
	7/15/2003	Lithium, Total	1250		50		
	7/15/2003	Magnesium, Total	19400		120		
	7/15/2003	Manganese, Total	5000		14	50	50
	7/15/2003	Mercury, Total	0.18	U	0.18	2	2
	7/15/2003	Nickel, Total	9	U	9		100
	7/15/2003	Potassium, Total	74400		500		
	7/15/2003	Selenium, Total	25	UJ	25	50	50
	7/15/2003	Silver, Total	4.6	U	4.6	1007	
	7/15/2003	Sodium, Total	185000		465		
	7/15/2003	Thallium, Total	2	U	2	2	0.5/10
	7/15/2003	Vanadium, Total	5	U	5		
	7/15/2003	Zinc, Total	55	U	55	500	5000

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Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	Related Regulations State ug/L
B38W17B	6/26/2003	Aluminum, Total	60	U	60	200	200
	6/26/2003	Antimony, Total	4.6	U	4.6	6	2/20
	6/26/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	6/26/2003	Barium, Total	79.9		0.86	2000	2000
	6/26/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	6/26/2003	Boron, Total	250		27		
	6/26/2003	Cadmium, Total	0.94	U	0.94	5	4
	6/26/2003	Calcium, Total	266000		54		
	6/26/2003	Chromium, Total	3.1		1.4	100	100
	6/26/2003	Cobalt, Total	1.7	U	1.7		
	6/26/2003	Copper, Total	2.6	U	2.6	1300	1000
	6/26/2003	Iron, Total	7920		53	300	300
	6/26/2003	Lead, Total	3.6	U	3.6	15	5/10
	6/26/2003	Magnesium, Total	16900		24		
	6/26/2003	Manganese, Total	3220		2.8	50	50
	6/26/2003	Mercury, Total	0.18	U	0.18	2	2
	6/26/2003	Nickel, Total	2.7	J	1.8		100
	6/26/2003	Potassium, Total	110000		100		
	6/26/2003	Selenium, Total	5	U	5	50	50
	6/26/2003	Silver, Total	0.93	U	0.93	1007	
	6/26/2003	Sodium, Total	100000		93		
	6/26/2003	Vanadium, Total	1.3	J	1		
	6/26/2003	Zinc, Total	11	U	11	500	5000
B38W17B Duplicate	6/26/2003	Aluminum, Total	60	U	60	200	200
	6/26/2003	Antimony, Total	4.6	U	4.6	6	2/20
	6/26/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	6/26/2003	Barium, Total	79.7		0.86	2000	2000
	6/26/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	6/26/2003	Boron, Total	244		27		
	6/26/2003	Cadmium, Total	0.94	U	0.94	5	4
	6/26/2003	Calcium, Total	265000		54		
	6/26/2003	Chromium, Total	1.6	J	1.4	100	100
	6/26/2003	Cobalt, Total	1.7	U	1.7		
	6/26/2003	Copper, Total	2.6	U	2.6	1300	1000
	6/26/2003	Iron, Total	7850		53	300	300
	6/26/2003	Lead, Total	3.6	U	3.6	15	5/10
	6/26/2003	Magnesium, Total	16700		24		
	6/26/2003	Manganese, Total	3220		2.8	50	50
	6/26/2003	Mercury, Total	0.18	U	0.18	2	2
	6/26/2003	Nickel, Total	1.9	J	1.8		100
	6/26/2003	Potassium, Total	109000		100		
	6/26/2003	Selenium, Total	5	U	5	50	50
	6/26/2003	Silver, Total	0.93	U	0.93	1007	
	6/26/2003	Sodium, Total	98600		93		
	6/26/2003	Vanadium, Total	1	U	1		
	6/26/2003	Zinc, Total	11	U	11	500	5000

Table A-12
2003 Groundwater Analytical Results - Metals
Maywood Interim Storage Site

Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	Related Regulations State ug/L
MISS01B	7/9/2003	Aluminum, Total	60	U	60	200	200
	7/9/2003	Antimony, Total	4.6	U	4.6	6	2/20
	7/9/2003	Arsenic, Total	3.5	U	3.5	50	0.02/8
	7/9/2003	Barium, Total	86.6		0.86	2000	2000
	7/9/2003	Beryllium, Total	0.64	U	0.64	4	0.008/20
	7/9/2003	Boron, Total	75.4		27		
	7/9/2003	Cadmium, Total	0.94	U	0.94	5	4
	7/9/2003	Calcium, Total	90600		54		
	7/9/2003	Chromium, Total	5.5		1.4	100	100
	7/9/2003	Cobalt, Total	1.7	U	1.7		
	7/9/2003	Copper, Total	2.6	U	2.6	1300	1000
	7/9/2003	Iron, Total	15700		53	300	300
	7/9/2003	Lead, Total	3.6	U	3.6	15	5/10
	7/9/2003	Lithium, Total	65.9		50		
	7/9/2003	Magnesium, Total	18400		24		
	7/9/2003	Manganese, Total	379		2.8	50	50
	7/9/2003	Mercury, Total	0.18	U	0.18	2	2
	7/9/2003	Nickel, Total	5.6	U	1.8		100
	7/9/2003	Potassium, Total	10700		100		
	7/9/2003	Selenium, Total	5	U	5	50	50
	7/9/2003	Silver, Total	0.93	U	0.93	1007	
	7/9/2003	Sodium, Total	53300		93		
	7/9/2003	Thallium, Total	1	U	1	2	0.5/10
	7/9/2003	Vanadium, Total	4.4		1		
	7/9/2003	Zinc, Total	11	U	11	500	5000
MISS02B	6/30/2003	Aluminum, Total	300	U	300	200	200
	6/30/2003	Antimony, Total	23	U	23	6	2/20
	6/30/2003	Arsenic, Total	17.5	U	17.5	50	0.02/8
	6/30/2003	Barium, Total	13.2		4.3	2000	2000
	6/30/2003	Beryllium, Total	3.2	U	3.2	4	0.008/20
	6/30/2003	Boron, Total	1660		135		
	6/30/2003	Cadmium, Total	4.7	U	4.7	5	4
	6/30/2003	Calcium, Total	268000		270		
	6/30/2003	Chromium, Total	10.7	J	7	100	100
	6/30/2003	Cobalt, Total	22.4		8.5		
	6/30/2003	Copper, Total	13	U	13	1300	1000
	6/30/2003	Iron, Total	10700		265	300	300
	6/30/2003	Lead, Total	18	U	18	15	5/10
	6/30/2003	Lithium, Total	9590		50		
	6/30/2003	Magnesium, Total	34900		120		
	6/30/2003	Manganese, Total	4440		14	50	50
	6/30/2003	Mercury, Total	0.18	U	0.18	2	2
	6/30/2003	Nickel, Total	11	U	9		100
	6/30/2003	Potassium, Total	64400		500		
	6/30/2003	Selenium, Total	25	U	25	50	50
	6/30/2003	Silver, Total	4.6	U	4.6	1007	
	6/30/2003	Sodium, Total	928000		2320		
	6/30/2003	Thallium, Total	2	U	2	2	0.5/10
	6/30/2003	Vanadium, Total	5	U	5		
	6/30/2003	Zinc, Total	55	U	55	500	5000

Table A-12
2003 Groundwater Analytical Results - Metals
Maywood Interim Storage Site

Sampling Location	Date Collected	Detected Analyte	Result ug/L	Data Qualifiers	Reporting Limit ug/L	Related Regulations Federal ug/L	State ug/L
MISS05B	7/16/2003	Aluminum, Total	300	U	300	200	200
	7/16/2003	Antimony, Total	23	U	23	6	2/20
	7/16/2003	Arsenic, Total	29	J	17.5	50	0.02/8
	7/16/2003	Barium, Total	54.7		4.3	2000	2000
	7/16/2003	Beryllium, Total	3.2	U	3.2	4	0.008/20
	7/16/2003	Boron, Total	267		135		
	7/16/2003	Cadmium, Total	4.7	U	4.7	5	4
	7/16/2003	Calcium, Total	275000		270		
	7/16/2003	Chromium, Total	7	U	7	100	100
	7/16/2003	Cobalt, Total	8.5	U	8.5		
	7/16/2003	Copper, Total	13	U	13	1300	1000
	7/16/2003	Iron, Total	5880		265	300	300
	7/16/2003	Lead, Total	18	U	18	15	5/10
	7/16/2003	Lithium, Total	1290		50		
	7/16/2003	Magnesium, Total	20500		120		
	7/16/2003	Manganese, Total	1230		14	50	50
	7/16/2003	Mercury, Total	0.18	U	0.18	2	2
	7/16/2003	Nickel, Total	9	U	9		100
	7/16/2003	Potassium, Total	149000	J	500		
	7/16/2003	Selenium, Total	25	UJ	25	50	50
	7/16/2003	Silver, Total	4.6	U	4.6	1007	
	7/16/2003	Sodium, Total	54800	J	465		
	7/16/2003	Thallium, Total	2	U	2	2	0.5/10
	7/16/2003	Vanadium, Total	5	U	5		
	7/16/2003	Zinc, Total	55	U	55	500	5000
MISS07B	7/14/2003	Aluminum, Total	300	U	300	200	200
	7/14/2003	Antimony, Total	23	U	23	6	2/20
	7/14/2003	Arsenic, Total	82.9		17.5	50	0.02/8
	7/14/2003	Barium, Total	17.8		4.3	2000	2000
	7/14/2003	Beryllium, Total	3.2	U	3.2	4	0.008/20
	7/14/2003	Boron, Total	3180		135		
	7/14/2003	Cadmium, Total	4.7	U	4.7	5	4
	7/14/2003	Calcium, Total	302000		270		
	7/14/2003	Chromium, Total	7.2	J	7	100	100
	7/14/2003	Cobalt, Total	12.1	J	8.5		
	7/14/2003	Copper, Total	13	U	13	1300	1000
	7/14/2003	Iron, Total	16500		265	300	300
	7/14/2003	Lead, Total	18	U	18	15	5/10
	7/14/2003	Lithium, Total	7770		50		
	7/14/2003	Magnesium, Total	99600		120		
	7/14/2003	Manganese, Total	5930		14	50	50
	7/14/2003	Mercury, Total	0.18	U	0.18	2	2
	7/14/2003	Nickel, Total	17.3	J	9		100
	7/14/2003	Potassium, Total	69800		500		
	7/14/2003	Selenium, Total	25	UJ	25	50	50
	7/14/2003	Silver, Total	4.6	U	4.6	1007	
	7/14/2003	Sodium, Total	1470000		4650		
	7/14/2003	Thallium, Total	2	U	2	2	0.5/10
	7/14/2003	Vanadium, Total	20		5		
	7/14/2003	Zinc, Total	55	U	55	500	5000

[a] All analytes were reported, detected and undetected.

[b] USACE data qualifier flags based on the CDQMP-QAPP: J = Reported as an estimated value, U= analyte was not detected.

[c] Federal SDWA MCLs, 40 CFR 141. Regulations pertain to drinking water quality and are listed for comparison purposes only. Not established (NE).

[d] New Jersey Class IIA Groundwater Quality Standards NJAC 7:9-6. Analytes for which the PQL is greater than the GWQC are noted as such: GWQC/PQL.

[e] Monitoring wells B38W01S and B38W02D are the background locations for wells completed in overburden and bedrock wells respectively.

Table A-13
2003 Groundwater Analytical Results - Volatile Organic Compounds
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
Monitoring wells completed in unconsolidated sedimen							
B38W01S	6/27/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	6/27/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	6/27/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	6/27/2003	1,1-Dichloroethane	0.08	U	0.08		70
	6/27/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	6/27/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	6/27/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	6/27/2003	2-Butanone	2	UJ	2		3
	6/27/2003	2-Hexanone	0.9	U	0.9		
	6/27/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	6/27/2003	Acetone	2	J	1		700
	6/27/2003	Benzene	0.08	U	0.08	5	0.2
	6/27/2003	Bromodichloromethane	0.1	U	0.1		0.3
	6/27/2003	Bromoform	0.1	U	0.1		4
	6/27/2003	Bromomethane	0.2	UJ	0.2		10
	6/27/2003	Carbon disulfide	0.1	UJ	0.1		
	6/27/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	6/27/2003	Chlorobenzene	0.06	U	0.06	100	4
	6/27/2003	Chloroethane	0.2	UJ	0.2		
	6/27/2003	Chloroform	0.1	U	0.1		6
	6/27/2003	Chloromethane	0.3	U	0.3		30
	6/27/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	6/27/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	6/27/2003	Dibromochloromethane	0.1	U	0.1		10
	6/27/2003	Ethylbenzene	0.06	U	0.06	700	700
	6/27/2003	Methylene Chloride	0.2	UJ	0.2		2
	6/27/2003	Styrene	0.1	U	0.1	100	100
	6/27/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	6/27/2003	Toluene	0.04	U	0.04	100	1000
	6/27/2003	Total Xylene	0.1	U	0.1		
	6/27/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	6/27/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	6/27/2003	Trichloroethene	0.08	U	0.08	5	1
	6/27/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
B38W14S	7/10/2003	1,1,1-Trichloroethane	0.5	U	0.5	200	30
	7/10/2003	1,1,2,2-Tetrachloroethane	0.9	U	0.9		2
	7/10/2003	1,1,2-Trichloroethane	0.5	U	0.5	3/5	3
	7/10/2003	1,1-Dichloroethane	0.4	U	0.4		70
	7/10/2003	1,1-Dichloroethene	3		1	7	1
	7/10/2003	1,2-Dichloroethane	0.8	U	0.8	5	0.3
	7/10/2003	1,2-Dichloropropane	0.7	U	0.7	5	0.5
	7/10/2003	2-Butanone	8	UJ	8		3
	7/10/2003	2-Hexanone	4	U	4		
	7/10/2003	4-Methyl-2-pentanone	2	U	2		400
	7/10/2003	Acetone	6	UJ	6		700
	7/10/2003	Benzene	0.4	U	0.4	5	0.2
	7/10/2003	Bromodichloromethane	0.5	U	0.5		0.3
	7/10/2003	Bromoform	0.5	U	0.5		4
	7/10/2003	Bromomethane	0.9	R	0.9		10
	7/10/2003	Carbon disulfide	0.5	UJ	0.5		
	7/10/2003	Carbon tetrachloride	0.4	U	0.4		0.4
	7/10/2003	Chlorobenzene	0.3	U	0.3	100	4
	7/10/2003	Chloroethane	1	UJ	1		
	7/10/2003	Chloroform	1		0.5		6
	7/10/2003	Chloromethane	1	U	1		30
	7/10/2003	cis-1,2-Dichloroethene	15		0.4		
	7/10/2003	cis-1,3-Dichloropropene	0.5	U	0.5		
	7/10/2003	Dibromochloromethane	0.5	U	0.5		10
	7/10/2003	Ethylbenzene	0.3	U	0.3	700	700
	7/10/2003	Methylene Chloride	2	UJ	0.8		2
	7/10/2003	Styrene	0.5	U	0.5	100	100
	7/10/2003	Tetrachloroethene	78		0.6	5	0.4
	7/10/2003	Toluene	1		0.2	100	1000
	7/10/2003	Total Xylene	0.7	U	0.7		
	7/10/2003	trans-1,2-Dichloroethene	1	U	1		
	7/10/2003	Trans-1,3-Dichloropropene	0.8	U	0.8		
	7/10/2003	Trichloroethene	15		0.4	5	1
	7/10/2003	Vinyl chloride	1	UJ	1	5	0.08

Table A-13
2003 Groundwater Analytical Results - Volatile Organic Compounds
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
B38W15S	7/1/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/1/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/1/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/1/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/1/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/1/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/1/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/1/2003	2-Butanone	2	UJ	2		3
	7/1/2003	2-Hexanone	0.9	U	0.9		
	7/1/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/1/2003	Acetone	3	UJ	1		700
	7/1/2003	Benzene	0.08	U	0.08	5	0.2
	7/1/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/1/2003	Bromoform	0.1	U	0.1		4
	7/1/2003	Bromomethane	0.2	UJ	0.2		10
	7/1/2003	Carbon disulfide	0.1	UJ	0.1		
	7/1/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/1/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/1/2003	Chloroethane	0.2	UJ	0.2		
	7/1/2003	Chloroform	0.1	U	0.1		6
	7/1/2003	Chloromethane	0.3	U	0.3		30
	7/1/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/1/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/1/2003	Dibromochloromethane	0.1	U	0.1		10
	7/1/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/1/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/1/2003	Styrene	0.1	U	0.1	100	100
	7/1/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/1/2003	Toluene	0.04	U	0.04	100	1000
	7/1/2003	Total Xylene	0.1	U	0.1		
	7/1/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/1/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/1/2003	Trichloroethene	0.08	U	0.08	5	1
	7/1/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
B38W17A	6/26/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	6/26/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	6/26/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	6/26/2003	1,1-Dichloroethane	0.08	U	0.08		70
	6/26/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	6/26/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	6/26/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	6/26/2003	2-Butanone	2	UJ	2		3
	6/26/2003	2-Hexanone	0.9	U	0.9		
	6/26/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	6/26/2003	Acetone	1	UJ	1		700
	6/26/2003	Benzene	0.08	U	0.08	5	0.2
	6/26/2003	Bromodichloromethane	0.1	U	0.1		0.3
	6/26/2003	Bromoform	0.1	U	0.1		4
	6/26/2003	Bromomethane	0.2	UJ	0.2		10
	6/26/2003	Carbon disulfide	0.1	UJ	0.1		
	6/26/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	6/26/2003	Chlorobenzene	0.06	U	0.06	100	4
	6/26/2003	Chloroethane	0.2	UJ	0.2		
	6/26/2003	Chloroform	0.1	U	0.1		6
	6/26/2003	Chloromethane	0.3	U	0.3		30
	6/26/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	6/26/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	6/26/2003	Dibromochloromethane	0.1	U	0.1		10
	6/26/2003	Ethylbenzene	0.06	U	0.06	700	700
	6/26/2003	Methylene Chloride	0.2	UJ	0.2		2
	6/26/2003	Styrene	0.1	U	0.1	100	100
	6/26/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	6/26/2003	Toluene	0.1		0.04	100	1000
	6/26/2003	Total Xylene	0.1	U	0.1		
	6/26/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	6/26/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	6/26/2003	Trichloroethene	0.08	U	0.08	5	1
	6/26/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08

Table A-13
2003 Groundwater Analytical Results - Volatile Organic Compounds
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
B38W19S	7/11/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/11/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/11/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/11/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/11/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/11/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/11/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/11/2003	2-Butanone	2	UJ	2		3
	7/11/2003	2-Hexanone	0.9	U	0.9		
	7/11/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/11/2003	Acetone	1	R	1		700
	7/11/2003	Benzene	0.08	U	0.08	5	0.2
	7/11/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/11/2003	Bromoform	0.1	U	0.1		4
	7/11/2003	Bromomethane	0.2	UJ	0.2		10
	7/11/2003	Carbon disulfide	0.1	UJ	0.1		
	7/11/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/11/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/11/2003	Chloroethane	0.2	UJ	0.2		
	7/11/2003	Chloroform	0.1	U	0.1		6
	7/11/2003	Chloromethane	0.3	U	0.3		30
	7/11/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/11/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/11/2003	Dibromochloromethane	0.1	U	0.1		10
	7/11/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/11/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/11/2003	Styrene	0.1	U	0.1	100	100
	7/11/2003	Tetrachloroethene	0.1		0.1	5	0.4
	7/11/2003	Toluene	0.04	U	0.04	100	1000
	7/11/2003	Total Xylene	0.1	U	0.1		
	7/11/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/11/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/11/2003	Trichloroethene	0.08	U	0.08	5	1
	7/11/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
B38W24S	7/7/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/7/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/7/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/7/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/7/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/7/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/7/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/7/2003	2-Butanone	2	R	2		3
	7/7/2003	2-Hexanone	0.9	U	0.9		
	7/7/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/7/2003	Acetone	1	UJ	1		700
	7/7/2003	Benzene	0.08	U	0.08	5	0.2
	7/7/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/7/2003	Bromoform	0.1	UJ	0.1		4
	7/7/2003	Bromomethane	0.2	UJ	0.2		10
	7/7/2003	Carbon disulfide	0.1	UJ	0.1		
	7/7/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/7/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/7/2003	Chloroethane	0.2	UJ	0.2		
	7/7/2003	Chloroform	0.1	U	0.1		6
	7/7/2003	Chloromethane	0.3	UJ	0.3		30
	7/7/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/7/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/7/2003	Dibromochloromethane	0.1	UJ	0.1		10
	7/7/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/7/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/7/2003	Styrene	0.1	U	0.1	100	100
	7/7/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/7/2003	Toluene	0.04	U	0.04	100	1000
	7/7/2003	Total Xylene	0.1	U	0.1		
	7/7/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/7/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/7/2003	Trichloroethene	0.08	U	0.08	5	1
	7/7/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08

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Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
B38W25S	7/15/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/15/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/15/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/15/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/15/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/15/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/15/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/15/2003	2-Butanone	2	R	2		3
	7/15/2003	2-Hexanone	0.9	U	0.9		
	7/15/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/15/2003	Acetone	1	R	1		700
	7/15/2003	Benzene	0.08	U	0.08	5	0.2
	7/15/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/15/2003	Bromoform	0.1	U	0.1		4
	7/15/2003	Bromomethane	0.2	UJ	0.2		10
	7/15/2003	Carbon disulfide	0.1	UJ	0.1		
	7/15/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/15/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/15/2003	Chloroethane	0.2	UJ	0.2		
	7/15/2003	Chloroform	0.1	U	0.1		6
	7/15/2003	Chloromethane	0.3	UJ	0.3		30
	7/15/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/15/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/15/2003	Dibromochloromethane	0.1	U	0.1		10
	7/15/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/15/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/15/2003	Styrene	0.1	U	0.1	100	100
	7/15/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/15/2003	Toluene	0.04	U	0.04	100	1000
	7/15/2003	Total Xylene	0.1	U	0.1		
	7/15/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/15/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/15/2003	Trichloroethene	0.08	U	0.08	5	1
	7/15/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
MISS01AA	7/9/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/9/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/9/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/9/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/9/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/9/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/9/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/9/2003	2-Butanone	2	UJ	2		3
	7/9/2003	2-Hexanone	0.9	U	0.9		
	7/9/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/9/2003	Acetone	1	R	1		700
	7/9/2003	Benzene	0.08	U	0.08	5	0.2
	7/9/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/9/2003	Bromoform	0.1	U	0.1		4
	7/9/2003	Bromomethane	0.2	UJ	0.2		10
	7/9/2003	Carbon disulfide	0.1	UJ	0.1		
	7/9/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/9/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/9/2003	Chloroethane	0.2	UJ	0.2		
	7/9/2003	Chloroform	0.1	U	0.1		6
	7/9/2003	Chloromethane	0.3	U	0.3		30
	7/9/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/9/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/9/2003	Dibromochloromethane	0.1	U	0.1		10
	7/9/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/9/2003	Methylene Chloride	0.2	U	0.2		2
	7/9/2003	Styrene	0.1	U	0.1	100	100
	7/9/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/9/2003	Toluene	0.04	U	0.04	100	1000
	7/9/2003	Total Xylene	0.1	U	0.1		
	7/9/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/9/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/9/2003	Trichloroethene	0.08	U	0.08	5	1
	7/9/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08

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Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
MISS02A	6/30/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	6/30/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	6/30/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	6/30/2003	1,1-Dichloroethane	0.08	U	0.08		70
	6/30/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	6/30/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	6/30/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	6/30/2003	2-Butanone	2	UJ	2		3
	6/30/2003	2-Hexanone	0.9	U	0.9		
	6/30/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	6/30/2003	Acetone	1	UJ	1		700
	6/30/2003	Benzene	0.08	U	0.08	5	0.2
	6/30/2003	Bromodichloromethane	0.1	U	0.1		0.3
	6/30/2003	Bromoform	0.1	U	0.1		4
	6/30/2003	Bromomethane	0.2	UJ	0.2		10
	6/30/2003	Carbon disulfide	0.1	UJ	0.1		
	6/30/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	6/30/2003	Chlorobenzene	0.06	U	0.06	100	4
	6/30/2003	Chloroethane	0.2	UJ	0.2		
	6/30/2003	Chloroform	0.1	U	0.1		6
	6/30/2003	Chloromethane	0.3	UJ	0.3		30
	6/30/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	6/30/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	6/30/2003	Dibromochloromethane	0.1	U	0.1		10
	6/30/2003	Ethylbenzene	0.06	U	0.06	700	700
	6/30/2003	Methylene Chloride	0.2	UJ	0.2		2
	6/30/2003	Styrene	0.1	U	0.1	100	100
	6/30/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	6/30/2003	Toluene	0.04	U	0.04	100	1000
	6/30/2003	Total Xylene	0.1	U	0.1		
	6/30/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	6/30/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	6/30/2003	Trichloroethene	0.08	U	0.08	5	1
	6/30/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
MISS05A	7/14/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/14/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/14/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/14/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/14/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/14/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/14/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/14/2003	2-Butanone	2	R	2		3
	7/14/2003	2-Hexanone	0.9	U	0.9		
	7/14/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/14/2003	Acetone	1	R	1		700
	7/14/2003	Benzene	0.08	U	0.08	5	0.2
	7/14/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/14/2003	Bromoform	0.1	U	0.1		4
	7/14/2003	Bromomethane	0.2	UJ	0.2		10
	7/14/2003	Carbon disulfide	0.1	UJ	0.1		
	7/14/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/14/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/14/2003	Chloroethane	0.2	UJ	0.2		
	7/14/2003	Chloroform	0.1	U	0.1		6
	7/14/2003	Chloromethane	0.3	UJ	0.3		30
	7/14/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/14/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/14/2003	Dibromochloromethane	0.1	U	0.1		10
	7/14/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/14/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/14/2003	Styrene	0.1	U	0.1	100	100
	7/14/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/14/2003	Toluene	0.04	U	0.04	100	1000
	7/14/2003	Total Xylene	0.1	U	0.1		
	7/14/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/14/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/14/2003	Trichloroethene	0.08	U	0.08	5	1
	7/14/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08

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Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
MISS06A	7/2/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/2/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/2/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/2/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/2/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/2/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/2/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/2/2003	2-Butanone	2	UJ	2		3
	7/2/2003	2-Hexanone	0.9	U	0.9		
	7/2/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/2/2003	Acetone	1	UJ	1		700
	7/2/2003	Benzene	0.08	U	0.08	5	0.2
	7/2/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/2/2003	Bromoform	0.1	U	0.1		4
	7/2/2003	Bromomethane	0.2	UJ	0.2		10
	7/2/2003	Carbon disulfide	0.1	UJ	0.1		
	7/2/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/2/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/2/2003	Chloroethane	0.2	UJ	0.2		
	7/2/2003	Chloroform	0.2		0.1		6
	7/2/2003	Chloromethane	0.3	U	0.3		30
	7/2/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/2/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/2/2003	Dibromochloromethane	0.1	U	0.1		10
	7/2/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/2/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/2/2003	Styrene	0.1	U	0.1	100	100
	7/2/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/2/2003	Toluene	0.04	U	0.04	100	1000
	7/2/2003	Total Xylene	0.1	U	0.1		
	7/2/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/2/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/2/2003	Trichloroethene	0.08	U	0.08	5	1
	7/2/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
Monitoring wells completed in bedrock:							
B38W02D	6/27/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	6/27/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	6/27/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	6/27/2003	1,1-Dichloroethane	0.08	U	0.08		70
	6/27/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	6/27/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	6/27/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	6/27/2003	2-Butanone	2	UJ	2		3
	6/27/2003	2-Hexanone	0.9	U	0.9		
	6/27/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	6/27/2003	Acetone	4	J	1		700
	6/27/2003	Benzene	0.08	U	0.08	5	0.2
	6/27/2003	Bromodichloromethane	0.1	U	0.1		0.3
	6/27/2003	Bromoform	0.1	U	0.1		4
	6/27/2003	Bromomethane	0.2	UJ	0.2		10
	6/27/2003	Carbon disulfide	0.1	UJ	0.1		
	6/27/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	6/27/2003	Chlorobenzene	0.06	U	0.06	100	4
	6/27/2003	Chloroethane	0.2	UJ	0.2		
	6/27/2003	Chloroform	0.1	U	0.1		6
	6/27/2003	Chloromethane	0.3	U	0.3		30
	6/27/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	6/27/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	6/27/2003	Dibromochloromethane	0.1	U	0.1		10
	6/27/2003	Ethylbenzene	0.06	U	0.06	700	700
	6/27/2003	Methylene Chloride	0.2	UJ	0.2		2
	6/27/2003	Styrene	0.1	U	0.1	100	100
	6/27/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	6/27/2003	Toluene	0.04	U	0.04	100	1000
	6/27/2003	Total Xylene	0.1	U	0.1		
	6/27/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	6/27/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	6/27/2003	Trichloroethene	0.08	U	0.08	5	1
	6/27/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08

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Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
B38W14D	7/10/2003	1,1,1-Trichloroethane	2	U	2	200	30
	7/10/2003	1,1,2,2-Tetrachloroethane	4	U	4		2
	7/10/2003	1,1,2-Trichloroethane	2	U	2	3/5	3
	7/10/2003	1,1-Dichloroethane	2	U	2		70
	7/10/2003	1,1-Dichloroethene	4	J	6	7	1
	7/10/2003	1,2-Dichloroethane	3	U	3	5	0.3
	7/10/2003	1,2-Dichloropropane	3	U	3	5	0.5
	7/10/2003	2-Butanone	30	UJ	30		3
	7/10/2003	2-Hexanone	18	U	18		
	7/10/2003	4-Methyl-2-pentanone	8	U	8		400
	7/10/2003	Acetone	24	UJ	24		700
	7/10/2003	Benzene	2	U	2	5	0.2
	7/10/2003	Bromodichloromethane	2	U	2		0.3
	7/10/2003	Bromoform	2	U	2		4
	7/10/2003	Bromomethane	4	R	4		10
	7/10/2003	Carbon disulfide	2	UJ	2		
	7/10/2003	Carbon tetrachloride	2	U	2		0.4
	7/10/2003	Chlorobenzene	1	U	1	100	4
	7/10/2003	Chloroethane	5	UJ	5		
	7/10/2003	Chloroform	5		2		6
	7/10/2003	Chloromethane	5	U	5		30
	7/10/2003	cis-1,2-Dichloroethene	58		2		
	7/10/2003	cis-1,3-Dichloropropene	2	U	2		
	7/10/2003	Dibromochloromethane	2	U	2		10
	7/10/2003	Ethylbenzene	1	U	1	700	700
	7/10/2003	Methylene Chloride	9	UJ	3		2
	7/10/2003	Styrene	2	U	2	100	100
	7/10/2003	Tetrachloroethene	400		2	5	0.4
	7/10/2003	Toluene	8		0.8	100	1000
	7/10/2003	Total Xylene	3	U	3		
	7/10/2003	trans-1,2-Dichloroethene	4	U	4		
	7/10/2003	Trans-1,3-Dichloropropene	3	U	3		
	7/10/2003	Trichloroethene	82		2	5	1
	7/10/2003	Vinyl chloride	4	UJ	4	5	0.08
B38W15D	7/1/2003	1,1,1-Trichloroethane	1	U	1	200	30
	7/1/2003	1,1,2,2-Tetrachloroethane	2	U	2		2
	7/1/2003	1,1,2-Trichloroethane	1	U	1	3/5	3
	7/1/2003	1,1-Dichloroethane	0.8	U	0.8		70
	7/1/2003	1,1-Dichloroethene	2	J	3	7	1
	7/1/2003	1,2-Dichloroethane	2	U	2	5	0.3
	7/1/2003	1,2-Dichloropropane	1	U	1	5	0.5
	7/1/2003	2-Butanone	15	R	15		3
	7/1/2003	2-Hexanone	9	U	9		
	7/1/2003	4-Methyl-2-pentanone	4	U	4		400
	7/1/2003	Acetone	12	UJ	12		700
	7/1/2003	Benzene	0.8	U	0.8	5	0.2
	7/1/2003	Bromodichloromethane	1	U	1		0.3
	7/1/2003	Bromoform	1	UJ	1		4
	7/1/2003	Bromomethane	2	UJ	2		10
	7/1/2003	Carbon disulfide	1	UJ	1		
	7/1/2003	Carbon tetrachloride	0.8	U	0.8		0.4
	7/1/2003	Chlorobenzene	0.6	U	0.6	100	4
	7/1/2003	Chloroethane	2	UJ	2		
	7/1/2003	Chloroform	1	U	1		6
	7/1/2003	Chloromethane	3	UJ	3		30
	7/1/2003	cis-1,2-Dichloroethene	43		0.8		
	7/1/2003	cis-1,3-Dichloropropene	1	U	1		
	7/1/2003	Dibromochloromethane	1	UJ	1		10
	7/1/2003	Ethylbenzene	0.6	U	0.6	700	700
	7/1/2003	Methylene Chloride	4	UJ	2		2
	7/1/2003	Styrene	1	U	1	100	100
	7/1/2003	Tetrachloroethene	120		1	5	0.4
	7/1/2003	Toluene	0.4	U	0.4	100	1000
	7/1/2003	Total Xylene	1	U	1		
	7/1/2003	trans-1,2-Dichloroethene	27		2		
	7/1/2003	Trans-1,3-Dichloropropene	2	U	2		
	7/1/2003	Trichloroethene	27		0.8	5	1
	7/1/2003	Vinyl chloride	2	UJ	2	5	0.08

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Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
B38W17B	6/26/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	6/26/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	6/26/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	6/26/2003	1,1-Dichloroethane	0.08	U	0.08		70
	6/26/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	6/26/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	6/26/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	6/26/2003	2-Butanone	2	UJ	2		3
	6/26/2003	2-Hexanone	0.9	U	0.9		
	6/26/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	6/26/2003	Acetone	12	UJ	1		700
	6/26/2003	Benzene	0.5		0.08	5	0.2
	6/26/2003	Bromodichloromethane	0.1	U	0.1		0.3
	6/26/2003	Bromoform	0.1	U	0.1		4
	6/26/2003	Bromomethane	0.2	UJ	0.2		10
	6/26/2003	Carbon disulfide	0.1	UJ	0.1		
	6/26/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	6/26/2003	Chlorobenzene	0.06	U	0.06	100	4
	6/26/2003	Chloroethane	0.2	UJ	0.2		
	6/26/2003	Chloroform	0.1	U	0.1		6
	6/26/2003	Chloromethane	0.3	U	0.3		30
	6/26/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	6/26/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	6/26/2003	Dibromochloromethane	0.1	U	0.1		10
	6/26/2003	Ethylbenzene	0.06	U	0.06	700	700
	6/26/2003	Methylene Chloride	0.2	UJ	0.2		2
	6/26/2003	Styrene	0.1	U	0.1	100	100
	6/26/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	6/26/2003	Toluene	0.04	U	0.04	100	1000
	6/26/2003	Total Xylene	0.1	U	0.1		
	6/26/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	6/26/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	6/26/2003	Trichloroethene	0.08	U	0.08	5	1
	6/26/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
B38W18D	7/2/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/2/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/2/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/2/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/2/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/2/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/2/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/2/2003	2-Butanone	2	UJ	2		3
	7/2/2003	2-Hexanone	0.9	U	0.9		
	7/2/2003	4-Methyl-2-pentanone	0.4	UJ	0.4		400
	7/2/2003	Acetone	1	UJ	1		700
	7/2/2003	Benzene	0.08	U	0.08	5	0.2
	7/2/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/2/2003	Bromoform	0.1	U	0.1		4
	7/2/2003	Bromomethane	0.2	UJ	0.2		10
	7/2/2003	Carbon disulfide	0.1	UJ	0.1		
	7/2/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/2/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/2/2003	Chloroethane	0.2	UJ	0.2		
	7/2/2003	Chloroform	0.1	U	0.1		6
	7/2/2003	Chloromethane	0.3	U	0.3		30
	7/2/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/2/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/2/2003	Dibromochloromethane	0.1	U	0.1		10
	7/2/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/2/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/2/2003	Styrene	0.1	U	0.1	100	100
	7/2/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/2/2003	Toluene	0.04	U	0.04	100	1000
	7/2/2003	Total Xylene	0.1	U	0.1		
	7/2/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/2/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/2/2003	Trichloroethene	0.08	U	0.08	5	1
	7/2/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08

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Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
B38W18D Duplicate	7/2/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/2/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/2/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/2/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/2/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/2/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/2/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/2/2003	2-Butanone	2	UJ	2		3
	7/2/2003	2-Hexanone	0.8	J	0.9		
	7/2/2003	4-Methyl-2-pentanone	0.4	UJ	0.4		400
	7/2/2003	Acetone	1	UJ	1		700
	7/2/2003	Benzene	0.08	U	0.08	5	0.2
	7/2/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/2/2003	Bromoform	0.1	U	0.1		4
	7/2/2003	Bromomethane	0.2	UJ	0.2		10
	7/2/2003	Carbon disulfide	0.1	UJ	0.1		
	7/2/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/2/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/2/2003	Chloroethane	0.2	UJ	0.2		
	7/2/2003	Chloroform	0.1	U	0.1		6
	7/2/2003	Chloromethane	0.3	U	0.3		30
	7/2/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/2/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/2/2003	Dibromochloromethane	0.1	U	0.1		10
	7/2/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/2/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/2/2003	Styrene	0.1	U	0.1	100	100
	7/2/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/2/2003	Toluene	0.04	U	0.04	100	1000
	7/2/2003	Total Xylene	0.1	U	0.1		
	7/2/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/2/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/2/2003	Trichloroethene	0.08	U	0.08	5	1
	7/2/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
B38W19D	7/11/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/11/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/11/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/11/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/11/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/11/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/11/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/11/2003	2-Butanone	2	R	2		3
	7/11/2003	2-Hexanone	0.9	U	0.9		
	7/11/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/11/2003	Acetone	2	R	1		700
	7/11/2003	Benzene	0.5		0.08	5	0.2
	7/11/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/11/2003	Bromoform	0.1	UJ	0.1		4
	7/11/2003	Bromomethane	0.2	R	0.2		10
	7/11/2003	Carbon disulfide	0.1	UJ	0.1		
	7/11/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/11/2003	Chlorobenzene	0.1		0.06	100	4
	7/11/2003	Chloroethane	0.2	UJ	0.2		
	7/11/2003	Chloroform	0.1	U	0.1		6
	7/11/2003	Chloromethane	0.3	UJ	0.3		30
	7/11/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/11/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/11/2003	Dibromochloromethane	0.1	U	0.1		10
	7/11/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/11/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/11/2003	Styrene	0.1	U	0.1	100	100
	7/11/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/11/2003	Toluene	0.04	U	0.04	100	1000
	7/11/2003	Total Xylene	0.1	U	0.1		
	7/11/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/11/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/11/2003	Trichloroethene	0.08	U	0.08	5	1
	7/11/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08

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Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
B38W24D	7/7/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/7/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/7/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/7/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/7/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/7/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/7/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/7/2003	2-Butanone	2	R	2		3
	7/7/2003	2-Hexanone	0.9	U	0.9		
	7/7/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/7/2003	Acetone	1	UJ	1		700
	7/7/2003	Benzene	0.08	U	0.08	5	0.2
	7/7/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/7/2003	Bromoform	0.1	UJ	0.1		4
	7/7/2003	Bromomethane	0.2	UJ	0.2		10
	7/7/2003	Carbon disulfide	0.1	UJ	0.1		
	7/7/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/7/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/7/2003	Chloroethane	0.2	UJ	0.2		
	7/7/2003	Chloroform	0.1	U	0.1		6
	7/7/2003	Chloromethane	0.3	UJ	0.3		30
	7/7/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/7/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/7/2003	Dibromochloromethane	0.1	UJ	0.1		10
	7/7/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/7/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/7/2003	Styrene	0.1	U	0.1	100	100
	7/7/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/7/2003	Toluene	0.04	U	0.04	100	1000
	7/7/2003	Total Xylene	0.6		0.1		
	7/7/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/7/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/7/2003	Trichloroethene	0.08	U	0.08	5	1
	7/7/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
B38W25D	7/15/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/15/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/15/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/15/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/15/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/15/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/15/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/15/2003	2-Butanone	2	R	2		3
	7/15/2003	2-Hexanone	0.9	U	0.9		
	7/15/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/15/2003	Acetone	1	R	1		700
	7/15/2003	Benzene	0.08	U	0.08	5	0.2
	7/15/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/15/2003	Bromoform	0.1	U	0.1		4
	7/15/2003	Bromomethane	0.2	UJ	0.2		10
	7/15/2003	Carbon disulfide	0.1	UJ	0.1		
	7/15/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/15/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/15/2003	Chloroethane	0.2	UJ	0.2		
	7/15/2003	Chloroform	0.1	U	0.1		6
	7/15/2003	Chloromethane	0.3	UJ	0.3		30
	7/15/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/15/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/15/2003	Dibromochloromethane	0.1	U	0.1		10
	7/15/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/15/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/15/2003	Styrene	0.1	U	0.1	100	100
	7/15/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/15/2003	Toluene	0.1	U	0.04	100	1000
	7/15/2003	Total Xylene	0.1	U	0.1		
	7/15/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/15/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/15/2003	Trichloroethene	0.08	U	0.08	5	1
	7/15/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08

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Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
B38W25D Duplicate	7/15/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/15/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/15/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/15/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/15/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/15/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/15/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/15/2003	2-Butanone	2	UJ	2		3
	7/15/2003	2-Hexanone	0.9	U	0.9		
	7/15/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/15/2003	Acetone	1	R	1		700
	7/15/2003	Benzene	0.08	U	0.08	5	0.2
	7/15/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/15/2003	Bromoform	0.1	U	0.1		4
	7/15/2003	Bromomethane	0.2	R	0.2		10
	7/15/2003	Carbon disulfide	0.1	UJ	0.1		
	7/15/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/15/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/15/2003	Chloroethane	0.2	UJ	0.2		
	7/15/2003	Chloroform	0.1	U	0.1		6
	7/15/2003	Chloromethane	0.3	U	0.3		30
	7/15/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/15/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/15/2003	Dibromochloromethane	0.1	U	0.1		10
	7/15/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/15/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/15/2003	Styrene	0.1	U	0.1	100	100
	7/15/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/15/2003	Toluene	0.1	U	0.04	100	1000
	7/15/2003	Total Xylene	0.1	U	0.1		
	7/15/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/15/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/15/2003	Trichloroethene	0.08	U	0.08	5	1
	7/15/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
MISS01B	7/9/2003	1,1,1-Trichloroethane	0.2	U	0.2	200	30
	7/9/2003	1,1,2,2-Tetrachloroethane	0.4	U	0.4		2
	7/9/2003	1,1,2-Trichloroethane	0.2	U	0.2	3/5	3
	7/9/2003	1,1-Dichloroethane	0.2	U	0.2		70
	7/9/2003	1,1-Dichloroethene	0.3	J	0.6	7	1
	7/9/2003	1,2-Dichloroethane	0.3	U	0.3	5	0.3
	7/9/2003	1,2-Dichloropropane	0.3	U	0.3	5	0.5
	7/9/2003	2-Butanone	3	R	3		3
	7/9/2003	2-Hexanone	2	U	2		
	7/9/2003	4-Methyl-2-pentanone	0.8	U	0.8		400
	7/9/2003	Acetone	2	R	2		700
	7/9/2003	Benzene	0.2	U	0.2	5	0.2
	7/9/2003	Bromodichloromethane	0.2	U	0.2		0.3
	7/9/2003	Bromoform	0.2	UJ	0.2		4
	7/9/2003	Bromomethane	0.4	R	0.4		10
	7/9/2003	Carbon disulfide	0.2	UJ	0.2		
	7/9/2003	Carbon tetrachloride	0.2	U	0.2		0.4
	7/9/2003	Chlorobenzene	0.1	U	0.1	100	4
	7/9/2003	Chloroethane	0.5	UJ	0.5		
	7/9/2003	Chloroform	0.2		0.2		6
	7/9/2003	Chloromethane	0.5	UJ	0.5		30
	7/9/2003	cis-1,2-Dichloroethene	45		0.2		
	7/9/2003	cis-1,3-Dichloropropene	0.2	U	0.2		
	7/9/2003	Dibromochloromethane	0.2	U	0.2		10
	7/9/2003	Ethylbenzene	0.1	U	0.1	700	700
	7/9/2003	Methylene Chloride	0.8	UJ	0.3		2
	7/9/2003	Styrene	0.2	U	0.2	100	100
	7/9/2003	Tetrachloroethene	30		0.2	5	0.4
	7/9/2003	Toluene	0.08	U	0.08	100	1000
	7/9/2003	Total Xylene	0.3	U	0.3		
	7/9/2003	trans-1,2-Dichloroethene	0.6		0.4		
	7/9/2003	Trans-1,3-Dichloropropene	0.3	U	0.3		
	7/9/2003	Trichloroethene	8		0.2	5	1
	7/9/2003	Vinyl chloride	0.4	J	0.4	5	0.08

Table A-13
2003 Groundwater Analytical Results - Volatile Organic Compounds
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
MISS02B	6/30/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	6/30/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	6/30/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	6/30/2003	1,1-Dichloroethane	0.08	U	0.08		70
	6/30/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	6/30/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	6/30/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	6/30/2003	2-Butanone	2	UJ	2		3
	6/30/2003	2-Hexanone	0.9	U	0.9		
	6/30/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	6/30/2003	Acetone	4	UJ	1		700
	6/30/2003	Benzene	0.2		0.08	5	0.2
	6/30/2003	Bromodichloromethane	0.1	U	0.1		0.3
	6/30/2003	Bromoform	0.1	U	0.1		4
	6/30/2003	Bromomethane	0.2	UJ	0.2		10
	6/30/2003	Carbon disulfide	0.1	UJ	0.1		
	6/30/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	6/30/2003	Chlorobenzene	0.06	U	0.06	100	4
	6/30/2003	Chloroethane	0.2	UJ	0.2		
	6/30/2003	Chloroform	0.1	U	0.1		6
	6/30/2003	Chloromethane	0.3	UJ	0.3		30
	6/30/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	6/30/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	6/30/2003	Dibromochloromethane	0.1	U	0.1		10
	6/30/2003	Ethylbenzene	0.06	U	0.06	700	700
	6/30/2003	Methylene Chloride	0.2	UJ	0.2		2
	6/30/2003	Styrene	0.1	U	0.1	100	100
	6/30/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	6/30/2003	Toluene	0.04	U	0.04	100	1000
	6/30/2003	Total Xylene	0.1	U	0.1		
	6/30/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	6/30/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	6/30/2003	Trichloroethene	0.08	U	0.08	5	1
	6/30/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08
MISS05B	7/16/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/16/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/16/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/16/2003	1,1-Dichloroethane	0.08	U	0.08		70
	7/16/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/16/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/16/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/16/2003	2-Butanone	2	UJ	2		3
	7/16/2003	2-Hexanone	0.9	U	0.9		
	7/16/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/16/2003	Acetone	1	UJ	1		700
	7/16/2003	Benzene	2		0.08	5	0.2
	7/16/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/16/2003	Bromoform	0.1	U	0.1		4
	7/16/2003	Bromomethane	0.2	UJ	0.2		10
	7/16/2003	Carbon disulfide	0.1	UJ	0.1		
	7/16/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/16/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/16/2003	Chloroethane	0.2	UJ	0.2		
	7/16/2003	Chloroform	0.1	U	0.1		6
	7/16/2003	Chloromethane	0.3	UJ	0.3		30
	7/16/2003	cis-1,2-Dichloroethene	0.08	U	0.08		
	7/16/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/16/2003	Dibromochloromethane	0.1	U	0.1		10
	7/16/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/16/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/16/2003	Styrene	0.1	U	0.1	100	100
	7/16/2003	Tetrachloroethene	0.1	U	0.1	5	0.4
	7/16/2003	Toluene	0.04	U	0.04	100	1000
	7/16/2003	Total Xylene	0.1	U	0.1		
	7/16/2003	trans-1,2-Dichloroethene	0.2	U	0.2		
	7/16/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/16/2003	Trichloroethene	0.08	U	0.08	5	1
	7/16/2003	Vinyl chloride	0.2	UJ	0.2	5	0.08

Table A-13
2003 Groundwater Analytical Results - Volatile Organic Compounds
Maywood Interim Storage Site - 2003

Sampling Location	Date Collected	Analyte[a]	Result (µg/L)	Data Qualifiers[b]	Reporting Limit (µg/L)	Federal[c] (µg/L)	State[d] (µg/L)
MISS07B	7/14/2003	1,1,1-Trichloroethane	0.1	U	0.1	200	30
	7/14/2003	1,1,2,2-Tetrachloroethane	0.2	U	0.2		2
	7/14/2003	1,1,2-Trichloroethane	0.1	U	0.1	3/5	3
	7/14/2003	1,1-Dichloroethane	0.5		0.08		70
	7/14/2003	1,1-Dichloroethene	0.3	U	0.3	7	1
	7/14/2003	1,2-Dichloroethane	0.2	U	0.2	5	0.3
	7/14/2003	1,2-Dichloropropane	0.1	U	0.1	5	0.5
	7/14/2003	2-Butanone	2	R	2		3
	7/14/2003	2-Hexanone	0.9	U	0.9		
	7/14/2003	4-Methyl-2-pentanone	0.4	U	0.4		400
	7/14/2003	Acetone	1	R	1		700
	7/14/2003	Benzene	0.1		0.08	5	0.2
	7/14/2003	Bromodichloromethane	0.1	U	0.1		0.3
	7/14/2003	Bromoform	0.1	U	0.1		4
	7/14/2003	Bromomethane	0.2	UJ	0.2		10
	7/14/2003	Carbon disulfide	0.1	UJ	0.1		
	7/14/2003	Carbon tetrachloride	0.08	U	0.08		0.4
	7/14/2003	Chlorobenzene	0.06	U	0.06	100	4
	7/14/2003	Chloroethane	0.2	UJ	0.2		
	7/14/2003	Chloroform	0.1	U	0.1		6
	7/14/2003	Chloromethane	0.3	UJ	0.3		30
	7/14/2003	cis-1,2-Dichloroethene	2		0.08		
	7/14/2003	cis-1,3-Dichloropropene	0.1	U	0.1		
	7/14/2003	Dibromochloromethane	0.1	U	0.1		10
	7/14/2003	Ethylbenzene	0.06	U	0.06	700	700
	7/14/2003	Methylene Chloride	0.2	UJ	0.2		2
	7/14/2003	Styrene	0.1	U	0.1	100	100
	7/14/2003	Tetrachloroethene	2		0.1	5	0.4
	7/14/2003	Toluene	0.04	U	0.04	100	1000
	7/14/2003	Total Xylene	0.1	U	0.1		
	7/14/2003	trans-1,2-Dichloroethene	2		0.2		
	7/14/2003	Trans-1,3-Dichloropropene	0.2	U	0.2		
	7/14/2003	Trichloroethene	0.6		0.08	5	1
	7/14/2003	Vinyl chloride	0.8	J	0.2	5	0.08

U= Analyte was analyzed for but not detected.
J = Reported as an estimated value. Data quality evaluation indicates that the analytical result is an estimate of the actual value.
D = Diluted out.
B= The analyte is found in the associated blank as well as in the sample. It indicates possible blank contamination.
UJ= Analyte was analyzed for but not detected, it must be estimated due to quality control consideration.
[a] All analytes were reported, detected and undetected.
[b] USACE and laboratory data qualifier flags based on the CDQMP-QAPP;
[c] Federal SDWA MCLs, 40 CFR 141 (October 1999).
[d] New Jersey Class IIA Groundwater Quality Standards, NJAC 7:9-6 (October 1999). Analytes for which the published PQL is greater than the GWQC are noted as such: GWQC / PQL.
[e] Monitoring well B38W01S is the background location for wells that are completed in unconsolidated sediment.

Table A-14
2003 List of Analytes and reporting Limits for
Metals and Volatile Organic Compounds
Maywood Interim Storage Site - 2003

Groundwater Metals	Reporting Limit (mg/L)
Aluminum, Total	500
Antimony, Total	20
Arsenic, Total	40
Barium, Total	5
Beryllium, Total	5
Boron, Total	60
Cadmium, Total	10
Chromium, Total	10
Cobalt, Total	10
Copper, Total	10
Iron, Total	200
Lead, Total	10
Lithium	50
Manganese, Total	15
Mercury, Total	0.2
Nickel, Total	10
Selenium, Total	30
Silver, Total	6
Thallium, Total	40
Vanadium, Total	6
Zinc, Total	50

Groundwater Volatile Organic Compounds	Reporting Limit (µg/L)
1,1,1-Trichloroethane	0.5
1,1,2,2-Tetrachloroethane	0.5
1,1,2-Trichloroethane	0.5
1,1-Dichloroethane	0.5
1,1-Dichloroethene	0.5
1,2-Dichloroethane	0.5
1,2-Dichloropropane	0.5
2-Butanone	5
2-Hexanone	0.5
4-Methyl-2-pentanone	0.5
Acetone	5
Benzene	0.5
Bromodichloromethane	0.5
Bromoform	0.5
Bromomethane	0.5
Carbon disulfide	0.5
Carbon tetrachloride	0.5
Chlorobenzene	0.5
Chloroethane	0.5
Chloroform	0.5
Chloromethane	0.5
cis-1,2-Dichloroethene	0.5
cis-1,3-Dichloropropene	0.5
Dibromochloromethane	0.5
Ethylbenzene	0.5
Methylene Chloride	0.5
Styrene	0.5
Tetrachloroethene	0.5
Toluene	0.5
Total Xylene	1
trans-1,2-Dichloroethene	0.5
Trans-1,3-Dichloropropene	0.5
Trichloroethene	0.5
Vinyl chloride	

APPENDIX B
HISTORICAL RESULTS

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APPENDIX B HISTORICAL RESULTS

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Table B-1
Historical Results for Radioactive Parameters in Sediment at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (pCi/g)	Result (µg/g)	Qualifier	Detection Limit (pCi/g)
SWSD002	04/10/92	Radium-226	0.55		J	0.00
SWSD002	10/26/92	Radium-226	0.25			0.18
SWSD002	04/21/93	Radium-226	0.44			0.27
SWSD002	10/07/93	Radium-226	0.57		J	0.28
SWSD002	05/30/94	Radium-226	0.47			0.23
SWSD002	05/08/95	Radium-226	0.48			0.09
SWSD002	11/13/95	Radium-226	0.30			0.09
SWSD002	05/08/96	Radium-226	0.41			0.13
SWSD002	10/15/96	Radium-226	0.57			0.11
SWSD002	05/05/97	Radium-226	0.67			0.13
SWSD002	06/02/98	Radium-226	0.31			1.00
SWSD002	11/03/98	Radium-226	0.52			1.00
SWSD002	05/21/99	Radium-226	0.36			0.18
SWSD002	07/24/00	Radium-226	0.58		J	0.12
SWSD002	07/16/01	Radium-226	0.66		J	0.18
SWSD002	07/22/02	Radium-226	0.18		U	0.31
SWSD002	07/08/03	Radium-226	0.89		J	0.20
SWSD003	04/10/92	Radium-226	0.52		J	0.00
SWSD003	10/26/92	Radium-226	0.45			0.16
SWSD003	04/21/93	Radium-226	0.35			0.33
SWSD003	10/07/93	Radium-226	0.39		J	0.30
SWSD003	05/30/94	Radium-226	0.46			0.29
SWSD003	05/08/95	Radium-226	0.55			0.08
SWSD003	11/13/95	Radium-226	0.29			0.05
SWSD003	05/08/96	Radium-226	0.52			0.12
SWSD003	10/15/96	Radium-226	0.70			0.10
SWSD003	05/05/97	Radium-226	0.49			0.10
SWSD003	06/02/98	Radium-226	0.28			1.00
SWSD003	11/03/98	Radium-226	0.28			1.00
SWSD003	05/21/99	Radium-226	0.3			0.19
SWSD003	07/16/01	Radium-226	0.24		J	0.05
SWSD003	07/22/02	Radium-226	0.51		J	0.29
SWSD003	07/08/03	Radium-226	1.02			0.18
SWSD005	04/10/92	Radium-226	0.51		J	0.00
SWSD005	10/26/92	Radium-226	0.44			0.16
SWSD005	04/21/93	Radium-226	0.35		UJ	0.35
SWSD005	10/07/93	Radium-226	0.00		UJ	0.44
SWSD005	05/30/94	Radium-226	0.76			0.26
SWSD005	05/30/94	Radium-226	0.87		J	0.25
SWSD005	08/31/94	Radium-226	1.30		U	0.11
SWSD005	05/08/95	Radium-226	1.50			0.09
SWSD005	05/08/95	Radium-226	1.70			0.12
SWSD005	11/13/95	Radium-226	1.28			0.16
SWSD005	11/13/95	Radium-226	2.79			0.09
SWSD005	05/08/96	Radium-226	0.50			0.09
SWSD005	10/15/96	Radium-226	0.97			0.07
SWSD005	05/05/97	Radium-226	0.90			0.15
SWSD005	06/02/98	Radium-226	1.26			1.00
SWSD005	11/03/98	Radium-226	1.01			1.00
SWSD005	05/21/99	Radium-226	1.44			0.16
SWSD005	07/16/01	Radium-226	0.87		J	0.15
SWSD005	07/22/02	Radium-226	0.64		J	0.29
SWSD005	07/08/03	Radium-226	1.95			0.20
SWSD006	05/30/94	Radium-226	3.10			0.99
SWSD006	08/31/94	Radium-226	2.90			0.14
SWSD006	05/08/95	Radium-226	1.30			0.12
SWSD006	11/13/95	Radium-226	4.45			0.15
SWSD006	05/08/96	Radium-226	0.99			0.09
SWSD006	10/15/96	Radium-226	4.50			0.08
SWSD006	05/05/97	Radium-226	3.50			0.15
SWSD006	06/02/98	Radium-226	4.65			1.00
SWSD006	11/03/98	Radium-226	3.86			1.00
SWSD006	05/21/99	Radium-226	8.04			0.28
SWSD006	07/20/00	Radium-226	0.64		J	0.17

Table B-1
Historical Results for Radioactive Parameters in Sediment at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (pCi/g)	Result (µg/g)	Qualifier	Detection Limit (pCi/g)
SWSD006	07/16/01	Radium-226	1.41		J	0.18
SWSD006	07/23/02	Radium-226	3.51			0.30
SWSD006	07/08/03	Radium-226	2.54			0.18
SWSD007	08/31/94	Radium-226	0.99		U	0.11
SWSD007	05/08/95	Radium-226	5.40			0.12
SWSD007	11/13/95	Radium-226	3.32			0.12
SWSD007	05/08/96	Radium-226	3.70			0.05
SWSD007	05/08/96	Radium-226	3.29			0.18
SWSD007	10/15/96	Radium-226	5.05			0.14
SWSD007	10/15/96	Radium-226	4.04			0.11
SWSD007	05/05/97	Radium-226	4.25			0.18
SWSD007	05/05/97	Radium-226	5.23			0.20
SWSD007	06/02/98	Radium-226	6.97			1.00
SWSD007	11/03/98	Radium-226	2.22			1.00
SWSD007	05/21/99	Radium-226	1.07			0.12
SWSD007	07/20/00	Radium-226	-0.07		R	0.18
SWSD007	07/16/01	Radium-226	0.89		J	0.24
SWSD007	07/11/02	Radium-226	6.58			0.24
SWSD007	07/08/03	Radium-226	3.77			0.22
SWSD002	04/10/92	Radium-228	0.98		J	0.00
SWSD002	10/26/92	Radium-228	0.29		J	0.32
SWSD002	04/21/93	Radium-228	0.44		UJ	0.44
SWSD002	10/07/93	Radium-228	0.00		UJ	0.71
SWSD002	05/30/94	Radium-228	0.81		J	0.41
SWSD002	11/13/95	Radium-228	1.60			0.42
SWSD002	05/08/96	Radium-228	0.60			0.16
SWSD002	10/15/96	Radium-228	0.72			0.13
SWSD002	05/05/97	Radium-228	0.56			0.17
SWSD002	06/02/98	Radium-228	0.55			1.00
SWSD002	11/03/98	Radium-228	0.54			1.00
SWSD002	05/21/99	Radium-228	0.74			0.17
SWSD002	07/24/00	Radium-228	0.31		J	0.66
SWSD002	07/16/01	Radium-228	0.85		J	0.70
SWSD002	07/22/02	Radium-228	0.61		J	0.61
SWSD002	07/08/03	Radium-228	1.06			0.65
SWSD003	04/10/92	Radium-228	0.74		J	0.00
SWSD003	10/26/92	Radium-228	0.65		J	0.29
SWSD003	04/21/93	Radium-228	0.77			0.31
SWSD003	10/07/93	Radium-228	0.00		UJ	0.61
SWSD003	11/13/95	Radium-228	0.90			0.50
SWSD003	05/08/96	Radium-228	0.40		U	0.11
SWSD003	10/15/96	Radium-228	0.43			0.14
SWSD003	05/05/97	Radium-228	0.45			0.14
SWSD003	06/02/98	Radium-228	0.4			1.00
SWSD003	11/03/98	Radium-228	0.65			1.00
SWSD003	05/21/99	Radium-228	0.35			0.19
SWSD003	07/16/01	Radium-228	0.21		UJ	0.32
SWSD003	07/22/02	Radium-228	0.57		UJ	0.80
SWSD003	07/22/02	Radium-228	0.59		J	0.52
SWSD005	04/10/92	Radium-228	0.73		J	0.00
SWSD005	10/26/92	Radium-228	0.47		J	0.29
SWSD005	04/21/93	Radium-228	0.69			0.24
SWSD005	10/07/93	Radium-228	0.00		UJ	0.76
SWSD005	05/30/94	Radium-228	3.00		J	0.44
SWSD005	05/30/94	Radium-228	3.60		J	0.46
SWSD005	11/13/95	Radium-228	1.60			0.58
SWSD005	11/13/95	Radium-228	13.60			0.69
SWSD005	05/08/96	Radium-228	0.90			0.13
SWSD005	10/15/96	Radium-228	3.34			0.11
SWSD005	05/05/97	Radium-228	2.84			0.16
SWSD005	06/02/98	Radium-228	2.32			1.00
SWSD005	11/03/98	Radium-228	4.41			1.00
SWSD005	05/21/99	Radium-228	3.13			0.19
SWSD005	07/20/00	Radium-228	2.39		J	0.59
SWSD005	07/16/01	Radium-228	3.45			0.50

Table B-1
Historical Results for Radioactive Parameters in Sediment at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (pCi/g)	Result (µg/g)	Qualifier	Detection Limit (pCi/g)
SWSD005	07/11/02	Radium-228	1.64			1.40
SWSD005	07/08/03	Radium-228	2.68			0.61
SWSD006	05/30/94	Radium-228	19.60		J	1.70
SWSD006	11/13/95	Radium-228	9.60			0.53
SWSD006	05/08/96	Radium-228	5.15			0.16
SWSD006	10/15/96	Radium-228	20.33			0.30
SWSD006	05/05/97	Radium-228	17.33			0.13
SWSD006	06/02/98	Radium-228	16.22		J	1.00
SWSD006	11/03/98	Radium-228	17.74			1.00
SWSD006	05/21/99	Radium-228	7.67			0.26
SWSD006	07/20/00	Radium-228	0.39		J	0.20
SWSD006	07/16/01	Radium-228	4.09			0.74
SWSD006	07/23/02	Radium-228	17.7			0.70
SWSD006	07/08/03	Radium-228	3.39			0.53
SWSD007	11/13/95	Radium-228	11.70			0.56
SWSD007	05/08/96	Radium-228	14.22			0.12
SWSD007	05/08/96	Radium-228	8.16			0.10
SWSD007	10/15/96	Radium-228	22.41			0.29
SWSD007	10/15/96	Radium-228	16.79			0.25
SWSD007	05/05/97	Radium-228	8.75			0.17
SWSD007	05/05/97	Radium-228	8.78			0.18
SWSD007	06/02/98	Radium-228	16.46		J	1.00
SWSD007	11/03/98	Radium-228	8.49			1.00
SWSD007	05/21/99	Radium-228	1.79			0.17
SWSD007	07/20/00	Radium-228	1.42		J	0.55
SWSD007	07/16/01	Radium-228	2.91		J	0.83
SWSD007	07/11/02	Radium-228	20.0			1.00
SWSD007	07/08/03	Radium-228	5.0			0.54
SWSD002	05/08/96	Thorium-230	1.11		U	0.09
SWSD002	10/15/96	Thorium-230	0.67			0.05
SWSD002	05/05/97	Thorium-230	0.80		U	0.12
SWSD002	06/02/98	Thorium-230	0.52		U	1.00
SWSD002	11/03/98	Thorium-230	0.91			1.00
SWSD002	05/21/99	Thorium-230	0.55		U	0.17
SWSD002	07/24/00	Thorium-230	0.90		J	0.05
SWSD002	07/16/01	Thorium-230	0.47			0.13
SWSD002	07/22/02	Thorium-230	0.35		J	0.02
SWSD002	07/08/03	Thorium-230	0.50		J	0.04
SWSD003	05/08/96	Thorium-230	1.33		U	0.15
SWSD003	10/15/96	Thorium-230	0.47			0.06
SWSD003	05/05/97	Thorium-230	0.66		U	0.09
SWSD003	06/02/98	Thorium-230	0.52		U	1.00
SWSD003	11/03/98	Thorium-230	0.64			1.00
SWSD003	05/21/99	Thorium-230	0.96			0.15
SWSD003	07/16/01	Thorium-230	0.4			0.04
SWSD003	07/22/02	Thorium-230	0.84		J	0.08
SWSD003	07/08/03	Thorium-230	0.57		J	0.07
SWSD005	05/08/96	Thorium-230	0.97		U	0.08
SWSD005	10/15/96	Thorium-230	1.33			0.06
SWSD005	05/05/97	Thorium-230	2.08			0.16
SWSD005	06/02/98	Thorium-230	0.7		U	1.00
SWSD005	11/03/98	Thorium-230	1.42			1.00
SWSD005	05/21/99	Thorium-230	1.81			0.10
SWSD005	07/20/00	Thorium-230	0.64		J	0.12
SWSD005	07/16/01	Thorium-230	2.00			0.18
SWSD005	07/08/03	Thorium-230	0.82		J	0.09
SWSD006	05/08/96	Thorium-230	1.48		U	0.12
SWSD006	10/15/96	Thorium-230	4.72			0.11
SWSD006	05/05/97	Thorium-230	3.54			0.05
SWSD006	06/02/98	Thorium-230	3.28		J	1.00
SWSD006	11/03/98	Thorium-230	4.29			1.00
SWSD006	05/21/99	Thorium-230	1.62			0.22
SWSD006	07/20/00	Thorium-230	0.27		J	0.11
SWSD006	07/16/01	Thorium-230	1.49			0.18

Table B-1
Historical Results for Radioactive Parameters in Sediment at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (pCi/g)	Result (µg/g)	Qualifier	Detection Limit (pCi/g)
SWSD006	07/23/02	Thorium-230	2.96			0.10
SWSD006	07/08/03	Thorium-230	1.27		J	0.12
SWSD007	05/08/96	Thorium-230	3.19			0.09
SWSD007	05/08/96	Thorium-230	1.81			0.05
SWSD007	10/15/96	Thorium-230	4.52			0.18
SWSD007	10/15/96	Thorium-230	3.31			0.14
SWSD007	05/05/97	Thorium-230	2.64			0.16
SWSD007	05/05/97	Thorium-230	2.09			0.09
SWSD007	06/02/98	Thorium-230	3.37		J	1.00
SWSD007	11/03/98	Thorium-230	2.42			1.00
SWSD007	05/21/99	Thorium-230	1.18			0.13
SWSD007	07/20/00	Thorium-230	0.51		J	0.09
SWSD007	07/16/01	Thorium-230	6.64			0.10
SWSD007	07/16/01	Thorium-230	1.59			0.04
SWSD002	04/10/92	Thorium-232	0.80			0.00
SWSD002	10/26/92	Thorium-232	0.42			0.25
SWSD002	04/21/93	Thorium-232	0.70			0.20
SWSD002	10/07/93	Thorium-232	0.59			0.40
SWSD002	05/30/94	Thorium-232	0.71			0.36
SWSD002	05/08/95	Thorium-232	0.50			0.08
SWSD002	11/13/95	Thorium-232	0.39		U	0.05
SWSD002	05/08/96	Thorium-232	0.44			0.15
SWSD002	10/15/96	Thorium-232	0.62			0.08
SWSD002	05/05/97	Thorium-232	0.33			0.06
SWSD002	06/02/98	Thorium-232	0.33			1.00
SWSD002	11/03/98	Thorium-232	0.5		U	1.00
SWSD002	05/21/99	Thorium-232	0.39		U	0.12
SWSD002	07/24/00	Thorium-232	0.35		J	0.15
SWSD002	07/16/01	Thorium-232	0.35		J	0.10
SWSD002	07/22/02	Thorium-232	0.35		J	0.03
SWSD002	07/08/03	Thorium-232	0.44		J	0.07
SWSD003	04/10/92	Thorium-232	0.85		J	0.00
SWSD003	10/26/92	Thorium-232	0.65			0.23
SWSD003	04/21/93	Thorium-232	0.66			0.24
SWSD003	10/07/93	Thorium-232	0.00		UJ	0.49
SWSD003	05/30/94	Thorium-232	0.65		UJ	0.65
SWSD003	05/08/95	Thorium-232	0.56			0.10
SWSD003	11/13/95	Thorium-232	0.32		U	0.04
SWSD003	05/08/96	Thorium-232	0.57			0.11
SWSD003	10/15/96	Thorium-232	0.30			0.06
SWSD003	05/05/97	Thorium-232	0.37			0.10
SWSD003	06/02/98	Thorium-232	0.39			1.00
SWSD003	11/03/98	Thorium-232	0.57		U	1.00
SWSD003	05/21/99	Thorium-232	0.48		U	0.11
SWSD003	07/16/01	Thorium-232	0.34		J	0.04
SWSD003	07/22/02	Thorium-232	0.61		J	0.04
SWSD003	07/08/03	Thorium-232	0.40		J	0.04
SWSD005	04/10/92	Thorium-232	0.76		J	0.00
SWSD005	10/26/92	Thorium-232	0.55			0.23
SWSD005	04/21/93	Thorium-232	0.65			0.19
SWSD005	10/07/93	Thorium-232	0.00		UJ	0.60
SWSD005	05/30/94	Thorium-232	3.20		J	0.38
SWSD005	05/30/94	Thorium-232	3.60			0.39
SWSD005	08/31/94	Thorium-232	1.00			0.05
SWSD005	05/08/95	Thorium-232	2.40			0.08
SWSD005	05/08/95	Thorium-232	2.20			0.05
SWSD005	11/13/95	Thorium-232	2.53			0.06
SWSD005	11/13/95	Thorium-232	12.62			0.10
SWSD005	05/08/96	Thorium-232	0.92			0.10
SWSD005	10/15/96	Thorium-232	3.18			0.11
SWSD005	05/05/97	Thorium-232	2.94			0.13
SWSD005	06/02/98	Thorium-232	2.33			1.00
SWSD005	11/03/98	Thorium-232	4			1.00
SWSD005	05/21/99	Thorium-232	3.56			0.15

Table B-1
Historical Results for Radioactive Parameters in Sediment at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (pCi/g)	Result (µg/g)	Qualifier	Detection Limit (pCi/g)
SWSD005	07/20/00	Thorium-232	1.73			0.12
SWSD005	07/16/01	Thorium-232	6.91		J	0.13
SWSD005	07/11/02	Thorium-232	1.16			0.06
SWSD005	07/08/03	Thorium-232	1.32		J	0.07
SWSD006	05/30/94	Thorium-232	20.90			1.50
SWSD006	08/31/94	Thorium-232	16.80			0.04
SWSD006	05/08/95	Thorium-232	2.50			0.04
SWSD006	11/13/95	Thorium-232	11.47			0.04
SWSD006	05/08/96	Thorium-232	4.93			0.13
SWSD006	10/15/96	Thorium-232	21.66			0.11
SWSD006	05/05/97	Thorium-232	17.34			0.09
SWSD006	06/02/98	Thorium-232	15.78		J	1.00
SWSD006	11/03/98	Thorium-232	17.97			1.00
SWSD006	05/21/99	Thorium-232	8.13			0.15
SWSD006	07/20/00	Thorium-232	0.33		J	0.08
SWSD006	07/16/01	Thorium-232	4.19		J	0.14
SWSD006	07/23/02	Thorium-232	15.2			0.06
SWSD006	07/08/03	Thorium-232	3.14		J	0.07
SWSD007	08/31/94	Thorium-232	1.10			0.10
SWSD007	05/08/95	Thorium-232	14.60			0.07
SWSD007	11/13/95	Thorium-232	9.49			0.04
SWSD007	05/08/96	Thorium-232	14.75			0.05
SWSD007	05/08/96	Thorium-232	7.63			0.08
SWSD007	10/15/96	Thorium-232	18.47			0.14
SWSD007	10/15/96	Thorium-232	22.50			0.21
SWSD007	05/05/97	Thorium-232	7.39			0.07
SWSD007	05/05/97	Thorium-232	8.54			0.07
SWSD007	06/02/98	Thorium-232	17.08		J	1.00
SWSD007	11/03/98	Thorium-232	8.76			1.00
SWSD007	05/21/99	Thorium-232	1.9			0.11
SWSD007	07/20/00	Thorium-232	0.33		J	0.08
SWSD007	07/16/01	Thorium-232	3.06			0.16
SWSD007	07/11/02	Thorium-232	17.6			0.06
SWSD007	07/08/03	Thorium-232	5.50		J	0.10
SWSD002	04/10/92	Total Uranium	2.90	4.29		0.00
SWSD002	10/26/92	Total Uranium	1.42	2.10		0.10
SWSD002	04/21/93	Total Uranium	1.62	2.40	J	0.10
SWSD002	10/07/93	Total Uranium	0.88	1.30	U	0.10
SWSD002	05/30/94	Total Uranium	0.88	1.30		0.10
SWSD002	05/08/95	Total Uranium	0.74	1.10	U	0.10
SWSD002	11/13/95	Total Uranium	1.10	1.62	U	0.10
SWSD002	05/08/96	Total Uranium	1.16	1.72		0.10
SWSD002	10/15/96	Total Uranium	1.20	1.77	U	0.10
SWSD002	05/05/97	Total Uranium	0.93	1.38		0.10
SWSD002	06/02/98	Total Uranium	1.23	1.91		1.00
SWSD002	11/03/98	Total Uranium	2.01	3.12	U	1.00
SWSD002	05/21/99	Total Uranium	1.27	1.87		0.10
SWSD002	00/24/00	Total Uranium	0.84	1.24		0.09
SWSD002	07/16/01	Total Uranium	1.61	2.13		0.42
SWSD002	07/22/02	Total Uranium	0.63	1.87		0.18
SWSD002	07/08/03	Total Uranium	1.01			0.26
SWSD003	04/10/92	Total Uranium	2.72	4.02		0.00
SWSD003	10/26/92	Total Uranium	2.10	3.10		0.10
SWSD003	04/21/93	Total Uranium	2.57	3.80	J	0.10
SWSD003	10/07/93	Total Uranium	0.81	1.20	U	0.10
SWSD003	05/30/94	Total Uranium	0.68	1.00	U	0.10
SWSD003	05/08/95	Total Uranium	1.29	1.90	U	0.10
SWSD003	11/13/95	Total Uranium	1.27	1.88	U	0.10
SWSD003	05/08/96	Total Uranium	1.02	1.50	U	0.10
SWSD003	10/15/96	Total Uranium	1.16	1.72	U	0.10
SWSD003	05/05/97	Total Uranium	1.06	1.56		0.10
SWSD003	06/02/98	Total Uranium	1.11	1.72		1.00
SWSD003	11/03/98	Total Uranium	2.13	3.3	U	1.00
SWSD003	05/21/99	Total Uranium	1.19	1.76		0.10

Table B-1
Historical Results for Radioactive Parameters in Sediment at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (pCi/g)	Result (µg/g)	Qualifier	Detection Limit (pCi/g)
SWSD003	07/16/01	Total Uranium	0.77	1.13		0.22
SWSD003	07/22/02	Total Uranium	0.62	0.8		0.28
SWSD003	07/08/03	Total Uranium	0.97			0.30
SWSD005	04/10/92	Total Uranium	2.94	4.34		0.00
SWSD005	10/26/92	Total Uranium	2.30	3.40		0.10
SWSD005	04/21/93	Total Uranium	2.71	4.00	J	0.10
SWSD005	10/07/93	Total Uranium	0.74	1.10	U	0.10
SWSD005	05/30/94	Total Uranium	1.42	2.10		0.10
SWSD005	05/30/94	Total Uranium	1.56	2.30		0.10
SWSD005	08/31/94	Total Uranium	1.49	2.20	U	0.10
SWSD005	05/08/95	Total Uranium	1.42	2.10	U	0.10
SWSD005	05/08/95	Total Uranium	1.22	1.80	U	0.10
SWSD005	11/13/95	Total Uranium	1.66	2.45	U	0.10
SWSD005	11/13/95	Total Uranium	3.22	4.76		0.10
SWSD005	05/08/96	Total Uranium	1.21	1.79		0.10
SWSD005	10/15/96	Total Uranium	1.79	2.64		0.10
SWSD005	05/05/97	Total Uranium	1.20	1.77		0.10
SWSD005	06/02/98	Total Uranium	1.24	1.92		1.00
SWSD005	11/03/98	Total Uranium	3.97	6.17		1.00
SWSD005	05/21/99	Total Uranium	1.18	1.75		0.10
SWSD005	07/20/00	Total Uranium	1.79	2.65		0.09
SWSD005	07/16/01	Total Uranium	2.51	3.15		0.57
SWSD005	07/11/02	Total Uranium	0.65	1.04		0.22
SWSD005	07/08/03	Total Uranium	1.75			0.27
SWSD006	05/30/94	Total Uranium	7.04	10.40		0.10
SWSD006	08/31/94	Total Uranium	9.27	13.70		0.10
SWSD006	05/08/95	Total Uranium	1.35	2.00	U	0.10
SWSD006	11/13/95	Total Uranium	7.18	10.61		0.10
SWSD006	05/08/96	Total Uranium	2.86	4.22		0.10
SWSD006	10/15/96	Total Uranium	8.86	13.09		0.10
SWSD006	05/05/97	Total Uranium	7.39	10.91		0.10
SWSD006	06/02/98	Total Uranium	8.06	12.51		1.00
SWSD006	11/03/98	Total Uranium	10.05	15.61		1.00
SWSD006	05/21/99	Total Uranium	12.41	18.33		0.10
SWSD006	07/20/00	Total Uranium	0.7	1.03		0.09
SWSD006	07/16/01	Total Uranium	4.18	5.26		0.44
SWSD006	07/23/02	Total Uranium	14.55	21.1		0.19
SWSD006	07/08/03	Total Uranium	2.15			0.27
SWSD007	08/31/94	Total Uranium	2.03	3.00	U	0.10
SWSD007	05/08/95	Total Uranium	6.16	9.10		0.10
SWSD007	11/13/95	Total Uranium	6.11	9.03		0.10
SWSD007	05/08/96	Total Uranium	5.84	8.62		0.10
SWSD007	05/08/96	Total Uranium	3.97	5.86		0.10
SWSD007	10/15/96	Total Uranium	8.88	13.12		0.10
SWSD007	10/15/96	Total Uranium	8.77	12.96		0.10
SWSD007	05/05/97	Total Uranium	5.29	7.82		0.10
SWSD007	05/05/97	Total Uranium	5.04	7.44		0.10
SWSD007	06/02/98	Total Uranium	5.13	8.02		1.00
SWSD007	11/03/98	Total Uranium	5.15	7.99		1.00
SWSD007	05/21/99	Total Uranium	2.00	3.00		0.10
SWSD007	07/20/00	Total Uranium	1.57	2.32		0.10
SWSD007	07/16/01	Total Uranium	7.50			0.45
SWSD007	07/11/02	Total Uranium	7.66	11.80		0.13
SWSD007	07/08/03	Total Uranium	4.06			0.25

Table B-2
Historical Results for Radioactive Parameters in Groundwater at MISS
Maywood Interim Storage Site - 2002

Station	Date	Analyte Name	Result	Rev Q	Error	SQL	Units
B38W19D	23-Jul-93	RADIUM-226	0.04	UJ	0.08	0.21	PCI/L
B38W19D	16-May-94	RADIUM-226	1.3	U	0.37	0.15	PCI/L
B38W19D	10-May-95	RADIUM-226	0.09	UJ	0.1	0.16	PCI/L
B38W19D	16-May-96	RADIUM-226	0.19		0.12	0.14	PCI/L
B38W19D	16-May-97	RADIUM-226	0.29		0.16	0.16	PCI/L
B38W19D	17-Jun-98	RADIUM-226	0.15	UJ	0.2	0.41	PCI/L
B38W19D	27-May-99	RADIUM-226	0.33	UJ	0.26	0.38	PCI/L
B38W19D	12-Jul-00	RADIUM-226	0.16	UJ	0.13	0.2	PCI/L
B38W19D	13-Jun-01	RADIUM-226	0.28	J	0.17	0.21	PCI/L
B38W19D	9-Jul-02	RADIUM-226	0.53	J	0.21	0.27	PCI/L
B38W19D	11-Jul-03	RADIUM-226	0.46	J	0.2	0.22	PCI/L
B38W19S	27-May-94	RADIUM-226	0.78		0.28	0.11	PCI/L
B38W19S	17-May-95	RADIUM-226	0.11		0.09	0.05	PCI/L
B38W19S	10-May-96	RADIUM-226	0.11		0.09	0.09	PCI/L
B38W19S	29-Jun-98	RADIUM-226	0.32	UJ	0.24	0.34	PCI/L
B38W19S	14-May-99	RADIUM-226	0.35	UJ	0.3	0.4	PCI/L
B38W19S	13-Jun-01	RADIUM-226	0.51	J	0.23	0.24	PCI/L
B38W19S	9-Jul-02	RADIUM-226	0.32	J	0.15	0.31	PCI/L
B38W19S	11-Jul-03	RADIUM-226	0.72	J	0.3	0.33	PCI/L
B38W25S	3-Aug-93	RADIUM-226	0.34		0.22	0.09	PCI/L
B38W25S	24-May-94	RADIUM-226	0.37		0.19	0.13	PCI/L
B38W25S	15-May-95	RADIUM-226	0.16		0.12	0.09	PCI/L
B38W25S	15-May-96	RADIUM-226	0.26	UJ	0	0.26	PCI/L
B38W25S	5-Jun-97	RADIUM-226	0.13	UJ	0.1	0.14	PCI/L
B38W25S	1-Jul-98	RADIUM-226	0.13	UJ	0.17	0.34	PCI/L
B38W25S	17-May-99	RADIUM-226	0.08	UJ	0.13	0.27	PCI/L
B38W25S	10-Jul-01	RADIUM-226	0.32	J	0.18	0.21	PCI/L
B38W25S	10-Jul-02	RADIUM-226	0.45				
B38W25S	15-Jul-03	RADIUM-226	0.56	J	0.25	0.28	
MISS02B	20-Jul-93	RADIUM-226	0.05	UJ	0.1	0.29	PCI/L
MISS02B	13-May-94	RADIUM-226	2	U	0.46	0.14	PCI/L
MISS02B	9-May-95	RADIUM-226	0.1		0.09	0.06	PCI/L
MISS02B	14-May-96	RADIUM-226	0.11	UJ	0.11	0.2	PCI/L
MISS02B	19-May-97	RADIUM-226	0.28		0.16	0.12	PCI/L
MISS02B	10-Jun-98	RADIUM-226	0.35		0.24	0.3	PCI/L
MISS02B	18-May-99	RADIUM-226	0.46		0.31	0.42	PCI/L
MISS02B	23-Jun-00	RADIUM-226	0.25	J	0.33	0.55	PCI/L
MISS02B	5-Jul-01	RADIUM-226	0.23	J	0.17	0.28	PCI/L
MISS02B	8-Jul-02	RADIUM-226	0.04	UJ	0.2	0.24	PCI/L
MISS02B	11-Jul-03	RADIUM-226	0.18	UJ	0.16	0.23	PCI/L
MISS05A	27-May-94	RADIUM-226	1.33		0.54	0.14	PCI/L
MISS05A	12-May-95	RADIUM-226	0.2	UJ	0.18	0.22	PCI/L
MISS05A	10-May-96	RADIUM-226	0.04	UJ	0.06	0.16	PCI/L
MISS05A	2-Jun-97	RADIUM-226	0.52		0.27	0.27	PCI/L
MISS05A	29-Jun-98	RADIUM-226	0.23	UJ	0.24	0.42	PCI/L
MISS05A	14-May-99	RADIUM-226	0.68		0.48	0.64	PCI/L
MISS05A	19-Jun-01	RADIUM-226	0.6	J	0.28	0.34	PCI/L
MISS05A	1-Aug-02	RADIUM-226	0.36	J	0.15	0.23	PCI/L
MISS05A	14-Jul-03	RADIUM-226	0.32	UJ	0.28	0.43	PCI/L

Table B-2
Historical Results for Radioactive Parameters in Groundwater at MISS
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Station	Date	Analyte Name	Result	Rev Q	Error	SQL	Units
B38W19D	16-May-96	RADIUM-228	0.04	UJ	0.08	0.24	PCI/L
B38W19D	16-May-97	RADIUM-228	0.08	UJ	0.12	0.22	PCI/L
B38W19D	17-Jun-98	RADIUM-228	0.04	UJ	0.18	0.46	PCI/L
B38W19D	27-May-99	RADIUM-228	0.13	UJ	0.39	0.91	PCI/L
B38W19D	12-Jul-00	RADIUM-228	0.43	U	0.4	0.66	PCI/L
B38W19D	13-Jun-01	RADIUM-228	0.7	UJ	0.69	0.74	PCI/L
B38W19D	9-Jul-02	RADIUM-228	0.89	J	0.49	0.76	PCI/L
B38W19D	11-Jul-03	RADIUM-228	0.71	J	0.38	0.58	PCI/L
B38W19S	10-May-96	RADIUM-228	0.11	UJ	0.15	0.31	PCI/L
B38W19S	29-Jun-98	RADIUM-228	0.26	UJ	0.27	0.41	PCI/L
B38W19S	14-May-99	RADIUM-228	0.48	UJ	0.15	0.48	PCI/L
B38W19S	13-Jun-01	RADIUM-228	2.49	J	0.72	0.70	PCI/L
B38W19S	9-Jul-02	RADIUM-228	2.33		0.66	0.83	PCI/L
B38W19S	11-Jul-03	RADIUM-228	4.33		0.81	0.85	PCI/L
B38W25S	15-May-96	RADIUM-228	0.21		0.19	0.19	PCI/L
B38W25S	5-Jun-97	RADIUM-228	0.13	UJ	0.15	0.26	PCI/L
B38W25S	1-Jul-98	RADIUM-228	0.3	UJ	0.31	0.48	PCI/L
B38W25S	17-May-99	RADIUM-228	0.12	UJ	0.22	0.44	PCI/L
B38W25S	7-Jul-00	RADIUM-228	0.17	U	0.42	0.71	PCI/L
B38W25S	10-Jul-01	RADIUM-228	0.76	UJ	0.72	0.77	PCI/L
B38W25S	10-Jul-02	RADIUM-228	1.13		0.5	0.74	PCI/L
B38W25S	15-Jul-03	RADIUM-228	0.06	U	0.39	0.66	PCI/L
MISS02B	14-May-96	RADIUM-228	0.09	UJ	0.12	0.39	PCI/L
MISS02B	19-May-97	RADIUM-228	0.05	UJ	0.14	0.34	PCI/L
MISS02B	10-Jun-98	RADIUM-228	0.01	UJ	0.12	0.37	PCI/L
MISS02B	18-May-99	RADIUM-228	0.02	UJ	0.17	0.48	PCI/L
MISS02B	23-Jun-00	RADIUM-228	0.32	U	0.33	0.55	PCI/L
MISS02B	5-Jul-01	RADIUM-228	1.36	J	1.05	1.11	PCI/L
MISS02B	8-Jul-02	RADIUM-228	0.71	J	0.39	0.60	PCI/L
MISS02B	30-Jun-03	RADIUM-228	0.44	UJ	0.44	0.72	PCI/L
MISS05A	10-May-96	RADIUM-228	0.14	UJ	0.21	0.46	PCI/L
MISS05A	2-Jun-97	RADIUM-228	0.67		0.44	0.51	PCI/L
MISS05A	29-Jun-98	RADIUM-228	0.55		0.42	0.53	PCI/L
MISS05A	14-May-99	RADIUM-228	0.16	UJ	0.31	0.66	PCI/L
MISS05A	19-Jun-01	RADIUM-228	2.05	J	0.85	0.87	PCI/L
MISS05A	1-Jul-02	RADIUM-228	4.02		0.75	0.80	PCI/L
MISS05A	14-Jul-03	RADIUM-228	1.25	UJ	0.87	1.40	PCI/L
B38W19D	16-May-96	THORIUM-228	0.04	UJ	0.08	0.24	PCI/L
B38W19D	16-May-97	THORIUM-228	0.08	UJ	0.12	0.22	PCI/L
B38W19D	17-Jun-98	THORIUM-228	0.04	UJ	0.18	0.46	PCI/L
B38W19D	17-May-99	THORIUM-228	0.13	U	0.39	0.91	PCI/L
B38W19D	13-Jun-01	THORIUM-228	0.42	UJ	0.44	0.66	PCI/L
B38W19D	9-Jul-02	THORIUM-228	0.23	UJ	0.22	0.30	PCI/L
B38W19D	11-Jul-03	THORIUM-228	0.35	U	0.095	0.35	PCI/L
B38W19S	10-May-96	THORIUM-228	0.11	UJ	0.15	0.31	PCI/L
B38W19S	29-Jun-98	THORIUM-228	0.26	UJ	0.27	0.41	PCI/L
B38W19S	14-May-99	THORIUM-228	0.48	U	0.15	0.48	PCI/L
B38W19S	13-Jun-01	THORIUM-228	0.36	UJ	0.35	0.52	PCI/L

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Station	Date	Analyte Name	Result	Rev Q	Error	SQL	Units
B38W19S	9-Jul-02	THORIUM-228	0.19	UJ	0.17	0.23	PCI/L
B38W19S	11-Jul-03	THORIUM-228	0.01	U	0.07	0.21	PCI/L
B38W25S	15-May-96	THORIUM-228	0.21		0.19	0.19	PCI/L
B38W25S	15-May-96	THORIUM-228	0.21	UJ	0.19	0.33	PCI/L
B38W25S	5-Jun-97	THORIUM-228	0.13	UJ	0.15	0.26	PCI/L
B38W25S	1-Jul-98	THORIUM-228	0.3	UJ	0.31	0.48	PCI/L
B38W25S	17-May-99	THORIUM-228	0.12	UJ	0.22	0.44	PCI/L
B38W25S	7-Jul-00	THORIUM-228	0.46	J	0.32	0.38	PCI/L
B38W25S	10-Jul-01	THORIUM-228	0.53	U	0.14	0.53	PCI/L
B38W25S	10-Jul-02	THORIUM-228	0.24	J	0.16	0.12	PCI/L
B38W25S	15-Jul-03	THORIUM-228	0.03	UJ	0.066	0.09	PCI/L
MISS02B	14-May-96	THORIUM-228	0.09	UJ	0.12	0.39	PCI/L
MISS02B	19-May-97	THORIUM-228	0.05	UJ	0.14	0.34	PCI/L
MISS02B	10-Jun-98	THORIUM-228	0.01	UJ	0.12	0.37	PCI/L
MISS02B	18-May-99	THORIUM-228	0.02	UJ	0.17	0.48	PCI/L
MISS02B	23-Jun-00	THORIUM-228	0.04	U	0.09	0.2	PCI/L
MISS02B	5-Jul-01	THORIUM-228	0.23	UJ	0.26	0.41	PCI/L
MISS02B	8-Jul-02	THORIUM-228	0.09	U	0.13	0.06	PCI/L
MISS02B	30-Jun-03	THORIUM-228	0.08	U	0.12	0.25	PCI/L
MISS05A	10-May-96	THORIUM-228	0.14	UJ	0.21	0.46	PCI/L
MISS05A	2-Jun-97	THORIUM-228	0.67		0.44	0.51	PCI/L
MISS05A	29-Jun-98	THORIUM-228	0.55		0.42	0.53	PCI/L
MISS05A	14-May-99	THORIUM-228	0.16	UJ	0.31	0.66	PCI/L
MISS05A	19-Jun-01	THORIUM-228	0.07	U	0.2	0.49	PCI/L
MISS05A	1-Jul-02	THORIUM-228	0.14	UJ	0.14	0.23	PCI/L
MISS05A	14-Jul-03	THORIUM-228	0.19	U	0.021	0.19	PCI/L
B38W19D	10-May-95	THORIUM-230	0.37	U	0.23	0.09	PCI/L
B38W19D	16-May-96	THORIUM-230	0.24		0.2	0.11	PCI/L
B38W19D	16-May-97	THORIUM-230	0.5	U	0.3	0.25	PCI/L
B38W19D	17-Jun-98	THORIUM-230	0.17	UJ	0.24	0.42	PCI/L
B38W19D	27-May-99	THORIUM-230	0.67	UJ	0.57	0.76	PCI/L
B38W19D	12-Jul-00	THORIUM-230	0.11	UJ	0.12	0.18	PCI/L
B38W19D	13-Jun-01	THORIUM-230	0.72	UJ	0.6	0.87	PCI/L
B38W19D	9-Jul-02	THORIUM-230	1.15	J	0.19	0.22	PCI/L
B38W19D	11-Jul-03	THORIUM-230	0.71	J	0.38	0.28	PCI/L
B38W19S	17-May-95	THORIUM-230	0.35	U	0.25	0.18	PCI/L
B38W19S	10-May-96	THORIUM-230	3.4	J	1.03	0.14	PCI/L
B38W19S	29-Jun-98	THORIUM-230	0.17	UJ	0.21	0.34	PCI/L
B38W19S	29-May-99	THORIUM-230	0.07	UJ	0.17	0.4	PCI/L
B38W19S	13-Jun-01	THORIUM-230	1.51	J	0.7	0.52	PCI/L
B38W19S	9-Jul-02	THORIUM-230	0.1	UJ	0.12	0.16	PCI/L
B38W19S	11-Jul-03	THORIUM-230	0.48	J	0.28	0.19	PCI/L
B38W25S	15-May-95	THORIUM-230	0.14	UJ	0.16	0.21	PCI/L
B38W25S	15-May-96	THORIUM-230	0.5		0.3	0.19	PCI/L
B38W25S	5-Jun-97	THORIUM-230	0.44	U	0.29	0.26	PCI/L
B38W25S	1-Jul-98	THORIUM-230	0.14	UJ	0.2	0.33	PCI/L
B38W25S	17-May-99	THORIUM-230	0.26	UJ	0.26	0.36	PCI/L
B38W25S	7-Jul-00	THORIUM-230	0.38	J	0.28	0.28	PCI/L

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Station	Date	Analyte Name	Result	Rev Q	Error	SQL	Units
B38W25S	10-Jul-01	THORIUM-230	0.65	J	0.42	0.33	PCI/L
B38W25S	10-Jul-02	THORIUM-230	0.59	J	0.27	0.17	PCI/L
B38W25S	15-Jul-03	THORIUM-230	0.16	J	0.15	0.16	PCI/L
MISS02B	9-May-95	THORIUM-230	0.08	UJ	0.12	0.19	PCI/L
MISS02B	14-May-96	THORIUM-230	0.38		0.26	0.19	PCI/L
MISS02B	19-May-97	THORIUM-230	0.81	U	0.4	0.21	PCI/L
MISS02B	10-Jun-98	THORIUM-230	0.18	UJ	0.22	0.32	PCI/L
MISS02B	18-May-99	THORIUM-230	0.59		0.4	0.43	PCI/L
MISS02B	23-Jun-00	THORIUM-230	0.4	J	0.25	0.27	PCI/L
MISS02B	5-Jul-01	THORIUM-230	0.66	J	0.42	0.44	PCI/L
MISS02B	8-Jul-02	THORIUM-230	0.49	J	0.25	0.19	PCI/L
MISS02B	30-Jun-03	THORIUM-230	0.13	J	0.12	0.13	PCI/L
MISS05A	12-May-95	THORIUM-230	0.43	U	0.28	0.22	PCI/L
MISS05A	10-May-96	THORIUM-230	1.7	J	0.77	0.33	PCI/L
MISS05A	2-Jun-97	THORIUM-230	0.92		0.52	0.43	PCI/L
MISS05A	29-Jun-98	THORIUM-230	0.28	UJ	0.3	0.46	PCI/L
MISS05A	14-May-99	THORIUM-230	0.69		0.48	0.44	PCI/L
MISS05A	19-Jun-01	THORIUM-230	1.25	J	0.67	0.72	PCI/L
MISS05A	1-Aug-02	THORIUM-230	0.57	J	0.25	0.11	PCI/L
MISS05A	14-Jul-03	THORIUM-230	0.53	J	0.28	0.17	PCI/L
MISS07B	11-May-95	THORIUM-230	0.34	U	0.22	0.09	PCI/L
MISS07B	16-May-96	THORIUM-230	0.26	U	0.22	0.26	PCI/L
MISS07B	16-May-97	THORIUM-230	0.44	U	0.27	0.22	PCI/L
MISS07B	27-May-99	THORIUM-230	0.39	U	0.88	0.49	PCI/L
MISS07B	12-Jul-00	THORIUM-230	0.37	J	0.24	0.21	PCI/L
MISS07B	11-Jun-01	THORIUM-230	0.19	U	0.38	0.84	PCI/L
MISS07B	11-Jul-02	THORIUM-230	0.48	J	0.26	0.08	PCI/L
MISS07B	14-Jul-03	THORIUM-230	0.23	J	0.18	0.09	PCI/L
B38W19D	23-Jul-93	THORIUM-232	0.14	UJ	0.29	0.43	PCI/L
B38W19D	16-May-94	THORIUM-232	0.04	UJ	0.07	0.1	PCI/L
B38W19D	10-May-95	THORIUM-232	0.09	UJ		0.09	PCI/L
B38W19D	16-May-96	THORIUM-232	0.19	UJ	0	0.19	PCI/L
B38W19D	16-May-97	THORIUM-232	0.29	U	0.22	0.22	PCI/L
B38W19D	17-Jun-98	THORIUM-232	0.15	UJ	0.2	0.31	PCI/L
B38W19D	27-May-99	THORIUM-232	0.22	UJ	0.32	0.54	PCI/L
B38W19D	12-Jul-00	THORIUM-232	0.01	U	0.05	0.13	PCI/L
B38W19D	13-Jun-01	THORIUM-232	0.52	UJ	0.5	0.78	PCI/L
B38W19D	9-Jul-02	THORIUM-232	0.0	U	0.0	0.1	PCI/L
B38W19D	11-Jul-03	THORIUM-232	0.0	U	0.1	0.1	PCI/L
B38W19S	27-May-94	THORIUM-232	0.04	UJ	0.09	0.12	PCI/L
B38W19S	17-May-95	THORIUM-232	-0.01	UJ	0.02	0.21	PCI/L
B38W19S	10-May-96	THORIUM-232	0.24	UJ	0	0.24	PCI/L
B38W19S	29-Jun-98	THORIUM-232	0.03	UJ	0.11	0.32	PCI/L
B38W19S	14-May-99	THORIUM-232	0.02	UJ	0.1	0.29	PCI/L
B38W19S	13-Jun-01	THORIUM-232	0.3	UJ	0.32	0.52	PCI/L
B38W19S	0-Jul-02	THORIUM-232	0.0	U	0.0	0.08	PCI/L
B38W19S	11-Jul-03	THORIUM-232	0.1	U	0.1	0.09	PCI/L
B38W25S	3-Aug-93	THORIUM-232	0.24		0.16	0.14	PCI/L
B38W25S	24-May-94	THORIUM-232	0.13	UJ	0	0.13	PCI/L

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Station	Date	Analyte Name	Result	Rev Q	Error	SQL	Units
B38W25S	15-May-95	THORIUM-232	0.06	UJ	0.11	0.2	PCI/L
B38W25S	15-May-96	THORIUM-232	0.08	UJ	0.12	0.19	PCI/L
B38W25S	5-Jun-97	THORIUM-232	0.17	UJ	0.18	0.2	PCI/L
B38W25S	1-Jul-98	THORIUM-232	0.04	UJ	0.11	0.3	PCI/L
B38W25S	17-May-99	THORIUM-232	0.13	UJ	0.18	0.3	PCI/L
B38W25S	7-Jul-00	THORIUM-232	0.13	U	0.17	0.28	PCI/L
B38W25S	10-Jul-01	THORIUM-232	0.03	UJ	0.13	0.36	PCI/L
B38W25S	10-Jul-02	THORIUM-232	0.03	U	0.07	0.17	PCI/L
B38W25S	15-Jul-03	THORIUM-232	0.07	UJ	0.09	0.09	PCI/L
MISS02B	20-Jul-93	THORIUM-232	0	UJ	0	0.2	PCI/L
MISS02B	9-May-95	THORIUM-232	0.07	UJ	0.12	0.22	PCI/L
MISS02B	14-May-96	THORIUM-232	0.25	UJ	0	0.25	PCI/L
MISS02B	19-May-97	THORIUM-232	0.14	UJ	0.16	0.12	PCI/L
MISS02B	10-Jun-98	THORIUM-232	0.05	UJ	0.11	0.14	PCI/L
MISS02B	18-May-99	THORIUM-232	0.04	UJ	0.11	0.3	PCI/L
MISS02B	23-Jun-00	THORIUM-232	0.02	U	0.06	0.14	PCI/L
MISS02B	5-Jul-01	THORIUM-232	0.54		0.39	0.45	PCI/L
MISS02B	8-Jul-02	THORIUM-232	0.08	J	0.09	0.07	PCI/L
MISS02B	30-Jun-03	THORIUM-232	0.13	U	0.01	0.13	PCI/L
MISS05A	27-May-94	THORIUM-232	0.4	J	0.29	0.21	PCI/L
MISS05A	12-May-95	THORIUM-232	0.23		0.2	0.18	PCI/L
MISS05A	10-May-96	THORIUM-232	0.21	UJ	0.25	0.19	PCI/L
MISS05A	2-Jun-97	THORIUM-232	0.13	UJ	0.19	0.51	PCI/L
MISS05A	29-Jun-98	THORIUM-232	0.04	UJ	0.17	0.48	PCI/L
MISS05A	14-May-99	THORIUM-232	0.17	UJ	0.26	0.47	PCI/L
MISS05A	19-Jun-01	THORIUM-232	0.29	UJ	0.3	0.43	PCI/L
MISS05A	1-Jul-02	THORIUM-232	0.08	UJ	0.09	0.12	PCI/L
MISS05A	14-Jul-03	THORIUM-232	0.08	U	0	0.08	PCI/L
B38W19D	23-Jul-93	TOTAL URANIUM	0.36		0.04	0.03	UG/L
B38W19D	16-May-94	TOTAL URANIUM	0.35		0.04	0.03	UG/L
B38W19D	10-May-95	TOTAL URANIUM	0.29		0.03	0.03	UG/L
B38W19D	16-May-96	TOTAL URANIUM	1.27		0.03	0.03	UG/L
B38W19D	16-May-97	TOTAL URANIUM	0.3		0.01	0.03	UG/L
B38W19D	17-Jun-98	TOTAL URANIUM	0.03	UJ	0	0.03	UG/L
B38W19D	27-May-99	TOTAL URANIUM	0.26	UJ	0.02	0.03	UG/L
B38W19D	12-Jul-00	TOTAL URANIUM	1.82				UG/L
B38W19D	13-Jun-01	TOTAL URANIUM	1.00				UG/L
B38W19D	9-Jul-02	TOTAL URANIUM	0.68				UG/L
B38W19D	11-Jul-03	TOTAL URANIUM	0.48				UG/L
B38W19S	27-May-94	TOTAL URANIUM	0.38		0.04	0.03	UG/L
B38W19S	17-May-95	TOTAL URANIUM	1.4		0.15	0.03	UG/L
B38W19S	10-May-96	TOTAL URANIUM	0.58		0.01	0.03	UG/L
B38W19S	29-Jun-98	TOTAL URANIUM	0.03	UJ	0	0.03	UG/L
B38W19S	14-May-99	TOTAL URANIUM	0.02	UJ	0.01	0.03	UG/L
B38W19S	13-Jun-01	TOTAL URANIUM	0.89				UG/L
B38W19S	9-Jul-02	TOTAL URANIUM	1.13				UG/L
B38W19S	11-Jul-03	TOTAL URANIUM	0.3				UG/L
B38W25S	3-Aug-93	TOTAL URANIUM	0.5		0.05	0.03	UG/L
B38W25S	24-May-94	TOTAL URANIUM	0.06		0.01	0.03	UG/L

Table B-2
Historical Results for Radioactive Parameters in Groundwater at MISS
Maywood Interim Storage Site - 2002

Station	Date	Analyte Name	Result	Rev Q	Error	SQL	Units
B38W25S	15-May-95	TOTAL URANIUM	0.09		0.01	0.03	UG/L
B38W25S	15-May-96	TOTAL URANIUM	0.45		0.01	0.03	UG/L
B38W25S	5-Jun-97	TOTAL URANIUM	0.5		0.01	0.03	UG/L
B38W25S	1-Jul-98	TOTAL URANIUM	0.03	UJ	0	0.03	UG/L
B38W25S	17-May-99	TOTAL URANIUM	0.17	UJ	0.01	0.03	UG/L
B38W25S	7-Jul-00	TOTAL URANIUM	0.41				UG/L
B38W25S	10-Jul-01	TOTAL URANIUM	3.74				UG/L
B38W25S	10-Jul-02	TOTAL URANIUM	0.68				UG/L
B38W25S	15-Jul-03	TOTAL URANIUM	0.56				UG/L
MISS02B	20-Jul-93	TOTAL URANIUM	0.33		0.04	0.03	UG/L
MISS02B	13-May-94	TOTAL URANIUM	0.29		0.03	0.03	UG/L
MISS02B	9-May-95	TOTAL URANIUM	0.29		0.03	0.03	UG/L
MISS02B	14-May-96	TOTAL URANIUM	0.68		0.02	0.03	UG/L
MISS02B	19-May-97	TOTAL URANIUM	0.28		0.02	0.03	UG/L
MISS02B	10-Jun-98	TOTAL URANIUM	0.03	UJ	0	0.03	UG/L
MISS02B	18-May-99	TOTAL URANIUM	0.12		0.01	0.03	UG/L
MISS02B	23-Jun-00	TOTAL URANIUM	0.48				UG/L
MISS02B	5-Jul-01	TOTAL URANIUM	2.98				UG/L
MISS02B	8-Jul-02	TOTAL URANIUM	0.45				UG/L
MISS02B	30-Jun-03	TOTAL URANIUM	0.27				UG/L
MISS05A	27-May-94	TOTAL URANIUM	86.8		10.3	0.03	UG/L
MISS05A	12-May-95	TOTAL URANIUM	41.2		4.8	0.03	UG/L
MISS05A	10-May-96	TOTAL URANIUM	140		8.6	0.03	UG/L
MISS05A	15-OCT-96	TOTAL URANIUM	139.05		8.95	0.03	UG/L
MISS05A	2-Jun-97	TOTAL URANIUM	96.15		6.03	0.03	UG/L
MISS05A	29-Jun-98	TOTAL URANIUM	181.71		12.18	0.03	UG/L
MISS05A	14-May-99	TOTAL URANIUM	110.46		2.51	0.03	UG/L
MISS05A	19-Jun-01	TOTAL URANIUM	52.87				UG/L
MISS05A	1-Aug-02	TOTAL URANIUM	103.71				UG/L
MISS05A	14-Jul-03	TOTAL URANIUM	160.48				UG/L

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W01S	17-Jul-02	REG	ALUMINUM	127		J
B38W01S	27-Jun-03	REG	ALUMINUM	101		J
B38W15S	16-Jul-02	REG	ALUMINUM	102		J
MISS02A	22-Jun-00	REG	ALUMINUM	360		
MISS02A	5-Jul-01	REG	ALUMINUM	29.5		
MISS02A	8-Jul-02	REG	ALUMINUM	505		J
MISS02A	30-Jun-03	REG	ALUMINUM	96.7		J
B38W17A	19-Jun-00	REG	ALUMINUM	785		
B38W17A	14-Jun-01	REG	ALUMINUM	128		
B38W17B	19-Jun-00	REG	ALUMINUM	40.6		J
B38W17B	14-Jun-01	REG	ALUMINUM	68.6		
B38W14D	10-Jul-03	REG	ALUMINUM	1,010		
B38W18D	3-Jul-02	DUP	ALUMINUM	164		J
B38W18D	2-Jul-03	REG	ALUMINUM	497		
B38W15D	6-Jul-98	REG	ANTIMONY	0.7		
B38W15D	26-Jun-00	REG	ANTIMONY	2.1		
B38W15D	27-Jun-01	REG	ANTIMONY	1.9		
B38W15S	6-Jul-98	REG	ANTIMONY	0.75		
B38W15S	27-Jun-01	REG	ANTIMONY	1.9		
B38W17A	28-Jul-93	REG	ANTIMONY	445	=	
B38W17A	2-Jul-98	REG	ANTIMONY	1		
B38W17A	19-Jun-00	REG	ANTIMONY	37.6		
B38W17A	14-Jun-01	REG	ANTIMONY	1.9		
B38W18D	2-Jul-03	REG	ANTIMONY	4.6		UJ
B38W19S	29-Jun-98	REG	ANTIMONY	0.65		
B38W24D	2-Jul-98	REG	ANTIMONY	0.6		
B38W24D	5-Jul-01	REG	ANTIMONY	1.9		
B38W24S	2-Jul-98	REG	ANTIMONY	0.7		
B38W24S	27-Jun-01	REG	ANTIMONY	1.9		
B38W25D	12-May-95	REG	ANTIMONY	2.9	=	
B38W25D	15-May-97	REG	ANTIMONY	2		
B38W25D	1-Jul-98	REG	ANTIMONY	0.65		
B38W25D	10-Jul-01	REG	ANTIMONY	1.9		
B38W25S	15-May-95	REG	ANTIMONY	1.5	=	
B38W25S	10-Jul-01	REG	ANTIMONY	1.9		
MISS02A	10-May-95	REG	ANTIMONY	2.4	=	
MISS02A	15-May-97	DUP	ANTIMONY	5.1		
MISS02A	11-Jun-98	DUP	ANTIMONY	3.2		
MISS02A	18-May-99	DUP	ANTIMONY	3.9		
MISS02A	5-Jul-01	REG	ANTIMONY	1.9		
MISS05A	27-May-94	REG	ANTIMONY	36.4	=	
MISS05A	12-May-95	REG	ANTIMONY	1.8	=	
MISS05A	29-Jun-98	REG	ANTIMONY	1.2		
MISS05A	14-May-99	REG	ANTIMONY	0.7		
MISS05A	19-Jun-01	REG	ANTIMONY	1.9		
MISS06A	24-May-94	REG	ANTIMONY	34.9	=	
MISS06A	1-Jul-98	REG	ANTIMONY	1.8		
MISS06A	17-May-99	REG	ANTIMONY	0.81		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS06A	20-Jun-01	REG	ANTIMONY	1.9		
MISS06A	2-Jul-03	REG	ANTIMONY	4.6		UJ
MISS07B	18-May-94	REG	ANTIMONY	25.7	=	
MISS07B	18-May-95	REG	ANTIMONY	25.7		
MISS07B	11-Jun-01	REG	ANTIMONY	1.9		
MISS07B	16-Jun-98	REG	ARSENIC	57.3		
MISS07B	27-May-99	REG	ARSENIC	49.9		J
MISS07B	12-Jul-00	REG	ARSENIC	52.6		
MISS07B	11-Jun-01	REG	ARSENIC	82.8		
MISS07B	11-Jul-02	DUP	ARSENIC	56.5		J
B38W02D	30-Jun-98	REG	ARSENIC	0.75		
B38W02D	20-May-99	REG	ARSENIC	0.61		
B38W02D	28-Jun-01	REG	ARSENIC	2.3		
B38W14S	4-Aug-93	REG	ARSENIC	2.1	B	J
B38W14S	4-Jun-97	REG	ARSENIC	4.7		
B38W14S	17-May-99	REG	ARSENIC	0.52		
B38W14S	2-Jul-01	REG	ARSENIC	2.3		
B38W15D	2-Aug-93	REG	ARSENIC	6.8	B	J
B38W15D	26-May-94	REG	ARSENIC	2.6	=	J
B38W15D	13-May-96	REG	ARSENIC	5.4	=	
B38W15D	3-Jun-97	REG	ARSENIC	5.7		
B38W15D	6-Jul-98	REG	ARSENIC	7.5		
B38W15D	26-Jun-00	REG	ARSENIC	11.1		
B38W15D	27-Jun-01	DUP	ARSENIC	4.6		
B38W15D	16-Jul-02	REG	ARSENIC	13.9		J
B38W15D	1-Jul-03	REG	ARSENIC	9.9		
B38W15S	2-Aug-93	REG	ARSENIC	3.9	B	J
B38W15S	19-May-95	REG	ARSENIC	4.9	=	
B38W15S	19-May-95	DUP	ARSENIC	4.8	=	
B38W15S	3-Jun-97	REG	ARSENIC	2.6		
B38W15S	6-Jul-98	REG	ARSENIC	3.1		
B38W15S	27-Jun-01	REG	ARSENIC	4.4		
B38W17A	28-Jul-93	REG	ARSENIC	8.9	B	
B38W17A	2-Jul-98	REG	ARSENIC	2.9		
B38W17A	14-Jun-01	REG	ARSENIC	2.3		
B38W17B	3-Jun-97	REG	ARSENIC	1.8		
B38W17B	2-Jul-98	REG	ARSENIC	1.3		
B38W17B	13-May-99	REG	ARSENIC	0.76		
B38W17B	14-Jun-01	REG	ARSENIC	2.3		
B38W18D	21-Jul-93	REG	ARSENIC	2.5	B	
B38W18D	8-Jun-98	REG	ARSENIC	1.7		
B38W18D	20-May-99	REG	ARSENIC	2.3		
B38W18D	6-Jul-00	REG	ARSENIC	8.2		J
B38W18D	20-Jun-01	REG	ARSENIC	2.3		
B38W18D	3-Jul-02	REG	ARSENIC	8.7		
B38W18D	2-Jul-03	REG	ARSENIC	9.6		
B38W19D	23-Jul-93	REG	ARSENIC	93	=	
B38W19D	16-May-94	REG	ARSENIC	68.7	=	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W19D	10-May-95	REG	ARSENIC	48.8	=	J
B38W19D	16-May-96	REG	ARSENIC	50.5	=	
B38W19D	16-May-97	REG	ARSENIC	59.5		
B38W19D	17-Jun-98	REG	ARSENIC	60.8		
B38W19D	27-May-99	REG	ARSENIC	55.1	=	J
B38W19D	12-Jul-00	REG	ARSENIC	70.3		
B38W19D	13-Jun-01	REG	ARSENIC	69.8		
B38W19D	9-Jul-02	REG	ARSENIC	71		
B38W19D	11-Jul-03	REG	ARSENIC	53.9		
B38W19S	27-May-94	REG	ARSENIC	8.6	=	
B38W19S	10-May-96	REG	ARSENIC	5.4	=	
B38W19S	29-Jun-98	REG	ARSENIC	18.1		
B38W19S	14-May-99	REG	ARSENIC	17.8		
B38W19S	13-Jun-01	REG	ARSENIC	28.7		
B38W24S	2-Jul-98	REG	ARSENIC	1.8		
B38W24S	27-Jun-01	REG	ARSENIC	2.3		
B38W24D	22-Jun-00	REG	ARSENIC	2.1		J
B38W24D	15-Jul-02	REG	ARSENIC	8.4		J
B38W25D	15-May-97	REG	ARSENIC	2.9		
B38W25D	1-Jul-98	REG	ARSENIC	1.1		
B38W25D	10-Jul-01	REG	ARSENIC	2.3		
B38W25S	3-Aug-93	REG	ARSENIC	3.9	B	J
B38W25S	15-May-95	DUP	ARSENIC	2.5	=	
B38W25S	5-Jun-97	REG	ARSENIC	1.3		
B38W25S	1-Jul-98	REG	ARSENIC	2.8		
B38W25S	17-May-99	REG	ARSENIC	2.3		
B38W25S	7-Jul-00	REG	ARSENIC	13.4		
B38W25S	10-Jul-01	REG	ARSENIC	20.8		
B38W25S	15-Jul-03	REG	ARSENIC	24.1		J
MISS01AA	31-Jul-93	REG	ARSENIC	2.8	B	J
MISS01AA	18-May-95	REG	ARSENIC	18.7	=	
MISS01AA	23-May-97	REG	ARSENIC	4.2		
MISS01AA	18-Jun-98	REG	ARSENIC	5.2		
MISS01AA	12-May-99	REG	ARSENIC	6.5		
MISS01AA	20-Jun-01	REG	ARSENIC	2.3		
MISS01B	21-Jul-93	REG	ARSENIC	3.6	B	
MISS01B	16-May-94	REG	ARSENIC	3.6	=	
MISS01B	10-May-95	REG	ARSENIC	2.7	=	J
MISS01B	18-Jun-98	REG	ARSENIC	2.1		
MISS01B	25-May-99	REG	ARSENIC	1.1		J
MISS01B	19-Jun-01	REG	ARSENIC	2.3		
MISS02A	20-Jul-93	REG	ARSENIC	2840	=	
MISS02A	12-May-94	REG	ARSENIC	6600	=	J
MISS02A	10-May-95	REG	ARSENIC	6000	=	J
MISS02A	16-May-96	REG	ARSENIC	6360	=	
MISS02A	15-May-97	REG	ARSENIC	5660		
MISS02A	15-May-97	DUP	ARSENIC	5580		
MISS02A	11-Jun-98	REG	ARSENIC	4310		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS02A	11-Jun-98	DUP	ARSENIC	5150		
MISS02A	18-May-99	DUP	ARSENIC	6350		
MISS02A	22-Jun-00	REG	ARSENIC	3520		
MISS02A	5-Jul-01	REG	ARSENIC	2210		
MISS02A	8-Jul-02	REG	ARSENIC	2110		
MISS02A	30-Jun-03	REG	ARSENIC	2770		
MISS05A	27-May-94	REG	ARSENIC	3.5	=	
MISS05A	12-May-95	REG	ARSENIC	3.8	=	
MISS05A	2-Jun-97	REG	ARSENIC	16.6		
MISS05A	29-Jun-98	REG	ARSENIC	16.4		
MISS05A	14-May-99	REG	ARSENIC	2		
MISS05A	19-Jun-01	REG	ARSENIC	2.3		
MISS05B	23-Jul-93	REG	ARSENIC	16.6	=	
MISS05B	17-May-94	REG	ARSENIC	11.9	=	J
MISS05B	11-May-95	REG	ARSENIC	10.9	=	J
MISS05B	16-May-96	REG	ARSENIC	10.6	=	
MISS05B	14-May-97	REG	ARSENIC	10.1		J
MISS05B	30-Jun-98	REG	ARSENIC	9.9		
MISS05B	11-Jul-00	REG	ARSENIC	20.5		
MISS05B	18-Jun-01	REG	ARSENIC	24.3		
MISS05B	31-Jul-02	REG	ARSENIC	20.2		
MISS05B	16-Jul-03	REG	ARSENIC	29		J
MISS06A	3-Jun-97	REG	ARSENIC	3.4		
MISS06A	1-Jul-98	REG	ARSENIC	5.4		
MISS06A	17-May-99	REG	ARSENIC	2.2		
MISS06A	10-Jul-00	REG	ARSENIC	4		J
MISS06A	20-Jun-01	REG	ARSENIC	2.3		
MISS07B	14-Jul-03	REG	ARSENIC	82.9		
B38W01S	23-May-94	REG	BARIUM	17.8	=	
B38W01S	21-May-95	REG	BARIUM	13.1	=	
B38W01S	17-May-96	REG	BARIUM	14.4	=	
B38W01S	4-Jun-97	REG	BARIUM	16.8		
B38W01S	7-Jul-98	REG	BARIUM	16.3		
B38W01S	11-Jul-01	DUP	BARIUM	15.1		
B38W01S	17-Jul-02	REG	BARIUM	12.6		
B38W01S	27-Jun-03	REG	BARIUM	16.1		
B38W02D	27-Jul-93	REG	BARIUM	385	=	
B38W02D	19-May-94	REG	BARIUM	342	=	
B38W02D	20-May-95	REG	BARIUM	298	=	
B38W02D	17-May-96	REG	BARIUM	349	=	
B38W02D	4-Jun-97	REG	BARIUM	391		
B38W02D	30-Jun-98	REG	BARIUM	364		
B38W02D	20-May-99	REG	BARIUM	342		
B38W02D	13-Jul-00	REG	BARIUM	299		
B38W02D	28-Jun-01	REG	BARIUM	332		
B38W02D	17-Jul-02	REG	BARIUM	431		
B38W02D	27-Jun-03	REG	BARIUM	368		
MISS07B	16-Jun-98	REG	BARIUM	28.1		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS07B	27-May-99	REG	BARIUM	21.4		
MISS07B	11-Jun-01	REG	BARIUM	20.6		
MISS07B	11-Jul-02	DUP	BARIUM	15.9		J
MISS07B	14-Jul-03	REG	BARIUM			
B38W14D	4-Aug-93	REG	BARIUM	106	B	
B38W14D	20-May-95	REG	BARIUM	73.6	=	
B38W14D	17-May-96	REG	BARIUM	97.3	=	
B38W14D	4-Jun-97	REG	BARIUM	113		
B38W14D	7-Jul-98	REG	BARIUM	111		
B38W14D	7-Jul-98	DUP	BARIUM	113		
B38W14D	17-May-99	DUP	BARIUM	116		
B38W14D	5-Jul-00	REG	BARIUM	105		
B38W14D	2-Jul-01	REG	BARIUM	88.6		
B38W14D	24-Jul-02	REG	BARIUM	109		
B38W14D	10-Jul-03	REG	BARIUM	144		
B38W14S	4-Aug-93	REG	BARIUM	106	B	
B38W14S	20-May-95	REG	BARIUM	61.6	=	
B38W14S	17-May-96	REG	BARIUM	85.2	=	
B38W14S	17-May-96	DUP	BARIUM	77.8	=	
B38W14S	4-Jun-97	REG	BARIUM	90		
B38W14S	7-Jul-98	REG	BARIUM	108		
B38W14S	17-May-99	REG	BARIUM	86.6		
B38W14S	5-Jul-00	REG	BARIUM	91.3		
B38W14S	2-Jul-01	REG	BARIUM	85.6		
B38W14S	24-Jul-02	REG	BARIUM	92.9		
B38W14S	10-Jul-03	REG	BARIUM	103		
B38W15D	2-Aug-93	REG	BARIUM	32.4	B	
B38W15D	26-May-94	REG	BARIUM	30.3	=	
B38W15D	19-May-95	REG	BARIUM	22.3	=	
B38W15D	13-May-96	REG	BARIUM	39.4	=	
B38W15D	3-Jun-97	REG	BARIUM	27.5		
B38W15D	6-Jul-98	REG	BARIUM	22.6		
B38W15D	26-Jun-00	REG	BARIUM	30.2		
B38W15D	27-Jun-01	DUP	BARIUM	15.9		
B38W15D	16-Jul-02	REG	BARIUM	22.2		
B38W15D	1-Jul-03	REG	BARIUM	26.1		
B38W15S	2-Aug-93	REG	BARIUM	50	B	
B38W15S	26-May-94	REG	BARIUM	34	=	
B38W15S	19-May-95	REG	BARIUM	50.9	=	
B38W15S	19-May-95	DUP	BARIUM	46.1	=	
B38W15S	13-May-96	REG	BARIUM	35.7	=	
B38W15S	3-Jun-97	REG	BARIUM	32.2		
B38W15S	6-Jul-98	REG	BARIUM	32.5		
B38W15S	26-Jun-00	REG	BARIUM	37.6		
B38W15S	27-Jun-01	REG	BARIUM	46		
B38W15S	16-Jul-02	REG	BARIUM	35.1		
B38W15S	1-Jul-03	REG	BARIUM	29		
B38W17A	28-Jul-93	REG	BARIUM	299	B	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W17A	25-May-94	REG	BARIUM	46.9	=	
B38W17A	20-May-95	REG	BARIUM	36.4	=	
B38W17A	13-May-96	REG	BARIUM	60.3	=	
B38W17A	3-Jun-97	REG	BARIUM	49.3		
B38W17A	2-Jul-98	REG	BARIUM	78.1		
B38W17A	13-May-99	REG	BARIUM	63.1		
B38W17A	19-Jun-00	REG	BARIUM	94.1		
B38W17A	20-Jun-00	REG	BARIUM	44.7		
B38W17A	2-Jul-02	REG	BARIUM	53.3		
B38W17A	26-Jun-03	REG	BARIUM	64.3		
B38W17B	29-Jul-93	REG	BARIUM	64.9	B	
B38W17B	25-May-94	REG	BARIUM	89.4	=	
B38W17B	20-May-95	REG	BARIUM	71.8	=	
B38W17B	13-May-96	REG	BARIUM	98.3	=	
B38W17B	3-Jun-97	REG	BARIUM	96.5		
B38W17B	2-Jul-98	REG	BARIUM	71.6		
B38W17B	13-May-99	REG	BARIUM	89.1		
B38W17B	19-Jun-00	REG	BARIUM	69.4		
B38W17B	14-Jun-01	DUP	BARIUM	75.4		
B38W17B	2-Jul-02	REG	BARIUM	62.9		
B38W17B	26-Jun-03	REG	BARIUM	79.9		
B38W18D	21-Jul-93	REG	BARIUM	13.1	B	
B38W18D	13-May-94	REG	BARIUM	14.7	=	
B38W18D	15-May-95	REG	BARIUM	22.7	=	
B38W18D	14-May-96	REG	BARIUM	22.1	=	
B38W18D	9-May-97	REG	BARIUM	17.2		
B38W18D	8-Jun-98	REG	BARIUM	18.8		
B38W18D	20-May-99	REG	BARIUM	20.8		
B38W18D	6-Jul-00	REG	BARIUM	22.9		
B38W18D	20-Jun-01	REG	BARIUM	19		
B38W18D	3-Jul-02	DUP	BARIUM	27.8		
B38W18D	02-Jul_03	DUP	BARIUM	28		
B38W19D	16-May-94	REG	BARIUM	30.8	=	
B38W19D	10-May-95	REG	BARIUM	22.4	=	
B38W19D	16-May-96	REG	BARIUM	29.7	=	
B38W19D	16-May-97	REG	BARIUM	29.5		
B38W19D	17-Jun-98	REG	BARIUM	32.4		
B38W19D	23-Jul-93	REG	BARIUM	23.9	B	
B38W19D	23-May-99	REG	BARIUM	31		
B38W19D	12-Jul-00	REG	BARIUM	26.9		
B38W19D	13-Jun-01	REG	BARIUM	33.2		
B38W19D	9-Jul-02	REG	BARIUM	34.9		J
B38W19D	11-Jul-03	REG	BARIUM	36.9		
B38W19S	27-May-94	REG	BARIUM	50.2	=	
B38W19S	17-May-95	REG	BARIUM	47.5	=	
B38W19S	10-May-96	REG	BARIUM	43.1	=	
B38W19S	29-Jun-98	REG	BARIUM	42.7		
B38W19S	14-May-99	REG	BARIUM	43.2		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W19S	13-Jun-01	REG	BARIUM	36.5		
B38W19S	9-Jul-02	REG	BARIUM	32.6	J	
B38W19S	11-Jul-03	REg	BARIUM	31.1		
B38W24D	9-Aug-93	REG	BARIUM	49.6	B	
B38W24D	18-May-94	REG	BARIUM	41.2	=	
B38W24D	17-May-95	REG	BARIUM	24.6	=	
B38W24D	9-May-96	REG	BARIUM	56.2	=	
B38W24D	2-Jun-97	REG	BARIUM	50.6		
B38W24D	2-Jul-98	REG	BARIUM	96.5		
B38W24D	13-May-99	REG	BARIUM	45.6		
B38W24D	22-Jun-00	REG	BARIUM	240		J
B38W24D	5-Jul-01	REG	BARIUM	52.7		
B38W24D	15-Jul-02	REG	BARIUM	30.6		
B38W24D	7-Jul-03	REG	BARIUM	71.7		
B38W24S	5-Aug-93	REG	BARIUM	45	B	
B38W24S	25-May-94	REG	BARIUM	46	=	
B38W24S	17-May-95	REG	BARIUM	45.6	=	
B38W24S	9-May-96	REG	BARIUM	39.4	=	
B38W24S	2-Jun-97	REG	BARIUM	43.9		
B38W24S	2-Jul-98	REG	BARIUM	43.3		
B38W24S	2-May-99	DUP	BARIUM	39.1		
B38W24S	21-Jun-00	REG	BARIUM	36.2		
B38W24S	27-Jun-01	REG	BARIUM	34.1		
B38W24S	15-Jul-02	REG	BARIUM	34.2		
B38W24S	7-Jul-03	REG	BARIUM	40.8		
B38W25D	3-Aug-93	REG	BARIUM	49	B	
B38W25D	18-May-94	REG	BARIUM	51.7	=	
B38W25D	12-May-95	REG	BARIUM	62.7	=	
B38W25D	15-May-96	REG	BARIUM	54.5	=	
B38W25D	15-May-97	REG	BARIUM	48.3		
B38W25D	1-Jul-98	REG	BARIUM	48.1		
B38W25D	26-May-99	REG	BARIUM	58.4		
B38W25D	7-Jul-00	REG	BARIUM	61.4		
B38W25D	10-Jul-01	DUP	BARIUM	61.4		
B38W25D	10-Jul-02	REG	BARIUM	92.2		J
B38W25D	15-Jul-03	REG	BARIUM	312		
B38W25S	3-Aug-93	REG	BARIUM	126	B	
B38W25S	24-May-94	REG	BARIUM	50.5	=	
B38W25S	15-May-95	REG	BARIUM	68.5	=	
B38W25S	15-May-95	DUP	BARIUM	43.1	=	
B38W25S	15-May-96	REG	BARIUM	39	=	
B38W25S	15-May-96	DUP	BARIUM	39.4	=	
B38W25S	5-Jun-97	REG	BARIUM	47		
B38W25S	1-Jul-98	REG	BARIUM	112		
B38W25S	17-May-99	REG	BARIUM	73.6		
B38W25S	7-Jul-00	REG	BARIUM	166		
B38W25S	10-Jul-01	REG	BARIUM	198		
B38W25S	10-Jul-02	REG	BARIUM	294		J

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W25S	15-Jul-03	REG	BARIUM	339		
MISS01AA	31-Jul-93	REG	BARIUM	159	B	
MISS01AA	23-May-94	REG	BARIUM	19.5	=	
MISS01AA	18-May-95	REG	BARIUM	10.6	=	
MISS01AA	9-May-96	REG	BARIUM	14.4	=	
MISS01AA	23-May-97	REG	BARIUM	7		
MISS01AA	18-Jun-98	REG	BARIUM	8.1		
MISS01AA	12-May-99	REG	BARIUM	8.7		
MISS01AA	20-Jun-00	REG	BARIUM	6.9		
MISS01AA	20-Jun-01	REG	BARIUM	9		
MISS01AA	11-Jul-02	REG	BARIUM	6.4		J
MISS01AA	9-Jul-03	REG	BARIUM	7.7		J
MISS01B	21-Jul-93	REG	BARIUM	72.9	B	
MISS01B	21-Jul-93	REG	BARIUM	69.6	B	
MISS01B	16-May-94	REG	BARIUM	82.9	=	
MISS01B	10-May-95	REG	BARIUM	66.9	=	
MISS01B	15-May-96	REG	BARIUM	98.3	=	
MISS01B	18-Jun-98	REG	BARIUM	80		
MISS01B	25-May-99	REG	BARIUM	73.5		
MISS01B	20-Jun-00	REG	BARIUM	66.7		
MISS01B	19-Jun-01	REG	BARIUM	71.4		
MISS01B	18-Jul-02	DUP	BARIUM	66.8		
MISS01B	9-Jul-03	REG	BARIUM	86.6		
MISS02A	20-Jul-93	REG	BARIUM	10	=	
MISS02A	12-May-94	REG	BARIUM	10.1	=	J
MISS02A	10-May-95	REG	BARIUM	12	=	
MISS02A	16-May-96	REG	BARIUM	9.5	=	
MISS02A	15-May-97	DUP	BARIUM	8.4		
MISS02A	11-Jun-98	DUP	BARIUM	6.2		
MISS02A	18-May-99	DUP	BARIUM	21		
MISS02A	22-Jun-00	REG	BARIUM	8.6		
MISS02A	5-Jul-01	REG	BARIUM	1.5		
MISS02A	8-Jul-02	REG	BARIUM	9.4		J
MISS02B	20-Jul-93	REG	BARIUM	13.3	=	
MISS02B	13-May-94	REG	BARIUM	7.8	=	
MISS02B	9-May-95	REG	BARIUM	18.1	=	
MISS02B	14-May-96	REG	BARIUM	9.2	=	
MISS02B	19-May-97	REG	BARIUM	9		
MISS02B	10-Jun-98	REG	BARIUM	10		
MISS02B	18-May-99	REG	BARIUM	11		
MISS02B	23-Jun-00	REG	BARIUM	11.4		
MISS02B	5-Jul-01	REG	BARIUM	10.3		
MISS02B	8-Jul-02	REG	BARIUM	10.5		J
MISS02B	30-Jun-03	REG	BARIUM	13.2		
MISS05A	27-May-94	REG	BARIUM	28.2	=	
MISS05A	12-May-95	REG	BARIUM	37.8	=	
MISS05A	10-May-96	REG	BARIUM	32	=	
MISS05A	2-Jun-97	REG	BARIUM	23.1		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
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Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS05A	29-Jun-98	REG	BARIUM	18.4		
MISS05A	14-May-99	REG	BARIUM	20.3		
MISS05A	19-Jun-01	REG	BARIUM	17.2		
MISS05A	1-Aug-02	REG	BARIUM	16.1		
MISS05A	14-Jul-03	REG	BARIUM	15.4		
MISS05B	23-Jul-93	REG	BARIUM	52.2	B	
MISS05B	17-May-94	REG	BARIUM	89.9	=	
MISS05B	11-May-95	REG	BARIUM	128	=	
MISS05B	16-May-96	REG	BARIUM	38.3	=	
MISS05B	14-May-97	REG	BARIUM	37.9		
MISS05B	30-Jun-98	REG	BARIUM	26.3		
MISS05B	11-Jul-00	REG	BARIUM	41.6		
MISS05B	18-Jun-01	REG	BARIUM	62.2		
MISS05B	31-Jul-02	REG	BARIUM	125		
MISS05B	16-Jul-03	REG	BARIUM	54.7		
MISS06A	4-Aug-93	REG	BARIUM	80.3	B	
MISS06A	24-May-94	REG	BARIUM	44.3	=	
MISS06A	16-May-95	REG	BARIUM	122	=	
MISS06A	10-May-96	REG	BARIUM	39.4	=	
MISS06A	3-Jun-97	REG	BARIUM	57.9		
MISS06A	1-Jul-98	REG	BARIUM	48.1		
MISS06A	17-May-99	REG	BARIUM	48		
MISS06A	10-Jul-00	REG	BARIUM	51.4		
MISS06A	20-Jun-01	REG	BARIUM	54.8		
MISS06A	10-Jul-02	REG	BARIUM	33.1		J
MISS06A	2-Jul-03	REG	BARIUM	67.5		
MISS07B	12-Jul-00	REG	BARIUM	20		
MISS07B	11-Jul-02	DUP	BARIUM	15.9		J
MISS07B	14-Jul-03	REG	BARIUM	17.8		
B38W01S	28-Jul-93	REG	BERYLLIUM	4	B	
B38W01S	23-May-94	REG	BERYLLIUM	1.1	=	
B38W01S	21-May-95	REG	BERYLLIUM	3.1	=	
B38W01S	17-May-96	REG	BERYLLIUM	2.3	=	
B38W01S	4-Jun-97	REG	BERYLLIUM	2.7		
B38W01S	7-Jul-98	REG	BERYLLIUM	1.9		
B38W01S	11-Jul-01	DUP	BERYLLIUM	2.2		
B38W01S	17-Jul-02	REG	BERYLLIUM	1.6		J
B38W01S	27-Jun-03	REG	BERYLLIUM	1.8		
B38W02D	4-Jun-97	REG	BERYLLIUM	0.24		
B38W02D	28-Jun-01	REG	BERYLLIUM	0.2		
MISS07B	16-Jun-98	REG	BERYLLIUM	0.14		
MISS07B	11-Jun-01	REG	BERYLLIUM	0.36		
B38W14D	4-Jun-97	REG	BERYLLIUM	0.2		
B38W14D	2-Jul-01	REG	BERYLLIUM	0.2		
B38W14S	4-Jun-97	REG	BERYLLIUM	0.28		
B38W14S	2-Jul-01	REG	BERYLLIUM	0.2		
B38W15D	26-May-94	REG	BERYLLIUM	0.5	=	
B38W15D	3-Jun-97	REG	BERYLLIUM	0.24		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W15D	27-Jun-01	REG	BERYLLIUM	0.2		
B38W15S	3-Jun-97	REG	BERYLLIUM	0.2		
B38W15S	27-Jun-01	REG	BERYLLIUM	0.2		
B38W17A	28-Jul-93	REG	BERYLLIUM	2.7	B	
B38W17A	3-Jun-97	REG	BERYLLIUM	0.2		
B38W17A	19-Jun-00	REG	BERYLLIUM	0.21		J
B38W17A	14-Jun-01	REG	BERYLLIUM	0.24		
B38W17B	3-Jun-97	REG	BERYLLIUM	0.26		
B38W17B	14-Jun-01	REG	BERYLLIUM	0.44		
B38W18D	15-May-95	REG	BERYLLIUM	1.1	=	
B38W18D	14-May-96	REG	BERYLLIUM	0.84	=	
B38W18D	9-May-97	REG	BERYLLIUM	0.46		
B38W18D	8-Jun-98	REG	BERYLLIUM	0.86		
B38W18D	20-May-99	DUP	BERYLLIUM	0.99		
B38W18D	6-Jul-00	REG	BERYLLIUM	0.52		J
B38W18D	20-Jun-01	REG	BERYLLIUM	0.2		
B38W18D	2-Jul-03	REG	BERYLLIUM	1.3		J
B38W24D	2-Jun-97	REG	BERYLLIUM	0.52		
B38W24D	2-Jul-98	REG	BERYLLIUM	0.82		
B38W24D	13-May-99	REG	BERYLLIUM	0.42		
B38W24D	5-Jul-01	REG	BERYLLIUM	0.64		
B38W24S	25-May-94	REG	BERYLLIUM	1.5	=	
B38W24S	17-May-95	REG	BERYLLIUM	0.77	=	
B38W24S	9-May-96	REG	BERYLLIUM	2	=	
B38W24S	2-Jun-97	REG	BERYLLIUM	6.3		
B38W24S	2-Jul-98	REG	BERYLLIUM	4.5		
B38W24S	13-May-99	REG	BERYLLIUM	1.1		
B38W24S	21-Jun-00	REG	BERYLLIUM	1.1		
B38W24S	27-Jun-01	REG	BERYLLIUM	1.4		
B38W24S	15-Jul-02	REG	BERYLLIUM	1.4		J
B38W24S	7-Jul-03	REG	BERYLLIUM	1.4		
B38W25S	3-Aug-93	REG	BERYLLIUM	1.1	B	
B38W25S	5-Jun-97	REG	BERYLLIUM	0.3		
B38W25S	10-Jul-01	REG	BERYLLIUM	0.3		
MISS02B	20-Jul-93	REG	BERYLLIUM	1.8	=	
MISS02B	14-May-96	REG	BERYLLIUM	0.68	=	
MISS02B	19-May-97	REG	BERYLLIUM	0.66		
MISS02B	10-Jun-98	REG	BERYLLIUM	0.74		
MISS02B	18-May-99	REG	BERYLLIUM	0.84		
MISS02B	23-Jun-00	REG	BERYLLIUM	0.57		J
MISS02B	5-Jul-01	REG	BERYLLIUM	0.3		
MISS05A	2-Jun-97	REG	BERYLLIUM	0.48		
MISS05A	29-Jun-98	REG	BERYLLIUM	0.14		
MISS05A	19-Jun-01	REG	BERYLLIUM	0.2		
B38W01S	28-Jul-93	REG	BORON	516	=	
B38W01S	23-May-94	REG	BORON	496	=	
B38W01S	21-May-95	REG	BORON	444	=	
B38W01S	4-Jun-97	REG	BORON	373		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W01S	7-Jul-98	REG	BORON	270		
B38W01S	11-Jul-01	DUP	BORON	276		
B38W01S	17-Jul-02	REG	BORON	239		
B38W01S	27-Jun-03	REG	BORON	282		
B38W02D	20-May-95	REG	BORON	125	=	
B38W02D	4-Jun-97	REG	BORON	23.3		
B38W02D	30-Jun-98	REG	BORON	24.8		
B38W02D	20-May-99	REG	BORON	24.2		
B38W02D	28-Jun-01	REG	BORON	19.7		
B38W02D	17-Jul-02	REG	BORON	50		UJ
B38W14D	4-Aug-93	REG	BORON	63.9	=	
B38W14D	20-May-95	REG	BORON	108	=	
B38W14D	4-Jun-97	REG	BORON	49.8		
B38W14D	7-Jul-98	DUP	BORON	49.8		
B38W14D	17-May-99	REG	BORON	47.5		
B38W14D	2-Jul-01	REG	BORON	42.2		
B38W14D	24-Jul-02	REG	BORON	76		J
B38W14D	10-Jul-03	REG	BORON	54.2		
B38W14S	4-Aug-93	REG	BORON	68	=	
B38W14S	20-May-95	REG	BORON	142	=	
B38W14S	4-Jun-97	REG	BORON	40.6		
B38W14S	7-Jul-98	REG	BORON	39.3		
B38W14S	17-May-99	REG	BORON	38.6		
B38W14S	2-Jul-01	REG	BORON	34.5		
B38W14S	24-Jul-02	REG	BORON	82.1		J
B38W14S	10-Jul-03	REG	BORON	56.4		
B38W15D	2-Aug-93	REG	BORON	297	=	
B38W15D	26-May-94	REG	BORON	520	=	
B38W15D	19-May-95	REG	BORON	338	=	
B38W15D	13-May-96	REG	BORON	521	=	
B38W15D	3-Jun-97	REG	BORON	415		
B38W15D	6-Jul-98	REG	BORON	235		
B38W15D	27-Jun-01	DUP	BORON	210		
B38W15D	16-Jul-02	REG	BORON	616		
B38W15D	1-Jul-03	REG	BORON	700		
B38W15S	2-Aug-93	REG	BORON	532	=	
B38W15S	26-May-94	REG	BORON	425	=	
B38W15S	19-May-95	REG	BORON	608	=	
B38W15S	19-May-95	DUP	BORON	566	=	
B38W15S	13-May-96	REG	BORON	432	=	
B38W15S	3-Jun-97	REG	BORON	492		
B38W15S	6-Jul-98	REG	BORON	455		
B38W15S	27-Jun-01	REG	BORON	642		
B38W15S	16-Jul-02	REG	BORON	713		
B38W15S	1-Jul-03	REG	BORON	616		
B38W17A	20-May-95	REG	BORON	156	=	
B38W17A	13-May-96	REG	BORON	143	=	
B38W17A	3-Jun-97	REG	BORON	72.3		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W17A	2-Jul-98	REG	BORON	63.7		
B38W17A	13-May-99	REG	BORON	66.2		
B38W17A	14-Jun-01	REG	BORON	62.4		
B38W17A	2-Jul-02	REG	BORON	63		J
B38W17A	26-Jun-03	REG	BORON	66.3		
B38W17B	29-Jul-93	REG	BORON	392	=	
B38W17B	25-May-94	REG	BORON	355	=	
B38W17B	20-May-95	REG	BORON	382	=	
B38W17B	13-May-96	REG	BORON	303	=	
B38W17B	3-Jun-97	REG	BORON	365		
B38W17B	2-Jul-98	REG	BORON	289		
B38W17B	13-May-99	REG	BORON	317		
B38W17B	14-Jun-01	REG	BORON	315		
B38W17B	2-Jul-02	REG	BORON	267		
B38W17B	26-Jun-03	REG	BORON	250		
B38W18D	21-Jul-93	REG	BORON	491	=	
B38W18D	13-May-94	REG	BORON	449	=	J
B38W18D	15-May-95	REG	BORON	425	=	
B38W18D	9-May-97	REG	BORON	405		
B38W18D	8-Jun-98	REG	BORON	425		
B38W18D	20-May-99	REG	BORON	366		
B38W18D	20-Jun-01	REG	BORON	173		
B38W18D	3-Jul-02	DUP	BORON	348		
B38W18D	2-Jul-03	DUP	BORON	387		
B38W19D	23-Jul-93	REG	BORON	2020	=	
B38W19D	16-May-94	REG	BORON	1020	=	
B38W19D	10-May-95	REG	BORON	885	=	
B38W19D	16-May-96	REG	BORON	762	=	J
B38W19D	16-May-97	REG	BORON	879		
B38W19D	17-Jun-98	REG	BORON	962		
B38W19D	27-May-99	REG	BORON	1120		
B38W19D	13-Jun-01	REG	BORON	717		
B38W19D	9-Jul-02	REG	BORON	1100		
B38W19D	11-Jul-03	REG	BORON	563		
B38W19S	27-May-94	REG	BORON	1130	=	
B38W19S	17-May-95	REG	BORON	1240	=	
B38W19S	10-May-96	REG	BORON	1030	=	
B38W19S	29-Jun-98	REG	BORON	741		
B38W19S	14-May-99	REG	BORON	756		
B38W19S	13-Jun-01	REG	BORON	746		
B38W19S	9-Jul-02	REG	BORON	801		
B38W19S	11-Jul-03	REG	BORON	631		
B38W24D	9-Aug-93	REG	BORON	142	=	
B38W24D	9-May-96	REG	BORON	138	=	
B38W24D	2-Jun-97	REG	BORON	90.4		
B38W24D	2-Jul-98	REG	BORON	76.6		
B38W24D	13-May-99	REG	BORON	98.3		
B38W24D	5-Jul-01	REG	BORON	89.4		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W24D	15-Jul-02	REG	BORON	89.7		
B38W24D	7-Jul-03	REG	BORON	96.2		
B38W24S	5-Aug-93	REG	BORON	104	=	
B38W24S	17-May-95	REG	BORON	132	=	
B38W24S	9-May-96	REG	BORON	105	=	
B38W24S	2-Jun-97	REG	BORON	79.3		
B38W24S	2-Jul-98	REG	BORON	82		
B38W24S	13-May-99	REG	BORON	104		
B38W24S	27-Jun-01	REG	BORON	92.8		
B38W24S	15-Jul-02	REG	BORON	108		
B38W24S	7-Jul-03	REG	BORON	101		
B38W25D	3-Aug-93	REG	BORON	168	=	
B38W25D	18-May-94	REG	BORON	172	=	
B38W25D	12-May-95	REG	BORON	236	=	J
B38W25D	15-May-96	REG	BORON	159	=	
B38W25D	15-May-97	REG	BORON	154		
B38W25D	1-Jul-98	REG	BORON	138		
B38W25D	26-May-99	REG	BORON	146		
B38W25D	10-Jul-01	REG	BORON	128		
B38W25S	3-Aug-93	REG	BORON	134	=	
B38W25S	24-May-94	REG	BORON	133	=	UJ
B38W25S	15-May-95	REG	BORON	227	=	
B38W25S	15-May-95	DUP	BORON	171	=	
B38W25S	15-May-96	REG	BORON	150	=	
B38W25S	15-May-96	DUP	BORON	142	=	
B38W25S	5-Jun-97	REG	BORON	126		
B38W25S	1-Jul-98	REG	BORON	98.4		
B38W25S	17-May-99	REG	BORON	79.6		
B38W25S	10-Jul-01	REG	BORON	79.3		
MISS01AA	31-Jul-93	REG	BORON	189	=	
MISS01AA	23-May-94	REG	BORON	204	=	
MISS01AA	18-May-95	REG	BORON	222	=	
MISS01AA	9-May-96	REG	BORON	178	=	
MISS01AA	23-May-97	REG	BORON	234		
MISS01AA	18-Jun-98	REG	BORON	270		
MISS01AA	12-May-99	REG	BORON	278		
MISS01AA	20-Jun-01	REG	BORON	376		
MISS01AA	11-Jul-02	REG	BORON	260		J
MISS01AA	9-Jul-03	REG	BORON	293		
MISS01B	21-Jul-93	REG	BORON	106	=	
MISS01B	21-Jul-93	REG	BORON	85.3	=	
MISS01B	15-May-96	REG	BORON	94.9	=	
MISS01B	18-Jun-98	REG	BORON	72.1		
MISS01B	25-May-99	REG	BORON	61.6		
MISS01B	19-Jun-01	REG	BORON	62.4		
MISS01B	18-Jul-02	DUP	BORON	54.8		J
MISS01B	9-Jul-03	REG	BORON	75.4		
MISS02A	20-Jul-93	REG	BORON	1300	=	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS02A	12-May-94	REG	BORON	897	=	J
MISS02A	10-May-95	REG	BORON	1190	=	
MISS02A	16-May-96	REG	BORON	878	=	J
MISS02A	15-May-97	REG	BORON	1000		
MISS02A	15-May-97	DUP	BORON	910		
MISS02A	11-Jun-98	DUP	BORON	818		
MISS02A	18-May-99	REG	BORON	1680		
MISS02A	5-Jul-01	REG	BORON	977		
MISS02A	8-Jul-02	REG	BORON	2080		
MISS02A	30-Jun-03	REG	BORON	1070		
MISS02B	20-Jul-93	REG	BORON	2150	=	
MISS02B	13-May-94	REG	BORON	1260	=	J
MISS02B	9-May-95	REG	BORON	1220	=	
MISS02B	14-May-96	REG	BORON	1680	=	
MISS02B	19-May-97	REG	BORON	1450		
MISS02B	10-Jun-98	REG	BORON	1620		
MISS02B	18-May-99	REG	BORON	1580		
MISS02B	5-Jul-01	REG	BORON	4110		
MISS02B	8-Jul-02	REG	BORON	1190		
MISS02B	30-Jun-03	REG	BORON	1660		
MISS05A	27-May-94	REG	BORON	420	=	
MISS05A	12-May-95	REG	BORON	588	=	J
MISS05A	10-May-96	REG	BORON	385	=	
MISS05A	2-Jun-97	REG	BORON	402		
MISS05A	29-Jun-98	REG	BORON	291		
MISS05A	14-May-99	REG	BORON	352		
MISS05A	19-Jun-01	REG	BORON	326		
MISS05A	1-Aug-02	REG	BORON	452		
MISS05A	14-Jul-03	REG	BORON	303		
MISS05B	17-May-94	REG	BORON	747	=	
MISS05B	11-May-95	REG	BORON	665	=	J
MISS05B	14-May-97	REG	BORON	662		
MISS05B	30-Jun-98	REG	BORON	281		
MISS05B	23-Jul-93	REG	BORON	806	=	
MISS05B	18-Jun-01	REG	BORON	371		
MISS05B	31-Jul-02	REG	BORON	429		
MISS05B	16-Jul-03	REG	BORON	267		
MISS06A	4-Aug-93	REG	BORON	1800	=	
MISS06A	24-May-94	REG	BORON	498	=	J
MISS06A	16-May-95	REG	BORON	2080	=	
MISS06A	10-May-96	REG	BORON	326	=	
MISS06A	3-Jun-97	REG	BORON	482		
MISS06A	1-Jul-98	REG	BORON	327		
MISS06A	17-May-99	REG	BORON	352		
MISS06A	20-Jun-01	REG	BORON	165		
MISS06A	2-Jul-03	REG	BORON	147		
MISS07B	22-Jul-93	REG	BORON	1180	=	
MISS07B	18-May-94	REG	BORON	757	=	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS07B	11-May-95	REG	BORON	1210	=	J
MISS07B	16-May-96	REG	BORON	963	=	
MISS07B	16-May-97	REG	BORON	1050		
MISS07B	16-Jun-98	REG	BORON	1260		
MISS07B	27-May-99	REG	BORON	1670		
MISS07B	11-Jun-01	REG	BORON	2860		
MISS07B	11-Jul-02	REG	BORON	2120		
MISS07B	14-Jul-03	REG	BORON	17.8		
B38W01S	23-May-94	REG	CADMIUM	2.4	=	
B38W01S	4-Jun-97	REG	CADMIUM	0.66		
B38W01S	7-Jul-98	REG	CADMIUM	1.2		
B38W01S	11-Jul-01	REG	CADMIUM	0.37		
B38W14D	4-Aug-93	REG	CADMIUM	9.7	=	J
B38W14D	4-Jun-97	REG	CADMIUM	1		
B38W14D	7-Jul-98	DUP	CADMIUM	2.4		
B38W14D	7-Jul-98	REG	CADMIUM	2.4		
B38W14D	5-Jul-00	REG	CADMIUM	2.9		
B38W14D	2-Jul-01	REG	CADMIUM	4.7		
B38W14S	4-Aug-93	REG	CADMIUM	9.5	=	J
B38W14S	4-Jun-97	REG	CADMIUM	1.3		
B38W14S	7-Jul-98	REG	CADMIUM	11.9		
B38W14S	5-Jul-00	REG	CADMIUM	1.1		
B38W14S	2-Jul-01	REG	CADMIUM	0.48		
B38W15D	2-Aug-93	REG	CADMIUM	6.4	=	
B38W15D	6-Jul-98	REG	CADMIUM	0.44		
B38W15D	27-Jun-01	DUP	CADMIUM	0.82		
B38W15S	3-Jun-97	REG	CADMIUM	2.6		
B38W15S	6-Jul-98	REG	CADMIUM	2.2		
B38W15S	27-Jun-01	REG	CADMIUM	0.51		
B38W15S	16-Jul-02	REG	CADMIUM	3.4		J
B38W17A	2-Jul-98	REG	CADMIUM	0.79		
B38W17A	14-Jun-01	REG	CADMIUM	0.3		
B38W17B	3-Jun-97	REG	CADMIUM	0.33		
B38W17B	2-Jul-98	REG	CADMIUM	0.36		
B38W17B	14-Jun-01	REG	CADMIUM	0.3		
B38W19D	16-May-97	REG	CADMIUM	0.44		
B38W19D	17-Jun-98	REG	CADMIUM	0.26		
B38W19D	13-Jun-01	REG	CADMIUM	0.3		
B38W19S	29-Jun-98	REG	CADMIUM	0.54		
B38W19S	13-Jun-01	REG	CADMIUM	0.3		
B38W24D	2-Jul-98	REG	CADMIUM	2.6		
B38W24D	5-Jul-01	REG	CADMIUM	0.69		
B38W24D	7-Jul-03	REG	CADMIUM	1.1		
B38W24S	2-Jul-98	REG	CADMIUM	0.79		
B38W24S	27-Jun-01	REG	CADMIUM	0.44		
B38W25S	5-Jun-97	REG	CADMIUM	0.4		
B38W25S	1-Jul-98	REG	CADMIUM	1.4		
B38W25S	7-Jul-00	REG	CADMIUM	1.4		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W25S	10-Jul-01	REG	CADMIUM	0.46		
MISS01AA	31-Jul-93	REG	CADMIUM	7	=	
MISS01AA	23-May-97	REG	CADMIUM	1.4		
MISS01AA	18-Jun-98	REG	CADMIUM	0.82		
MISS01AA	20-Jun-01	REG	CADMIUM	0.3		
MISS02A	12-May-94	REG	CADMIUM	7.9	=	
MISS02A	15-May-97	REG	CADMIUM	0.46		
MISS02A	15-May-97	DUP	CADMIUM	0.32		
MISS02A	5-Jul-01	REG	CADMIUM	0.3		
MISS02B	23-Jun-00	REG	CADMIUM	0.97		
MISS05A	29-Jun-98	REG	CADMIUM	0.98		
MISS05A	19-Jun-01	REG	CADMIUM	0.3		
MISS05B	30-Jun-98	REG	CADMIUM	0.48		
MISS05B	18-Jun-01	REG	CADMIUM	0.3		
MISS06A	24-May-94	REG	CADMIUM	4.2	=	UJ
MISS06A	3-Jun-97	REG	CADMIUM	2.6		
MISS06A	1-Jul-98	REG	CADMIUM	2.2		
MISS06A	10-Jul-00	REG	CADMIUM	1.5		
MISS06A	20-Jun-01	REG	CADMIUM	2.7		
MISS06A	2-Jul-03	REG	CADMIUM	5.6		
B38W01S	28-Jul-93	REG	CALCIUM	427000	=	
B38W01S	23-May-94	REG	CALCIUM	392000	=	
B38W01S	21-May-95	REG	CALCIUM	371000	=	
B38W01S	17-May-96	REG	CALCIUM	420000	=	
B38W01S	4-Jun-97	REG	CALCIUM	433000		
B38W01S	7-Jul-98	REG	CALCIUM	404000		
B38W01S	17-Jul-02	REG	CALCIUM	308000		
B38W01S	27-Jun-03	REG	CALCIUM	363000		
B38W02D	27-Jul-93	REG	CALCIUM	89000	=	
B38W02D	19-May-94	REG	CALCIUM	77700	=	
B38W02D	20-May-95	REG	CALCIUM	73700	=	
B38W02D	17-May-96	REG	CALCIUM	87700	=	
B38W02D	4-Jun-97	REG	CALCIUM	88700		
B38W02D	30-Jun-98	REG	CALCIUM	84700		
B38W02D	20-May-99	REG	CALCIUM	95600		
B38W02D	13-Jul-00	REG	CALCIUM	86300		
B38W02D	17-Jul-02	REG	CALCIUM	84400		
B38W02D	27-Jun-03	REG	CALCIUM	73500		
B38W14D	4-Aug-93	REG	CALCIUM	97900	=	J
B38W14D	20-May-95	REG	CALCIUM	77400	=	
B38W14D	17-May-96	REG	CALCIUM	111000	=	
B38W14D	4-Jun-97	REG	CALCIUM	110000		
B38W14D	7-Jul-98	DUP	CALCIUM	109000		
B38W14D	17-May-99	DUP	CALCIUM	119000		
B38W14D	5-Jul-00	REG	CALCIUM	102000		
B38W14D	24-Jul-02	REG	CALCIUM	100000		
B38W14D	10-Jul-03	REG	CALCIUM	124000		
B38W14S	4-Aug-93	REG	CALCIUM	47800	=	J

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W14S	20-May-95	REG	CALCIUM	70800	=	
B38W14S	17-May-96	REG	CALCIUM	99700	=	
B38W14S	17-May-96	DUP	CALCIUM	90600	=	
B38W14S	4-Jun-97	REG	CALCIUM	90500		
B38W14S	7-Jul-98	REG	CALCIUM	85200		
B38W14S	17-May-99	REG	CALCIUM	95600		
B38W14S	5-Jul-00	REG	CALCIUM	94600		
B38W14S	24-Jul-02	REG	CALCIUM	98400		
B38W14S	10-Jul-03	REG	CALCIUM	102000		
B38W15D	2-Aug-93	REG	CALCIUM	48600	=	
B38W15D	26-May-94	REG	CALCIUM	92800	=	
B38W15D	19-May-95	REG	CALCIUM	58700	=	J
B38W15D	13-May-96	REG	CALCIUM	98600	=	J
B38W15D	3-Jun-97	REG	CALCIUM	71300		
B38W15D	6-Jul-98	REG	CALCIUM	44400		
B38W15D	26-Jun-00	REG	CALCIUM	102000		
B38W15D	16-Jul-02	REG	CALCIUM	80400		
B38W15D	1-Jul-03	REG	CALCIUM	101000		
B38W15S	2-Aug-93	REG	CALCIUM	75700	=	
B38W15S	26-May-94	REG	CALCIUM	55100	=	
B38W15S	19-May-95	REG	CALCIUM	80500	=	J
B38W15S	19-May-95	DUP	CALCIUM	75100	=	J
B38W15S	13-May-96	REG	CALCIUM	52500	=	J
B38W15S	3-Jun-97	REG	CALCIUM	57200		
B38W15S	6-Jul-98	REG	CALCIUM	55400		
B38W15S	26-Jun-00	REG	CALCIUM	80500		
B38W15S	16-Jul-02	REG	CALCIUM	82200		
B38W15S	1-Jul-03	REG	CALCIUM	66700		
B38W17A	28-Jul-93	REG	CALCIUM	133000	=	
B38W17A	25-May-94	REG	CALCIUM	75000	=	
B38W17A	20-May-95	REG	CALCIUM	57300	=	
B38W17A	13-May-96	REG	CALCIUM	93800	=	J
B38W17A	3-Jun-97	REG	CALCIUM	53400		
B38W17A	2-Jul-98	REG	CALCIUM	60800		
B38W17A	17-May-99	DUP	CALCIUM	88300		
B38W17A	19-Jun-00	REG	CALCIUM	54000		
B38W17A	2-Jul-02	REG	CALCIUM	77700		
B38W17A	26-Jun-03	REG	CALCIUM	83000		
B38W17B	29-Jul-93	REG	CALCIUM	219000	=	J
B38W17B	25-May-94	REG	CALCIUM	291000	=	
B38W17B	20-May-95	REG	CALCIUM	223000	=	
B38W17B	13-May-96	REG	CALCIUM	309000	=	J
B38W17B	3-Jun-97	REG	CALCIUM	313000		
B38W17B	2-Jul-98	REG	CALCIUM	235000		
B38W17B	13-May-99	REG	CALCIUM	303000		
B38W17B	19-Jun-00	REG	CALCIUM	258000		
B38W17B	2-Jul-02	REG	CALCIUM	230000		
B38W17B	26-Jun-03	REG	CALCIUM	266000		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W18D	21-Jul-93	REG	CALCIUM	151000	=	
B38W18D	13-May-94	REG	CALCIUM	164000	=	J
B38W18D	15-May-95	REG	CALCIUM	154000	=	
B38W18D	14-May-96	REG	CALCIUM	166000	=	
B38W18D	9-May-97	REG	CALCIUM	154000		
B38W18D	8-Jun-98	REG	CALCIUM	162000		
B38W18D	20-May-99	REG	CALCIUM	161000		
B38W18D	6-Jul-00	REG	CALCIUM	143000		
B38W18D	3-Jul-02	REG	CALCIUM	189000		
B38W18D	2-Jul-03	DUP	CALCIUM	232000		
B38W19D	23-Jul-93	REG	CALCIUM	214000	=	
B38W19D	16-May-94	REG	CALCIUM	296000	=	
B38W19D	10-May-95	REG	CALCIUM	180000	=	
B38W19D	16-May-96	REG	CALCIUM	262000	=	
B38W19D	16-May-97	REG	CALCIUM	256000		
B38W19D	17-Jun-98	REG	CALCIUM	226000		
B38W19D	17-Jun-98	REG	CALCIUM	209000		
B38W19D	27-May-99	REG	CALCIUM	258000		
B38W19D	12-Jul-00	REG	CALCIUM	192000		
B38W19D	9-Jul-02	REG	CALCIUM	234000		
B38W19D	11-Jul-03	REG	CALCIUM	224000		
B38W19S	27-May-94	REG	CALCIUM	629000	=	
B38W19S	17-May-95	REG	CALCIUM	657000	=	
B38W19S	10-May-96	REG	CALCIUM	611000	=	J
B38W19S	29-Jun-98	REG	CALCIUM	670000		
B38W19S	27-May-99	REG	CALCIUM	654000		
B38W19S	9-Jul-02	REG	CALCIUM	582000		
B38W19S	11-Jul-03	REG	CALCIUM	661000		
B38W24D	9-Aug-93	REG	CALCIUM	80700	=	J
B38W24D	18-May-94	REG	CALCIUM	81300	=	
B38W24D	17-May-95	REG	CALCIUM	69700	=	
B38W24D	9-May-96	REG	CALCIUM	98300	=	J
B38W24D	2-Jun-97	REG	CALCIUM	83600		
B38W24D	2-Jul-98	REG	CALCIUM	82900		
B38W24D	14-May-99	REG	CALCIUM	98800		
B38W24D	22-Jun-00	REG	CALCIUM	89800		
B38W24D	15-Jul-02	REG	CALCIUM	68600		
B38W24D	7-Jul-03	REG	CALCIUM	85000		
B38W24S	5-Aug-93	REG	CALCIUM	42600	=	J
B38W24S	25-May-94	REG	CALCIUM	54000	=	
B38W24S	17-May-95	REG	CALCIUM	57000	=	
B38W24S	9-May-96	REG	CALCIUM	61300	=	J
B38W24S	2-Jun-97	REG	CALCIUM	43900		
B38W24S	2-Jul-98	REG	CALCIUM	41000		
B38W24S	13-May-99	REG	CALCIUM	67100		
B38W24S	21-Jun-00	REG	CALCIUM	56700		
B38W24S	15-Jul-02	REG	CALCIUM	52200		
B38W24S	7-Jul-03	REG	CALCIUM	40000		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W25D	3-Aug-93	REG	CALCIUM	152000	=	
B38W25D	18-May-94	REG	CALCIUM	117000	=	
B38W25D	12-May-95	REG	CALCIUM	144000	=	
B38W25D	15-May-96	REG	CALCIUM	134000	=	J
B38W25D	15-May-97	REG	CALCIUM	109000		J
B38W25D	1-Jul-98	REG	CALCIUM	109000		
B38W25D	26-May-99	REG	CALCIUM	109000		
B38W25D	7-Jul-00	REG	CALCIUM	99500		
B38W25D	10-Jul-02	REG	CALCIUM	126000		
B38W25D	15-Jul-03	REG	CALCIUM	361000		
B38W25S	3-Aug-93	REG	CALCIUM	255000	=	
B38W25S	24-May-94	REG	CALCIUM	189000	=	J
B38W25S	15-May-95	REG	CALCIUM	208000	=	
B38W25S	15-May-95	DUP	CALCIUM	199000	=	
B38W25S	15-May-96	REG	CALCIUM	162000	=	J
B38W25S	15-May-96	DUP	CALCIUM	183000	=	J
B38W25S	5-Jun-97	REG	CALCIUM	169000		
B38W25S	1-Jul-98	REG	CALCIUM	144000		
B38W25S	1-May-99	REG	CALCIUM	185000		
B38W25S	7-Jul-00	REG	CALCIUM	186000		
B38W25S	10-Jul-02	REG	CALCIUM	187000		
B38W25S	15-Jul-03	REG	CALCIUM	122000		
MISS01AA	31-Jul-93	REG	CALCIUM	616000	=	J
MISS01AA	23-May-94	REG	CALCIUM	564000	=	
MISS01AA	18-May-95	REG	CALCIUM	714000	=	
MISS01AA	9-May-96	REG	CALCIUM	555000	=	J
MISS01AA	23-May-97	REG	CALCIUM	616000		
MISS01AA	18-Jun-98	REG	CALCIUM	645000		
MISS01AA	12-May-99	REG	CALCIUM	645000		
MISS01AA	20-Jun-00	REG	CALCIUM	544000		
MISS01AA	11-Jul-02	REG	CALCIUM	569000		
MISS01AA	9-Jul-03	REG	CALCIUM	640000		
MISS01B	21-Jul-93	REG	CALCIUM	92200	=	
MISS01B	16-May-94	REG	CALCIUM	90800	=	
MISS01B	10-May-95	REG	CALCIUM	84500	=	
MISS01B	15-May-96	REG	CALCIUM	97100	=	J
MISS01B	18-Jun-98	REG	CALCIUM	91900		
MISS01B	25-May-99	REG	CALCIUM	96600		
MISS01B	18-Jul-02	REG	CALCIUM	62900		
MISS01B	9-Jul-03	REG	CALCIUM	90600		
MISS02A	20-Jul-93	REG	CALCIUM	164000	=	
MISS02A	12-May-94	REG	CALCIUM	79400	=	J
MISS02A	10-May-95	REG	CALCIUM	54500	=	
MISS02A	16-May-96	REG	CALCIUM	67600	=	
MISS02A	15-May-97	REG	CALCIUM	66700		J
MISS02A	15-May-97	DUP	CALCIUM	62400		J
MISS02A	11-Jun-98	DUP	CALCIUM	106000		
MISS02A	81-May-99	REG	CALCIUM	116000		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS02A	22-Jun-00	REG	CALCIUM	116000		
MISS02A	8-Jul-02	REG	CALCIUM	225000		
MISS02A	30-Jun-03	REG	CALCIUM	184000		
MISS02B	20-Jul-93	REG	CALCIUM	295000	=	
MISS02B	13-May-94	REG	CALCIUM	221000	=	J
MISS02B	9-May-95	REG	CALCIUM	248000	=	
MISS02B	14-May-96	REG	CALCIUM	275000	=	
MISS02B	19-May-97	REG	CALCIUM	272000		
MISS02B	10-Jun-98	REG	CALCIUM	304000		
MISS02B	18-May-99	DUP	CALCIUM	304000		
MISS02B	23-Jun-00	REG	CALCIUM	240000		
MISS02B	8-Jul-02	REG	CALCIUM	255000		
MISS02B	30-Jun-03	REG	CALCIUM	268000		
MISS05A	27-May-94	REG	CALCIUM	582000	=	
MISS05A	12-May-95	REG	CALCIUM	683000	=	
MISS05A	10-May-96	REG	CALCIUM	603000	=	J
MISS05A	2-Jun-97	REG	CALCIUM	612000		
MISS05A	29-Jun-98	REG	CALCIUM	591000		
MISS05A	14-May-99	REG	CALCIUM	677000		
MISS05A	1-Aug-02	REG	CALCIUM	554000		
MISS05A	14-Jul-03	REG	CALCIUM	636000		
MISS05B	23-Jul-93	REG	CALCIUM	315000	=	
MISS05B	17-May-94	REG	CALCIUM	339000	=	
MISS05B	11-May-95	REG	CALCIUM	295000	=	
MISS05B	16-May-96	REG	CALCIUM	322000	=	
MISS05B	14-May-97	REG	CALCIUM	340000		
MISS05B	30-Jun-98	REG	CALCIUM	143000		
MISS05B	11-Jul-00	REG	CALCIUM	201000		
MISS05B	31-Jul-02	REG	CALCIUM	355000		
MISS05B	16-Jul-03	REG	CALCIUM	275000		
MISS06A	4-Aug-93	REG	CALCIUM	218000	=	J
MISS06A	24-May-94	REG	CALCIUM	249000	=	J
MISS06A	16-May-95	REG	CALCIUM	292000	=	
MISS06A	10-May-96	REG	CALCIUM	225000	=	J
MISS06A	3-Jun-97	REG	CALCIUM	273000		
MISS06A	1-Jul-98	REG	CALCIUM	198000		
MISS06A	17-May-99	DUP	CALCIUM	252000		
MISS06A	10-Jul-00	REG	CALCIUM	168000		
MISS06A	10-Jul-02	REG	CALCIUM	171000		
MISS06A	2-Jul-03	REG	CALCIUM	295000		
MISS07B	22-Jul-93	REG	CALCIUM	180000	=	
MISS07B	22-Jul-93	REG	CALCIUM	175000	=	
MISS07B	16-Jun-98	REG	CALCIUM	160000		
MISS07B	27-May-99	DUP	CALCIUM	250000		
MISS07B	12-Jul-00	REG	CALCIUM	138000		
MISS07B	11-Jul-02	REG	CALCIUM	254000		
MISS07B	14-Jul-03	REG	CALCIUM	302000		
B38W02D	27-Jul-93	REG	CHROMIUM	7.9	B	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W02D	17-May-96	REG	CHROMIUM	38.3	=	
B38W02D	4-Jun-97	REG	CHROMIUM	20.8		
B38W02D	30-Jun-98	REG	CHROMIUM	371		
B38W02D	20-May-99	REG	CHROMIUM	9.7		
B38W02D	13-Jul-00	REG	CHROMIUM	98.4		J
B38W02D	28-Jun-01	REG	CHROMIUM	48.9		
B38W02D	17-Jul-02	REG	CHROMIUM	9.7		J
B38W02D	27-Jun-03	REG	CHROMIUM	3.9		
B38W14D	4-Jun-97	REG	CHROMIUM	21.2		
B38W14D	7-Jul-98	REG	CHROMIUM	3.9		
B38W14D	7-Jul-98	DUP	CHROMIUM	2.6		
B38W14D	17-May-99	REG	CHROMIUM	1		
B38W14D	2-Jul-01	REG	CHROMIUM	8.7		
B38W14D	24-Jul-02	REG	CHROMIUM	5.5		
B38W14D	10-Jul-03	REG	CHROMIUM	6.9		
B38W14S	20-May-95	REG	CHROMIUM	35.9	=	
B38W14S	17-May-96	REG	CHROMIUM	345	=	
B38W14S	17-May-96	DUP	CHROMIUM	296	=	
B38W14S	4-Jun-97	REG	CHROMIUM	354		
B38W14S	7-Jul-98	REG	CHROMIUM	420		
B38W14S	17-May-99	REG	CHROMIUM	67.2		
B38W14S	5-Jul-00	REG	CHROMIUM	7.5		
B38W14S	2-Jul-01	REG	CHROMIUM	0.9		
B38W15D	2-Aug-93	REG	CHROMIUM	9.3	B	
B38W15D	3-Jun-97	REG	CHROMIUM	2.2		
B38W15D	6-Jul-98	REG	CHROMIUM	6.5		
B38W15D	27-Jun-01	REG	CHROMIUM	19.5		
B38W15D	16-Jul-02	REG	CHROMIUM	1.8		J
B38W15S	3-Jun-97	REG	CHROMIUM	1.8		
B38W15S	6-Jul-98	REG	CHROMIUM	5.5		
B38W15S	27-Jun-01	REG	CHROMIUM	2.9		
B38W15S	16-Jul-02	REG	CHROMIUM	2		J
B38W17A	28-Jul-93	REG	CHROMIUM	21000	=	
B38W17A	25-May-94	REG	CHROMIUM	122	=	
B38W17A	20-May-95	REG	CHROMIUM	56.6	=	
B38W17A	13-May-96	REG	CHROMIUM	632	=	
B38W17A	3-Jun-97	REG	CHROMIUM	1880		
B38W17A	2-Jul-98	REG	CHROMIUM	5350		
B38W17A	13-May-99	REG	CHROMIUM	66.3		
B38W17A	19-Jun-00	REG	CHROMIUM	1590		
B38W17A	14-Jun-01	REG	CHROMIUM	3.9		
B38W17A	2-Jul-02	REG	CHROMIUM	102		
B38W17A	26-Jun-03	REG	CHROMIUM	3.4		
B38W17B	3-Jun-97	REG	CHROMIUM	0.84		
B38W17B	2-Jul-98	REG	CHROMIUM	2.8		
B38W17B	13-May-99	REG	CHROMIUM	1.4		
B38W17B	19-Jun-00	REG	CHROMIUM	12.9		
B38W17B	14-Jun-01	REG	CHROMIUM	3.6		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
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Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W17B	2-Jul-02	REG	CHROMIUM	4.4		
B38W17B	26-Jun-03	REG	CHROMIUM	3.1		
B38W18D	21-Jul-93	REG	CHROMIUM	27.2	=	
B38W18D	13-May-94	REG	CHROMIUM	25.8	=	J
B38W18D	15-May-95	REG	CHROMIUM	29.9	=	
B38W18D	14-May-96	REG	CHROMIUM	30.8	=	J
B38W18D	9-May-97	REG	CHROMIUM	26.9		
B38W18D	8-Jun-98	REG	CHROMIUM	83.4		
B38W18D	20-May-99	REG	CHROMIUM	39.5		
B38W18D	6-Jul-00	REG	CHROMIUM	28		
B38W18D	20-Jun-01	REG	CHROMIUM	10.3		
B38W18D	3-Jul-02	DUP	CHROMIUM	28.6		
B38W18D	2-Jul-03	REG	CHROMIUM	72.4		
B38W19D	16-May-94	REG	CHROMIUM	5.1	=	
B38W19D	16-May-97	REG	CHROMIUM	3.4		
B38W19D	12-Jul-00	REG	CHROMIUM	2.8		
B38W19D	13-Jun-01	REG	CHROMIUM	5		
B38W19S	29-Jun-98	REG	CHROMIUM	2.9		
B38W19S	14-May-99	REG	CHROMIUM	2.6		
B38W19S	13-Jun-01	REG	CHROMIUM	0.9		
B38W24D	9-Aug-93	REG	CHROMIUM	8.9	B	J
B38W24D	18-May-94	REG	CHROMIUM	6.2	=	
B38W24D	9-May-96	REG	CHROMIUM	6.2	=	
B38W24D	2-Jul-98	REG	CHROMIUM	17.9		
B38W24D	13-May-99	REG	CHROMIUM	6.4		
B38W24D	5-Jul-01	REG	CHROMIUM	5.4		
B38W24D	7-Jul-03	REG	CHROMIUM	3.3		
B38W24S	25-May-94	REG	CHROMIUM	4.9	=	
B38W24S	2-Jun-97	REG	CHROMIUM	4.5		
B38W24S	21-Jun-00	REG	CHROMIUM	5.6		
B38W24S	27-Jun-01	REG	CHROMIUM	0.9		
B38W25D	18-May-94	REG	CHROMIUM	8.8	=	
B38W25D	12-May-95	REG	CHROMIUM	36.5	=	J
B38W25D	15-May-97	REG	CHROMIUM	6.2		
B38W25D	1-Jul-98	REG	CHROMIUM	3.2		
B38W25D	7-Jul-00	REG	CHROMIUM	5.3		
B38W25D	10-Jul-01	DUP	CHROMIUM	5.4		
B38W25S	3-Aug-93	REG	CHROMIUM	210	=	
B38W25S	15-May-95	REG	CHROMIUM	14.6	=	
B38W25S	15-May-95	DUP	CHROMIUM	12.7	=	
B38W25S	15-May-96	REG	CHROMIUM	4.9	=	
B38W25S	5-Jun-97	REG	CHROMIUM	20.7		
B38W25S	1-Jul-98	REG	CHROMIUM	50.7		
B38W25S	17-May-99	REG	CHROMIUM	106		
B38W25S	7-Jul-00	REG	CHROMIUM	48.4		
B38W25S	10-Jul-01	REG	CHROMIUM	3.5		
MISS01AA	31-Jul-93	REG	CHROMIUM	54.9	=	
MISS01AA	23-May-94	REG	CHROMIUM	285	=	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS01AA	23-May-97	REG	CHROMIUM	2.1		
MISS01AA	18-Jun-98	REG	CHROMIUM	7.4		
MISS01AA	12-May-99	REG	CHROMIUM	1		
MISS01AA	20-Jun-00	REG	CHROMIUM	4.4		
MISS01AA	20-Jun-01	REG	CHROMIUM	0.9		
MISS01B	20-Jun-00	REG	CHROMIUM	1.7		J
MISS01B	18-Jul-02	REG	CHROMIUM	6.4		J
MISS01B	9-Jul-03	REG	CHROMIUM	5.5		
MISS02A	20-Jul-93	REG	CHROMIUM	157	=	
MISS02A	12-May-94	REG	CHROMIUM	15.1	=	J
MISS02A	10-May-95	REG	CHROMIUM	94.5	=	
MISS02A	15-May-97	REG	CHROMIUM	24.3		
MISS02A	15-May-97	DUP	CHROMIUM	22.3		
MISS02A	11-Jun-98	DUP	CHROMIUM	26.8		
MISS02A	18-May-99	REG	CHROMIUM	94.1		
MISS02A	22-Jun-00	REG	CHROMIUM	69.2		
MISS02A	5-Jul-01	REG	CHROMIUM	19.7		
MISS02A	8-Jul-02	REG	CHROMIUM	81.1		
MISS02A	30-Jun-03	REG	CHROMIUM	4.9		
MISS02B	20-Jul-93	REG	CHROMIUM	5.1	=	
MISS02B	9-May-95	REG	CHROMIUM	5.3	=	
MISS02B	19-May-97	REG	CHROMIUM	5.1		
MISS02B	10-Jun-98	REG	CHROMIUM	6.2		
MISS02B	18-May-99	REG	CHROMIUM	7.5		
MISS02B	23-Jun-00	REG	CHROMIUM	24.1		
MISS02B	5-Jul-01	REG	CHROMIUM	24.9		
MISS02B	30-Jun-03	REG	CHROMIUM	10.7		J
MISS05B	11-May-95	REG	CHROMIUM	10.9	=	
MISS05B	14-May-97	REG	CHROMIUM	2.9		
MISS05B	30-Jun-98	REG	CHROMIUM	10.8		
MISS05B	11-Jul-00	REG	CHROMIUM	2.4		
MISS05B	18-Jun-01	REG	CHROMIUM	5.9		
MISS06A	10-Jul-00	REG	CHROMIUM	16.8		
MISS07B	14-Jul-03	REG	CHROMIUM	7.2		J
B38W07B	16-Jun-98	REG	CHROMIUM	1.6		
B38W02D	4-Jun-97	REG	COBALT	1.1		
B38W02D	30-Jun-98	REG	COBALT	1.6		
B38W02D	13-Jul-00	REG	COBALT	1.4		J
B38W02D	28-Jun-01	REG	COBALT	42.1		
B38W02D	2-Jul-03	REG	COBALT	28.8		
B38W14D	7-Jul-98	REG	COBALT	0.42		
B38W14D	2-Jul-01	REG	COBALT	13.5		
B38W14S	4-Aug-93	REG	COBALT	20.1	B	
B38W14S	4-Jun-97	REG	COBALT	0.97		
B38W14S	7-Jul-98	REG	COBALT	2.2		
B38W14S	17-May-99	REG	COBALT	1.5		
B38W14S	2-Jul-01	REG	COBALT	0.8		
B38W15D	3-Jun-97	REG	COBALT	2.5		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W15D	6-Jul-98	REG	COBALT	1.4		
B38W15D	27-Jun-01	DUP	COBALT	21.4		
B38W15D	16-Jul-02	DUP	COBALT	2.3		J
B38W15D	1-Jul-03	REG	COBALT	2.8		J
B38W15S	3-Jun-97	REG	COBALT	1.4		
B38W15S	6-Jul-98	REG	COBALT	0.69		
B38W15S	2-Jul-01	REG	COBALT	0.8		
B38W17A	28-Jul-93	REG	COBALT	57	=	
B38W17A	25-May-94	REG	COBALT	5.8	=	
B38W17A	3-Jun-97	REG	COBALT	1.6		
B38W17A	2-Jul-98	REG	COBALT	8.1		
B38W17A	13-May-99	DUP	COBALT	1.2		
B38W17A	19-Jun-00	REG	COBALT	13		
B38W17A	14-Jun-01	REG	COBALT	1.6		
B38W18D	21-Jul-93	REG	COBALT	17.7	B	
B38W18D	13-May-94	REG	COBALT	19.1	=	J
B38W18D	15-May-95	REG	COBALT	18.5	=	
B38W18D	14-May-96	REG	COBALT	16.9	=	
B38W18D	9-May-97	REG	COBALT	11.5		
B38W18D	8-Jun-98	REG	COBALT	13.3		
B38W18D	20-May-99	REG	COBALT	15.7		
B38W18D	20-Jun-01	REG	COBALT	49.2		
B38W18D	3-Jul-02	DUP	COBALT	19		
B38W18D	2-Jul-03	DUP	COBALT	20.3		
B38W19D	12-Jul-00	REG	COBALT	0.5		J
B38W19D	13-Jun-01	REG	COBALT	14.2		
B38W24D	9-Aug-93	REG	COBALT	12		B
B38W24D	2-Jul-98	REG	COBALT	0.74		
B38W24D	5-Jul-01	REG	COBALT	1.2		
B38W24S	21-Jun-00	REG	COBALT	0.72		J
B38W24S	15-Jul-02	REG	COBALT	11.1		
B38W25S	3-Aug-93	REG	COBALT	14.6		B
B38W25S	15-May-95	REG	COBALT	3.6	=	
B38W25S	5-Jun-97	REG	COBALT	1.5		
B38W25S	1-Jul-98	REG	COBALT	2.4		
B38W25S	17-May-99	REG	COBALT	3.2		
B38W25S	10-Jul-01	REG	COBALT	24		
B38W25S	10-Jul-02	REG	COBALT	18.7		
MISS02A	15-May-97	REG	COBALT	1		
MISS02A	15-May-97	DUP	COBALT	0.98		
MISS02A	11-Jun-98	DUP	COBALT	1.1		
MISS02A	18-May-99	DUP	COBALT	2.2		
MISS02A	5-Jul-01	REG	COBALT	1		
MISS02B	13-May-94	REG	COBALT	7	=	J
MISS02B	9-May-95	REG	COBALT	5.4	=	
MISS02B	19-May-97	REG	COBALT	3.3		
MISS02B	10-Jun-98	REG	COBALT	2.8		
MISS02B	18-May-99	REG	COBALT	3		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS02B	5-Jul-01	REG	COBALT	11		
MISS02B	30-Jun-03	REG	COBALT	22.4		
MISS05A	12-May-95	REG	COBALT	9.1	=	
MISS05A	2-Jun-97	REG	COBALT	1.4		
MISS05A	29-Jun-98	REG	COBALT	1.3		
MISS05A	14-May-99	REG	COBALT	14.1		
MISS05A	19-Jun-01	REG	COBALT	2.8		
MISS05A	1-Aug-02	REG	COBALT	3.8		J
MISS06A	24-May-94	REG	COBALT	4.2	=	
MISS06A	3-Jun-97	REG	COBALT	0.95		
MISS06A	1-Jul-98	REG	COBALT	0.64		
MISS06A	10-Jul-00	REG	COBALT	1.2		J
MISS06A	20-Jun-01	REG	COBALT	0.8		
MISS07B	14-Jul-03	REG	COBALT	12.1		J
B38W07B	16-Jun-98	REG	COBALT	4.4		
B38W07B	27-May-99	DUP	COBALT	5.3		
B38W07B	12-Jul-00	REG	COBALT	3.6		
B38W02D	19-May-94	REG	COPPER	3.8	=	
B38W02D	4-Jun-97	REG	COPPER	2.4		
B38W02D	30-Jun-98	REG	COPPER	8.7		
B38W02D	20-May-99	REG	COPPER	2.9		
B38W02D	28-Jun-01	REG	COPPER	4		
B38W14D	4-Aug-93	REG	COPPER	33.1	=	
B38W14D	20-May-95	REG	COPPER	5.7	=	
B38W14D	4-Jun-97	REG	COPPER	15.7		
B38W14D	7-Jul-98	REG	COPPER	13		
B38W14D	7-Jul-98	DUP	COPPER	11.8		
B38W14D	17-May-99	DUP	COPPER	3.6		
B38W14D	5-Jul-00	REG	COPPER	21.6		
B38W14D	2-Jul-01	REG	COPPER	19.4		
B38W14D	10-Jul-03	REG	COPPER	11		
B38W14S	4-Aug-93	REG	COPPER	14.7		B
B38W14S	20-May-95	REG	COPPER	4.1	=	
B38W14S	4-Jun-97	REG	COPPER	8.9		
B38W14S	7-Jul-98	REG	COPPER	22.3		
B38W14S	17-May-99	REG	COPPER	4.9		
B38W14S	5-Jul-00	REG	COPPER	2.5		
B38W14S	2-Jul-01	REG	COPPER	1.4		
B38W14S	10-Jul-03	REG	COPPER	2.7		J
B38W15D	2-Aug-93	REG	COPPER	33.7	=	
B38W15D	13-May-96	REG	COPPER	9.7	=	
B38W15D	3-Jun-97	REG	COPPER	2.6		
B38W15D	6-Jul-98	REG	COPPER	9.2		
B38W15D	26-Jun-00	REG	COPPER	1.3		
B38W15D	27-Jun-01	REG	COPPER	13.6		
B38W15D	16-Jul-02	REG	COPPER	2.1		J
B38W15D	1-Jul-03	REG	COPPER	2.8		J
B38W15S	19-May-95	REG	COPPER	9.3	=	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W15S	19-May-95	DUP	COPPER	6.4	=	
B38W15S	3-Jun-97	REG	COPPER	5.4		
B38W15S	6-Jul-98	REG	COPPER	21.8		
B38W15S	26-Jun-00	REG	COPPER	4.1		
B38W15S	27-Jun-01	REG	COPPER	18.9		
B38W15S	16-Jul-02	REG	COPPER	16		
B38W17A	28-Jul-93	REG	COPPER	118	=	
B38W17A	25-May-94	REG	COPPER	7.6	=	
B38W17A	13-May-96	REG	COPPER	8.4	=	
B38W17A	3-Jun-97	REG	COPPER	10		
B38W17A	2-Jul-98	REG	COPPER	36.6		
B38W17A	13-May-99	REG	COPPER	2.9		
B38W17A	14-Jun-01	REG	COPPER	2		
B38W17A	26-Jun-03	REG	COPPER	3.5		J
B38W17B	2-Jul-98	REG	COPPER	2.1		
B38W17B	13-May-99	REG	COPPER	1.2		
B38W17B	14-Jun-01	REG	COPPER	0.7		
B38W18D	6-Jul-00	REG	COPPER	2.4		
B38W18D	20-Jun-01	REG	COPPER	0.78		
B38W18D	2-Jul-03	REG	COPPER	5.9		
B38W19D	16-May-97	REG	COPPER	3.9		
B38W19D	17-Jun-98	REG	COPPER	1		
B38W19D	13-Jun-01	REG	COPPER	0.7		
B38W19S	17-May-95	REG	COPPER	4.8	=	
B38W19S	29-Jun-98	REG	COPPER	2.8		
B38W19S	13-Jun-01	REG	COPPER	0.7		
B38W24D	9-Aug-93	REG	COPPER	6		B
B38W24D	18-May-94	REG	COPPER	3.4	=	
B38W24D	2-Jun-97	REG	COPPER	1.3		
B38W24D	2-Jul-98	REG	COPPER	10.4		
B38W24D	13-May-99	REG	COPPER	3		
B38W24D	5-Jul-01	REG	COPPER	4.6		
B38W24D	15-Jul-02	REG	COPPER	3.2		J
B38W24D	7-Jul-03	REG	COPPER	3.7		UJ
B38W24S	5-Aug-93	REG	COPPER	8.8		B
B38W24S	2-Jun-97	REG	COPPER	24.2		
B38W24S	2-Jul-98	REG	COPPER	2.8		
B38W24S	13-May-99	REG	COPPER	9.4		
B38W24S	27-Jun-01	REG	COPPER	1.3		
B38W25D	15-May-97	REG	COPPER	4.6		
B38W25D	1-Jul-98	REG	COPPER	1.3		
B38W25D	7-Jul-00	REG	COPPER	0.54		J
B38W25D	10-Jul-01	DUP	COPPER	2		
B38W25S	3-Aug-93	REG	COPPER	52.4	=	
B38W25S	5-Jun-97	REG	COPPER	1		
B38W25S	1-Jul-98	REG	COPPER	7.3		
B38W25S	17-May-99	REG	COPPER	2.8		
B38W25S	7-Jul-00	REG	COPPER	5.2		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W25S	10-Jul-01	REG	COPPER	1.7		
MISS01AA	31-Jul-93	REG	COPPER	31.1	=	
MISS01AA	23-May-94	REG	COPPER	11.7	=	
MISS01AA	23-May-97	REG	COPPER	3.9		
MISS01AA	20-Jun-01	REG	COPPER	0.7		
MISS02A	20-Jul-93	REG	COPPER	126	=	
MISS02A	12-May-94	REG	COPPER	103	=	
MISS02A	10-May-95	REG	COPPER	173	=	
MISS02A	16-May-96	REG	COPPER	169	=	
MISS02A	15-May-97	REG	COPPER	112		
MISS02A	15-May-97	DUP	COPPER	114		
MISS02A	11-Jun-98	DUP	COPPER	96.2		
MISS02A	18-May-99	REG	COPPER	366		
MISS02A	5-Jul-01	REG	COPPER	20.8		
MISS02A	8-Jul-02	REG	COPPER	76.1		
MISS02A	30-Jun-03	REG	COPPER	34.9		
MISS02B	13-May-94	REG	COPPER	166	=	J
MISS02B	9-May-95	REG	COPPER	6	=	
MISS02B	19-May-97	REG	COPPER	3.4		
MISS02B	10-Jun-98	REG	COPPER	1.1		
MISS02B	23-Jun-00	REG	COPPER	1.7		
MISS02B	5-Jul-01	REG	COPPER	2		
MISS05A	10-May-96	REG	COPPER	6	=	
MISS05A	2-Jun-97	REG	COPPER	3.7		
MISS05A	29-Jun-98	REG	COPPER	4.1		
MISS05A	14-May-99	REG	COPPER	1.7		
MISS05A	19-Jun-01	REG	COPPER	1.4		
MISS05A	14-Jul-03	REG	COPPER	14.6		J
MISS05B	11-May-95	REG	COPPER	4.9	=	
MISS05B	30-Jun-98	REG	COPPER	3.4		
MISS05B	18-Jun-01	REG	COPPER	0.7		
MISS06A	4-Aug-93	REG	COPPER	22.9	B	
MISS06A	24-May-94	REG	COPPER	21.8	=	
MISS06A	16-May-95	REG	COPPER	31.3	=	
MISS06A	10-May-96	REG	COPPER	27.2	=	
MISS06A	3-Jun-97	REG	COPPER	50.1		
MISS06A	1-Jul-98	REG	COPPER	44		
MISS06A	17-May-99	REG	COPPER	29.4		
MISS06A	20-Jun-01	REG	COPPER	17.6		
MISS06A	10-Jul-02	REG	COPPER	12.8		J
MISS06A	2-Jul-03	REG	COPPER	11.9		
B38W07B	16-Jun-98	REG	COPPER	4.9		
MISS07B	11-Jul-02	REG	COPPER	7.6		J
B38W01S	28-Jul-93	REG	IRON	31000	=	
B38W01S	23-May-94	REG	IRON	27500	=	
B38W01S	21-May-95	REG	IRON	22100	=	
B38W01S	17-May-96	REG	IRON	24700	=	
B38W01S	4-Jun-97	REG	IRON	28100		J

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W01S	7-Jul-98	REG	IRON	28900		J
B38W01S	11-Jul-01	DUP	IRON	23200		
B38W01S	17-Jul-02	DUP	IRON	22400		
B38W01S	27-Jun-03	REG	IRON	24600		
B38W02D	19-May-94	REG	IRON	33.1	=	
B38W02D	20-May-95	REG	IRON	72.4	=	
B38W02D	17-May-96	REG	IRON	737	=	
B38W02D	4-Jun-97	REG	IRON	183		J
B38W02D	30-Jun-98	REG	IRON	580		J
B38W02D	20-May-99	REG	IRON	28.8		
B38W02D	13-Jul-00	REG	IRON	202		
B38W02D	28-Jun-01	REG	IRON	362		
B38W02D	17-Jul-02	REG	IRON	104		J
B38W14D	4-Aug-93	REG	IRON	320	=	
B38W14D	20-May-95	REG	IRON	32.4	=	
B38W14D	7-Jul-98	REG	IRON	274		J
B38W14D	7-Jul-98	DUP	IRON	204		J
B38W14D	17-May-99	REG	IRON	64.2		J
B38W14D	2-Jul-01	REG	IRON	217		
B38W14D	24-Jul-02	REG	IRON	692		
B38W14D	10-Jul-03	REG	IRON	980		
B38W14S	4-Aug-93	REG	IRON	403	=	
B38W14S	20-May-95	REG	IRON	324	=	
B38W14S	17-May-96	REG	IRON	820	=	
B38W14S	17-May-96	DUP	IRON	743	=	
B38W14S	4-Jun-97	REG	IRON	1200		J
B38W14S	7-Jul-98	REG	IRON	2540		J
B38W14S	17-May-99	REG	IRON	528		J
B38W14S	5-Jul-00	REG	IRON	340		
B38W14S	2-Jul-01	REG	IRON	82.4		
B38W14S	24-Jul-02	REG	IRON	172		
B38W15D	2-Aug-93	REG	IRON	709	=	
B38W15D	13-May-96	REG	IRON	103	=	UJ
B38W15D	3-Jun-97	REG	IRON	160		J
B38W15D	6-Jul-98	REG	IRON	593		J
B38W15D	27-Jun-01	REG	IRON	301		
B38W15S	2-Aug-93	REG	IRON	537	=	
B38W15S	26-May-94	REG	IRON	400	=	
B38W15S	19-May-95	REG	IRON	1720	=	
B38W15S	19-May-95	DUP	IRON	1450	=	
B38W15S	13-May-96	REG	IRON	530	=	J
B38W15S	3-Jun-97	REG	IRON	675		J
B38W15S	6-Jul-98	REG	IRON	1010		J
B38W15S	26-Jun-00	REG	IRON	546		
B38W15S	27-Jun-01	REG	IRON	1210		
B38W15S	16-Jul-02	REG	IRON	577		
B38W15S	1-Jul-03	REG	IRON	329		
B38W17A	28-Jul-93	REG	IRON	116000	=	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
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Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W17A	25-May-94	REG	IRON	829	=	
B38W17A	20-May-95	REG	IRON	688	=	
B38W17A	13-May-96	REG	IRON	3280	=	J
B38W17A	3-Jun-97	REG	IRON	11700		J
B38W17A	2-Jul-98	REG	IRON	27900		J
B38W17A	13-May-99	REG	IRON	377		
B38W17A	19-Jun-00	REG	IRON	12500		
B38W17A	14-Jun-01	REG	IRON	189		
B38W17A	2-Jul-02	REG	IRON	867		
B38W17A	26-Jun-03	REG	IRON	126		
B38W17B	29-Jul-93	REG	IRON	6520	=	J
B38W17B	25-May-94	REG	IRON	10200	=	
B38W17B	20-May-95	REG	IRON	6570	=	
B38W17B	13-May-96	REG	IRON	11400	=	J
B38W17B	3-Jun-97	REG	IRON	9470		J
B38W17B	2-Jul-98	REG	IRON	6890		J
B38W17B	13-May-99	REG	IRON	8350		
B38W17B	19-Jun-00	REG	IRON	8490		
B38W17B	14-Jun-01	REG	IRON	8450		
B38W17B	2-Jul-02	REG	IRON	6840		
B38W17B	26-Jul-03	REG	IRON	7920		
B38W18D	21-Jul-93	REG	IRON	16000	=	J
B38W18D	13-May-94	REG	IRON	12900	=	J
B38W18D	15-May-95	REG	IRON	14400	=	
B38W18D	14-May-96	REG	IRON	14200	=	
B38W18D	9-May-97	REG	IRON	12100		
B38W18D	8-Jun-98	REG	IRON	13500		
B38W18D	20-May-99	REG	IRON	14800		
B38W18D	6-Jul-00	REG	IRON	11600		
B38W18D	20-Jun-01	REG	IRON	647		
B38W18D	3-Jul-02	DUP	IRON	16000		
B38W18D	2-Jul-03	REG	IRON	22400		
B38W19D	23-Jul-93	REG	IRON	3030	=	J
B38W19D	16-May-94	REG	IRON	4090	=	
B38W19D	10-May-95	REG	IRON	2630	=	J
B38W19D	16-May-96	REG	IRON	3530	=	
B38W19D	16-May-97	REG	IRON	3260		J
B38W19D	17-Jun-98	REG	IRON	3110		J
B38W19D	17-Jun-98	REG	IRON	3160		
B38W19D	27-May-99	REG	IRON	3670		
B38W19D	12-Jul-00	REG	IRON	3110		
B38W19D	13-Jun-01	REG	IRON	3870		
B38W19D	9-Jul-02	REG	IRON	3890		
B38W19D	1-Jul-03	REG	IRON	3950		
B38W19S	27-May-94	REG	IRON	3240	=	
B38W19S	17-May-95	REG	IRON	1300	=	
B38W19S	10-May-96	REG	IRON	4590	=	J
B38W19S	29-Jun-98	REG	IRON	5980		J

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W19S	14-May-99	REG	IRON	6600		
B38W19S	13-Jun-01	REG	IRON	2500		
B38W19S	9-Jul-02	REG	IRON	1070		
B38W19S	11-Jul-03	REG	IRON	2880		
B38W24D	9-Aug-93	REG	IRON	22900	=	J
B38W24D	18-May-94	REG	IRON	21800	=	
B38W24D	17-May-95	REG	IRON	17500	=	
B38W24D	9-May-96	REG	IRON	28600	=	J
B38W24D	2-Jun-97	REG	IRON	26600		J
B38W24D	2-Jul-98	REG	IRON	25600		J
B38W24D	13-May-99	REG	IRON	27000		
B38W24D	22-Jun-00	REG	IRON	37900		
B38W24D	5-Jul-01	REG	IRON	28600		
B38W24D	15-Jul-02	REG	IRON	19400		
B38W24D	7-Jul-03	REG	IRON	30300		
B38W24S	5-Aug-93	REG	IRON	34800	=	
B38W24S	25-May-94	REG	IRON	35900	=	
B38W24S	17-May-95	REG	IRON	46500	=	
B38W24S	9-May-96	REG	IRON	33400	=	J
B38W24S	2-Jun-97	REG	IRON	51100		J
B38W24S	2-Jul-98	REG	IRON	31700		J
B38W24S	13-May-99	DUP	IRON	36100		
B38W24S	21-Jun-00	REG	IRON	31900		
B38W24S	27-Jun-01	REG	IRON	24700		
B38W24S	15-Jul-02	REG	IRON	30000		
B38W24S	7-Jul-03	REG	IRON	22000		
B38W25D	3-Aug-93	REG	IRON	5380	=	
B38W25D	18-May-94	REG	IRON	5550	=	
B38W25D	12-May-95	REG	IRON	6760	=	
B38W25D	15-May-96	REG	IRON	6460	=	J
B38W25D	15-May-97	REG	IRON	5640		J
B38W25D	1-Jul-98	REG	IRON	4620		J
B38W25D	26-May-99	REG	IRON	4980		
B38W25D	7-Jul-00	REG	IRON	5270		
B38W25D	10-Jul-01	DUP	IRON	4770		
B38W25D	10-Jul-02	DUP	IRON	6460		
B38W25D	15-Jul-03	REG	IRON	23700		
B38W25S	3-Aug-93	REG	IRON	19700	=	
B38W25S	24-May-94	REG	IRON	9080	=	J
B38W25S	15-May-95	REG	IRON	14600	=	
B38W25S	15-May-95	DUP	IRON	12000	=	
B38W25S	15-May-96	REG	IRON	9620	=	J
B38W25S	15-May-96	DUP	IRON	10200	=	J
B38W25S	5-Jun-97	REG	IRON	6260		J
B38W25S	1-Jul-98	REG	IRON	7490		J
B38W25S	17-May-99	REG	IRON	10400		J
B38W25S	7-Jul-00	REG	IRON	14000		
B38W25S	10-Jul-01	REG	IRON	30900		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
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Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W25S	10-Jul-02	REG	IRON	47100		
B38W25S	15-Jul-03	REG	IRON	53000		
MISS01AA	31-Jul-93	REG	IRON	9340	=	
MISS01AA	23-May-94	REG	IRON	2210	=	
MISS01AA	18-May-95	REG	IRON	360	=	
MISS01AA	9-May-96	REG	IRON	725	=	J
MISS01AA	23-May-97	REG	IRON	571		
MISS01AA	18-Jun-98	REG	IRON	512		
MISS01AA	12-May-99	REG	IRON	2790		
MISS01AA	20-Jun-00	REG	IRON	490		
MISS01AA	20-Jun-01	REG	IRON	731		
MISS01AA	9-Jul-03	REG	IRON	331		J
MISS01B	21-Jul-93	REG	IRON	1620	=	J
MISS01B	16-May-94	REG	IRON	7780	=	
MISS01B	10-May-95	REG	IRON	1030	=	J
MISS01B	15-May-96	REG	IRON	6260	=	J
MISS01B	18-Jun-98	REG	IRON	2080		
MISS01B	25-May-99	REG	IRON	1060		
MISS01B	20-Jun-00	REG	IRON	4970		
MISS01B	19-Jun-01	REG	IRON	3990		
MISS01B	18-Jul-02	REG	IRON	13700		
MISS01B	9-Jul-03	REG	IRON	15700		
MISS02A	20-Jul-93	REG	IRON	914	=	
MISS02A	12-May-94	REG	IRON	402	=	J
MISS02A	10-May-95	REG	IRON	892	=	J
MISS02A	16-May-96	REG	IRON	584	=	
MISS02A	15-May-97	REG	IRON	426		J
MISS02A	15-May-97	DUP	IRON	500		J
MISS02A	11-Jun-98	REG	IRON	1070		
MISS02A	11-Jun-98	DUP	IRON	1440		
MISS02A	18-May-99	REG	IRON	1010		
MISS02A	22-Jun-00	REG	IRON	5410		
MISS02A	5-Jul-01	REG	IRON	863		
MISS02A	8-Jul-02	REG	IRON	4810		
MISS02A	30-Jun-03	REG	IRON	165		
MISS02B	20-Jul-93	REG	IRON	19300	=	
MISS02B	13-May-94	REG	IRON	6800	=	J
MISS02B	9-May-95	REG	IRON	8690	=	
MISS02B	14-May-96	REG	IRON	7880	=	
MISS02B	19-May-97	REG	IRON	8880		J
MISS02B	10-Jun-98	REG	IRON	8140		
MISS02B	18-May-99	REG	IRON	8620		
MISS02B	23-Jun-00	REG	IRON	15500		
MISS02B	5-Jul-01	REG	IRON	37000		
MISS02B	8-Jul-02	REG	IRON	11200		
MISS02B	30-Jun-03	REG	IRON	10700		
MISS05A	27-May-94	REG	IRON	9770	=	
MISS05A	12-May-95	REG	IRON	15800	=	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS05A	10-May-96	REG	IRON	6590	=	J
MISS05A	2-Jun-97	REG	IRON	31600		J
MISS05A	29-Jun-98	REG	IRON	15900		J
MISS05A	14-May-99	REG	IRON	2190		
MISS05A	19-Jun-01	REG	IRON	1530		
MISS05A	1-Aug-02	REG	IRON	706		
MISS05A	14-Jul-03	REG	IRON	293		J
MISS05B	23-Jul-93	REG	IRON	2660	=	J
MISS05B	17-May-94	REG	IRON	2780	=	
MISS05B	11-May-95	REG	IRON	3180	=	J
MISS05B	16-May-96	REG	IRON	2910	=	
MISS05B	14-May-97	REG	IRON	2560		
MISS05B	30-Jun-98	REG	IRON	13800		J
MISS05B	18-Jun-01	REG	IRON	14900		
MISS05B	31-Jul-02	REG	IRON	6220		
MISS05B	16-Jul-03	REG	IRON	5880		
MISS06A	4-Aug-93	REG	IRON	225	=	
MISS06A	24-May-94	REG	IRON	455	=	J
MISS06A	16-May-95	REG	IRON	333	=	
MISS06A	10-May-96	REG	IRON	157	=	J
MISS06A	3-Jun-97	REG	IRON	759		J
MISS06A	1-Jul-98	REG	IRON	1320		J
MISS06A	17-May-99	REG	IRON	370		J
MISS06A	22-Jul-00	REG	IRON	1910		
MISS06A	20-Jun-01	REG	IRON	308		
MISS06A	2-Jul-03	REG	IRON	99.3		J
B38W07B	16-Jun-98	REG	IRON	9160		
B38W07B	27-May-99	REG	IRON	5920		
B38W07B	12-Jul-00	REG	IRON	6390		
MISS07B	11-Jul-02	REG	IRON	13100		
MISS07B	14-Jul-03	REG	IRON	16500		
B38W02D	17-May-96	REG	LEAD	1.4	=	
B38W02D	4-Jun-97	REG	LEAD	2.8		
B38W02D	30-Jun-98	REG	LEAD	7.1		
B38W02D	28-Jun-01	REG	LEAD	2.6		
B38W14D	20-May-95	REG	LEAD	2.8	=	J
B38W14D	7-Jul-98	DUP	LEAD	1.7		
B38W14D	17-May-99	REG	LEAD	0.86		
B38W14D	2-Jul-01	REG	LEAD	2.6		
B38W14D	10-Jul-03	REG	LEAD	16.8		
B38W14S	20-May-95	REG	LEAD	2.9	=	J
B38W14S	17-May-96	REG	LEAD	1.2	=	
B38W14S	17-May-96	DUP	LEAD	1.8	=	
B38W14S	4-Jun-97	REG	LEAD	5.6		
B38W14S	7-Jul-98	REG	LEAD	23.9		
B38W14S	17-May-99	REG	LEAD	2.5		
B38W14S	2-Jul-01	REG	LEAD	2.6		
B38W15D	2-Aug-93	REG	LEAD	27.5	=	J

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W15D	3-Jun-97	REG	LEAD	1.8		
B38W15D	6-Jul-98	REG	LEAD	3.3		
B38W15D	27-Jun-01	REG	LEAD	2.6		
B38W15S	2-Aug-93	REG	LEAD	2.3	B	J
B38W15S	26-May-94	REG	LEAD	3	=	J
B38W15S	19-May-95	REG	LEAD	2	=	
B38W15S	19-May-95	DUP	LEAD	2.4	=	
B38W15S	3-Jun-97	REG	LEAD	4		
B38W15S	6-Jul-98	REG	LEAD	5.3		
B38W15S	27-Jun-01	REG	LEAD	5		
B38W17A	28-Jul-93	REG	LEAD	36.6	=	J
B38W17A	20-May-95	REG	LEAD	2.8	=	J
B38W17A	13-May-96	REG	LEAD	1.1	=	J
B38W17A	3-Jun-97	REG	LEAD	2.3		
B38W17A	2-Jul-98	REG	LEAD	1.3		
B38W17A	14-Jun-01	REG	LEAD	2.6		
B38W18D	14-May-96	REG	LEAD	1	=	
B38W18D	8-Jun-98	REG	LEAD	0.45		
B38W18D	20-May-99	REG	LEAD	1.1		
B38W18D	6-Jul-00	REG	LEAD	1.9		J
B38W18D	20-Jun-01	REG	LEAD	2.6		
B38W19S	29-Jun-98	REG	LEAD	0.35		
B38W19S	13-Jun-01	REG	LEAD	2.6		
B38W19S	9-Jul-02	REG	LEAD	17		UJ
B38W24D	2-Jul-98	REG	LEAD	2.4		
B38W24D	13-May-99	REG	LEAD	1.2		
B38W24D	5-Jul-01	REG	LEAD	2.6		
B38W24S	17-May-95	REG	LEAD	1.8	=	
B38W24S	2-Jul-98	REG	LEAD	0.85		
B38W24S	27-Jun-01	REG	LEAD	2.6		
B38W25S	24-May-94	REG	LEAD	3.8	=	UJ
B38W25S	15-May-96	REG	LEAD	1.5	=	J
B38W25S	5-Jun-97	REG	LEAD	0.6		
B38W25S	1-Jul-98	REG	LEAD	1.3		
B38W25S	17-May-99	REG	LEAD	0.66		
B38W25S	10-Jul-01	REG	LEAD	2.6		
B38W25S	10-Jul-02	REG	LEAD	17		UJ
MISS01AA	31-Jul-93	REG	LEAD	4.1	=	J
MISS01AA	18-May-95	REG	LEAD	2	=	
MISS01AA	18-Jun-98	REG	LEAD	9.8		
MISS01AA	12-May-99	REG	LEAD	1.6		
MISS01AA	20-Jun-01	REG	LEAD	2.6		
MISS01AA	11-Jul-02	REG	LEAD	17		UJ
MISS02A	20-Jul-93	REG	LEAD	2.5	=	UJ
MISS02A	12-May-94	REG	LEAD	7.3	=	J
MISS02A	10-May-95	REG	LEAD	3.6	=	
MISS02A	16-May-96	REG	LEAD	8.1	=	
MISS02A	15-May-97	REG	LEAD	4.8		J

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS02A	15-May-97	DUP	LEAD	4.7		J
MISS02A	11-Jun-98	REG	LEAD	3.9		
MISS02A	11-Jun-98	DUP	LEAD	4.9		
MISS02A	18-May-99	REG	LEAD	11		
MISS02A	22-Jun-00	REG	LEAD	13		
MISS02A	5-Jul-01	REG	LEAD	2.6		
MISS02A	8-Jul-02	REG	LEAD	17		UJ
MISS05A	29-Jun-98	REG	LEAD	11.9		
MISS05A	14-May-99	REG	LEAD	0.35		
MISS05A	19-Jun-01	REG	LEAD	2.6		
MISS05B	17-May-94	REG	LEAD	2.1	=	J
MISS05B	30-Jun-98	REG	LEAD	0.5		
MISS05B	18-Jun-01	REG	LEAD	2.6		
MISS06A	24-May-94	REG	LEAD	4.4	=	UJ
MISS06A	3-Jun-97	REG	LEAD	13.8		
MISS06A	1-Jul-98	REG	LEAD	17.8		
MISS06A	17-May-99	REG	LEAD	2.9		
MISS06A	10-Jul-00	REG	LEAD	9.6		
MISS06A	20-Jun-01	REG	LEAD	2.6		
MISS06A	10-Jul-02	REG	LEAD	17		UJ
B38W19D	9-Jul-02	REG	LEAD	17		UJ
B38W25D	10-Jul-02	REG	LEAD	17		UJ
MISS02B	8-Jul-02	REG	LEAD	17		UJ
MISS07B	11-Jul-02	REG	LEAD	17		UJ
B38W01S	28-Jul-93	REG	LITHIUM	2690	=	
B38W01S	23-May-94	REG	LITHIUM	2410	=	
B38W01S	17-May-96	REG	LITHIUM	1830	=	J
B38W01S	4-Jun-97	REG	LITHIUM	2370		
B38W01S	7-Jul-98	REG	LITHIUM	1840		J
B38W01S	11-Jul-01	DUP	LITHIUM	1580		
B38W01S	17-Jul-02	DUP	LITHIUM	1210		
B38W01S	27-Jun-03	REG	LITHIUM	1250		
B38W02D	19-May-94	REG	LITHIUM	30.1	=	
B38W02D	4-Jun-97	REG	LITHIUM	14.8		
B38W02D	30-Jun-98	REG	LITHIUM	16.5		J
B38W02D	20-May-99	REG	LITHIUM	11.7		
B38W02D	28-Jun-01	REG	LITHIUM	14.3		
B38W02D	17-Jul-02	REG	LITHIUM	16		J
B38W02D	27-Jun-03	REG	LITHIUM	1020		
B38W14D	4-Aug-93	REG	LITHIUM	49.8	=	
B38W14D	4-Jun-97	REG	LITHIUM	44.5		
B38W14D	7-Jul-98	DUP	LITHIUM	48.4		J
B38W14D	7-Jul-98	REG	LITHIUM	47.2		J
B38W14D	17-May-99	REG	LITHIUM	34.3		
B38W14D	2-Jul-01	REG	LITHIUM	27.3		
B38W14D	24-Jul-02	REG	LITHIUM	18.6		J
B38W14S	4-Aug-93	REG	LITHIUM	126	=	
B38W14S	4-Jun-97	REG	LITHIUM	48		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W14S	7-Jul-98	REG	LITHIUM	45.5		J
B38W14S	17-May-99	REG	LITHIUM	38		
B38W14S	2-Jul-01	REG	LITHIUM	30.5		
B38W14S	24-Jul-02	REG	LITHIUM	22.9		J
B38W14S	10-Jul-03	REG	LITHIUM	96.6		
B38W15D	2-Aug-93	REG	LITHIUM	1740	=	
B38W15D	26-May-94	REG	LITHIUM	2750	=	
B38W15D	13-May-96	REG	LITHIUM	2980	=	J
B38W15D	3-Jun-97	REG	LITHIUM	2980		
B38W15D	6-Jul-98	REG	LITHIUM	2060		
B38W15D	27-Jun-01	REG	LITHIUM	871		
B38W15D	16-Jul-02	REG	LITHIUM	2530		
B38W15D	1-Jul-03	REG	LITHIUM	2940		
B38W15S	2-Aug-93	REG	LITHIUM	1910	=	
B38W15S	2-Aug-93	REG	LITHIUM	1970	=	
B38W15S	26-May-94	REG	LITHIUM	1590	=	
B38W15S	13-May-96	REG	LITHIUM	1800	=	J
B38W15S	3-Jun-97	REG	LITHIUM	2590		
B38W15S	6-Jul-98	REG	LITHIUM	2590		
B38W15S	27-Jun-01	REG	LITHIUM	3150		
B38W15S	16-Jul-02	REG	LITHIUM	2560		
B38W15S	1-Jul-03	REG	LITHIUM	2240		
B38W17A	28-Jul-93	REG	LITHIUM	348	=	
B38W17A	25-May-94	REG	LITHIUM	347	=	
B38W17A	13-May-96	REG	LITHIUM	431	=	J
B38W17A	3-Jun-97	REG	LITHIUM	334		
B38W17A	2-Jul-98	REG	LITHIUM	307		J
B38W17A	13-May-99	DUP	LITHIUM	363		
B38W17A	14-Jun-01	REG	LITHIUM	298		
B38W17B	29-Jul-93	REG	LITHIUM	1650	=	J
B38W17B	25-May-94	REG	LITHIUM	1060	=	
B38W17B	13-May-96	REG	LITHIUM	920	=	J
B38W17B	3-Jun-97	REG	LITHIUM	1740		
B38W17B	2-Jul-98	REG	LITHIUM	1800		J
B38W17B	13-May-99	REG	LITHIUM	1460		J
B38W17B	14-Jun-01	REG	LITHIUM	1810		
B38W18D	21-Jul-93	REG	LITHIUM	3610	=	
B38W18D	13-May-94	REG	LITHIUM	3380	=	J
B38W18D	14-May-96	REG	LITHIUM	3000	=	J
B38W18D	9-May-97	REG	LITHIUM	3540		
B38W18D	8-Jun-98	REG	LITHIUM	3790		
B38W18D	20-May-99	REG	LITHIUM	2850		
B38W18D	20-Jun-01	REG	LITHIUM	1480		
B38W18D	2-Jul-03	REG	LITHIUM	3020		
B38W19D	23-Jul-93	REG	LITHIUM	6890	=	
B38W19D	16-May-94	REG	LITHIUM	4600	=	
B38W19D	16-May-96	REG	LITHIUM	3800	=	J
B38W19D	16-May-97	REG	LITHIUM	5600		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W19D	17-Jun-98	REG	LITHIUM	6220		J
B38W19D	17-Jun-98	REG	LITHIUM	5920		
B38W19D	27-May-99	REG	LITHIUM	6350		J
B38W19D	13-Jun-01	REG	LITHIUM	5250		
B38W19D	9-Jul-02	REG	LITHIUM	4770		
B38W19D	11-Jul-03	REG	LITHIUM	3480		
B38W19S	27-May-94	REG	LITHIUM	1690	=	
B38W19S	10-May-96	REG	LITHIUM	1450	=	J
B38W19S	29-Jun-98	REG	LITHIUM	1700		J
B38W19S	14-May-99	REG	LITHIUM	1400		J
B38W19S	13-Jun-01	REG	LITHIUM	1480		
B38W19S	9-Jul-02	REG	LITHIUM	1250		
B38W19S	11-Jul-03	REG	LITHIUM	960		
B38W24D	9-Aug-93	REG	LITHIUM	44.1	=	
B38W24D	18-May-94	REG	LITHIUM	37.5	=	
B38W24D	9-May-96	REG	LITHIUM	80.1	=	J
B38W24D	2-Jun-97	REG	LITHIUM	54.3		
B38W24D	2-Jul-98	REG	LITHIUM	46.1		J
B38W24D	13-May-99	REG	LITHIUM	50.4		
B38W24D	5-Jul-01	REG	LITHIUM	50.8		
B38W24S	9-May-96	REG	LITHIUM	56	=	J
B38W24S	2-Jun-97	REG	LITHIUM	27.5		
B38W24S	2-Jul-98	REG	LITHIUM	26.5		J
B38W24S	13-May-99	DUP	LITHIUM	32.4		
B38W24S	27-Jun-01	REG	LITHIUM	27.2		
B38W24S	15-Jul-02	REG	LITHIUM	35.8		J
B38W25D	3-Aug-93	REG	LITHIUM	1330	=	
B38W25D	18-May-94	REG	LITHIUM	1230	=	
B38W25D	15-May-96	REG	LITHIUM	1370	=	J
B38W25D	15-May-97	REG	LITHIUM	1600		
B38W25D	1-Jul-98	REG	LITHIUM	1430		J
B38W25D	26-May-99	REG	LITHIUM	1280		J
B38W25D	10-Jul-01	DUP	LITHIUM	981		
B38W25D	10-Jul-02	DUP	LITHIUM	888		
B38W25D	15-Jul-03	DUP	LITHIUM	1250		
B38W25S	3-Aug-93	REG	LITHIUM	1360	=	
B38W25S	24-May-94	REG	LITHIUM	1130	=	J
B38W25S	15-May-96	DUP	LITHIUM	994	=	J
B38W25S	5-Jun-97	REG	LITHIUM	1190		
B38W25S	1-Jul-98	REG	LITHIUM	827		J
B38W25S	17-May-99	REG	LITHIUM	793		
B38W25S	10-Jul-01	REG	LITHIUM	610		
B38W25S	10-Jul-02	REG	LITHIUM	623		
B38W25S	15-Jul-03	REG	LITHIUM	531		
MISS01AA	31-Jul-93	REG	LITHIUM	442	=	
MISS01AA	23-May-94	REG	LITHIUM	240	=	
MISS01AA	9-May-96	REG	LITHIUM	224	=	J
MISS01AA	23-May-97	REG	LITHIUM	265		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS01AA	18-Jun-98	REG	LITHIUM	258		
MISS01AA	12-May-99	REG	LITHIUM	224		J
MISS01AA	20-Jun-01	REG	LITHIUM	260		
MISS01AA	11-Jul-02	REG	LITHIUM	203		
MISS01AA	9-Jul-03	REG	LITHIUM	165		
MISS01B	21-Jul-93	REG	LITHIUM	114	=	
MISS01B	16-May-94	REG	LITHIUM	80.8	=	
MISS01B	15-May-96	REG	LITHIUM	128	=	J
MISS01B	18-Jun-98	REG	LITHIUM	105		
MISS01B	25-May-99	REG	LITHIUM	95.1		J
MISS01B	19-Jun-01	REG	LITHIUM	66.7		
MISS01B	18-Jul-02	DUP	LITHIUM	43.6		J
MISS01B	9-Jul-03	REG	LITHIUM	65.9		
MISS02A	20-Jul-93	REG	LITHIUM	6990	=	
MISS02A	12-May-94	REG	LITHIUM	4660	=	
MISS02A	16-May-96	REG	LITHIUM	4480	=	J
MISS02A	15-May-97	REG	LITHIUM	7090		
MISS02A	15-May-97	DUP	LITHIUM	6650		
MISS02A	11-Jun-98	DUP	LITHIUM	6110		
MISS02A	11-May-99	REG	LITHIUM	9300		
MISS02A	5-Jul-01	REG	LITHIUM	8150		
MISS02A	8-Jul-02	REG	LITHIUM	8950		
MISS02A	30-Jun-03	REG	LITHIUM	6200		
MISS02B	20-Jul-93	REG	LITHIUM	14100	=	
MISS02B	13-May-94	REG	LITHIUM	10200	=	J
MISS02B	14-May-96	REG	LITHIUM	11900	=	J
MISS02B	19-May-97	REG	LITHIUM	15200		
MISS02B	10-Jun-98	REG	LITHIUM	12800		
MISS02B	18-May-99	DUP	LITHIUM	12200		J
MISS02B	5-Jul-01	REG	LITHIUM	11900		
MISS02B	8-Jul-02	REG	LITHIUM	8160		
MISS02B	30-Jun-03	REG	LITHIUM	9590		
MISS05A	27-May-94	REG	LITHIUM	677	=	
MISS05A	10-May-96	REG	LITHIUM	664	=	J
MISS05A	2-Jun-97	REG	LITHIUM	854		
MISS05A	29-Jun-98	REG	LITHIUM	660		J
MISS05A	14-May-99	REG	LITHIUM	863		J
MISS05A	19-Jun-01	REG	LITHIUM	767		
MISS05A	14-Jul-03	REG	LITHIUM	560		
MISS05B	23-Jul-93	REG	LITHIUM	2520	=	
MISS05B	17-May-94	REG	LITHIUM	2370	=	
MISS05B	16-May-96	REG	LITHIUM	2130	=	J
MISS05B	14-May-97	REG	LITHIUM	2710		
MISS05B	30-Jun-98	REG	LITHIUM	1920		J
MISS05B	18-Jun-01	REG	LITHIUM	3090		
MISS05B	31-Jul-02	REG	LITHIUM	2330		
MISS05B	16-Jul-03	REG	LITHIUM	1290		
MISS06A	4-Aug-93	REG	LITHIUM	7340	=	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS06A	24-May-94	REG	LITHIUM	2140	=	J
MISS06A	10-May-96	REG	LITHIUM	1680	=	J
MISS06A	3-Jun-97	REG	LITHIUM	2780		
MISS06A	1-Jul-98	REG	LITHIUM	2130		J
MISS06A	17-May-99	REG	LITHIUM	2130		
MISS06A	20-Jun-01	REG	LITHIUM	1460		
MISS06A	10-Jul-02	REG	LITHIUM	814		
MISS06A	2-Jul-03	REG	LITHIUM	1450		
B38W07B	16-Jun-98	REG	LITHIUM	5480		
B38W07B	27-May-99	REG	LITHIUM	6870		J
MISS07B	11-Jul-02	DUP	LITHIUM	6000		
MISS07B	14-Jul-03	REG	LITHIUM	7770		
B38W01S	28-Jul-93	REG	MAGNESIUM	36900	=	
B38W01S	23-May-94	REG	MAGNESIUM	35400	=	
B38W01S	21-May-95	REG	MAGNESIUM	27600	=	
B38W01S	17-May-96	REG	MAGNESIUM	32800	=	
B38W01S	4-Jun-97	REG	MAGNESIUM	30300		
B38W01S	7-Jul-98	REG	MAGNESIUM	25600		J
B38W01S	17-Jul-02	REG	MAGNESIUM	27800		
B38W01S	27-Jun-03	REG	MAGNESIUM	32000		
B38W02D	27-Jul-93	REG	MAGNESIUM	3830		B
B38W02D	19-May-94	REG	MAGNESIUM	3480	=	
B38W02D	20-May-95	REG	MAGNESIUM	3020	=	
B38W02D	17-May-96	REG	MAGNESIUM	3710	=	
B38W02D	4-Jun-97	REG	MAGNESIUM	3840		
B38W02D	20-May-99	REG	MAGNESIUM	4020		
B38W02D	13-Jul-00	REG	MAGNESIUM	3740		
B38W02D	17-Jul-02	REG	MAGNESIUM	4410		
B38W02D	27-Jun-03	REG	MAGNESIUM	3720		
B38W07B	16-Jun-98	REG	MAGNESIUM	57500		
B38W07B	27-May-99	DUP	MAGNESIUM	88300		
B38W14D	4-Aug-93	REG	MAGNESIUM	25100	=	J
B38W14D	20-May-95	REG	MAGNESIUM	19500	=	
B38W14D	17-May-96	REG	MAGNESIUM	27800	=	
B38W14D	4-Jun-97	REG	MAGNESIUM	27700		
B38W14D	7-Jul-98	DUP	MAGNESIUM	28700		J
B38W14D	17-May-99	REG	MAGNESIUM	30000		
B38W14D	5-Jul-00	REG	MAGNESIUM	25300		
B38W14D	24-Jul-02	REG	MAGNESIUM	24100		
B38W14D	10-Jul_03	REG	MAGNESIUM	30500		
B38W14S	4-Aug-93	REG	MAGNESIUM	12100	=	J
B38W14S	20-May-95	REG	MAGNESIUM	20000	=	
B38W14S	17-May-96	REG	MAGNESIUM	28900	=	
B38W14S	17-May-96	DUP	MAGNESIUM	26300	=	
B38W14S	4-Jun-97	REG	MAGNESIUM	25300		
B38W14S	7-Jul-98	REG	MAGNESIUM	25000		J
B38W14S	17-May-99	REG	MAGNESIUM	27400		
B38W14S	5-Jul-00	REG	MAGNESIUM	26600		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W14S	24-Jul-02	REG	MAGNESIUM	26900		
B38W14S	10-Jul-03	REG	MAGNESIUM	29500		
B38W15D	2-Aug-93	REG	MAGNESIUM	18100	=	
B38W15D	26-May-94	REG	MAGNESIUM	35500	=	
B38W15D	19-May-95	REG	MAGNESIUM	22700	=	J
B38W15D	13-May-96	REG	MAGNESIUM	37500	=	
B38W15D	3-Jun-97	REG	MAGNESIUM	26500		
B38W15D	6-Jul-98	REG	MAGNESIUM	17100		J
B38W15D	26-Jun-00	REG	MAGNESIUM	39400		
B38W15D	16-Jul-02	REG	MAGNESIUM	30300		
B38W15D	1-Jul-03	REG	MAGNESIUM	39400		
B38W15S	2-Aug-93	REG	MAGNESIUM	25200	=	
B38W15S	26-May-94	REG	MAGNESIUM	19300	=	
B38W15S	19-May-95	REG	MAGNESIUM	27700	=	J
B38W15S	19-May-95	DUP	MAGNESIUM	25300	=	J
B38W15S	13-May-96	REG	MAGNESIUM	17800	=	
B38W15S	3-Jun-97	REG	MAGNESIUM	19000		
B38W15S	6-Jul-98	REG	MAGNESIUM	18100		J
B38W15S	26-Jun-00	REG	MAGNESIUM	25300		
B38W15S	16-Jul-02	REG	MAGNESIUM	24400		
B38W15S	1-Jul-03	REG	MAGNESIUM	22100		
B38W17A	28-Jul-93	REG	MAGNESIUM	13300	=	
B38W17A	25-May-94	REG	MAGNESIUM	7340	=	
B38W17A	20-May-95	REG	MAGNESIUM	5610	=	
B38W17A	13-May-96	REG	MAGNESIUM	9720	=	
B38W17A	3-Jun-97	REG	MAGNESIUM	5620		
B38W17A	2-Jul-98	REG	MAGNESIUM	6280		J
B38W17A	13-May-99	DUP	MAGNESIUM	9300		
B38W17A	19-Jun-00	REG	MAGNESIUM	5930		
B38W17A	2-Jul-02	REG	MAGNESIUM	7440		
B38W17A	26-Jun-03	REG	MAGNESIUM	8730		
B38W17B	29-Jul-93	REG	MAGNESIUM	25400	=	J
B38W17B	25-May-94	REG	MAGNESIUM	26600	=	
B38W17B	20-May-95	REG	MAGNESIUM	22800	=	
B38W17B	13-May-96	REG	MAGNESIUM	23500	=	
B38W17B	3-Jun-97	REG	MAGNESIUM	24900		
B38W17B	13-May-99	REG	MAGNESIUM	25200		
B38W17B	2-Jul-02	REG	MAGNESIUM	18000		
B38W17B	26-Jun-03	REG	MAGNESIUM	16900		
B38W18D	21-Jul-93	REG	MAGNESIUM	13600	=	
B38W18D	13-May-94	REG	MAGNESIUM	14400	=	J
B38W18D	15-May-95	REG	MAGNESIUM	14100	=	
B38W18D	14-May-96	REG	MAGNESIUM	14300	=	
B38W18D	9-May-97	REG	MAGNESIUM	14000		
B38W18D	8-Jun-98	REG	MAGNESIUM	14400		
B38W18D	20-May-99	REG	MAGNESIUM	14500		
B38W18D	6-Jul-00	REG	MAGNESIUM	12400		
B38W18D	3-Jul-02	DUP	MAGNESIUM	15300		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W18D	2-Jul-03	REG	MAGNESIUM	19300		
B38W19D	23-Jul-93	REG	MAGNESIUM	37200	=	
B38W19D	16-May-94	REG	MAGNESIUM	52600	=	
B38W19D	10-May-95	REG	MAGNESIUM	31200	=	
B38W19D	16-May-96	REG	MAGNESIUM	43900	=	
B38W19D	16-May-97	REG	MAGNESIUM	36600		J
B38W19D	17-Jun-98	REG	MAGNESIUM	38900		
B38W19D	27-May-99	REG	MAGNESIUM	42000		
B38W19D	12-Jul-00	REG	MAGNESIUM	31100		
B38W19D	9-Jul-02	REG	MAGNESIUM	36800		
B38W19D	11-Jul-03	REG	MAGNESIUM	30100		
B38W19S	27-May-94	REG	MAGNESIUM	76200	=	
B38W19S	17-May-95	REG	MAGNESIUM	69000	=	
B38W19S	10-May-96	REG	MAGNESIUM	62600	=	
B38W19S	29-Jun-98	REG	MAGNESIUM	43300		J
B38W19S	14-May-99	REG	MAGNESIUM	46100		
B38W19S	9-Jul-02	REG	MAGNESIUM	43400		
B38W19S	11-Jul-03	REG	MAGNESIUM	31400		
B38W24D	9-Aug-93	REG	MAGNESIUM	9710	=	J
B38W24D	18-May-94	REG	MAGNESIUM	9810	=	
B38W24D	17-May-95	REG	MAGNESIUM	8290	=	
B38W24D	9-May-96	REG	MAGNESIUM	11600	=	
B38W24D	2-Jun-97	REG	MAGNESIUM	10100		
B38W24D	2-Jul-98	REG	MAGNESIUM	9790		J
B38W24D	24-May-99	REG	MAGNESIUM	11400		
B38W24D	22-Jun-00	REG	MAGNESIUM	10700		
B38W24D	15-Jul-02	REG	MAGNESIUM	8730		
B38W24D	7-Jul-03	REG	MAGNESIUM	11700		
B38W24S	5-Aug-93	REG	MAGNESIUM	6330	=	J
B38W24S	25-May-94	REG	MAGNESIUM	7930	=	
B38W24S	17-May-95	REG	MAGNESIUM	8430	=	
B38W24S	9-May-96	REG	MAGNESIUM	8550	=	
B38W24S	2-Jun-97	REG	MAGNESIUM	6280		
B38W24S	2-Jul-98	REG	MAGNESIUM	5810		J
B38W24S	13-May-99	REG	MAGNESIUM	4910		
B38W24S	21-Jun-00	REG	MAGNESIUM	7830		
B38W24S	15-Jul-02	REG	MAGNESIUM	6810		
B38W24S	7-Jul-03	REG	MAGNESIUM	5490		
B38W25D	3-Aug-93	REG	MAGNESIUM	6810	=	
B38W25D	18-May-94	REG	MAGNESIUM	5680	=	
B38W25D	12-May-95	REG	MAGNESIUM	6940	=	
B38W25D	15-May-96	REG	MAGNESIUM	6470	=	
B38W25D	15-May-97	REG	MAGNESIUM	5670		J
B38W25D	1-Jul-98	REG	MAGNESIUM	5520		J
B38W25D	26-May-99	REG	MAGNESIUM	5290		
B38W25D	7-Jul-00	REG	MAGNESIUM	4920		
B38W25D	10-Jul-02	REG	MAGNESIUM	6150		
B38W25D	15-Jul-03	REG	MAGNESIUM	19400		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W25S	3-Aug-93	REG	MAGNESIUM	7480	=	
B38W25S	24-May-94	REG	MAGNESIUM	7290	=	J
B38W25S	15-May-95	REG	MAGNESIUM	9110	=	
B38W25S	15-May-95	DUP	MAGNESIUM	7630	=	
B38W25S	15-May-96	REG	MAGNESIUM	7550	=	
B38W25S	15-May-96	DUP	MAGNESIUM	7980	=	
B38W25S	5-Jun-97	REG	MAGNESIUM	7470		
B38W25S	1-Jul-98	REG	MAGNESIUM	7810		J
B38W25S	17-May-99	REG	MAGNESIUM	6150		
B38W25S	7-Jul-00	REG	MAGNESIUM	7520		
B38W25S	10-Jul-02	REG	MAGNESIUM	7770		
B38W25S	15-Jul-03	REG	MAGNESIUM	9300		
MISS01AA	31-Jul-93	REG	MAGNESIUM	23800	=	
MISS01AA	23-May-94	REG	MAGNESIUM	22200	=	
MISS01AA	18-May-95	REG	MAGNESIUM	22000	=	
MISS01AA	9-May-96	REG	MAGNESIUM	24100	=	
MISS01AA	23-May-97	REG	MAGNESIUM	32100		
MISS01AA	18-Jun-98	REG	MAGNESIUM	33800		
MISS01AA	12-May-99	REG	MAGNESIUM	31700		
MISS01AA	20-Jun-00	REG	MAGNESIUM	23700		
MISS01AA	11-Jul-02	REG	MAGNESIUM	29200		
MISS01AA	9-Jul-03	REG	MAGNESIUM	30100		
MISS01B	21-Jul-93	REG	MAGNESIUM	18700	=	
MISS01B	16-May-94	REG	MAGNESIUM	18400	=	
MISS01B	10-May-95	REG	MAGNESIUM	17600	=	
MISS01B	15-May-96	REG	MAGNESIUM	19200	=	
MISS01B	18-Jun-98	REG	MAGNESIUM	18900		
MISS01B	25-May-99	REG	MAGNESIUM	18800		
MISS01B	20-Jun-00	REG	MAGNESIUM	17200		
MISS01B	18-Jul-02	REG	MAGNESIUM	12900		
MISS01B	9-Jul-03	REG	MAGNESIUM	18400		
MISS02A	20-Jul-93	REG	MAGNESIUM	16100	=	
MISS02A	12-May-94	REG	MAGNESIUM	7980	=	
MISS02A	10-May-95	REG	MAGNESIUM	3410	=	
MISS02A	16-May-96	REG	MAGNESIUM	5980	=	
MISS02A	15-May-97	REG	MAGNESIUM	7560		J
MISS02A	15-May-97	DUP	MAGNESIUM	7030		J
MISS02A	11-Jun-98	DUP	MAGNESIUM	11800		
MISS02A	18-May-99	REG	MAGNESIUM	5700		
MISS02A	22-Jun-00	REG	MAGNESIUM	7780		
MISS02A	8-Jul-02	REG	MAGNESIUM	14300		
MISS02A	30-Jun-03	REG	MAGNESIUM	29900		
MISS02B	20-Jul-93	REG	MAGNESIUM	42300	=	
MISS02B	13-May-94	REG	MAGNESIUM	30100	=	J
MISS02B	9-May-95	REG	MAGNESIUM	33600	=	
MISS02B	14-May-96	REG	MAGNESIUM	36100	=	
MISS02B	19-May-97	REG	MAGNESIUM	32500		J
MISS02B	10-Jun-98	REG	MAGNESIUM	34600		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS02B	18-May-99	DUP	MAGNESIUM	40500		
MISS02B	23-Jun-00	REG	MAGNESIUM	34200		
MISS02B	8-Jul-02	REG	MAGNESIUM	35200		
MISS02B	30-Jun-03	REG	MAGNESIUM	34900		
MISS05A	27-May-94	REG	MAGNESIUM	48200	=	
MISS05A	12-May-95	REG	MAGNESIUM	79200	=	
MISS05A	10-May-96	REG	MAGNESIUM	42700	=	
MISS05A	2-Jun-97	REG	MAGNESIUM	43300		
MISS05A	29-Jun-98	REG	MAGNESIUM	33100		J
MISS05A	14-May-99	REG	MAGNESIUM	47700		
MISS05A	1-Aug-02	REG	MAGNESIUM	72200		
MISS05A	14-Jul-03	REG	MAGNESIUM	37300		
MISS05B	23-Jul-93	REG	MAGNESIUM	58200	=	
MISS05B	17-May-94	REG	MAGNESIUM	64400	=	
MISS05B	11-May-95	REG	MAGNESIUM	52200	=	J
MISS05B	16-May-96	REG	MAGNESIUM	47400	=	
MISS05B	14-May-97	REG	MAGNESIUM	60300		
MISS05B	30-Jun-98	REG	MAGNESIUM	19000		J
MISS05B	11-Jul-00	REG	MAGNESIUM	23900		
MISS05B	31-Jul-02	REG	MAGNESIUM	84900		
MISS05B	16-Jul-03	REG	MAGNESIUM	20500		
MISS06A	4-Aug-93	REG	MAGNESIUM	14800	=	J
MISS06A	24-May-94	REG	MAGNESIUM	9830	=	J
MISS06A	16-May-95	REG	MAGNESIUM	19200	=	
MISS06A	10-May-96	REG	MAGNESIUM	8630	=	
MISS06A	3-Jun-97	REG	MAGNESIUM	13600		
MISS06A	1-Jul-98	REG	MAGNESIUM	9670		J
MISS06A	17-May-99	DUP	MAGNESIUM	12400		
MISS06A	10-Jul-00	REG	MAGNESIUM	9330		
MISS06A	10-Jul-02	REG	MAGNESIUM	7900		
MISS06A	2-Jul-03	REG	MAGNESIUM	13400		
MISS07B	12-Jul-00	REG	MAGNESIUM	50000		
MISS07B	11-Jul-02	REG	MAGNESIUM	88900		
MISS07B	14-Jul-03	REG	MAGNESIUM	99600		
B38W01S	28-Jul-93	REG	MANGANESE	2880	=	J
B38W01S	23-May-94	REG	MANGANESE	2910	=	
B38W01S	21-May-95	REG	MANGANESE	2340	=	
B38W01S	17-May-96	REG	MANGANESE	2810	=	
B38W01S	4-Jun-97	REG	MANGANESE	2780		
B38W01S	7-Jul-98	REG	MANGANESE	2270		
B38W01S	11-Jul-01	DUP	MANGANESE	2570		
B38W01S	17-Jul-02	DUP	MANGANESE	2250		
B38W01S	27-Jun-03	REG	MANGANESE	2670		
B38W02D	27-Jul-93	REG	MANGANESE	2220	=	J
B38W02D	19-May-94	REG	MANGANESE	2000	=	
B38W02D	20-May-95	REG	MANGANESE	1240	=	
B38W02D	17-May-96	REG	MANGANESE	1350	=	
B38W02D	4-Jun-97	REG	MANGANESE	2480		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W02D	30-Jun-98	REG	MANGANESE	3700		
B38W02D	20-May-99	REG	MANGANESE	1130		
B38W02D	13-Jul-00	REG	MANGANESE	2300		
B38W02D	28-Jun-01	REG	MANGANESE	931		
B38W02D	17-Jul-02	REG	MANGANESE	798		
B38W02D	27-Jun-03	REG	MANGANESE	409		
B38W14D	4-Aug-93	REG	MANGANESE	31.7	=	
B38W14D	20-May-95	REG	MANGANESE	5.3	=	
B38W14D	17-May-96	REG	MANGANESE	5.3	=	
B38W14D	4-Jun-97	REG	MANGANESE	33.5		
B38W14D	7-Jul-98	REG	MANGANESE	14.2		
B38W14D	7-Jul-98	DUP	MANGANESE	13.3		
B38W14D	17-May-99	REG	MANGANESE	6.1		J
B38W14D	5-Jul-00	REG	MANGANESE	11.5		
B38W14D	2-Jul-01	REG	MANGANESE	7.3		
B38W14D	24-Jul-02	REG	MANGANESE	16.1		
B38W14D	10-Jul-03	REG	MANGANESE	32.5		
B38W14S	4-Aug-93	REG	MANGANESE	505	=	
B38W14S	20-May-95	REG	MANGANESE	7.9	=	
B38W14S	17-May-96	REG	MANGANESE	22.6	=	
B38W14S	17-May-96	DUP	MANGANESE	20.3	=	
B38W14S	4-Jun-97	REG	MANGANESE	15.7		
B38W14S	7-Jul-98	REG	MANGANESE	126		J
B38W14S	17-May-99	REG	MANGANESE	32.1		
B38W14S	5-Jul-00	REG	MANGANESE	76.3		
B38W14S	2-Jul-01	REG	MANGANESE	50.8		
B38W14S	24-Jul-02	REG	MANGANESE	115		
B38W14S	10-Jul-03	REG	MANGANESE	330		
B38W15D	2-Aug-93	REG	MANGANESE	474	=	J
B38W15D	26-May-94	REG	MANGANESE	944	=	
B38W15D	19-May-95	REG	MANGANESE	638	=	J
B38W15D	13-May-96	REG	MANGANESE	1080	=	J
B38W15D	3-Jun-97	REG	MANGANESE	809		
B38W15D	6-Jul-98	REG	MANGANESE	514		
B38W15D	26-Jun-00	REG	MANGANESE	1060		
B38W15D	27-Jun-01	DUP	MANGANESE	137		
B38W15D	16-Jul-02	REG	MANGANESE	806		
B38W15D	1-Jul-03	REG	MANGANESE	1060		
B38W15S	2-Aug-93	REG	MANGANESE	1850	=	J
B38W15S	26-May-94	REG	MANGANESE	1370	=	
B38W15S	19-May-95	REG	MANGANESE	2170	=	J
B38W15S	19-May-95	DUP	MANGANESE	1970	=	J
B38W15S	13-May-96	REG	MANGANESE	1400	=	J
B38W15S	3-Jun-97	REG	MANGANESE	1540		
B38W15S	6-Jul-98	REG	MANGANESE	1550		
B38W15S	26-Jun-00	REG	MANGANESE	2050		
B38W15S	27-Jun-01	REG	MANGANESE	2300		
B38W15S	16-Jul-02	REG	MANGANESE	2100		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W15S	1-Jul-03	REG	MANGANESE	1750		
B38W17A	28-Jul-93	REG	MANGANESE	1030	=	J
B38W17A	25-May-94	REG	MANGANESE	57.7	=	
B38W17A	20-May-95	REG	MANGANESE	55.9	=	
B38W17A	13-May-96	REG	MANGANESE	38.4	=	J
B38W17A	3-Jun-97	REG	MANGANESE	59.9		
B38W17A	2-Jul-98	REG	MANGANESE	137		
B38W17A	13-May-99	DUP	MANGANESE	42.7		
B38W17A	19-Jun-00	REG	MANGANESE	2070		
B38W17A	14-Jun-01	REG	MANGANESE	253		
B38W17A	2-Jul-02	REG	MANGANESE	314		
B38W17A	26-Jun-03	REG	MANGANESE	212		
B38W17B	29-Jul-93	REG	MANGANESE	3940	=	J
B38W17B	25-May-94	REG	MANGANESE	4650	=	
B38W17B	20-May-95	REG	MANGANESE	4020	=	
B38W17B	13-May-96	REG	MANGANESE	4710	=	J
B38W17B	3-Jun-97	REG	MANGANESE	4860		
B38W17B	2-Jul-98	REG	MANGANESE	3940		
B38W17B	13-May-99	REG	MANGANESE	4920		
B38W17B	19-Jun-00	REG	MANGANESE	3970		
B38W17B	14-Jun-01	REG	MANGANESE	4320		
B38W17B	2-Jul-02	REG	MANGANESE	3010		
B38W17B	26-Jun-03	REG	MANGANESE	3220		
B38W18D	21-Jul-93	REG	MANGANESE	4010	=	J
B38W18D	13-May-94	REG	MANGANESE	3800	=	J
B38W18D	15-May-95	REG	MANGANESE	4010	=	
B38W18D	14-May-96	REG	MANGANESE	3950	=	
B38W18D	9-May-97	REG	MANGANESE	2980		
B38W18D	8-Jun-98	REG	MANGANESE	3670		
B38W18D	20-May-99	REG	MANGANESE	4590		
B38W18D	6-Jul-00	REG	MANGANESE	3510		
B38W18D	20-Jun-01	REG	MANGANESE	180		
B38W18D	3-Jul-02	DUP	MANGANESE	4210		
B38W18D	2-Jul-03	DUP	MANGANESE	5330		
B38W19D	23-Jul-93	REG	MANGANESE	2450	=	J
B38W19D	16-May-94	REG	MANGANESE	3090	=	
B38W19D	10-May-95	REG	MANGANESE	2030	=	
B38W19D	16-May-96	REG	MANGANESE	2570	=	
B38W19D	16-May-97	REG	MANGANESE	2400		
B38W19D	17-Jun-98	REG	MANGANESE	2530		
B38W19D	27-May-99	REG	MANGANESE	2820		
B38W19D	12-Jul-00	REG	MANGANESE	2240		
B38W19D	13-Jun-01	REG	MANGANESE	2190		
B38W19D	9-Jul-02	REG	MANGANESE	2630		
B38W19D	11-Jul-03	REG	MANGANESE	2330		
B38W19S	27-May-94	REG	MANGANESE	860	=	
B38W19S	17-May-95	REG	MANGANESE	301	=	
B38W19S	10-May-96	REG	MANGANESE	744	=	J

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W19S	29-Jun-98	REG	MANGANESE	682		
B38W19S	29-May-99	REG	MANGANESE	841		
B38W19S	13-Jun-01	REG	MANGANESE	933		
B38W19S	9-Jul-02	REG	MANGANESE	918		
B38W19S	11-Jul-03	REG	MANGANESE	514		
B38W24D	9-Aug-93	REG	MANGANESE	5620	=	
B38W24D	18-May-94	REG	MANGANESE	4730	=	J
B38W24D	17-May-95	REG	MANGANESE	3980	=	
B38W24D	9-May-96	REG	MANGANESE	6190	=	J
B38W24D	2-Jun-97	REG	MANGANESE	5600		
B38W24D	2-Jul-98	REG	MANGANESE	4720		
B38W24D	13-May-99	REG	MANGANESE	5860		
B38W24D	22-Jun-00	REG	MANGANESE	5350		
B38W24D	5-Jul-01	REG	MANGANESE	5870		
B38W24D	15-Jul-02	REG	MANGANESE	4720		
B38W24D	7-Jul-03	REG	MANGANESE	6460		
B38W24S	5-Aug-93	REG	MANGANESE	4720	=	
B38W24S	25-May-94	REG	MANGANESE	4610	=	
B38W24S	17-May-95	REG	MANGANESE	5420	=	
B38W24S	9-May-96	REG	MANGANESE	4430	=	J
B38W24S	2-Jun-97	REG	MANGANESE	3190		
B38W24S	2-Jul-98	REG	MANGANESE	2910		
B38W24S	13-May-99	DUP	MANGANESE	5040		
B38W24S	21-Jun-00	REG	MANGANESE	3830		
B38W24S	27-Jun-01	REG	MANGANESE	3010		
B38W24S	15-Jul-02	REG	MANGANESE	3600		
B38W24S	7-Jul-03	REG	MANGANESE	2710		
B38W25D	3-Aug-93	REG	MANGANESE	1620	=	J
B38W25D	18-May-94	REG	MANGANESE	1380	=	J
B38W25D	12-May-95	REG	MANGANESE	1740	=	J
B38W25D	15-May-96	REG	MANGANESE	1610	=	J
B38W25D	15-May-97	REG	MANGANESE	1380		
B38W25D	1-Jul-98	REG	MANGANESE	1400		
B38W25D	26-May-99	REG	MANGANESE	1390		
B38W25D	7-Jul-00	REG	MANGANESE	1250		
B38W25D	10-Jul-01	DUP	MANGANESE	1280		
B38W25D	10-Jul-02	DUP	MANGANESE	1600		
B38W25D	15-Jul-03	REG	MANGANESE	5010		
B38W25S	3-Aug-93	REG	MANGANESE	1730	=	J
B38W25S	24-May-94	REG	MANGANESE	1250	=	J
B38W25S	15-May-95	REG	MANGANESE	1540	=	
B38W25S	15-May-95	DUP	MANGANESE	1410	=	
B38W25S	15-May-96	REG	MANGANESE	1330	=	J
B38W25S	15-May-96	DUP	MANGANESE	1480	=	J
B38W25S	5-Jun-97	REG	MANGANESE	1450		
B38W25S	1-Jul-98	REG	MANGANESE	2390		
B38W25S	17-May-99	REG	MANGANESE	2670		J
B38W25S	7-Jul-00	REG	MANGANESE	7120		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W25S	10-Jul-01	REG	MANGANESE	7380		
B38W25S	10-Jul-02	REG	MANGANESE	5810		
B38W25S	15-Jul-03	REG	MANGANESE	5540		
MISS01AA	31-Jul-93	REG	MANGANESE	309	=	J
MISS01AA	23-May-94	REG	MANGANESE	156	=	
MISS01AA	18-May-95	REG	MANGANESE	8.6	=	
MISS01AA	9-May-96	REG	MANGANESE	119	=	J
MISS01AA	23-May-97	REG	MANGANESE	116		
MISS01AA	18-Jun-98	REG	MANGANESE	117		
MISS01AA	12-May-99	REG	MANGANESE	118		
MISS01AA	20-Jun-00	REG	MANGANESE	94.9		
MISS01AA	20-Jun-01	REG	MANGANESE	117		
MISS01AA	11-Jul-02	REG	MANGANESE	73.2		
MISS01AA	9-Jul-03	REG	MANGANESE	102		
MISS01B	21-Jul-93	REG	MANGANESE	236	=	J
MISS01B	16-May-94	REG	MANGANESE	356	=	
MISS01B	10-May-95	REG	MANGANESE	271	=	
MISS01B	15-May-96	REG	MANGANESE	390	=	J
MISS01B	18-Jun-98	REG	MANGANESE	375		
MISS01B	25-May-99	REG	MANGANESE	359		
MISS01B	20-Jun-00	REG	MANGANESE	291		
MISS01B	19-Jun-01	REG	MANGANESE	320		
MISS01B	18-Jul-02	REG	MANGANESE	192		
MISS01B	9-Jul-03	REG	MANGANESE	379		
MISS02A	20-Jul-93	REG	MANGANESE	96.8	=	
MISS02A	12-May-94	REG	MANGANESE	21.9	=	J
MISS02A	10-May-95	REG	MANGANESE	50.6	=	
MISS02A	16-May-96	REG	MANGANESE	20.9	=	
MISS02A	15-May-97	DUP	MANGANESE	19.4		
MISS02A	11-Jun-98	DUP	MANGANESE	49.7		
MISS02A	18-May-99	REG	MANGANESE	71		
MISS02A	22-Jun-00	REG	MANGANESE	268		
MISS02A	5-Jul-01	REG	MANGANESE	109		
MISS02A	8-Jul-02	REG	MANGANESE	392		
MISS02A	30-Jun-03	REG	MANGANESE	85.4		
MISS02B	20-Jul-93	REG	MANGANESE	4500	=	
MISS02B	13-May-94	REG	MANGANESE	4190	=	J
MISS02B	9-May-95	REG	MANGANESE	4210	=	
MISS02B	14-May-96	REG	MANGANESE	5470	=	
MISS02B	19-May-97	REG	MANGANESE	4630		
MISS02B	10-Jun-98	REG	MANGANESE	5120		
MISS02B	18-May-99	DUP	MANGANESE	5650		
MISS02B	23-Jun-00	REG	MANGANESE	3820		
MISS02B	5-Jul-01	REG	MANGANESE	965		
MISS02B	8-Jul-02	REG	MANGANESE	3380		
MISS02B	30-Jun-03	REG	MANGANESE	4440		
MISS05A	27-May-94	REG	MANGANESE	728	=	
MISS05A	12-May-95	REG	MANGANESE	1330	=	J

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS05A	10-May-96	REG	MANGANESE	646	=	J
MISS05A	2-Jun-97	REG	MANGANESE	584		
MISS05A	29-Jun-98	REG	MANGANESE	330		
MISS05A	14-May-99	REG	MANGANESE	688		
MISS05A	19-Jun-01	REG	MANGANESE	722		
MISS05A	1-Aug-02	REG	MANGANESE	551		
MISS05A	14-Jul-03	REG	MANGANESE	234		
MISS05B	23-Jul-93	REG	MANGANESE	2220	=	J
MISS05B	17-May-94	REG	MANGANESE	2530	=	
MISS05B	11-May-95	REG	MANGANESE	2180	=	
MISS05B	16-May-96	REG	MANGANESE	1920	=	
MISS05B	14-May-97	REG	MANGANESE	2450		
MISS05B	30-Jun-98	REG	MANGANESE	771		
MISS05B	11-Jul-00	REG	MANGANESE	951		
MISS05B	18-Jun-01	REG	MANGANESE	2250		
MISS05B	31-Jul-02	REG	MANGANESE	3010		
MISS05B	16-Jul-03	REG	MANGANESE	1230		
MISS06A	4-Aug-93	REG	MANGANESE	826	=	
MISS06A	24-May-94	REG	MANGANESE	49.7	=	J
MISS06A	16-May-95	REG	MANGANESE	1540	=	
MISS06A	10-May-96	REG	MANGANESE	95	=	J
MISS06A	3-Jun-97	REG	MANGANESE	374		
MISS06A	1-Jul-98	REG	MANGANESE	267		
MISS06A	17-May-99	REG	MANGANESE	58.6		J
MISS06A	10-Jul-00	REG	MANGANESE	228		
MISS06A	20-Jun-01	REG	MANGANESE	13.6		
MISS06A	10-Jul-02	REG	MANGANESE	46.7		
MISS06A	2-Jul-03	REG	MANGANESE	371		
MISS07B	12-Jul-00	REG	MANGANESE	2030		
MISS07B	11-Jul-02	REG	MANGANESE	4660		
MISS07B	14-Jul-03	REG	MANGANESE	5930		
MISS02A	11-Jun-98	DUP	MERCURY	0.52		J
MISS02A	22-Jun-00	REG	MERCURY	0.45		
MISS02A	5-Jul-01	REG	MERCURY	0.1		
MISS02A	8-Jul-02	REG	MERCURY	0.32		J
MISS02A	30-Jun-03	REG	MERCURY	0.19		J
B38W14D	5-Jul-00	REG	MERCURY	0.11		J
B38W14D	2-Jul-01	REG	MERCURY	0.1		
B38W24S	21-Jun-00	REG	MERCURY	0.12		J
B38W24S	27-Jun-01	REG	MERCURY	0.1		
B38W02D	20-May-95	REG	MOLYBDENU	9.7	=	
B38W02D	4-Jun-97	REG	MOLYBDENU	2.5		
B38W02D	30-Jun-98	REG	MOLYBDENU	23.6		
B38W14D	20-May-95	REG	MOLYBDENU	16.6	=	
B38W14S	20-May-95	REG	MOLYBDENU	18.1	=	
B38W14S	4-Jun-97	REG	MOLYBDENU	20.5		
B38W14S	7-Jul-98	REG	MOLYBDENU	29.7		
B38W14S	17-May-99	REG	MOLYBDENU	9.4		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W17A	28-Jul-93	REG	MOLYBDENU	281	=	
B38W17A	20-May-95	REG	MOLYBDENU	18.9	=	
B38W17A	3-Jun-97	REG	MOLYBDENU	18.7		
B38W17A	2-Jul-98	REG	MOLYBDENU	79.1		
B38W17A	13-May-99	REG	MOLYBDENU	2.6		
B38W18D	8-Jun-98	REG	MOLYBDENU	9.7		
B38W19S	17-May-95	REG	MOLYBDENU	20.4	=	
B38W19S	10-May-96	REG	MOLYBDENU	10.1	=	
B38W24D	2-Jul-98	REG	MOLYBDENU	3.9		
B38W25S	24-May-94	REG	MOLYBDENU	6.4	=	
B38W25S	1-Jul-98	REG	MOLYBDENU	7.6		
B38W25S	17-May-99	REG	MOLYBDENU	16.6		
MISS01AA	23-May-94	REG	MOLYBDENU	49.2	=	J
MISS01AA	18-May-95	REG	MOLYBDENU	10	=	
MISS01AA	23-May-97	REG	MOLYBDENU	1.8		
MISS01AA	18-Jun-98	REG	MOLYBDENU	3		
MISS02A	12-May-94	REG	MOLYBDENU	5.9	=	J
MISS02A	15-May-97	REG	MOLYBDENU	3.5		
MISS02A	15-May-97	DUP	MOLYBDENU	3.5		
MISS02A	11-Jun-98	REG	MOLYBDENU	3.4		
MISS02A	11-Jun-98	DUP	MOLYBDENU	3.8		
MISS02A	11-Jun-99	REG	MOLYBDENU	31.1		
MISS05A	2-Jun-97	REG	MOLYBDENU	2.5		
MISS05A	29-Jun-98	REG	MOLYBDENU	3.3		
MISS05A	14-May-99	REG	MOLYBDENU	1.9		
B38W01S	28-Jul-93	REG	NICKEL	14.8	B	
B38W01S	4-Jun-97	REG	NICKEL	3.6		
B38W01S	7-Jul-98	REG	NICKEL	2.7		
B38W01S	11-Jul-01	REG	NICKEL	4.9		
B38W02D	27-Jul-93	REG	NICKEL	14.8	B	
B38W02D	19-May-94	REG	NICKEL	10.1	=	
B38W02D	17-May-96	REG	NICKEL	40.8	=	
B38W02D	4-Jun-97	REG	NICKEL	17.6		
B38W02D	30-Jun-98	REG	NICKEL	41.6		
B38W02D	20-May-99	REG	NICKEL	5.7		
B38W02D	13-Jul-00	REG	NICKEL	32.7		
B38W02D	28-Jun-01	REG	NICKEL	20.2		
B38W02D	17-Jul-02	REG	NICKEL	6.9		J
B38W02D	27-Jun-03	REG	NICKEL	5.7		
B38W14D	4-Jun-97	REG	NICKEL	18.5		
B38W14D	7-Jul-98	REG	NICKEL	10.2		
B38W14D	7-Jul-98	DUP	NICKEL	9.1		
B38W14D	17-May-99	REG	NICKEL	3.3		
B38W14D	5-Jul-00	REG	NICKEL	12.1		
B38W14D	2-Jul-01	REG	NICKEL	21.6		
B38W14D	24-Jul-02	REG	NICKEL	5.3		
B38W14D	10-Jul-03	REG	NICKEL	4.4		
B38W14S	4-Aug-93	REG	NICKEL	31.2	B	

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W14S	17-May-96	REG	NICKEL	17	=	
B38W14S	17-May-96	DUP	NICKEL	17	=	
B38W14S	4-Jun-97	REG	NICKEL	19.7		
B38W14S	7-Jul-98	REG	NICKEL	31.3		
B38W14S	17-May-99	REG	NICKEL	23.5		
B38W14S	5-Jul-00	REG	NICKEL	9.6		
B38W14S	2-Jul-01	REG	NICKEL	4.8		
B38W14S	24-Jul-02	REG	NICKEL	11.2		
B38W14S	10-Jul-03	REG	NICKEL	7.3		
B38W15D	26-May-94	REG	NICKEL	30.9	=	
B38W15D	3-Jun-97	REG	NICKEL	6.8		
B38W15D	6-Jul-98	REG	NICKEL	8.2		
B38W15D	26-Jun-00	REG	NICKEL	9.7		
B38W15D	27-Jun-01	REG	NICKEL	12		
B38W15D	16-Jul-02	REG	NICKEL	7.2		J
B38W15S	3-Jun-97	REG	NICKEL	3.8		
B38W15S	6-Jul-98	REG	NICKEL	5.2		
B38W15S	26-Jun-00	REG	NICKEL	4.8		
B38W15S	27-Jun-01	REG	NICKEL	6.2		
B38W15S	16-Jul-02	REG	NICKEL	3.7		J
B38W17A	28-Jul-93	REG	NICKEL	824	=	
B38W17A	25-May-94	REG	NICKEL	153	=	
B38W17A	20-May-95	REG	NICKEL	167	=	
B38W17A	13-May-96	REG	NICKEL	143	=	
B38W17A	3-Jun-97	REG	NICKEL	148		
B38W17A	2-Jul-98	REG	NICKEL	201		
B38W17A	13-May-99	DUP	NICKEL	120		
B38W17A	19-Jun-00	REG	NICKEL	114		
B38W17A	14-Jun-01	REG	NICKEL	56.3		
B38W17A	2-Jul-02	REG	NICKEL	102		
B38W17A	26-Jun-03	REG	NICKEL	57.7		
B38W17B	3-Jun-97	REG	NICKEL	1.2		
B38W17B	2-Jul-98	REG	NICKEL	2.4		
B38W17B	13-May-99	REG	NICKEL	1.6		
B38W17B	19-Jun-00	REG	NICKEL	7		
B38W17B	14-Jun-01	REG	NICKEL	4.9		
B38W17B	2-Jul-02	REG	NICKEL	4.1		
B38W17B	26-Jun-03	REG	NICKEL	2.7		J
B38W18D	21-Jul-93	REG	NICKEL	37.6	B	
B38W18D	13-May-94	REG	NICKEL	39.5	=	J
B38W18D	15-May-95	REG	NICKEL	26.3	=	
B38W18D	14-May-96	REG	NICKEL	28.4	=	
B38W18D	9-May-97	REG	NICKEL	17.3		
B38W18D	8-Jun-98	REG	NICKEL	55.5		
B38W18D	20-May-99	REG	NICKEL	24.9		
B38W18D	6-Jul-00	REG	NICKEL	22.7		
B38W18D	20-Jun-01	REG	NICKEL	36.6		
B38W18D	3-Jul-02	DUP	NICKEL	28.4		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W18D	2-Jul-03	REG	NICKEL	30.1		
B38W19D	16-May-97	REG	NICKEL	3.9		
B38W19D	17-Jun-98	REG	NICKEL	1.9		
B38W19D	27-May-99	REG	NICKEL	1.7		
B38W19D	12-Jul-00	REG	NICKEL	2.2		J
B38W19S	29-Jun-98	REG	NICKEL	4.7		
B38W19S	14-May-99	REG	NICKEL	4.2		
B38W19S	13-Jun-01	REG	NICKEL	3.5		
B38W24D	18-May-94	REG	NICKEL	12.5	=	
B38W24D	2-Jun-97	REG	NICKEL	1.2		
B38W24D	2-Jul-98	REG	NICKEL	14.7		
B38W24D	13-May-99	REG	NICKEL	4.4		
B38W24D	5-Jul-01	REG	NICKEL	4		
B38W24D	15-Jul-02	REG	NICKEL	4		J
B38W24D	7-Jul-03	REG	NICKEL	2.1		UJ
B38W24S	2-Jun-97	REG	NICKEL	5.4		
B38W24S	2-Jul-98	REG	NICKEL	0.85		
B38W24S	21-Jun-00	REG	NICKEL	8		
B38W24S	27-Jun-01	REG	NICKEL	1.2		
B38W24S	15-Jul-02	REG	NICKEL	5.3		J
B38W25D	12-May-95	REG	NICKEL	27.7	=	
B38W25D	15-May-97	REG	NICKEL	5.3		
B38W25D	1-Jul-98	REG	NICKEL	2.7		
B38W25D	26-May-99	REG	NICKEL	2.7		
B38W25D	7-Jul-00	REG	NICKEL	3.6		
B38W25D	10-Jul-01	DUP	NICKEL	3.3		
B38W25S	3-Aug-93	REG	NICKEL	134	=	
B38W25S	15-May-95	REG	NICKEL	22.5	=	
B38W25S	15-May-95	DUP	NICKEL	30	=	
B38W25S	5-Jun-97	REG	NICKEL	5.8		
B38W25S	1-Jul-98	REG	NICKEL	35.1		
B38W25S	17-May-99	DUP	NICKEL	78.1		
B38W25S	7-Jul-00	REG	NICKEL	32.4		
B38W25S	10-Jul-01	REG	NICKEL	14.2		
MISS01AA	31-Jul-93	REG	NICKEL	66.5	=	
MISS01AA	23-May-94	REG	NICKEL	243	=	
MISS01AA	23-May-97	REG	NICKEL	4.1		
MISS01AA	18-Jun-98	REG	NICKEL	9.9		
MISS01AA	12-May-99	REG	NICKEL	3.6		
MISS01AA	20-Jun-00	REG	NICKEL	4		
MISS01AA	20-Jun-01	REG	NICKEL	1.9		
MISS01B	20-Jun-00	REG	NICKEL	1.9		J
MISS01B	19-Jun-01	REG	NICKEL	4.1		
MISS01B	18-Jul-02	REG	NICKEL	7.3		J
MISS02A	12-May-94	REG	NICKEL	27.1	=	
MISS02A	10-May-95	REG	NICKEL	11.4	=	
MISS02A	15-May-97	REG	NICKEL	12.2		
MISS02A	15-May-97	DUP	NICKEL	13.5		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS02A	11-Jun-98	REG	NICKEL	9.7		
MISS02A	11-Jun-98	DUP	NICKEL	10.4		
MISS02A	18-May-99	REG	NICKEL	31.1		
MISS02A	22-Jun-00	REG	NICKEL	20		
MISS02A	5-Jul-01	REG	NICKEL	4.3		
MISS02A	8-Jul-02	REG	NICKEL	24.4		
MISS02B	20-Jul-93	REG	NICKEL	22.6	=	
MISS02B	13-May-94	REG	NICKEL	181	=	J
MISS02B	19-May-97	REG	NICKEL	9.2		
MISS02B	10-Jun-98	REG	NICKEL	9.2		
MISS02B	18-May-99	REG	NICKEL	9.6		
MISS02B	23-Jun-00	REG	NICKEL	20.9		
MISS02B	5-Jul-01	REG	NICKEL	7.6		
MISS05A	10-May-96	REG	NICKEL	10.9	=	
MISS05A	2-Jun-97	REG	NICKEL	6.1		
MISS05A	29-Jun-98	REG	NICKEL	5		
MISS05A	14-May-99	REG	NICKEL	22.8		
MISS05A	19-Jun-01	REG	NICKEL	5.1		
MISS05A	1-Aug-02	REG	NICKEL	14.1		
MISS05B	23-Jul-93	REG	NICKEL	17.7	B	
MISS05B	14-May-97	REG	NICKEL	4.1		
MISS05B	30-Jun-98	REG	NICKEL	10.8		
MISS05B	18-Jun-01	REG	NICKEL	6.8		
MISS05B	31-Jul-02	REG	NICKEL	2.3		J
MISS06A	10-May-96	REG	NICKEL	17.3	=	
MISS06A	3-Jun-97	REG	NICKEL	10.6		
MISS06A	1-Jul-98	REG	NICKEL	8.1		
MISS06A	17-May-99	DUP	NICKEL	7.9		
MISS06A	10-Jul-00	REG	NICKEL	21.1		
MISS06A	20-Jun-01	REG	NICKEL	6.5		
MISS07B	12-Jul-00	REG	NICKEL	6.8		
MISS07B	11-Jun-01	REG	NICKEL	8.8		
MISS07B	11-Jul-02	REG	NICKEL	10.6		J
MISS07B	14-Jul-03	REG	NICKEL	17.3		J
B38W01S	28-Jul-93	REG	POTASSIUM	59500	=	
B38W01S	23-May-94	REG	POTASSIUM	54100	=	
B38W01S	21-May-95	REG	POTASSIUM	44600	=	
B38W01S	17-May-96	REG	POTASSIUM	49300	=	
B38W01S	4-Jun-97	REG	POTASSIUM	49500		
B38W01S	7-Jul-98	REG	POTASSIUM	43700		
B38W01S	17-Jul-02	REG	POTASSIUM	57200		
B38W01S	27-Jun-03	REG	POTASSIUM	44100		
B38W02D	19-May-94	REG	POTASSIUM	1210	=	
B38W02D	17-May-96	REG	POTASSIUM	449	=	
B38W02D	4-Jun-97	REG	POTASSIUM	819		
B38W02D	30-Jun-98	REG	POTASSIUM	941		
B38W02D	20-May-99	REG	POTASSIUM	777		
B38W02D	13-Jul-00	REG	POTASSIUM	847		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
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Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W02D	17-Jul-02	REG	POTASSIUM	952		
B38W02D	27-Jun-03	REG	POTASSIUM	761		
B38W14D	4-Aug-93	REG	POTASSIUM	7440	=	
B38W14D	20-May-95	REG	POTASSIUM	3750	=	
B38W14D	17-May-96	REG	POTASSIUM	4380	=	
B38W14D	4-Jun-97	REG	POTASSIUM	5300		
B38W14D	7-Jul-98	REG	POTASSIUM	6020		
B38W14D	7-Jul-98	DUP	POTASSIUM	6110		
B38W14D	17-May-99	REG	POTASSIUM	4140		
B38W14D	5-Jul-00	REG	POTASSIUM	6240		
B38W14D	24-Jul-02	REG	POTASSIUM	6350		
B38W14D	10-Jul-03	REG	POTASSIUM	3020		
B38W14S	4-Aug-93	REG	POTASSIUM	5700	=	
B38W14S	20-May-95	REG	POTASSIUM	2850	=	
B38W14S	17-May-96	REG	POTASSIUM	3720	=	
B38W14S	17-May-96	DUP	POTASSIUM	3790	=	
B38W14S	4-Jun-97	REG	POTASSIUM	5080		
B38W14S	7-Jul-98	REG	POTASSIUM	4930		
B38W14S	17-May-99	REG	POTASSIUM	4810		
B38W14S	5-Jul-00	REG	POTASSIUM	4420		
B38W14S	24-Jul-02	REG	POTASSIUM	7190		
B38W14S	10-Jul-03	REG	POTASSIUM	4670		
B38W15D	2-Aug-93	REG	POTASSIUM	41200	=	
B38W15D	26-May-94	REG	POTASSIUM	58800	=	
B38W15D	19-May-95	REG	POTASSIUM	43300	=	J
B38W15D	13-May-96	REG	POTASSIUM	65000	=	J
B38W15D	3-Jun-97	REG	POTASSIUM	50500		
B38W15D	6-Jul-98	REG	POTASSIUM	44200		
B38W15D	26-Jun-00	REG	POTASSIUM	72700		
B38W15D	16-Jul-02	REG	POTASSIUM	60100		
B38W15D	1-Jul-03	REG	POTASSIUM	72500		
B38W15S	2-Aug-93	REG	POTASSIUM	146000	=	
B38W15S	26-May-94	REG	POTASSIUM	138000	=	
B38W15S	19-May-95	REG	POTASSIUM	168000	=	J
B38W15S	19-May-95	DUP	POTASSIUM	154000	=	J
B38W15S	13-May-96	REG	POTASSIUM	136000	=	J
B38W15S	3-Jun-97	REG	POTASSIUM	136000		
B38W15S	6-Jul-98	REG	POTASSIUM	120000		
B38W15S	26-Jun-00	REG	POTASSIUM	164000		
B38W15S	16-Jul-02	REG	POTASSIUM	195000		
B38W15S	1-Jul-03	REG	POTASSIUM	136000		J
B38W17A	28-Jul-93	REG	POTASSIUM	26600	=	
B38W17A	25-May-94	REG	POTASSIUM	20300	=	
B38W17A	20-May-95	REG	POTASSIUM	13900	=	
B38W17A	13-May-96	REG	POTASSIUM	31000	=	J
B38W17A	3-Jun-97	REG	POTASSIUM	19200		
B38W17A	2-Jul-98	REG	POTASSIUM	20800		
B38W17A	13-May-99	DUP	POTASSIUM	25000		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
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Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W17A	19-Jun-00	REG	POTASSIUM	18900		
B38W17A	2-Jul-02	REG	POTASSIUM	32200		
B38W17A	26-Jun-03	REG	POTASSIUM	23600		
B38W17B	29-Jul-93	REG	POTASSIUM	78400	=	J
B38W17B	25-May-94	REG	POTASSIUM	83300	=	
B38W17B	20-May-95	REG	POTASSIUM	73200	=	
B38W17B	13-May-96	REG	POTASSIUM	88500	=	J
B38W17B	3-Jun-97	REG	POTASSIUM	91100		
B38W17B	2-Jul-98	REG	POTASSIUM	88000		
B38W17B	13-May-99	REG	POTASSIUM	98900		
B38W17B	19-Jun-00	REG	POTASSIUM	93300		
B38W17B	2-Jul-02	REG	POTASSIUM	126000		J
B38W17B	26-Jun-03	REG	POTASSIUM	110000		
B38W18D	21-Jul-93	REG	POTASSIUM	6910	=	
B38W18D	13-May-94	REG	POTASSIUM	6240	=	J
B38W18D	15-May-95	REG	POTASSIUM	6370	=	
B38W18D	14-May-96	REG	POTASSIUM	6830	=	
B38W18D	9-May-97	REG	POTASSIUM	7530		
B38W18D	8-Jun-98	REG	POTASSIUM	8870		
B38W18D	20-May-99	DUP	POTASSIUM	7370		
B38W18D	6-Jul-00	REG	POTASSIUM	6320		
B38W18D	3-Jul-02	REG	POTASSIUM	12600		J
B38W18D	2-Jul-03	DUP	POTASSIUM	10900		J
B38W19D	23-Jul-93	REG	POTASSIUM	381000	=	
B38W19D	16-May-94	REG	POTASSIUM	485000	=	
B38W19D	10-May-95	REG	POTASSIUM	329000	=	
B38W19D	16-May-96	REG	POTASSIUM	435000	=	
B38W19D	16-May-97	REG	POTASSIUM	397000		J
B38W19D	17-Jun-98	REG	POTASSIUM	415000		J
B38W19D	27-May-99	REG	POTASSIUM	408000		
B38W19D	12-Jul-00	REG	POTASSIUM	291000		
B38W19D	9-Jul-02	REG	POTASSIUM	389000		
B38W19D	11-Jul-03	REG	POTASSIUM	343000		
B38W19S	27-May-94	REG	POTASSIUM	43500	=	
B38W19S	17-May-95	REG	POTASSIUM	40400	=	
B38W19S	10-May-96	REG	POTASSIUM	33500	=	J
B38W19S	29-Jun-98	REG	POTASSIUM	31800		
B38W19S	14-May-99	REG	POTASSIUM	35500		
B38W19S	9-Jul-02	REG	POTASSIUM	39300		
B38W19S	11-Jul-03	REG	POTASSIUM	14100		
B38W24D	9-Aug-93	REG	POTASSIUM	13000	=	
B38W24D	18-May-94	REG	POTASSIUM	9900	=	
B38W24D	17-May-95	REG	POTASSIUM	7530	=	
B38W24D	9-May-96	REG	POTASSIUM	12700	=	J
B38W24D	2-Jun-97	REG	POTASSIUM	12800		
B38W24D	2-Jul-98	REG	POTASSIUM	12200		
B38W24D	13-May-99	REG	POTASSIUM	12800		
B38W24D	22-Jun-00	REG	POTASSIUM	11600		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W24D	15-Jul-02	REG	POTASSIUM	15700		
B38W24D	7-Jul-03	REG	POTASSIUM	12600		
B38W24S	5-Aug-93	REG	POTASSIUM	8060	=	
B38W24S	25-May-94	REG	POTASSIUM	6600	=	
B38W24S	17-May-95	REG	POTASSIUM	7050	=	
B38W24S	9-May-96	REG	POTASSIUM	8790	=	J
B38W24S	2-Jun-97	REG	POTASSIUM	6030		
B38W24S	2-Jul-98	REG	POTASSIUM	6450		
B38W24S	13-May-99	DUP	POTASSIUM	7710		
B38W24S	21-Jun-00	REG	POTASSIUM	6990		
B38W24S	15-Jul-02	REG	POTASSIUM	12700		
B38W24S	7-Jul-03	REG	POTASSIUM	7080		J
B38W25D	3-Aug-93	REG	POTASSIUM	92300	=	
B38W25D	18-May-94	REG	POTASSIUM	62800	=	
B38W25D	12-May-95	REG	POTASSIUM	73900	=	J
B38W25D	15-May-96	REG	POTASSIUM	77800	=	J
B38W25D	15-May-97	REG	POTASSIUM	61700		J
B38W25D	1-Jul-98	REG	POTASSIUM	56900		
B38W25D	26-May-99	DUP	POTASSIUM	56200		
B38W25D	7-Jul-00	REG	POTASSIUM	48300		
B38W25D	10-Jul-02	REG	POTASSIUM	58800		
B38W25D	15-Jul-03	REG	POTASSIUM	74500		
B38W25S	3-Aug-93	REG	POTASSIUM	167000	=	
B38W25S	24-May-94	REG	POTASSIUM	89600	=	J
B38W25S	15-May-95	REG	POTASSIUM	88400	=	
B38W25S	15-May-95	DUP	POTASSIUM	88800	=	
B38W25S	15-May-96	REG	POTASSIUM	72800	=	J
B38W25S	15-May-96	DUP	POTASSIUM	77900	=	J
B38W25S	5-Jun-97	REG	POTASSIUM	71400		
B38W25S	1-Jul-98	REG	POTASSIUM	45900		
B38W25S	17-May-99	REG	POTASSIUM	74400		
B38W25S	7-Jul-00	REG	POTASSIUM	59900		
B38W25S	10-Jul-02	REG	POTASSIUM	69400		
B38W25S	15-Jul-=03	REG	POTASSIUM	19500		
MISS01AA	31-Jul-93	REG	POTASSIUM	2340	B	J
MISS01AA	18-May-95	REG	POTASSIUM	1550	=	
MISS01AA	9-May-96	REG	POTASSIUM	1460	=	J
MISS01AA	23-May-97	REG	POTASSIUM	1900		
MISS01AA	18-Jun-98	REG	POTASSIUM	2100		
MISS01AA	12-May-99	REG	POTASSIUM	1590		
MISS01AA	20-Jun-00	REG	POTASSIUM	1270		
MISS01AA	11-Jul-02	REG	POTASSIUM	1180		J
MISS01AA	9-Jul-03	REG	POTASSIUM	851		
MISS01B	21-Jul-93	REG	POTASSIUM	6350	=	
MISS01B	16-May-94	REG	POTASSIUM	5710	=	
MISS01B	10-May-95	REG	POTASSIUM	6950	=	
MISS01B	15-May-96	REG	POTASSIUM	15300	=	J
MISS01B	18-Jun-98	REG	POTASSIUM	13900		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS01B	25-May-99	REG	POTASSIUM	11900		
MISS01B	20-Jun-00	REG	POTASSIUM	9000		
MISS01B	18-Jul-02	DUP	POTASSIUM	10200		
MISS01B	9-Jul-03	REG	POTASSIUM	10700		
MISS02A	20-Jul-93	REG	POTASSIUM	9390	=	
MISS02A	12-May-94	REG	POTASSIUM	2850	=	
MISS02A	10-May-95	REG	POTASSIUM	4340	=	
MISS02A	16-May-96	REG	POTASSIUM	3190	=	
MISS02A	15-May-97	REG	POTASSIUM	5120		J
MISS02A	15-May-97	DUP	POTASSIUM	4940		J
MISS02A	11-Jun-98	REG	POTASSIUM	4790		J
MISS02A	11-Jun-98	DUP	POTASSIUM	5260		J
MISS02A	18-May-99	REG	POTASSIUM	12500		
MISS02A	22-Jun-00	REG	POTASSIUM	9350		J
MISS02A	8-Jul-02	REG	POTASSIUM	13800		J
MISS02A	30-Jun-03	REG	POTASSIUM	4160		
MISS02B	20-Jul-93	REG	POTASSIUM	55100	=	
MISS02B	13-May-94	REG	POTASSIUM	32000	=	J
MISS02B	9-May-95	REG	POTASSIUM	40300	=	
MISS02B	14-May-96	REG	POTASSIUM	38000	=	
MISS02B	19-May-97	REG	POTASSIUM	40100		J
MISS02B	10-Jun-98	REG	POTASSIUM	46200		J
MISS02B	18-May-99	REG	POTASSIUM	70700		
MISS02B	23-Jun-00	REG	POTASSIUM	84400		
MISS02B	8-Jul-02	REG	POTASSIUM	66100		
MISS02B	30-Jun-03	REG	POTASSIUM	64400		
MISS05A	27-May-94	REG	POTASSIUM	57800	=	
MISS05A	12-May-95	REG	POTASSIUM	84600	=	J
MISS05A	10-May-96	REG	POTASSIUM	53000	=	J
MISS05A	2-Jun-97	REG	POTASSIUM	64100		
MISS05A	29-Jun-98	REG	POTASSIUM	45000		
MISS05A	14-May-99	REG	POTASSIUM	58300		
MISS05A	1-Aug-02	REG	POTASSIUM	73700		
MISS05A	14-Jul-03	REG	POTASSIUM	31300		
MISS05B	23-Jul-93	REG	POTASSIUM	224000	=	
MISS05B	17-May-94	REG	POTASSIUM	230000	=	
MISS05B	11-May-95	REG	POTASSIUM	231000	=	
MISS05B	16-May-96	REG	POTASSIUM	234000	=	
MISS05B	14-May-97	REG	POTASSIUM	224000		
MISS05B	30-Jun-98	REG	POTASSIUM	162000		
MISS05B	11-Jul-00	REG	POTASSIUM	167000		
MISS05B	31-Jul-02	REG	POTASSIUM	478000		
MISS05B	16-Jul-03	REG	POTASSIUM	149000		J
MISS06A	4-Aug-93	REG	POTASSIUM	75400	=	
MISS06A	24-May-94	REG	POTASSIUM	12100	=	J
MISS06A	16-May-95	REG	POTASSIUM	97000	=	
MISS06A	10-May-96	REG	POTASSIUM	12300	=	J
MISS06A	3-Jun-97	REG	POTASSIUM	22900		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS06A	1-Jul-98	REG	POTASSIUM	15000		
MISS06A	17-May-99	REG	POTASSIUM	15800		
MISS06A	10-Jul-00	REG	POTASSIUM	12600		
MISS06A	10-Jul-02	REG	POTASSIUM	10800		
MISS06A	2-Jul-03	REG	POTASSIUM	16500		J
MISS07B	12-Jul-00	REG	POTASSIUM	29200		
MISS07B	11-Jul-02	DUP	POTASSIUM	71200		
MISS07B	14-Jul-03	REG	POTASSIUM	69800		
B38W25D	15-Jul-03	REG	SELENIUM	25		UJ
B38W25S	15-Jul-03	REG	SELENIUM	25		UJ
MISS05A	14-Jul-03	REG	SELENIUM	25		UJ
MISS05B	16-Jul-03	REG	SELENIUM	25		UJ
MISS07B	14-Jul-03	REG	SELENIUM	25		UJ
B38W02D	30-Jun-98	REG	SILVER	0.78		
B38W02D	28-Jun-01	REG	SILVER	1		
B38W07B	16-Jun-98	REG	SILVER	1.1		J
B38W07B	27-May-99	DUP	SILVER	3		
B38W19D	16-May-94	REG	SILVER	6	=	
B38W19D	17-Jun-98	REG	SILVER	4.3		
B38W19D	13-Jun-01	REG	SILVER	1		
B38W19S	14-May-99	REG	SILVER	1.5		
B38W24D	18-May-94	REG	SILVER	4.8	=	
B38W24D	2-Jul-98	REG	SILVER	0.56		
B38W24D	5-Jul-01	REG	SILVER	1		
MISS01AA	18-Jun-98	REG	SILVER	1.3		J
MISS01AA	20-Jun-01	REG	SILVER	1		
MISS01B	16-May-94	REG	SILVER	6.4	=	
MISS01B	25-May-99	REG	SILVER	1.4		
MISS01B	19-Jun-01	REG	SILVER	1		
MISS02A	11-Jun-98	REG	SILVER	3.5		J
MISS02A	11-Jun-98	DUP	SILVER	0.96		J
MISS02A	18-May-99	REG	SILVER	1.4		
MISS02A	5-Jul-01	REG	SILVER	1		
MISS02B	10-Jun-98	REG	SILVER	1.2		J
MISS02B	18-May-99	REG	SILVER	1.4		
MISS02B	5-Jul-01	REG	SILVER	1		
MISS05A	27-May-94	REG	SILVER	5.6	=	
MISS05A	14-May-99	REG	SILVER	1.5		
MISS05A	19-Jun-01	REG	SILVER	1		
B38W01S	28-Jul-93	REG	SODIUM	91100	=	
B38W01S	23-May-94	REG	SODIUM	80300	=	
B38W01S	21-May-95	REG	SODIUM	53700	=	
B38W01S	17-May-96	REG	SODIUM	59900	=	
B38W01S	4-Jun-97	REG	SODIUM	52200		
B38W01S	7-Jul-98	REG	SODIUM	39500		J
B38W01S	17-Jul-02	REG	SODIUM	37600		
B38W01S	27-Jun-03	REG	SODIUM	45600		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W02D	27-Jul-93	REG	SODIUM	7820	=	
B38W02D	19-May-94	REG	SODIUM	7060	=	
B38W02D	20-May-95	REG	SODIUM	6050	=	
B38W02D	17-May-96	REG	SODIUM	7210	=	
B38W02D	4-Jun-97	REG	SODIUM	8410		
B38W02D	30-Jun-98	REG	SODIUM	8710		J
B38W02D	20-May-99	REG	SODIUM	8350		
B38W02D	13-Jul-00	REG	SODIUM	9050		
B38W02D	17-Jul-02	REG	SODIUM	9160		
B38W02D	27-Jun-03	REG	SODIUM	9660		
B38W14D	4-Aug-93	REG	SODIUM	29400	=	
B38W14D	20-May-95	REG	SODIUM	22100	=	
B38W14D	17-May-96	REG	SODIUM	31100	=	
B38W14D	4-Jun-97	REG	SODIUM	34800		
B38W14D	7-Jul-98	REG	SODIUM	34500		J
B38W14D	7-Jul-98	DUP	SODIUM	35400		J
B38W14D	17-May-99	REG	SODIUM	38800		
B38W14D	5-Jul-00	REG	SODIUM	34800		
B38W14D	24-Jul-02	REG	SODIUM	34400		
B38W14D	10-Jul-03	REG	SODIUM	42500		
B38W14S	4-Aug-93	REG	SODIUM	11500	=	
B38W14S	20-May-95	REG	SODIUM	13500	=	
B38W14S	17-May-96	REG	SODIUM	19500	=	
B38W14S	17-May-96	DUP	SODIUM	17700	=	
B38W14S	4-Jun-97	REG	SODIUM	21900		
B38W14S	7-Jul-98	REG	SODIUM	19900		J
B38W14S	17-May-99	REG	SODIUM	22800		
B38W14S	5-Jul-00	REG	SODIUM	23300		
B38W14S	24-Jul-02	REG	SODIUM	25900		
B38W14S	10-Jul-03	REG	SODIUM	35200		
B38W15D	2-Aug-93	REG	SODIUM	229000	=	
B38W15D	26-May-94	REG	SODIUM	340000	=	
B38W15D	19-May-95	REG	SODIUM	245000	=	
B38W15D	13-May-96	REG	SODIUM	361000	=	J
B38W15D	3-Jun-97	REG	SODIUM	251000		
B38W15D	6-Jul-98	REG	SODIUM	181000		J
B38W15D	26-Jun-00	REG	SODIUM	204000		
B38W15D	16-Jul-02	REG	SODIUM	288000		
B38W15D	1-Jul-03	REG	SODIUM	370000		
B38W15S	2-Aug-93	REG	SODIUM	223000	=	
B38W15S	26-May-94	REG	SODIUM	205000	=	
B38W15S	19-May-95	REG	SODIUM	269000	=	
B38W15S	19-May-95	DUP	SODIUM	248000	=	
B38W15S	13-May-96	REG	SODIUM	207000	=	J
B38W15S	3-Jun-97	REG	SODIUM	207000		
B38W15S	6-Jul-98	REG	SODIUM	187000		J
B38W15S	26-Jun-00	REG	SODIUM	175000		
B38W15S	16-Jul-02	REG	SODIUM	255000		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W15S	1-Jul-03	REG	SODIUM	253000		
B38W17A	28-Jul-93	REG	SODIUM	47000	=	
B38W17A	25-May-94	REG	SODIUM	37500	=	
B38W17A	20-May-95	REG	SODIUM	28000	=	
B38W17A	13-May-96	REG	SODIUM	58100	=	J
B38W17A	3-Jun-97	REG	SODIUM	33300		
B38W17A	2-Jul-98	REG	SODIUM	32300		J
B38W17A	13-May-99	REG	SODIUM	50800		
B38W17A	19-Jun-00	REG	SODIUM	38100		
B38W17A	2-Jul-02	REG	SODIUM	48300		
B38W17A	26-Jun-03	REG	SODIUM	52100		
B38W17B	29-Jul-93	REG	SODIUM	207000	=	J
B38W17B	25-May-94	REG	SODIUM	208000	=	
B38W17B	20-May-95	REG	SODIUM	232000	=	
B38W17B	13-May-96	REG	SODIUM	194000	=	J
B38W17B	3-Jun-97	REG	SODIUM	218000		
B38W17B	2-Jul-98	REG	SODIUM	172000		J
B38W17B	13-May-99	REG	SODIUM	197000		
B38W17B	19-Jun-00	REG	SODIUM	211000		
B38W17B	2-Jul-02	REG	SODIUM	118000		
B38W17B	26-Jun-03	REG	SODIUM	100000		
B38W18D	21-Jul-93	REG	SODIUM	28300	=	
B38W18D	13-May-94	REG	SODIUM	32800	=	J
B38W18D	15-May-95	REG	SODIUM	27000	=	
B38W18D	14-May-96	REG	SODIUM	29700	=	
B38W18D	9-May-97	REG	SODIUM	29100		
B38W18D	8-Jun-98	REG	SODIUM	34800		
B38W18D	20-May-99	REG	SODIUM	34300		
B38W18D	6-Jul-00	REG	SODIUM	36600		
B38W18D	3-Jul-02	DUP	SODIUM	56000		
B38W18D	2-Jul-03	REG	SODIUM	68100		
B38W19D	23-Jul-93	REG	SODIUM	469000	=	
B38W19D	16-May-94	REG	SODIUM	499000	=	
B38W19D	10-May-95	REG	SODIUM	306000	=	
B38W19D	16-May-96	REG	SODIUM	391000	=	
B38W19D	16-May-97	REG	SODIUM	327000		
B38W19D	17-Jun-98	REG	SODIUM	367000		
B38W19D	27-May-99	REG	SODIUM	383000		
B38W19D	12-Jul-00	REG	SODIUM	206000		J
B38W19D	3-Jul-02	REG	SODIUM	274000		
B38W19D	11-Jul-03	REG	SODIUM	227000		
B38W19S	27-May-94	REG	SODIUM	25900	=	
B38W19S	17-May-95	REG	SODIUM	23700	=	J
B38W19S	10-May-96	REG	SODIUM	22700	=	J
B38W19S	29-Jun-98	REG	SODIUM	21300		J
B38W19S	14-May-99	REG	SODIUM	21700		
B38W19S	9-Jul-02	REG	SODIUM	22800		
B38W19S	11-Jul-03	REG	SODIUM	17100		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W24D	9-Aug-93	REG	SODIUM	59800	=	J
B38W24D	18-May-94	REG	SODIUM	46600	=	
B38W24D	17-May-95	REG	SODIUM	39700	=	J
B38W24D	9-May-96	REG	SODIUM	54500	=	J
B38W24D	2-Jun-97	REG	SODIUM	41300		
B38W24D	2-Jul-98	REG	SODIUM	33800		J
B38W24D	13-May-99	REG	SODIUM	40000		
B38W24D	22-Jun-00	REG	SODIUM	34700		
B38W24D	15-Jul-02	REG	SODIUM	29500		
B38W24D	7-Jul-03	REG	SODIUM	37500		
B38W24S	5-Aug-93	REG	SODIUM	21700	=	
B38W24S	25-May-94	REG	SODIUM	19800	=	
B38W24S	17-May-95	REG	SODIUM	18800	=	J
B38W24S	9-May-96	REG	SODIUM	15700	=	J
B38W24S	2-Jun-97	REG	SODIUM	12500		
B38W24S	2-Jul-98	REG	SODIUM	12000		J
B38W24S	13-May-99	DUP	SODIUM	15600		
B38W24S	21-Jun-00	REG	SODIUM	13900		
B38W24S	15-Jul-02	REG	SODIUM	14900		
B38W24S	7-Jul-03	REG	SODIUM	12800		J
B38W25D	3-Aug-93	REG	SODIUM	54500	=	
B38W25D	18-May-94	REG	SODIUM	40200	=	
B38W25D	12-May-95	REG	SODIUM	43700	=	J
B38W25D	15-May-96	REG	SODIUM	37600	=	J
B38W25D	15-May-97	REG	SODIUM	30900		
B38W25D	1-Jul-98	REG	SODIUM	28900		J
B38W25D	26-May-99	REG	SODIUM	27700		
B38W25D	7-Jul-00	REG	SODIUM	28600		
B38W25D	10-Jul-02	REG	SODIUM	33000		
B38W25D	15-Jul-03	REG	SODIUM	185000		
B38W25S	3-Aug-93	REG	SODIUM	83800	=	
B38W25S	24-May-94	REG	SODIUM	42200	=	J
B38W25S	15-May-95	REG	SODIUM	37200	=	
B38W25S	15-May-95	DUP	SODIUM	37000	=	
B38W25S	15-May-96	REG	SODIUM	28300	=	J
B38W25S	15-May-96	DUP	SODIUM	31400	=	J
B38W25S	5-Jun-97	REG	SODIUM	31800		
B38W25S	1-Jul-98	REG	SODIUM	21600		J
B38W25S	17-May-99	REG	SODIUM	29900		
B38W25S	7-Jul-00	REG	SODIUM	30100		
B38W25S	10-Jul-02	REG	SODIUM	48100		
B38W25S	15-Jul-03	REG	SODIUM	69800		
MISS01AA	31-Jul-93	REG	SODIUM	7400	=	
MISS01AA	23-May-94	REG	SODIUM	4810	=	
MISS01AA	18-May-95	REG	SODIUM	5990	=	J
MISS01AA	9-May-96	REG	SODIUM	3870	=	J
MISS01AA	23-May-97	REG	SODIUM	5260		
MISS01AA	18-Jun-98	REG	SODIUM	5300		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS01AA	12-May-99	REG	SODIUM	5140		
MISS01AA	20-Jun-00	REG	SODIUM	4850		
MISS01AA	11-Jul-02	REG	SODIUM	4640		
MISS01AA	9-Jul-03	REG	SODIUM	4500		
MISS01B	21-Jul-93	REG	SODIUM	53200	=	
MISS01B	16-May-94	REG	SODIUM	48100	=	
MISS01B	10-May-95	REG	SODIUM	48100	=	
MISS01B	15-May-96	REG	SODIUM	56900	=	J
MISS01B	18-Jun-98	REG	SODIUM	49000		
MISS01B	25-May-99	REG	SODIUM	51500		
MISS01B	20-Jun-00	REG	SODIUM	50000		
MISS01B	18-Jul-02	REG	SODIUM	47700		
MISS01B	9-Jul-03	REG	SODIUM	53300		
MISS02A	20-Jul-93	REG	SODIUM	870000	=	
MISS02A	12-May-94	REG	SODIUM	878000	=	
MISS02A	10-May-95	REG	SODIUM	986000	=	
MISS02A	16-May-96	REG	SODIUM	800000	=	
MISS02A	15-May-97	REG	SODIUM	709000		
MISS02A	15-May-97	DUP	SODIUM	679000		
MISS02A	11-Jun-98	DUP	SODIUM	555000		
MISS02A	22-Jun-00	REG	SODIUM	666000		
MISS02A	8-Jul-02	REG	SODIUM	978000		
MISS02A	30-Jun-03	REG	SODIUM	637000		
MISS02B	20-Jul-93	REG	SODIUM	1310000	=	
MISS02B	13-May-94	REG	SODIUM	801000	=	J
MISS02B	9-May-95	REG	SODIUM	932000	=	J
MISS02B	14-May-96	REG	SODIUM	981000	=	
MISS02B	19-May-97	REG	SODIUM	959000		
MISS02B	10-Jun-98	REG	SODIUM	973000		
MISS02B	18-May-99	REG	SODIUM	1000000		
MISS02B	23-Jun-00	REG	SODIUM	342000		
MISS02B	8-Jul-02	REG	SODIUM	745000		
MISS02B	30-Jun-03	REG	SODIUM	928000		
MISS05A	27-May-94	REG	SODIUM	17300	=	
MISS05A	12-May-95	REG	SODIUM	24200	=	J
MISS05A	10-May-96	REG	SODIUM	14000	=	J
MISS05A	2-Jun-97	REG	SODIUM	20100		
MISS05A	29-Jun-98	REG	SODIUM	13800		J
MISS05A	14-May-99	REG	SODIUM	18000		
MISS05A	1-Aug-02	REG	SODIUM	30500		
MISS05A	14-Jul-03	REG	SODIUM	15400		
MISS05B	23-Jul-93	REG	SODIUM	321000	=	
MISS05B	17-May-94	REG	SODIUM	382000	=	
MISS05B	11-May-95	REG	SODIUM	303000	=	
MISS05B	16-May-96	REG	SODIUM	272000	=	
MISS05B	14-May-97	REG	SODIUM	297000		
MISS05B	30-Jun-98	REG	SODIUM	107000		J
MISS05B	11-Jul-00	REG	SODIUM	94800		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS05B	31-Jul-02	REG	SODIUM	384000		
MISS05B	16-Jul-03	REG	SODIUM	54800		J
MISS06A	4-Aug-93	REG	SODIUM	57300	=	
MISS06A	24-May-94	REG	SODIUM	15100	=	J
MISS06A	16-May-95	REG	SODIUM	62600	=	
MISS06A	10-May-96	REG	SODIUM	10500	=	J
MISS06A	3-Jun-97	REG	SODIUM	19400		
MISS06A	1-Jul-98	REG	SODIUM	15800		J
MISS06A	17-May-99	DUP	SODIUM	21300		
MISS06A	10-Jul-00	REG	SODIUM	17100		
MISS06A	10-Jul-02	REG	SODIUM	20500		
MISS06A	2-Jul-03	REG	SODIUM	64000		
MISS07B	27-May-99	REG	SODIUM	1290000		
MISS07B	12-Jul-00	REG	SODIUM	338000		
MISS07B	11-Jul-02	REG	SODIUM	1290000		
MISS07B	14-Jul-03	REG	SODIUM	1470000		
B38W02D	13-Jul-00	REG	THALLIUM	5.5		J
B38W02D	28-Jun-01	REG	THALLIUM	3.9		
B38W02D	27-Jun-03	REG	THALLIUM	3.5		J
B38W15S	26-Jun-00	REG	THALLIUM	6.2		J
B38W15S	27-Jun-01	REG	THALLIUM	3.9		
B38W18D	6-Jul-00	REG	THALLIUM	7.8		J
B38W18D	20-Jun-01	REG	THALLIUM	3.9		
B38W18D	2-Jul-03	REG	THALLIUM	1.3		J
B38W25S	7-Jul-00	REG	THALLIUM	17.4		
B38W25S	10-Jul-01	REG	THALLIUM	3.9		
MISS02B	23-Jun-00	REG	THALLIUM	7.8		J
MISS02B	5-Jul-01	REG	THALLIUM	3.9		
B38W02D	4-Jun-97	REG	VANADIUM	1.2		
B38W02D	30-Jun-98	REG	VANADIUM	2.7		
B38W02D	20-May-99	REG	VANADIUM	1		
B38W02D	13-Jul-00	REG	VANADIUM	1.8		J
B38W02D	28-Jun-01	REG	VANADIUM	1.5		
B38W14D	17-May-96	REG	VANADIUM	4.7	=	
B38W14D	7-Jul-98	REG	VANADIUM	1.1		
B38W14D	7-Jul-98	DUP	VANADIUM	0.8		
B38W14D	17-May99	REG	VANADIUM	1.1		
B38W14D	2-Jul-01	REG	VANADIUM	0.92		
B38W14D	24-Jul-02	REG	VANADIUM	1.7		J
B38W14D	10-Jul-03	REG	VANADIUM	2.4		
B38W14S	17-May-96	REG	VANADIUM	7.4	=	
B38W14S	17-May-96	DUP	VANADIUM	7.2	=	
B38W14S	4-Jun-97	REG	VANADIUM	6.2		
B38W14S	7-Jul-98	REG	VANADIUM	9.8		
B38W14S	17-May-99	REG	VANADIUM	2.9		
B38W14S	2-Jul-01	REG	VANADIUM	2.4		
B38W14S	24-Jul-02	REG	VANADIUM	2.1		J
B38W14S	10-Jul-03	REG	VANADIUM	2.1		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W15D	26-May-94	REG	VANADIUM	11.9	=	
B38W15D	13-May-96	REG	VANADIUM	12.3	=	
B38W15D	3-Jun-97	REG	VANADIUM	4.2		
B38W15D	6-Jul-98	REG	VANADIUM	4.2		
B38W15D	27-Jun-01	DUP	VANADIUM	2.6		
B38W15D	16-Jul-02	REG	VANADIUM	3		J
B38W15D	1-Jul-03	REG	VANADIUM	2.8		
B38W15S	2-Aug-93	REG	VANADIUM	13.3	B	
B38W15S	3-Jun-97	REG	VANADIUM	2.1		
B38W15S	6-Jul-98	REG	VANADIUM	2.2		
B38W15S	27-Jun-01	REG	VANADIUM	2.4		
B38W15S	16-Jul-02	REG	VANADIUM	1.6		J
B38W17A	25-May-94	REG	VANADIUM	9.9	=	
B38W17A	13-May-96	REG	VANADIUM	8.4	=	
B38W17A	3-Jun-97	REG	VANADIUM	7.2		
B38W17A	2-Jul-98	REG	VANADIUM	28.2		
B38W17A	19-Jun-00	REG	VANADIUM	11.8		
B38W17A	14-Jun-01	REG	VANADIUM	0.7		
B38W17B	25-May-94	REG	VANADIUM	20.8	=	
B38W17B	20-May-95	REG	VANADIUM	7.6	=	
B38W17B	13-May-96	REG	VANADIUM	20.6	=	
B38W17B	3-Jun-97	REG	VANADIUM	2		
B38W17B	2-Jul-98	REG	VANADIUM	1		
B38W17B	13-May-99	REG	VANADIUM	2.1		
B38W17B	19-Jun-00	REG	VANADIUM	1		J
B38W17B	14-Jun-01	REG	VANADIUM	2		
B38W17B	26-Jun-03	REG	VANADIUM	1.3		J
B38W19D	16-May-94	REG	VANADIUM	4.2	=	
B38W19D	16-May-96	REG	VANADIUM	8.1	=	
B38W19D	16-May-97	REG	VANADIUM	5.2		
B38W19D	17-Jun-98	REG	VANADIUM	4.2		
B38W19D	27-May-99	REG	VANADIUM	8.2		
B38W19D	12-Jul-00	REG	VANADIUM	4.5		
B38W19D	13-Jun-01	REG	VANADIUM	4		
B38W19S	27-May-94	REG	VANADIUM	56.6	=	
B38W19S	17-May-95	REG	VANADIUM	6.7	=	
B38W19S	10-May-96	REG	VANADIUM	41.9	=	
B38W19S	29-Jun-98	REG	VANADIUM	1.1		
B38W19S	14-May-99	REG	VANADIUM	2		
B38W19S	13-Jun-01	REG	VANADIUM	0.7		
B38W24D	2-Jun-97	REG	VANADIUM	1.2		
B38W24D	2-Jul-98	REG	VANADIUM	0.8		
B38W24D	13-May-99	REG	VANADIUM	0.8		
B38W24D	5-Jul-01	REG	VANADIUM	0.7		
B38W24S	2-Jun-97	REG	VANADIUM	2.8		
B38W24S	2-Jul-98	REG	VANADIUM	1.1		
B38W24S	13-May-99	REG	VANADIUM	0.89		
B38W24S	27-Jun-01	REG	VANADIUM	0.7		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W25S	3-Aug-93	REG	VANADIUM	16.7	B	J
B38W25S	24-May-94	REG	VANADIUM	15	=	
B38W25S	15-May-96	REG	VANADIUM	9.3	=	
B38W25S	15-May-96	DUP	VANADIUM	13.1	=	
B38W25S	5-Jun-97	REG	VANADIUM	1.3		
B38W25S	1-Jul-98	REG	VANADIUM	1.8		
B38W25S	17-May-99	REG	VANADIUM	1.7		
B38W25S	10-Jul-01	REG	VANADIUM	0.7		
MISS01AA	31-Jul-93	REG	VANADIUM	46.1	B	J
MISS01AA	23-May-94	REG	VANADIUM	42.1	=	
MISS01AA	9-May-96	REG	VANADIUM	37.9	=	
MISS01AA	23-May-97	REG	VANADIUM	0.5		
MISS01AA	18-Jun-98	REG	VANADIUM	4.6		
MISS01AA	12-May-99	REG	VANADIUM	2.8		
MISS01AA	20-Jun-01	REG	VANADIUM	0.81		
MISS01B	16-May-94	REG	VANADIUM	7.4	=	
MISS01B	15-May-96	REG	VANADIUM	13.6	=	
MISS01B	18-Jun-98	REG	VANADIUM	2.5		
MISS01B	25-May-99	REG	VANADIUM	3.4		
MISS01B	20-Jun-00	REG	VANADIUM	2.9		J
MISS01B	19-Jun-01	REG	VANADIUM	3.4		
MISS01B	18-Jul-02	REG	VANADIUM	1.8		J
MISS01B	9-Jul-03	REG	VANADIUM	4.4		
MISS02A	10-May-95	REG	VANADIUM	10.1	=	
MISS02A	16-May-96	REG	VANADIUM	6.3	=	
MISS02A	15-May-97	REG	VANADIUM	4.7		
MISS02A	15-May-97	DUP	VANADIUM	4.8		
MISS02A	11-Jun-98	REG	VANADIUM	2		
MISS02A	11-Jun-98	DUP	VANADIUM	2.4		
MISS02A	18-May-99	DUP	VANADIUM	9.7		
MISS02A	22-Jun-00	REG	VANADIUM	2.7		J
MISS02A	5-Jul-01	REG	VANADIUM	1.3		
MISS02B	9-May-95	REG	VANADIUM	6.8	=	
MISS02B	19-May-97	REG	VANADIUM	3.4		
MISS02B	10-Jun-98	REG	VANADIUM	3.4		
MISS02B	18-May-99	DUP	VANADIUM	3.9		
MISS02B	23-Jun-00	REG	VANADIUM	4.7		
MISS02B	5-Jul-01	REG	VANADIUM	2.8		
MISS05A	27-May-94	REG	VANADIUM	50.5	=	
MISS05A	10-May-96	REG	VANADIUM	41.9	=	
MISS05A	2-Jun-97	REG	VANADIUM	16.9		
MISS05A	29-Jun-98	REG	VANADIUM	11.3		
MISS05A	14-May-99	REG	VANADIUM	1.6		
MISS05A	19-Jun-01	REG	VANADIUM	0.7		
MISS05B	17-May-94	REG	VANADIUM	27.7	=	
MISS05B	16-May-96	REG	VANADIUM	6	=	
MISS05B	14-May-97	REG	VANADIUM	3.8		
MISS05B	30-Jun-98	REG	VANADIUM	0.96		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS05B	11-Jul-00	REG	VANADIUM	2.1		J
MISS05B	18-Jun-01	REG	VANADIUM	4.7		
MISS05B	31-Jul-02	REG	VANADIUM	2.5		J
MISS06A	4-Aug-93	REG	VANADIUM	21.9	B	J
MISS06A	24-May-94	REG	VANADIUM	23.6	=	
MISS06A	10-May-96	REG	VANADIUM	17.6	=	
MISS06A	3-Jun-97	REG	VANADIUM	1.2		
MISS06A	1-Jul-98	REG	VANADIUM	1.2		
MISS06A	17-May-99	REG	VANADIUM	1.2		
MISS06A	10-Jul-00	REG	VANADIUM	2.1		J
MISS06A	20-Jun-01	REG	VANADIUM	1.6		
MISS07B	27-May-99	DUP	VANADIUM	19.6		
MISS07B	12-Jul-00	REG	VANADIUM	13.9		
MISS07B	11-Jun-01	REG	VANADIUM	12.9		
MISS07B	11-Jul-02	DUP	VANADIUM	7		J
MISS07B	14-Jul-03	REG	VANADIUM	20		
B38W01S	23-May-94	REG	ZINC	129	=	J
B38W01S	7-Jul-98	REG	ZINC	13.5		
B38W01S	11-Jul-01	DUP	ZINC	1.6		
B38W02D	27-Jul-93	REG	ZINC	15.2	B	
B38W02D	17-May-96	REG	ZINC	3.2	=	
B38W02D	30-Jun-98	REG	ZINC	7.4		
B38W02D	28-Jun-01	REG	ZINC	7.4		
B38W14D	4-Aug-93	REG	ZINC	23.7	=	
B38W14D	17-May-96	REG	ZINC	4.2	=	
B38W14D	7-Jul-98	REG	ZINC	21.1		
B38W14D	7-Jul-98	DUP	ZINC	17.9		
B38W14D	5-Jul-00	REG	ZINC	24.7		
B38W14D	2-Jul-01	REG	ZINC	43.3		
B38W14D	10-Jul-03	REG	ZINC	37.4		
B38W14S	4-Aug-93	REG	ZINC	47.1	=	
B38W14S	20-May-95	REG	ZINC	40.1	=	
B38W14S	17-May-96	REG	ZINC	6.5	=	
B38W14S	17-May-96	DUP	ZINC	5.3	=	
B38W14S	7-Jul-98	REG	ZINC	40.3		
B38W14S	13-May-99	REG	ZINC	6.9		
B38W14S	2-Jul-01	REG	ZINC	2.8		
B38W15D	2-Aug-93	REG	ZINC	57.5	=	UJ
B38W15D	26-May-94	REG	ZINC	67.2	=	
B38W15D	6-Jul-98	REG	ZINC	11.2		
B38W15D	27-Jun-01	REG	ZINC	22.5		
B38W15S	2-Aug-93	REG	ZINC	48.6	=	UJ
B38W15S	2-Aug-93	REG	ZINC	36.4	=	UJ
B38W15S	6-Jul-98	REG	ZINC	13.9		
B38W15S	27-Jun-01	REG	ZINC	9.3		
B38W17A	28-Jul-93	REG	ZINC	147	=	
B38W17A	25-May-94	REG	ZINC	34.3	=	
B38W17A	2-Jul-98	REG	ZINC	22		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W17A	13-May-99	REG	ZINC	4.9		
B38W17A	19-Jun-00	REG	ZINC	25.8		
B38W17A	14-Jun-01	REG	ZINC	12.1		
B38W17A	26-Jun-03	REG	ZINC	14.5		J
B38W17B	25-May-94	REG	ZINC	42.8	=	
B38W17B	2-Jul-98	REG	ZINC	3.2		
B38W17B	13-May-99	REG	ZINC	1.6		
B38W17B	14-Jun-01	REG	ZINC	6.3		
B38W18D	21-Jul-93	REG	ZINC	138	=	
B38W18D	13-May-94	REG	ZINC	226	=	J
B38W18D	15-May-95	REG	ZINC	152	=	J
B38W18D	14-May-96	REG	ZINC	102	=	
B38W18D	9-May-97	REG	ZINC	76.8		
B38W18D	8-Jun-98	REG	ZINC	79.7		
B38W18D	20-May-99	DUP	ZINC	81.5		
B38W18D	6-Jul-00	REG	ZINC	91.2		
B38W18D	20-Jun-01	REG	ZINC	112		
B38W18D	2-Jul-03	REG	ZINC	102		
B38W19D	16-May-96	REG	ZINC	4.6	=	
B38W19D	16-May-97	REG	ZINC	3.1		
B38W19D	17-Jun-98	REG	ZINC	2.9		
B38W19D	27-May-99	REG	ZINC	2.1		
B38W19D	13-Jun-01	REG	ZINC	6.9		
B38W19S	17-May-95	REG	ZINC	6	=	UJ
B38W19S	29-Jun-98	REG	ZINC	6.2		
B38W19S	14-May-99	REG	ZINC	1.7		
B38W19S	13-Jun-01	REG	ZINC	2.5		
B38W24D	9-Aug-93	REG	ZINC	38.1	=	J
B38W24D	17-May-95	REG	ZINC	17.2	=	UJ
B38W24D	2-Jul-98	REG	ZINC	15.4		
B38W24D	13-May-99	REG	ZINC	5.9		
B38W24D	5-Jul-01	REG	ZINC	11.9		
B38W24S	17-May-95	REG	ZINC	7.6	=	UJ
B38W24S	2-Jul-98	REG	ZINC	12.3		
B38W24S	13-May-99	REG	ZINC	30.4		
B38W24S	27-Jun-01	REG	ZINC	6.1		
B38W24S	15-Jul-02	REG	ZINC	67.1		
B38W25D	3-Aug-93	REG	ZINC	28.5	=	UJ
B38W25D	15-May-97	REG	ZINC	2.8		
B38W25D	1-Jul-98	REG	ZINC	4.6		
B38W25D	26-May-99	REG	ZINC	4.5		
B38W25D	10-Jul-01	DUP	ZINC	2.8		
B38W25S	3-Aug-93	REG	ZINC	231	=	J
B38W25S	15-May-95	REG	ZINC	12.4	=	UJ
B38W25S	15-May-95	DUP	ZINC	13.1	=	UJ
B38W25S	15-May-96	REG	ZINC	38.2	=	
B38W25S	15-May-96	DUP	ZINC	31.6	=	J
B38W25S	1-Jul-98	REG	ZINC	198		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
B38W25S	17-May-99	REG	ZINC	29.7		
B38W25S	7-Jul-00	REG	ZINC	530		
B38W25S	10-Jul-01	REG	ZINC	35.9		
MISS01AA	31-Jul-93	REG	ZINC	142	=	J
MISS01AA	23-May-94	REG	ZINC	88.8	=	J
MISS01AA	18-May-95	REG	ZINC	7.6	=	UJ
MISS01AA	23-May-97	REG	ZINC	4.8		
MISS01AA	18-Jun-98	REG	ZINC	2.8		UJ
MISS01AA	20-Jun-01	REG	ZINC	16.6		
MISS01B	21-Jul-93	REG	ZINC	13.8	B	
MISS01B	10-May-95	REG	ZINC	34.6	=	
MISS01B	18-Jun-98	REG	ZINC	2.2		UJ
MISS01B	25-May-99	REG	ZINC	2.9		
MISS01B	19-Jun-01	REG	ZINC	6.9		
MISS01B	18-Jul-02	REG	ZINC	26.9		J
MISS02A	20-Jul-93	REG	ZINC	17.3	=	
MISS02A	12-May-94	REG	ZINC	50	=	J
MISS02A	10-May-95	REG	ZINC	19.3	=	
MISS02A	16-May-96	REG	ZINC	4.5	=	
MISS02A	15-May-97	REG	ZINC	8		
MISS02A	15-May-97	DUP	ZINC	10.5		
MISS02A	11-Jun-98	REG	ZINC	17.7		J
MISS02A	11-Jun-98	DUP	ZINC	11		J
MISS02A	18-May-99	REG	ZINC	36		
MISS02A	22-Jun-00	REG	ZINC	18.8		
MISS02B	13-May-94	REG	ZINC	148	=	J
MISS02B	9-May-95	REG	ZINC	22	=	
MISS02B	14-May-96	REG	ZINC	1.8	=	
MISS02B	19-May-97	REG	ZINC	70.8		
MISS02B	10-Jun-98	REG	ZINC	2.1		J
MISS02B	23-Jun-00	REG	ZINC	109		
MISS02B	5-Jul-01	REG	ZINC	5.4		
MISS05A	27-May-94	REG	ZINC	34.6	=	
MISS05A	12-May-95	REG	ZINC	34.4	=	
MISS05A	10-May-96	REG	ZINC	72.1	=	
MISS05A	29-Jun-98	REG	ZINC	27.4		
MISS05A	14-May-99	REG	ZINC	74.5		
MISS05A	19-Jun-01	REG	ZINC	24.1		
MISS05A	1-Aug-02	REG	ZINC	45.9		J
MISS05B	11-May-95	REG	ZINC	98	=	J
MISS05B	16-May-96	REG	ZINC	7.8	=	
MISS05B	30-Jun-98	REG	ZINC	39.3		
MISS05B	18-Jun-01	REG	ZINC	5.3		
MISS06A	4-Aug-93	REG	ZINC	1260	=	
MISS06A	24-May-94	REG	ZINC	1120	=	
MISS06A	16-May-95	REG	ZINC	865	=	
MISS06A	10-May-96	REG	ZINC	968	=	
MISS06A	3-Jun-97	REG	ZINC	1060		

Table B-3
Historical Results for Detected Selected Metals in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Sample Type	Analyte	Result (µg/L)	Lab Q	Rev Q
MISS06A	1-Jul-98	REG	ZINC	802		
MISS06A	17-May-99	DUP	ZINC	934		
MISS06A	10-Jul-00	REG	ZINC	495		
MISS06A	10-Jul-02	REG	ZINC	1780		
MISS06A	2-Jul-03	REG	ZINC	3580		
MISS07B	27-May-99	DUP	ZINC	4.8		

Table B-4
Historical Results for Detected VOCs in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (µg/L)	Qualifier BNI	Qualifier Lab	Detection Limit (µg/L)
B38W14D	4-Aug-93	1,1,1-Trichloroethane	8.00			5
B38W14D	20-May-95	1,1,1-Trichloroethane	6.00			5
B38W14D	4-Jun-97	1,1,1-Trichloroethane	4.00	J	J	5
B38W14D	07-Jul-98	1,1,1-Trichloroethane	3.00	J	J	10
B38W14D	20-May-99	1,1,1-Trichloroethane	3.00	J	J	10
B38W14D	16-Nov-00	1,1,1-Trichloroethane	2.00			1
B38W14D	2-Jul-01	1,1,1-Trichloroethane	2.00			1
B38W14S	20-May-95	1,1,1-Trichloroethane	7.00			5
B38W14S	4-Jun-97	1,1,1-Trichloroethane	4.00	J	J	5
B38W14S	07-Jul-98	1,1,1-Trichloroethane	4.00	J	J	5
B38W14S	17-May-99	1,1,1-Trichloroethane	2.00	J	J	5
B38W14S	16-Nov-00	1,1,1-Trichloroethane	1.00		U	1
B38W14S	2-Jul-01	1,1,1-Trichloroethane	2.00			1
B38W15D	2-Aug-93	1,1,1-Trichloroethane	10.00			5
B38W15D	26-May-94	1,1,1-Trichloroethane	5.00			5
B38W15D	19-May-95	1,1,1-Trichloroethane	7.00			5
B38W15D	13-May-96	1,1,1-Trichloroethane	3.00			2
B38W15D	3-Jun-97	1,1,1-Trichloroethane	3.00	J	J	5
B38W15D	06-Jul-98	1,1,1-Trichloroethane	5.00			5
B38W15D	9-Nov-00	1,1,1-Trichloroethane	0.60		I	1
B38W15D	27-Jun-01	1,1,1-Trichloroethane	0.50	J		1
B38W15S	2-Aug-93	1,1,1-Trichloroethane	2.00		J	5
B38W15S	26-May-94	1,1,1-Trichloroethane	2.00		J	5
B38W15S	13-May-96	1,1,1-Trichloroethane	1.00	J	J	2
B38W15S	9-Nov-00	1,1,1-Trichloroethane	1.00		U	1
MISS07B	13-Oct-92	1,1,1-Trichloroethane	1.00		J	5
MISS07B	12-Aug-93	1,1,1-Trichloroethane	2.00	J	J	5
MISS07B	18-May-94	1,1,1-Trichloroethane	2.00		J	5
MISS07B	18-May-94	1,1,1-Trichloroethane	2.00		J	5
MISS07B	6-Nov-00	1,1,1-Trichloroethane	0.20		J	1
B38W14D	4-Aug-93	1,1-Dichloroethane	3.00		J	5
B38W14D	20-May-95	1,1-Dichloroethane	4.00		J	5
B38W14D	4-Jun-97	1,1-Dichloroethane	3.00	J	J	5
B38W14D	17-May-99	1,1-Dichloroethane	2.00	J	J	5
B38W14D	16-Nov-00	1,1-Dichloroethane	1.00			1
B38W14D	2-Jul-01	1,1-Dichloroethane	1.00			1
B38W14S	20-May-95	1,1-Dichloroethane	2.00		J	5
B38W14S	4-Jun-97	1,1-Dichloroethane	2.00	J	J	5
B38W14S	07-Jul-98	1,1-Dichloroethane	1.00	J	J	5
B38W14S	8-Nov-00	1,1-Dichloroethane	0.20		J	1
B38W14S	2-Jul-01	1,1-Dichloroethane	0.70	J		1
B38W15D	2-Aug-93	1,1-Dichloroethane	6.00			5
B38W15D	26-May-94	1,1-Dichloroethane	4.00		J	5
B38W15D	19-May-95	1,1-Dichloroethane	6.00			5
B38W15D	13-May-96	1,1-Dichloroethane	3.00			2
B38W15D	3-Jun-97	1,1-Dichloroethane	4.00	J	J	5
B38W15D	06-Jul-98	1,1-Dichloroethane	6.00			5
B38W15D	9-Nov-00	1,1-Dichloroethane	2.00			1
B38W15D	27-Jun-01	1,1-Dichloroethane	1.00			1

Table B-4
Historical Results for Detected VOCs in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (µg/L)	Qualifier BNI	Qualifier Lab	Detection Limit (µg/L)
B38W15D	16-Jul-02	1,1-Dichloroethane	3.00	J		5
B38W15S	2-Aug-93	1,1-Dichloroethane	4.00		J	5
B38W15S	26-May-94	1,1-Dichloroethane	6.00			5
B38W15S	19-May-95	1,1-Dichloroethane	4.00		J	5
B38W15S	13-May-96	1,1-Dichloroethane	5.00			2
B38W15S	3-Jun-97	1,1-Dichloroethane	4.00	J	J	5
B38W15S	06-Jul-98	1,1-Dichloroethane	4.00	J	J	5
B38W15S	9-Nov-00	1,1-Dichloroethane	1.00		U	1
B38W15S	27-Jun-01	1,1-Dichloroethane	1.00			1
B38W14D	4-Aug-93	1,1-Dichloroethene	6.00			5
B38W14D	20-May-95	1,1-Dichloroethene	7.00			5
B38W14D	4-Jun-97	1,1-Dichloroethene	5.00			1
B38W14D	07-Jul-98	1,1-Dichloroethene	3.00	J	J	10
B38W14D	07-May-99	1,1-Dichloroethene	3.00	J	J	5
B38W14D	16-Nov-00	1,1-Dichloroethene	4.00			1
B38W14D	2-Jul-01	1,1-Dichloroethene	3.00			1
B38W14D	10-Jul-03	1,1-Dichloroethene	4.00	J		6
B38W14S	20-May-95	1,1-Dichloroethene	7.00			5
B38W14S	17-May-96	1,1-Dichloroethene	6.00	J	J	10
B38W14S	4-Jun-97	1,1-Dichloroethene	5.00			1
B38W14S	07-Jul-98	1,1-Dichloroethene	5.00	J	J	5
B38W14S	17-May-99	1,1-Dichloroethene	2.00	J	J	5
B38W14S	16-Nov-00	1,1-Dichloroethene	1.00		U	1
B38W14S	2-Jul-01	1,1-Dichloroethene	4.00			1
B38W14S	24-Jul-02	1,1-Dichloroethene	1.00	J		2
B38W14S	10-Jul-03	1,1-Dichloroethene	3.00			1
B38W15D	2-Aug-93	1,1-Dichloroethene	8.00			5
B38W15D	26-May-94	1,1-Dichloroethene	7.00			5
B38W15D	19-May-95	1,1-Dichloroethene	9.00			5
B38W15D	13-May-96	1,1-Dichloroethene	5.00			2
B38W15D	3-Jun-97	1,1-Dichloroethene	7.00	J		1
B38W15D	06-Jul-98	1,1-Dichloroethene	6.00			5
B38W15D	9-Nov-00	1,1-Dichloroethene	2.00			1
B38W15D	27-Jun-01	1,1-Dichloroethene	0.50	J		1
B38W15D	16-Jul-02	1,1-Dichloroethene	3.00	J		5
B38W15D	1-Jul-03	1,1-Dichloroethene	2.00	J		3
B38W15S	13-May-96	1,1-Dichloroethene	0.30	J	J	2
B38W15S	9-Nov-00	1,1-Dichloroethene	1.00		U	1
MISS01B	16-May-94	1,1-Dichloroethene	1.00		J	5
MISS01B	21-Dec-00	1,1-Dichloroethene	0.20		J	1
MISS01B	19-Jun-01	1,1-Dichloroethene	0.20	J		1
MISS01B	9-Jul-03	1,1-Dichloroethene	0.30	J		0.6
MISS07B	13-Oct-92	1,1-Dichloroethene	2.00		J	5
MISS07B	18-May-94	1,1-Dichloroethene	3.00		J	5
MISS07B	11-May-95	1,1-Dichloroethene	2.00		J	5
MISS07B	16-May-96	1,1-Dichloroethene	2.00	J	J	2
MISS07B	16-May-97	1,1-Dichloroethene	2.00			1
MISS07B	6-Nov-00	1,1-Dichloroethene	0.70		J	1
MISS07B	11-Jun-01	1,1-Dichloroethene	0.40	J		1

Table B-4
Historical Results for Detected VOCs in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (µg/L)	Qualifier BNI	Qualifier Lab	Detection Limit (µg/L)
MISS07B	11-Jul-02	1,1-Dichloroethene	0.30	J		0.5
B38W07B	16-Jun-98	1,2-Dichloroethene (Total)	6.00			5
B38W07B	6-Nov-00	1,2-Dichloroethene (Total)	6.00			1
B38W14D	4-Aug-93	1,2-Dichloroethene (Total)	56.00			5
B38W14D	20-May-95	1,2-Dichloroethene (Total)	93.00			5
B38W14D	17-May-96	1,2-Dichloroethene (Total)	83.00			50
B38W14D	4-Jun-97	1,2-Dichloroethene (Total)	78.00			5
B38W14D	07-Jul-98	1,2-Dichloroethene (Total)	71.00			10
B38W14D	17-May-99	1,2-Dichloroethene (Total)	77.00			5
B38W14D	16-Nov-00	1,2-Dichloroethene (Total)	50.00	D		1
B38W14D	2-Jul-01	1,2-Dichloroethene (Total)	37.00			1
B38W14S	4-Aug-93	1,2-Dichloroethene (Total)	10.00			5
B38W14S	20-May-95	1,2-Dichloroethene (Total)	53.00			5
B38W14S	17-May-96	1,2-Dichloroethene (Total)	29.00			10
B38W14S	17-May-96	1,2-Dichloroethene (Total)	0.90	J	J	1
B38W14S	4-Jun-97	1,2-Dichloroethene (Total)	43.00			5
B38W14S	07-Jul-98	1,2-Dichloroethene (Total)	44.00			5
B38W14S	17-May-99	1,2-Dichloroethene (Total)	43.00			5
B38W14S	16-Nov-00	1,2-Dichloroethene (Total)	10.00			1
B38W14S	2-Jul-01	1,2-Dichloroethene (Total)	25.00			1
B38W15D	2-Aug-93	1,2-Dichloroethene (Total)	150.00			5
B38W15D	26-May-94	1,2-Dichloroethene (Total)	120.00			5
B38W15D	19-May-95	1,2-Dichloroethene (Total)	160.00			5
B38W15D	13-May-96	1,2-Dichloroethene (Total)	110.00			2
B38W15D	3-Jun-97	1,2-Dichloroethene (Total)	120.00	J		5
B38W15D	06-Jul-98	1,2-Dichloroethene (Total)	140.00			5
B38W15D	9-Nov-00	1,2-Dichloroethene (Total)	55.00			1
B38W15D	27-Jun-01	1,2-Dichloroethene (Total)	25.00			1
B38W15S	2-Aug-93	1,2-Dichloroethene (Total)	42.00			5
B38W15S	26-May-94	1,2-Dichloroethene (Total)	94.00			5
B38W15S	19-May-95	1,2-Dichloroethene (Total)	6.00			5
B38W15S	19-May-95	1,2-Dichloroethene (Total)	10.00			5
B38W15S	13-May-96	1,2-Dichloroethene (Total)	55.00			2
B38W15S	3-Jun-97	1,2-Dichloroethene (Total)	13.00			5
B38W15S	06-Jul-98	1,2-Dichloroethene (Total)	15.00			5
B38W15S	9-Nov-00	1,2-Dichloroethene (Total)	1.00		U	1
B38W15S	27-Jun-01	1,2-Dichloroethene (Total)	3.00			1
B38W17B	29-Jul-93	1,2-Dichloroethene (Total)	3.00		J	5
B38W17B	25-May-94	1,2-Dichloroethene (Total)	1.00		J	5
B38W17B	20-May-95	1,2-Dichloroethene (Total)	2.00	J	J	5
B38W17B	14-Jun-01	1,2-Dichloroethene (Total)	0.30	J		1
B38W19D	11-Aug-93	1,2-Dichloroethene (Total)	2.00		J	5
B38W19D	16-May-96	1,2-Dichloroethene (Total)	0.30	J	J	1
B38W19D	7-Nov-00	1,2-Dichloroethene (Total)	0.50		J	1
B38W24D	9-May-96	1,2-Dichloroethene (Total)	0.70	J	J	1
B38W24D	15-Nov-00	1,2-Dichloroethene (Total)	0.30		J	1
B38W24D	5-Jul-01	1,2-Dichloroethene (Total)	0.50	J		1
B38W24S	9-May-96	1,2-Dichloroethene (Total)	0.20	J	J	1
MISS01B	15-Oct-92	1,2-Dichloroethene (Total)	1.00		J	5

Table B-4
Historical Results for Detected VOCs in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (µg/L)	Qualifier BNI	Qualifier Lab	Detection Limit (µg/L)
MISS01B	21-Jul-93	1,2-Dichloroethene (Total)	5.00		J	5
MISS01B	16-May-94	1,2-Dichloroethene (Total)	31.00			5
MISS01B	10-May-95	1,2-Dichloroethene (Total)	3.00		J	5
MISS01B	15-May-96	1,2-Dichloroethene (Total)	22.00			5
MISS01B	18-JUN-98	1,2-Dichloroethene (Total)	11.00			5
MISS01B	25-May-99	1,2-Dichloroethene (Total)	2.00	J	J	5
MISS01B	21-Dec-00	1,2-Dichloroethene (Total)	1.00		J	1
MISS01B	19-Jun-01	1,2-Dichloroethene (Total)	2.00			1
MISS05B	6-Nov-00	1,2-Dichloroethene (Total)	0.80		J	1
MISS05B	18-Jun-01	1,2-Dichloroethene (Total)	0.10	J		1
MISS07B	13-Oct-92	1,2-Dichloroethene (Total)	10.00			5
MISS07B	14-Oct-92	1,2-Dichloroethene (Total)	11.00	J	J	5
MISS07B	15-Oct-92	1,2-Dichloroethene (Total)	9.00			5
MISS07B	16-Oct-92	1,2-Dichloroethene (Total)	10.00			5
MISS07B	17-Oct-92	1,2-Dichloroethene (Total)	8.00			5
MISS07B	18-Oct-92	1,2-Dichloroethene (Total)	7.00			2
MISS07B	19-Oct-92	1,2-Dichloroethene (Total)	7.00			5
MISS07B	20-Oct-92	1,2-Dichloroethene (Total)	6.00			5
MISS07B	21-Oct-92	1,2-Dichloroethene (Total)	6.00			5
MISS07B	22-Oct-92	1,2-Dichloroethene (Total)	6.00			1
MISS07B	11-Jun-01	1,2-Dichloroethene (Total)	5.00			1
B38W14D	23-Oct-92	1,2-Dichloropropane	1.00		J	5
B38W14D	24-Oct-92	1,2-Dichloropropane	1.00		J	5
B38W14D	25-Oct-92	1,2-Dichloropropane	0.40		J	1
B38W14D	2-Jul-01	1,2-Dichloropropane	0.30	J		1
B38W15D	26-Oct-92	1,2-Dichloropropane	2.00		J	5
B38W15D	27-Oct-92	1,2-Dichloropropane	1.00		J	5
B38W15D	28-Oct-92	1,2-Dichloropropane	0.80	J	J	2
B38W15D	29-Oct-92	1,2-Dichloropropane	2.00	J	J	5
B38W15D	30-Oct-92	1,2-Dichloropropane	0.30		J	1
B38W15D	27-Jun-01	1,2-Dichloropropane	0.20	J		1
B38W15S	31-Oct-92	1,2-Dichloropropane	2.00		J	5
B38W15S	1-Nov-92	1,2-Dichloropropane	0.90	J	J	2
MISS02A	2-Nov-92	2-Butanone	23.00			10
MISS02A	3-Nov-92	2-Butanone	4.00		J	5
B38W15D	4-Nov-92	Benzene	0.70	J	J	2
B38W15D	5-Nov-92	Benzene	0.70		J	1
B38W15D	27-Jun-01	Benzene	0.30	J		1
B38W15S	6-Nov-92	Benzene	1.00		J	5
B38W15S	7-Nov-92	Benzene	0.50	J	J	2
B38W15S	8-Nov-92	Benzene	0.20		J	1
B38W19D	9-Nov-92	Benzene	5.00			5
B38W19D	10-Nov-92	Benzene	1.00		J	5
B38W19D	11-Nov-92	Benzene	5.00			1
B38W19D	12-Nov-92	Benzene	1.00			1
B38W19D	9-Aug-02	Benzene	0.70			0.5
B38W19D	11-Jul-03	Benzene	0.50			0.08
B38W24D	13-Nov-92	Benzene	2.00		J	5
B38W24D	14-Nov-92	Benzene	0.40	J	J	1

Table B-4
Historical Results for Detected VOCs in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (µg/L)	Qualifier BNI	Qualifier Lab	Detection Limit (µg/L)
B38W24D	15-Nov-92	Benzene	0.20		J	1
B38W24D	5-Jul-01	Benzene	0.10	J		1
MISS02B	16-Nov-92	Benzene	3.00		J	5
MISS02B	17-Nov-92	Benzene	7.00			5
MISS02B	18-Nov-92	Benzene	2.00		J	5
MISS02B	19-Nov-92	Benzene	1.00		J	5
MISS02B	20-Nov-92	Benzene	1.00			1
MISS02B	21-Nov-92	Benzene	0.60		J	1
MISS02B	5-Jul-01	Benzene	0.30	J		1
MISS02B	8-Jul-02	Benzene	0.20	J		0.5
MISS02B	30-Jun-03	Benzene	0.20			0.08
MISS05B	22-Nov-92	Benzene	200.00			5
MISS05B	23-Nov-92	Benzene	83.00	J		5
MISS05B	24-Nov-92	Benzene	170.00			5
MISS05B	25-Nov-92	Benzene	89.00	J		5
MISS05B	26-Nov-92	Benzene	97.00			2
MISS05B	27-Nov-92	Benzene	62.00			5
MISS05B	28-Nov-92	Benzene	15.00			5
MISS05B	29-Nov-92	Benzene	3500.00	D		1
MISS05B	31-Jul-02	Benzene	680.00			5
MISS05B	16-Jul-03	Benzene	2.00			0.08
B38W24D	2-Jul-98	Benzene, 1,2-Dichloro-3-Methyl	9.00	NJ	NJ	0
B38W17B	2-Jul-98	Benzene, 1,2-Dichloro-3-Methyl	4.00	NJ	NJ	0
MISS05B	30-JUN-98	Benzene, 1,2-Dichloro-3-Methyl	10.00	NJ	NJ	0
MISS01AA	16-Oct-92	Bis(2-Ethylhexyl)Phthalate	11.00		JB	10
B38W02D	17-May-96	C4-Alkenylbenzene	1.00	NJ	J	0
B38W19D	16-May-96	Chlorobenzene	0.60	J	J	1
B38W19D	7-Nov-00	Chlorobenzene	0.40		J	1
B38W19D	13-Jun-01	Chlorobenzene	0.30	J		1
B38W19D	9-Jul-02	Chlorobenzene	0.20	J		0.5
B38W19D	11-Jul-03	Chlorobenzene	0.10			0.06
B38W25S	15-May-96	Chlorobenzene	0.40	J	J	1
B38W25S	27-Nov-00	Chlorobenzene	0.10		J	1
MISS02B	14-May-96	Chlorobenzene	0.10	J	J	1
MISS02B	5-Jul-01	Chlorobenzene	0.10	J		1
MISS05B	16-May-96	Chlorobenzene	0.60	J	J	2
MISS05B	6-Nov-00	Chlorobenzene	8.00			1
MISS05B	18-Jun-01	Chlorobenzene	1.00			1
MISS07B	6-Nov-00	Chlorobenzene	0.20		J	1
B38W14D	4-Aug-93	Chloroform	7.00			5
B38W14D	17-May-96	Chloroform	6.00	J	J	50
B38W14D	4-Jun-97	Chloroform	6.00			5
B38W14D	17-May-99	Chloroform	2.00	J	J	5
B38W14D	16-Nov-00	Chloroform	2.00			1
B38W14D	2-Jul-01	Chloroform	2.00			1
B38W14D	10-Jul-03	Chloroform	5.00			2
B38W14S	20-May-95	Chloroform	3.00		J	5
B38W14S	17-May-96	Chloroform	3.00	J	J	10
B38W14S	4-Jun-97	Chloroform	3.00	J	J	5

Table B-4
Historical Results for Detected VOCs in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (µg/L)	Qualifier BNI	Qualifier Lab	Detection Limit (µg/L)
B38W14S	16-Nov-00	Chloroform	6.00			1
B38W14S	2-Jul-01	Chloroform	2.00			1
B38W14S	10-Jul-03	Chloroform	1.00			0.5
B38W15D	13-May-96	Chloroform	0.30	J	J	2
B38W15D	9-Nov-00	Chloroform	0.20		J	1
B38W15D	27-Jun-01	Chloroform	0.10	J		1
MISS01B	15-Oct-92	Chloroform	15.00			5
MISS01B	21-Jul-93	Chloroform	4.00		J	5
MISS01B	16-May-94	Chloroform	2.00		J	5
MISS01B	15-May-96	Chloroform	0.90	J	J	5
MISS01B	21-Dec-00	Chloroform	0.20		J	1
MISS01B	19-Jun-01	Chloroform	0.20	J		1
MISS01B	18-Jul-02	Chloroform	7.00			0.5
MISS01B	9-Jul-03	Chloroform	0.20			0.2
MISS06A	10-May-96	Chloroform	0.20	J	J	1
MISS06A	21-Dec-00	Chloroform	0.30		J	1
MISS06A	20-Jun-01	Chloroform	0.40	UB		1
MISS06A	10-Jul-02	Chloroform	2.00			0.5
MISS06A	2-Jul-03	Chloroform	0.20			0.1
B38W17B	29-Jul-93	Chlorotoluene	20.00	NJ	J	0
B38W17B	3-Jun-97	Chlorotoluene	10.00	NJ	J	
MISS05B	12-Aug-93	Chlorotoluene	30.00	NJ	J	0
MISS05B	12-Aug-93	Chlorotoluene	20.00	NJ	J	0
B38W25S	15-May-95	Dichloromethane	1.00		J	5
B38W24D	9-Aug-93	Dichlorotoluene	30.00	NJ	J	0
MISS05B	12-Aug-93	Dichlorotoluene	5.00	NJ	J	0
B38W24D	9-May-96	Ethylbenzene	0.10	J	J	1
B38W24D	5-Jul-01	Ethylbenzene	0.20	J		1
B38W19D	13-Oct-92	N-Nitrosodiphenylamine	3.00		J	10
MISS02B	15-Oct-92	Phenol	1.00	J	J	10
B38W02D	30-Jun-98	Propane, 2-Methoxy-2-Methyl-	30.00	NJ	NJ	0
B38W15D	06-Jul-98	Propane, 2-Methoxy-2-Methyl-	20.00	NJ	NJ	0
B38W15S	06-Jul-98	Propane, 2-Methoxy-2-Methyl-	6.00	NJ	NJ	0
B38W25S	01-Jul-98	Silanol, Trimethyl-	10.00	J	NJ	0
B38W18D	08-Jun-98	Sulfur Dioxide	6.00	NJ	NJ	0
B38W01S	07-Jul-98	Tetrachloroethene	6.00			5
B38W07B	16-Jun-98	Tetrachloroethene	48.00			5
B38W14D	17-May-96	Tetrachloroethene	1100.00			50
B38W14D	07-Jul-98	Tetrachloroethene	840.00		D	25
B38W14D	17-May-99	Tetrachloroethene	630.00		D	5
B38W14D	16-Nov-00	Tetrachloroethene	300.00	D		1
B38W14D	2-Jul-01	Tetrachloroethene	170.00	J		1
B38W14D	24-Jul-02	Tetrachloroethene	640.00			25
B38W14D	10-Jul-03	Tetrachloroethene				
B38W14D	10-Jul-03	Tetrachloroethene	400.00			2
B38W14S	4-Aug-93	Tetrachloroethene	23.00			5
B38W14S	17-May-96	Tetrachloroethene	360.00			10
B38W14S	17-May-96	Tetrachloroethene	34.00			1

Table B-4
Historical Results for Detected VOCs in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (µg/L)	Qualifier BNI	Qualifier Lab	Detection Limit (µg/L)
B38W14S	07-Jul-98	Tetrachloroethene	300.00	E		12
B38W14S	17-May-99	Tetrachloroethene	290.00		D	5
B38W14S	16-Nov-00	Tetrachloroethene	6.00			1
B38W14S	2-Jul-01	Tetrachloroethene	120.00	J		1
B38W14S	24-Jul-02	Tetrachloroethene	83.00			2
B38W14S	10-Jul-03	Tetrachloroethene	78.00			0.6
B38W15S	13-May-96	Tetrachloroethene	0.30	J	J	2
B38W15D	9-Nov-00	Tetrachloroethene	120.00			1
B38W15D	27-Jun-01	Tetrachloroethene	46.00	J		1
B38W15D	16-Jul-02	Tetrachloroethene	180.00			5
B38W15D	1-Jul-03	Tetrachloroethene	120.00			1
MISS01B	15-Oct-92	Tetrachloroethene	15.00			5
MISS01B	21-Jul-93	Tetrachloroethene	33.00			5
MISS01B	16-May-94	Tetrachloroethene	140.00			5
MISS01B	10-May-95	Tetrachloroethene	20.00			5
MISS01B	15-May-96	Tetrachloroethene	120.00			5
MISS01B	18-Jun-98	Tetrachloroethene	69.00			5
MISS01B	18-May-99	Tetrachloroethene	15.00			5
MISS01B	21-Nov-00	Tetrachloroethene	12.00			1
MISS01B	19-Jun-01	Tetrachloroethene	21.00			1
MISS01B	18-Jul-02	Tetrachloroethene	4.00			0.5
MISS01B	19-Jul-03	Tetrachloroethene	30.00			0.2
MISS06A	4-Aug-93	Tetrachloroethene	14.00			5
MISS07B	13-Oct-92	Tetrachloroethene	43.00			5
MISS07B	12-Aug-93	Tetrachloroethene	61.00	J		5
MISS07B	18-May-94	Tetrachloroethene	94.00			5
MISS07B	18-May-94	Tetrachloroethene	88.00			5
MISS07B	11-May-95	Tetrachloroethene	45.00			5
MISS07B	16-May-96	Tetrachloroethene	61.00			2
MISS07B	16-May-97	Tetrachloroethene	57.00			1
MISS07B	16-Jun-98	Tetrachloroethene	48.00			1
MISS07B	27-May-99	Tetrachloroethene	24.00			5
MISS07B	6-Nov-00	Tetrachloroethene	9.00			1
MISS07B	11-Jun-01	Tetrachloroethene	5.00			1
MISS07B	11-Jul-02	Tetrachloroethene	4.00			0.5
B38W07B	14-Jul-03	Tetrachloroethene	2.00			0.1
B38W01S	17-May-96	Toluene	0.20	J	J	1
B38W01S	8-Nov-00	Toluene	3.00			1
B38W01S	11-Jul-01	Toluene	0.20	J		1
B38W19D	16-May-96	Toluene	0.10	J	J	1
B38W19D	7-Nov-00	Toluene	0.40		J	1
B38W24D	9-May-96	Toluene	0.10	J	J	1
B38W24D	13-May-99	Toluene	2.00	J	J	5
B38W24D	15-Nov-00	Toluene	0.70		J	1
MISS02A	11-JUN-98	Toluene	2.00	J	J	5
MISS02A	21-Nov-00	Toluene	0.60		J	1
MISS05B	14-Oct-92	Toluene	2.00		J	5
MISS05B	17-May-94	Toluene	1.00		J	5
MISS05B	6-Nov-00	Toluene	6.00			1

Table B-4
Historical Results for Detected VOCs in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (µg/L)	Qualifier BNI	Qualifier Lab	Detection Limit (µg/L)
MISS05B	31-Jul-02	Toluene	6.00	J		25
B38W01S	07-Jul-98	Trichloroethene	2.00	J	J	5
B38W07B	16-Jun-98	Trichloroethene	2.00	J	J	5
B38W07B	6-Nov-00	Trichloroethene	2.00			1
B38W07B	11-Jun-01	Trichloroethene	0.80	J		1
B38W07B	11-Jul-02	Trichloroethene	1.00			0.5
B38W14D	17-May-96	Trichloroethene	240.00			50
B38W14D	4-Jun-97	Trichloroethene	200.00	J		1
B38W14D	07-Jul-98	Trichloroethene	210.00			10
B38W14D	17-May-99	Trichloroethene	160.00			5
B38W14D	16-Nov-00	Trichloroethene	82.00	D		1
B38W14D	2-Jul-01	Trichloroethene	60.00	J		1
B38W14D	24-Jul-02	Trichloroethene	160.00			25
B38W14D	10-Jul-03	Trichloroethene	82.00			2
B38W14S	4-Aug-93	Trichloroethene	6.00			5
B38W14S	20-May-95	Trichloroethene	140.00			5
B38W14S	17-May-96	Trichloroethene	77.00			10
B38W14S	17-May-96	Trichloroethene	4.00			1
B38W14S	4-Jun-97	Trichloroethene	91.00	J		1
B38W14S	7-Jul-98	Trichloroethene	79.00			5
B38W14S	17-May-99	Trichloroethene	67.00			5
B38W14S	8-Nov-00	Trichloroethene	5.00			1
B38W14S	2-Jul-01	Trichloroethene	38.00			1
B38W14S	24-Jul-02	Trichloroethene	22.00			2
B38W14S	10-Jul-03	Trichloroethene	15.00			0.4
B38W15D	26-May-94	Trichloroethene	170.00			5
B38W15D	3-Jun-97	Trichloroethene	170.00	J		1
B38W15D	9-Nov-00	Trichloroethene	30.00			1
B38W15D	27-Jun-01	Trichloroethene	20.00			1
B38W15D	16-Jul-02	Trichloroethene	36.00			5
B38W15D	1-Jul-03	Trichloroethene	27.00			0.8
B38W15S	2-Aug-93	Trichloroethene	1.00		J	5
B38W15S	26-May-94	Trichloroethene	2.00		J	5
B38W15S	13-May-96	Trichloroethene	1.00	J	J	2
MISS01B	21-Jul-93	Trichloroethene	2.00		J	5
MISS01B	16-May-94	Trichloroethene	9.00			5
MISS01B	10-May-95	Trichloroethene	2.00		J	5
MISS01B	15-May-96	Trichloroethene	9.00			5
MISS01B	18-Jun-98	Trichloroethene	5.00	J	J	5
MISS01B	21-Dec-00	Trichloroethene	1.00			1
MISS01B	19-Jun-01	Trichloroethene	1.00			1
MISS01B	18-Jul-02	Trichloroethene	0.30	J		0.5
MISS01B	9-Jul-03	Trichloroethene	8.00			0.2
MISS02A	11-Jun-98	Trichloroethene	1.00	J	J	5
MISS06A	4-Aug-93	Trichloroethene	1.00		J	5
MISS07B	13-Oct-92	Trichloroethene	2.00		J	5
MISS07B	12-Aug-93	Trichloroethene	4.00	J	J	5
MISS07B	18-May-94	Trichloroethene	3.00		J	5
MISS07B	18-May-94	Trichloroethene	3.00		J	5

Table B-4
Historical Results for Detected VOCs in Groundwater at MISS
Maywood Interim Storage Site - 2003

Station	Date	Analyte	Result (µg/L)	Qualifier BNI	Qualifier Lab	Detection Limit (µg/L)
MISS07B	11-May-95	Trichloroethene	3.00		J	5
MISS07B	16-May-96	Trichloroethene	3.00			2
MISS07B	16-May-97	Trichloroethene	2.00			1
MISS07B	16-Jun-98	Trichloroethene	2.00	J		1
MISS07B	27-May-99	Trichloroethene	2.00	J	J	5
MISS07B	6-Nov-00	Trichloroethene	2.00			1
MISS07B	11-Jun-01	Trichloroethene	0.80	J		1
MISS07B	11-Jul-02	Trichloroethene	1.00			0.5
MISS07B	14-Jul-03	Trichloroethene	0.60			0.08
B38W14S	4-Aug-93	Vinyl Chloride	6.00		J	10
B38W15D	2-Aug-93	Vinyl Chloride	4.00		J	10
B38W15D	26-May-94	Vinyl Chloride	3.00		J	10
B38W15D	13-May-96	Vinyl Chloride	1.00	J	J	4
B38W15D	3-Jun-97	Vinyl Chloride	1.00	J	J	2
B38W15D	9-Nov-00	Vinyl Chloride	0.60		J	2
B38W15S	2-Aug-93	Vinyl Chloride	40.00			10
B38W15S	26-May-94	Vinyl Chloride	95.00			10
B38W15S	19-May-95	Vinyl Chloride	4.00		J	10
B38W15S	19-May-95	Vinyl Chloride	5.00		J	10
B38W15S	13-May-96	Vinyl Chloride	54.00			4
B38W15S	3-Jun-97	Vinyl Chloride	9.00			2
B38W15S	06-Jul-98	Vinyl Chloride	12.00			2
B38W17B	25-May-94	Vinyl Chloride	2.00		J	10
B38W17B	20-May-95	Vinyl Chloride	2.00	J	J	10
B38W17B	14-Jun-01	Vinyl Chloride	0.30	J		2
MISS01B	9-Jul-03	Vinyl Chloride	0.40		J	0.4
MISS07B	18-May-94	Vinyl Chloride	2.00		J	10
MISS07B	18-May-94	Vinyl Chloride	2.00		J	10
MISS07B	16-May-96	Vinyl Chloride	0.80	J	J	4
MISS07B	16-May-97	Vinyl Chloride	0.80	J	J	2
MISS07B	6-Nov-00	Vinyl Chloride	1.00		J	2
MISS07B	11-Jul-02	Vinyl Chloride	0.90			0.5
MISS07B	14-Jul-03	Vinyl Chloride	0.80		J	0.2
B38W19D	16-May-96	Xylenes (Total)	0.10	J	J	1
B38W24D	9-May-96	Xylenes (Total)	0.50	J	J	1
B38W24D	7-Jul-03	Xylenes (Total)	0.60			0.1
MISS05B	16-May-96	Xylenes (Total)	0.40	J	J	2
MISS05B	11-Jun-01	Xylenes (Total)	1.00	J		1

APPENDIX C
WATER LEVEL MEASUREMENTS FOR THE YEAR 2003

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WATER LEVEL RECORD SHEET

Date: 3/12/03 **Site:MISS**

Measured by: M. Hanashy
G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration: ________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
MISS-1AA	0930	14.40	Top of Riser	Protective CSG	X
Permit #		14.40	Elevation:	Riser CSG X	
		14.40	62.7	Ground	
	Average	14.40		Other	
MISS-1B	0935	14.60	Top of Riser	Protective CSG	X
Permit #		14.60	Elevation:	Riser CSG X	
		14.60	61.98	Ground	
	Average	14.60		Other	
MISS-2A	0955	6.55	Top of Riser	Protective CSG	X
Permit #		6.55	Elevation:	Riser CSG X	
		6.55	61.47	Ground	
	Average	6.55		Other	
MISS-2B	1000	10.30	Top of Riser	Protective CSG	X
Permit #		10.30	Elevation:	Riser CSG X	
		10.30	61.64	Ground	
	Average	10.30		Other	
MISS-3A	0835	5.15	Top of Riser	Protective CSG	X
Permit #		5.15	Elevation:	Riser CSG X	
		5.15	58.52	Ground	
	Average	5.15		Other	
MISS-3B	0830	8.01	Top of Riser	Protective CSG	X
Permit #		8.01	Elevation:	Riser CSG X	
		8.01	57.66	Ground	
	Average	8.01		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 3/12/03 **Site:MISS**

Measured by: M. Hanashy

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration:______________________

Well No. (Enter Complete Well No.)	**Time** (24-hour format)	**Depth to water** (0.01 ft)	**Remarks**	**Measurement Reference Point**	**X**
MISS-4A	0850	5.90	Top of Riser	Protective CSG	X
Permit #		5.90	Elevation:	Riser CSG X	
		5.90	57.17	Ground	
	Average	5.90		Other	
MISS-4B	0845	9.30	Top of Riser	Protective CSG	
Permit #		9.30	Elevation:	Riser CSG X	
		9.30	56.42	Ground	
	Average	9.30	Oter cas. bent	Other	
MISS-5A	0900	10.30	Top of Riser	Protective CSG	X
Permit #		10.30	Elevation:	Riser CSG X	
		10.30	58.65	Ground	
	Average	10.30		Other	
MISS-5B	0905	13.64	Top of Riser	Protective CSG	X
Permit #		13.64	Elevation:	Riser CSG X	
		13.64	59.76	Ground	
	Average	13.64		Other	
MISS-6A	0940	9.00	Top of Riser	Protective CSG	
Permit #		9.00	Elevation:	Riser CSG X	
		9.00	58.26	Ground	
	Average	9.00	Prot.Cas.damage(	Other	
MISS-7A	0925	6.47	Top of Riser	Protective CSG	X
Permit #		6.47	Elevation:	Riser CSG X	
		6.47	55.6	Ground	
	Average	6.47		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 3/12/03 **Site:MISS** **Page 3 of 6**

Measured by: M. Hanashy

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
MISS-7B	0920	9.25	Top of Riser	Protective CSG	X
Permit #		9.25	Elevation:	Riser CSG X	
		9.25	55.77	Ground	
	Average	9.25		Other	
B38W01S	0815	5.35	Top of Riser	Protective CSG	X
Permit #	1	5.35	Elevation:	Riser CSG X	
		5.35	60.72	Ground	
	Average	5.35		Other	
B38W02D	1000	14.05	Top of Riser	Protective CSG	X
Permit # 2614082-9		14.05	Elevation:	Riser CSG X	
		14.05	67.7	Ground	
	Average	14.05		Other	
B38W03B	0825	8.12	Top of Riser	Protective CSG	X
Permit #		8.12	Elevation:	Riser CSG X	
		8.12	58.27	Ground	
	Average	8.12		Other	
B38W04B	0820	8.85	Top of Riser	Protective CSG	X
Permit #		8.85	Elevation:	Riser CSG X	
		8.85	65.85	Ground	
	Average	8.85		Other	
B38W05B			Top of Riser	Protective CSG	
Permit #			Elevation:	Riser CSG X	
			71.05	Ground	
	Average		Casing Bent	Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: **Site:MISS**

Measured by: M. Hanashy

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W06B			Top of Riser	Protective CSG	X
Permit #			Elevation:	Riser CSG X	
			54.41	Ground	
	Average			Other	
B38W07B	0855	6.76	Top of Riser	Protective CSG	X
Permit #		6.76	Elevation:	Riser CSG X	
		6.76	54.63	Ground	
	Average	6.76		Other	
B38W12A	0750	4.71	Top of Riser	Protective CSG	X
Permit #		4.71	Elevation:	Riser CSG X	
		4.71	50.1	Ground	
	Average	4.71		Other	
B38W12B	0755	4.12	Top of Riser	Protective CSG	X
Permit #		4.12	Elevation:	Riser CSG X	
		4.12	49.78	Ground	
	Average	4.12		Other	
B38W14S			Top of Riser	Protective CSG	X
Permit #			Elevation:	Riser CSG X	
			43.89	Ground	
	Average			Other	
B38W14D	1025	3.1	Top of Riser	Protective CSG	X
Permit #		3.1	Elevation:	Riser CSG X	
		3.1	43.79	Ground	
	Average	3.1		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 3/12/03 **Site:MISS** **Page 5 of 6**

Measured by: M. Hanashy

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration:______________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W15S	1020	4.30	Top of Riser	Protective CSG	X
Permit #		4.30	Elevation:	Riser CSG X	
		4.30	45.7	Ground	
	Average	4.30		Other	
B38W15D	1015	4.00	Top of Riser	Protective CSG	X
Permit #		4.00	Elevation:	Riser CSG X	
		4.00	45.89	Ground	
	Average	4.00		Other	
B38W17A	1022	8.10	Top of Riser	Protective CSG	X
Permit #		8.10	Elevation:	Riser CSG X	
		8.10	53.24	Ground	
	Average	8.10		Other	
B38W17B	0805	7.10	Top of Riser	Protective CSG	X
Permit #		7.10	Elevation:	Riser CSG X	
		7.10	53.28	Ground	
	Average	7.10		Other	
B38W18D	1005	3.00	Top of Casing	Protective CSG	X
Permit #		3.00	Elevation:	Riser CSG X	
		3.00	57.85	Ground	
	Average	3.00		Other	
B38W19S	0910	13.57	Top of Riser	Protective CSG	X
Permit #		13.57	Elevation:	Riser CSG X	
		13.57	59.91	Ground	
	Average	13.57		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: **Site:MISS** **Page 6 of 6**

Measured by: M. Hanashy

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W19D	0915	14.05	Top of Riser	Protective CSG	X
Permit #		14.05	Elevation:	Riser CSG X	
		14.05	59.98	Ground	
	Average	14.05		Other	
B38W24S			Top of Riser	Protective CSG	X
Permit #			Elevation:	Riser CSG X	
			55.04	Ground	
	Average			Other	
B38W24D	0840	6.80	Top of Casing	Protective CSG	X
Permit #		6.80	Elevation:	Riser CSG X	
		6.80	54.91	Ground	
	Average	6.80		Other	
B38W25S	0950	5.05	Top of Riser	Protective CSG	X
Permit #		5.05	Elevation:	Riser CSG X	
		5.05	57.44	Ground	
	Average	5.05		Other	
B38W25D	0945	5.54	Top of Riser	Protective CSG	X
Permit #		5.54	Elevation:	Riser CSG X	
		5.54	58.24	Ground	
	Average	5.54		Other	
				Protective CSG	
Permit #				Riser CSG X	
				Ground	
	Average			Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 5/23/03 **Site:MISS**

Measured by: M. Labanc
G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration: _________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
MISS-1AA	1245	15.10	Top of Riser	Protective CSG	X
Permit #		15.10	Elevation:	Riser CSG X	
		15.10	62.7	Ground	
	Average	15.10		Other	
MISS-1B	1255	16.75	Top of Riser	Protective CSG	X
Permit #		16.75	Elevation:	Riser CSG X	
		16.75	61.98	Ground	
	Average	16.75		Other	
MISS-2A	1309	9.14	Top of Riser	Protective CSG	X
Permit #		9.14	Elevation:	Riser CSG X	
		9.14	61.47	Ground	
	Average	9.14		Other	
MISS-2B	1310	11.50	Top of Riser	Protective CSG	X
Permit #		11.50	Elevation:	Riser CSG X	
		11.50	61.64	Ground	
	Average	11.50		Other	
MISS-3A	1335	8.90	Top of Riser	Protective CSG	X
Permit #		8.90	Elevation:	Riser CSG X	
		8.90	58.52	Ground	
	Average	8.90		Other	
MISS-3B	1333	10.15	Top of Riser	Protective CSG	X
Permit #		10.15	Elevation:	Riser CSG X	
		10.15	57.66	Ground	
	Average	10.15		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 5/23/03 **Site:MISS**

Measured by: M. Labanc

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration:______________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
MISS-4A	1337	9.65	Top of Riser	Protective CSG	X
Permit #		9.65	Elevation:	Riser CSG X	
		9.65	57.17	Ground	
	Average	9.65		Other	
MISS-4B	1338	11.09	Top of Riser	Protective CSG	
Permit #		11.09	Elevation:	Riser CSG X	
		11.09	56.42	Ground	
	Average	11.09	Oter cas. bent	Other	
MISS-5A	1346	13.00	Top of Riser	Protective CSG	X
Permit #		13.00	Elevation:	Riser CSG X	
		13.00	58.65	Ground	
	Average	13.00		Other	
MISS-5B	1345	15.55	Top of Riser	Protective CSG	X
Permit #		15.55	Elevation:	Riser CSG X	
		15.55	59.76	Ground	
	Average	15.55		Other	
MISS-6A	1316	11.40	Top of Riser	Protective CSG	
Permit #		11.40	Elevation:	Riser CSG X	
		11.40	58.26	Ground	
	Average	11.40	Prot.Cas.damaged	Other	
MISS-7A	1351	9.05	Top of Riser	Protective CSG	X
Permit #		9.05	Elevation:	Riser CSG X	
		9.05	55.6	Ground	
	Average	9.05		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 5/23/03 **Site:MISS**

Measured by: M. Labanc

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
MISS-7B	1352	10.85	Top of Riser	Protective CSG	X
Permit #		10.85	Elevation:	Riser CSG X	
		10.85	55.77	Ground	
	Average	10.85		Other	
B38W01S	0852	6.50	Top of Riser	Protective CSG	X
Permit #	1	6.50	Elevation:	Riser CSG X	
		6.50	60.72	Ground	
	Average	6.50		Other	
B38W02D	0859	17.71	Top of Riser	Protective CSG	X
Permit # 2614082-9		17.71	Elevation:	Riser CSG X	
		17.71	67.7	Ground	
	Average	17.71		Other	
B38W03B	1331	10.25	Top of Riser	Protective CSG	X
Permit #		10.25	Elevation:	Riser CSG X	
		10.25	58.27	Ground	
	Average	10.25		Other	
B38W04B	1402	10.10	Top of Riser	Protective CSG	X
Permit #		10.10	Elevation:	Riser CSG X	
		10.10	65.85	Ground	
	Average	10.10		Other	
B38W05B	0911	11.40	Top of Riser	Protective CSG	
Permit #		11.40	Elevation:	Riser CSG X	
		11.40	71.05	Ground	
	Average	11.40	Casing Bent	Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 5/23/03 **Site:MISS** **Page 4 of 6**

Measured by: M. Labanc

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W06B		Abondoned	Top of Riser	Protective CSG	X
Permit #			Elevation:	Riser CSG X	
			54.41	Ground	
	Average			Other	
B38W07B	1355	9.75	Top of Riser	Protective CSG	X
Permit #		9.75	Elevation:	Riser CSG X	
		9.75	54.63	Ground	
	Average	9.75		Other	
B38W12A	0823	6.04	Top of Riser	Protective CSG	X
Permit #		6.04	Elevation:	Riser CSG X	
		6.04	50.1	Ground	
	Average	6.04		Other	
B38W12B	0824	5.50	Top of Riser	Protective CSG	X
Permit #		5.50	Elevation:	Riser CSG X	
		5.50	49.78	Ground	
	Average	5.50		Other	
B38W14S	0841	4.61	Top of Riser	Protective CSG	X
Permit #		4.61	Elevation:	Riser CSG X	
		4.61	43.89	Ground	
	Average	4.61		Other	
B38W14D	0843	2.99	Top of Riser	Protective CSG	X
Permit #		2.99	Elevation:	Riser CSG X	
		2.99	43.79	Ground	
	Average	2.99		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 5/23/03 **Site:MISS** **Page 5 of 6**

Measured by: M. Labanc

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W15S	0837	5.51	Top of Riser	Protective CSG	X
Permit #		5.51	Elevation:	Riser CSG X	
		5.51	45.7	Ground	
	Average	5.51		Other	
B38W15D	0835	4.75	Top of Riser	Protective CSG	X
Permit #		4.75	Elevation:	Riser CSG X	
		4.75	45.89	Ground	
	Average	4.75		Other	
B38W17A	0831	9.10	Top of Riser	Protective CSG	X
Permit #		9.10	Elevation:	Riser CSG X	
		9.10	53.24	Ground	
	Average	9.10		Other	
B38W17B	0830	9.15	Top of Riser	Protective CSG	X
Permit #		9.15	Elevation:	Riser CSG X	
		9.15	53.28	Ground	
	Average	9.15		Other	
B38W18D	1407	4.30	Top of Casing	Protective CSG	X
Permit #		4.30	Elevation:	Riser CSG X	
		4.30	57.85	Ground	
	Average	4.30		Other	
B38W19S	1348	15.60	Top of Riser	Protective CSG	X
Permit #		15.60	Elevation:	Riser CSG X	
		15.60	59.91	Ground	
	Average	15.60		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 5/23/03 **Site:MISS**

Measured by: M. Labanc

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	**Time** (24-hour format)	**Depth to water (0.01 ft)**	**Remarks**	**Measurement Reference Point**	**X**
B38W19D	1349	15.80	Top of Riser	Protective CSG	X
Permit #		15.80	Elevation:	Riser CSG X	
		15.80	59.98	Ground	
	Average	15.80		Other	
B38W24S		No Access	Top of Riser	Protective CSG	X
Permit #			Elevation:	Riser CSG X	
			55.04	Ground	
	Average			Other	
B38W24D	1341	9.17	Top of Casing	Protective CSG	X
Permit #		9.17	Elevation:	Riser CSG X	
		9.17	54.91	Ground	
	Average	9.17		Other	
B38W25S	1320	7.50	Top of Riser	Protective CSG	X
Permit #		7.50	Elevation:	Riser CSG X	
		7.50	57.44	Ground	
	Average	7.50		Other	
B38W25D	1318	7.89	Top of Riser	Protective CSG	X
Permit #		7.89	Elevation:	Riser CSG X	
		7.89	58.24	Ground	
	Average	7.89		Other	
				Protective CSG	
Permit #				Riser CSG X	
				Ground	
	Average			Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 8/15/2003 **Site:MISS** **Page 1 of 6**

Measured by: B. Miller
G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration: __________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
MISS-1AA	0933	13.79	Top of Riser	Protective CSG	X
Permit #		13.79	Elevation:	Riser CSG X	
		13.79	62.7	Ground	
	Average	13.79		Other	
MISS-1B	0935	15.00	Top of Riser	Protective CSG	X
Permit #		15.00	Elevation:	Riser CSG X	
		15.00	61.98	Ground	
	Average	15.00		Other	
MISS-2A	0927	9.02	Top of Riser	Protective CSG	X
Permit #		9.02	Elevation:	Riser CSG X	
		9.02	61.47	Ground	
	Average	9.02		Other	
MISS-2B	0928	10.75	Top of Riser	Protective CSG	X
Permit #		10.75	Elevation:	Riser CSG X	
		10.75	61.64	Ground	
	Average	10.75		Other	
MISS-3A	0921	6.30	Top of Riser	Protective CSG	X
Permit #		6.30	Elevation:	Riser CSG X	
		6.30	58.52	Ground	
	Average	6.30		Other	
MISS-3B	0920	8.55	Top of Riser	Protective CSG	X
Permit #		8.55	Elevation:	Riser CSG X	
		8.55	57.66	Ground	
	Average	8.55		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 8/15/2003 **Site:MISS** **Page 2 of 6**

Measured by: R. Gendreau

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration:______________________

Well No. (Enter Complete Well No.)	**Time** (24-hour format)	**Depth to water** (0.01 ft)	**Remarks**	**Measurement Reference Point**	**X**
MISS-4A	0916	7.00	Top of Riser	Protective CSG	X
Permit #		7.00	Elevation:	Riser CSG X	
		7.00	57.17	Ground	
	Average	7.00		Other	
MISS-4B	0917	9.80	Top of Riser	Protective CSG	X
Permit #		9.80	Elevation:	Riser CSG X	
		9.80	56.42	Ground	
	Average	9.80	Oter cas. bent	Other	
MISS-5A	0901	10.17	Top of Riser	Protective CSG	X
Permit #		10.17	Elevation:	Riser CSG X	
		10.17	58.65	Ground	
	Average	10.17		Other	
MISS-5B	0900	14.40	Top of Riser	Protective CSG	X
Permit #		14.40	Elevation:	Riser CSG X	
		14.40	59.76	Ground	
	Average	14.40		Other	
MISS-6A	0945	9.70	Top of Riser	Protective CSG	X
Permit #		9.70	Elevation:	Riser CSG X	
		9.70	58.26	Ground	
	Average	9.70	Prot.Cas.damage	Other	
MISS-7A	0908	7.42	Top of Riser	Protective CSG	X
Permit #		7.42	Elevation:	Riser CSG X	
		7.42	55.6	Ground	
	Average	7.42		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 8/15/2003 **Site:MISS**

Measured by: R. Gendreau

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration:______________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
MISS-7B	0907	9.75	Top of Riser	Protective CSG	X
Permit #		9.75	Elevation:	Riser CSG X	
		9.75	55.77	Ground	
	Average	9.75		Other	
B38W01S	0837	5.93	Top of Riser	Protective CSG	X
Permit #	1	5.93	Elevation:	Riser CSG X	
		5.93	60.72	Ground	
	Average	5.93		Other	
B38W02D	0844	14.80	Top of Riser	Protective CSG	X
Permit # 2614082-9		14.80	Elevation:	Riser CSG X	
		14.80	67.7	Ground	
	Average	14.80		Other	
B38W03B	0922	8.68	Top of Riser	Protective CSG	X
Permit #		8.68	Elevation:	Riser CSG X	
		8.68	58.27	Ground	
	Average	8.68		Other	
B38W04B	1045	8.98	Top of Riser	Protective CSG	X
Permit #		8.98	Elevation:	Riser CSG X	
		8.98	65.85	Ground	
	Average	8.98		Other	
B38W05B	0850	10.18	Top of Riser	Protective CSG	X
Permit #		10.18	Elevation:	Riser CSG X	
		10.18	71.05	Ground	
	Average	10.18	Casing Bent	Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 8/15/2003 **Site:MISS** **Page 4 of 6**

Measured by: R. Gendreau

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W06B	N/A		Top of Riser	Protective CSG	
Permit #			Elevation:	Riser CSG X	
			54.41	Ground	
	Average			Other	
B38W07B	0856	7.95	Top of Riser	Protective CSG	X
Permit #		7.95	Elevation:	Riser CSG X	
		7.95	54.63	Ground	
	Average	7.95		Other	
B38W12A	0812	5.05	Top of Riser	Protective CSG	X
Permit #		5.05	Elevation:	Riser CSG X	
		5.05	50.1	Ground	
	Average	5.05		Other	
B38W12B	0810	4.46	Top of Riser	Protective CSG	X
Permit #		4.46	Elevation:	Riser CSG X	
		4.46	49.78	Ground	
	Average	4.46		Other	
B38W14S		No Access	Top of Riser	Protective CSG	X
Permit #			Elevation:	Riser CSG X	
			43.89	Ground	
	Average			Other	
B38W14D		No Access	Top of Riser	Protective CSG	X
Permit #			Elevation:	Riser CSG X	
			43.79	Ground	
	Average			Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 8/15/2003 **Site:MISS**

Measured by: R. Gendreau

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W15S	0827	4.65	Top of Riser	Protective CSG	X
Permit #		4.65	Elevation:	Riser CSG X	
		4.65	45.7	Ground	
	Average	4.65		Other	
B38W15D	0825	3.80	Top of Riser	Protective CSG	X
Permit #		3.80	Elevation:	Riser CSG X	
		3.80	45.89	Ground	
	Average	3.80		Other	
B38W17A	0822	7.85	Top of Riser	Protective CSG	X
Permit #		7.85	Elevation:	Riser CSG X	
		7.85	53.24	Ground	
	Average	7.85		Other	
B38W17B	0821	7.89	Top of Riser	Protective CSG	X
Permit #		7.89	Elevation:	Riser CSG X	
		7.89	53.28	Ground	
	Average	7.89		Other	
B38W18D	1000	3.37	Top of Casing	Protective CSG	X
Permit #		3.37	Elevation:	Riser CSG X	
		3.37	57.85	Ground	
	Average	3.37		Other	
B38W19S	0903	14.05	Top of Riser	Protective CSG	X
Permit #		14.05	Elevation:	Riser CSG X	
		14.05	59.91	Ground	
	Average	14.05		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 8/15/2003 **Site:MISS**

Measured by: R. Gendreau

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W19D	0904	14.69	Top of Riser	Protective CSG	X
Permit #		14.69	Elevation:	Riser CSG X	
		14.69	59.98	Ground	
	Average	14.69		Other	
B38W24S	0912	8.11	Top of Riser	Protective CSG	X
Permit #		8.11	Elevation:	Riser CSG X	
		8.11	55.04	Ground	
	Average	8.11		Other	
B38W24D	0913	7.70	Top of Casing	Protective CSG	X
Permit #		7.70	Elevation:	Riser CSG X	
		7.70	54.91	Ground	
	Average	7.70		Other	
B38W25S	0948	5.02	Top of Riser	Protective CSG	X
Permit #		5.02	Elevation:	Riser CSG X	
		5.02	57.44	Ground	
	Average	5.02		Other	
B38W25D	0947	5.66	Top of Riser	Protective CSG	X
Permit #		5.66	Elevation:	Riser CSG X	
		5.66	58.24	Ground	
	Average	5.66		Other	
				Protective CSG	
Permit #				Riser CSG X	
				Ground	
	Average			Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 10/17/2003 **Site:MISS** **Page 1 of 6**

Measured by: R. Gendreau
G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration: ________________

Well No. (Enter Complete Well No.)	(24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
MISS-1AA	0935	15.45	Top of Riser	Protective CSG	
Permit #		15.45	Elevation:	Riser CSG X	
		15.45	62.7	Ground	
	Average	15.45	Broken Lid	Other	
MISS-1B	0936	16.05	Top of Riser	Protective CSG	X
Permit #		16.05	Elevation:	Riser CSG X	
		16.05	61.98	Ground	
	Average	16.05		Other	
MISS-2A	0940	9.80	Top of Riser	Protective CSG	X
Permit #		9.80	Elevation:	Riser CSG X	
		9.80	61.47	Ground	
	Average	9.80		Other	
MISS-2B	0939	11.62	Top of Riser	Protective CSG	X
Permit #		11.62	Elevation:	Riser CSG X	
		11.62	61.64	Ground	
	Average	11.62		Other	
MISS-3A	0950	8.78	Top of Riser	Protective CSG	X
Permit #		8.78	Elevation:	Riser CSG X	
		8.78	58.52	Ground	
	Average	8.78		Other	
MISS-3B	0949	10.03	Top of Riser	Protective CSG	X
Permit #		10.03	Elevation:	Riser CSG X	
		10.03	57.66	Ground	
	Average	10.03		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 10/17/2003 **Site:MISS** **Page 2 of 6**

Measured by: R. Gendreau

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration:______________________

Well No. (Enter Complete Well No.)	**Time** (24-hour format)	**Depth to water** (0.01 ft)	**Remarks**	**Measurement Reference Point**	**X**
MISS-4A	0955	9.89	Top of Riser	Protective CSG	X
Permit #		9.89	Elevation:	Riser CSG X	
		9.89	57.17	Ground	
	Average	9.89		Other	
MISS-4B	0954	11.09	Top of Riser	Protective CSG	X
Permit #		11.09	Elevation:	Riser CSG X	
		11.09	56.42	Ground	
	Average	11.09	Oter cas. bent	Other	
MISS-5A	1001	13.42	Top of Riser	Protective CSG	X
Permit #		13.42	Elevation:	Riser CSG X	
		13.42	58.65	Ground	
	Average	13.42		Other	
MISS-5B	1000	15.80	Top of Riser	Protective CSG	X
Permit #		15.80	Elevation:	Riser CSG X	
		15.80	59.76	Ground	
	Average	15.80		Other	
MISS-6A	0920	11.20	Top of Riser	Protective CSG	X
Permit #		11.20	Elevation:	Riser CSG X	
		11.20	58.26	Ground	
	Average	11.20	Prot.Cas.damage	Other	
MISS-7A	1006	8.59	Top of Riser	Protective CSG	X
Permit #		8.59	Elevation:	Riser CSG X	
		8.59	55.6	Ground	
	Average	8.59		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 10/17/2003 **Site:MISS**

Measured by: R. Gendreau

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration:______________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
MISS-7B	1005	10.97	Top of Riser	Protective CSG	X
Permit #		10.97	Elevation:	Riser CSG X	
		10.97	55.77	Ground	
	Average	10.97		Other	
B38W01S	1221	6.62	Top of Riser	Protective CSG	X
Permit #		6.62	Elevation:	Riser CSG X	
		6.62	60.72	Ground	
	Average	6.62		Other	
B38W02D	1227	18.08	Top of Riser	Protective CSG	X
Permit #		18.08	Elevation:	Riser CSG X	
		18.08	67.7	Ground	
	Average	18.08		Other	
B38W03B	0947	10.20	Top of Riser	Protective CSG	X
Permit #		10.20	Elevation:	Riser CSG X	
		10.20	58.27	Ground	
	Average	10.20		Other	
B38W04B	0944	10.64	Top of Riser	Protective CSG	X
Permit #		10.64	Elevation:	Riser CSG X	
		10.64	65.85	Ground	
	Average	10.64		Other	
B38W05B	1235	12.90	Top of Riser	Protective CSG	
Permit #		12.90	Elevation:	Riser CSG X	
		12.90	71.05	Ground	
	Average	12.90	Casing Bent	Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 10/17/2003 **Site:MISS**

Measured by: R. Gendreau

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W06B			Top of Riser	Protective CSG	
Permit #			Elevation:	Riser CSG X	
			54.41	Ground	
	Average			Other	
B38W07B	1011	9.80	Top of Riser	Protective CSG	X
Permit #		9.80	Elevation:	Riser CSG X	
		9.80	54.63	Ground	
	Average	9.80		Other	
B38W12A	1156	6.32	Top of Riser	Protective CSG	X
Permit #		6.32	Elevation:	Riser CSG X	
		6.32	50.1	Ground	
	Average	6.32		Other	
B38W12B	1155	5.85	Top of Riser	Protective CSG	X
Permit #		5.85	Elevation:	Riser CSG X	
		5.85	49.78	Ground	
	Average	5.85		Other	
B38W14S		No Access	Top of Riser	Protective CSG	
Permit #			Elevation:	Riser CSG X	
			43.89	Ground	
	Average			Other	
B38W14D		No Access	Top of Riser	Protective CSG	
Permit #			Elevation:	Riser CSG X	
			43.79	Ground	
	Average			Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: 10/17/2003 **Site:MISS**

Measured by: R. Gendreau

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other _____________
☐ Calibration of electric sounder
Date of last calibration:_____________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W15S	1213	5.74	Top of Riser	Protective CSG	X
Permit #		5.74	Elevation:	Riser CSG X	
		5.74	45.7	Ground	
	Average	5.74		Other	
B38W15D	1212	4.70	Top of Riser	Protective CSG	X
Permit #		4.70	Elevation:	Riser CSG X	
		4.70	45.89	Ground	
	Average	4.70		Other	
B38W17A	1209	9.36	Top of Riser	Protective CSG	X
Permit #		9.36	Elevation:	Riser CSG X	
		9.36	53.24	Ground	
	Average	9.36		Other	
B38W17B	1208	9.35	Top of Riser	Protective CSG	X
Permit #		9.35	Elevation:	Riser CSG X	
		9.35	53.28	Ground	
	Average	9.35		Other	
B38W18D	1105	4.50	Top of Casing	Protective CSG	X
Permit #		4.50	Elevation:	Riser CSG X	
		4.50	57.85	Ground	
	Average	4.50		Other	
B38W19S	1003	15.76	Top of Riser	Protective CSG	X
Permit #		15.76	Elevation:	Riser CSG X	
		15.76	59.91	Ground	
	Average	15.76		Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

WATER LEVEL RECORD SHEET

Date: **10/17/2003** **Site:MISS**

Measured by: R. Gendreau

G. Moyer

☐ Battery Check ☐ Funct. Check ☐ Physical Exam.
☐ Electric Sounder ☐ Chalked Tape ☐ Other ______________
☐ Calibration of electric sounder
Date of last calibration:______________________

Well No. (Enter Complete Well No.)	Time (24-hour format)	Depth to water (0.01 ft)	Remarks	Measurement Reference Point	X
B38W19D	1004	16.00	Top of Riser	Protective CSG	X
Permit #		16.00	Elevation:	Riser CSG X	
		16.00	59.98	Ground	
	Average	16.00		Other	
B38W24S	0951	9.65	Top of Riser	Protective CSG	X
Permit #		9.65	Elevation:	Riser CSG X	
		9.65	55.04	Ground	
	Average	9.65		Other	
B38W24D	0952	9.30	Top of Casing	Protective CSG	X
Permit #		9.30	Elevation:	Riser CSG X	
		9.30	54.91	Ground	
	Average	9.30		Other	
B38W25S	0925	7.19	Top of Riser	Protective CSG	X
Permit #		7.19	Elevation:	Riser CSG X	
		7.19	57.44	Ground	
	Average	7.19		Other	
B38W25D	0925	7.60	Top of Riser	Protective CSG	X
Permit #		7.60	Elevation:	Riser CSG X	
		7.60	58.24	Ground	
	Average	7.60		Other	
				Protective CSG	
Permit #				Riser CSG X	
				Ground	
	Average			Other	

X - if well head and pad are in good condition
FUSRAP SOP: SW-MWD-410- 0
Rev:

APPENDIX D
FIGURES

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APPENDIX D FIGURES

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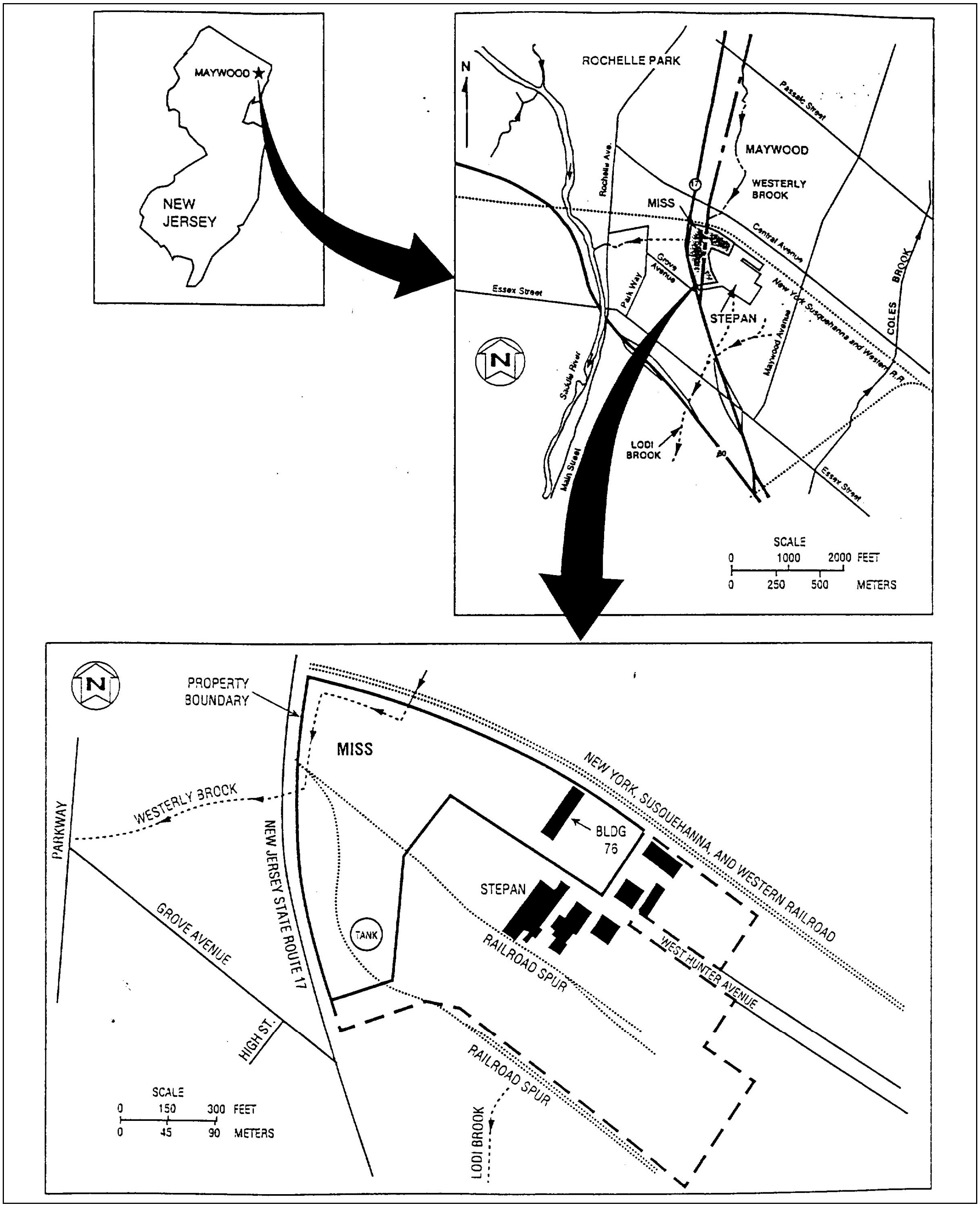


Figure D-1
Maywood Interim Storage Site, Site Location and Map

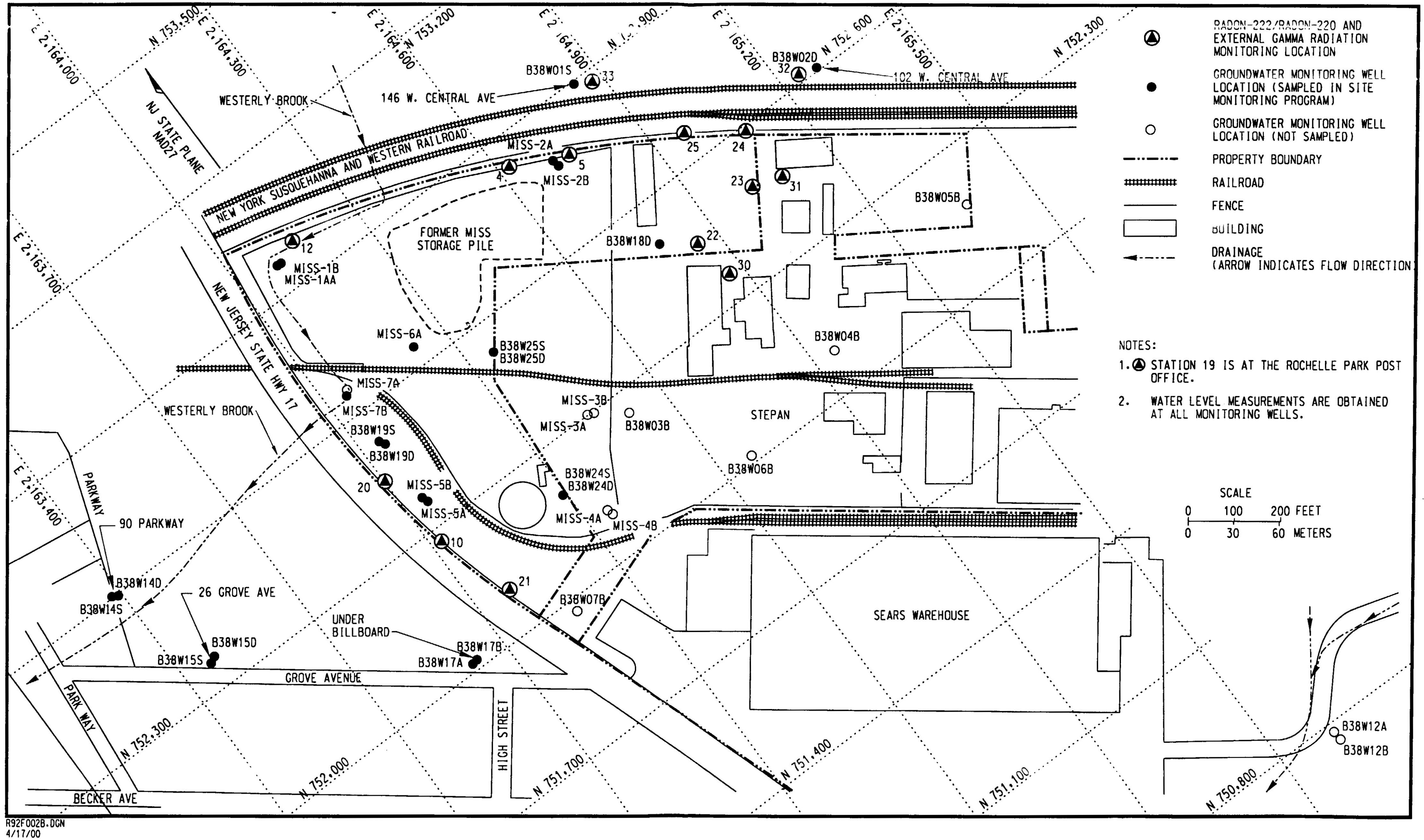


Figure D-2
Maywood Interim Storage Site Environmental Monitoring Sampling Locations: External Gamma Radiation, Radon-222 / Radon-220, and Groundwater

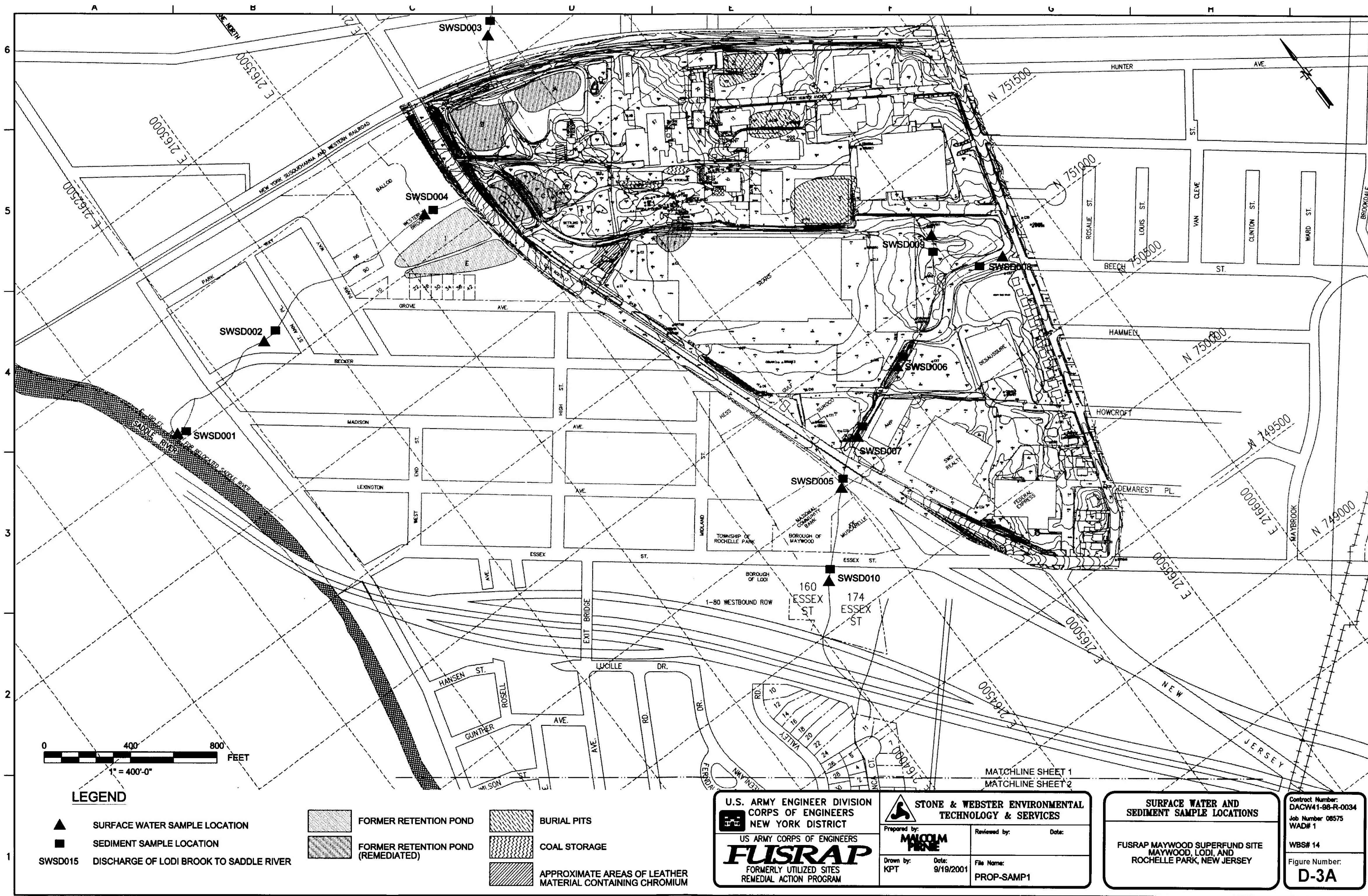


Figure D-3A
Surface Water and Sediment Sample Locations

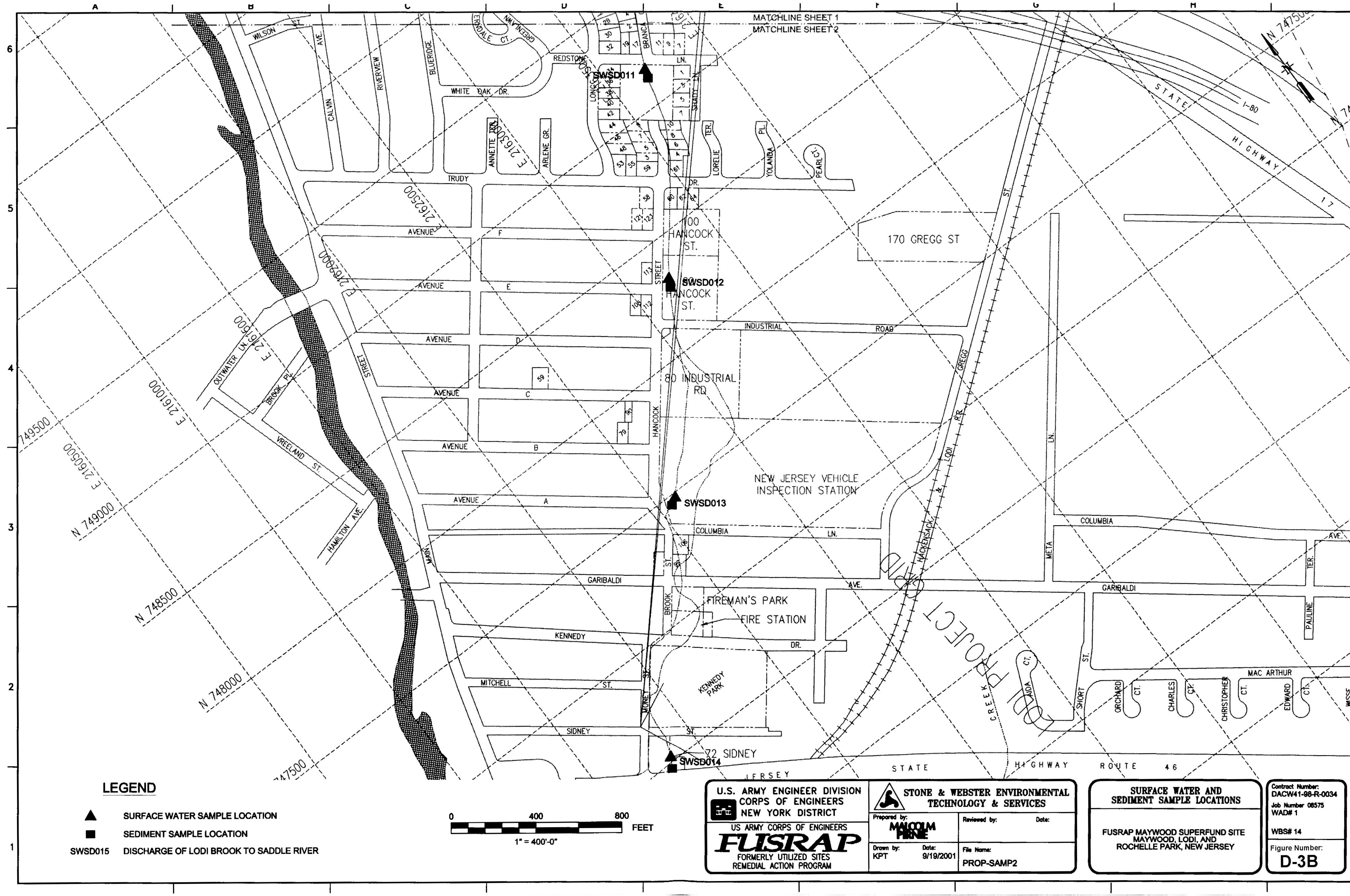
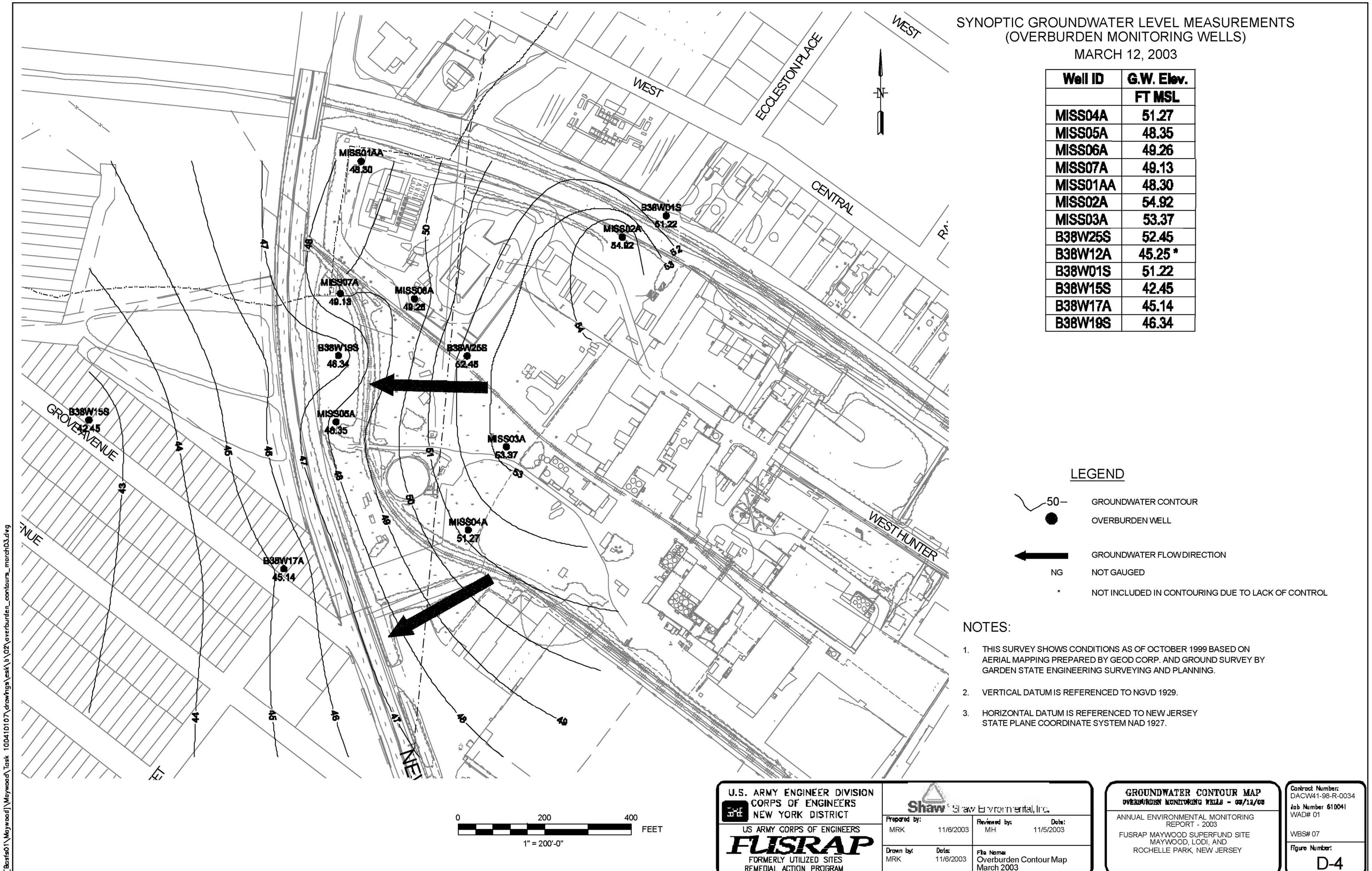


Figure D-3B
Surface Water and Sediment Sample Locations



Well ID	G.W. Elev. FT MSL
MISS04A	51.27
MISS05A	48.35
MISS06A	49.26
MISS07A	49.13
MISS01AA	48.30
MISS02A	54.92
MISS03A	53.37
B38W25S	52.45
B38W12A	45.25 *
B38W01S	51.22
B38W15S	42.45
B38W17A	45.14
B38W19S	46.34

Figure D-4
Synoptic Groundwater Level Measurements, Overburden Monitoring Wells – March 12, 2003

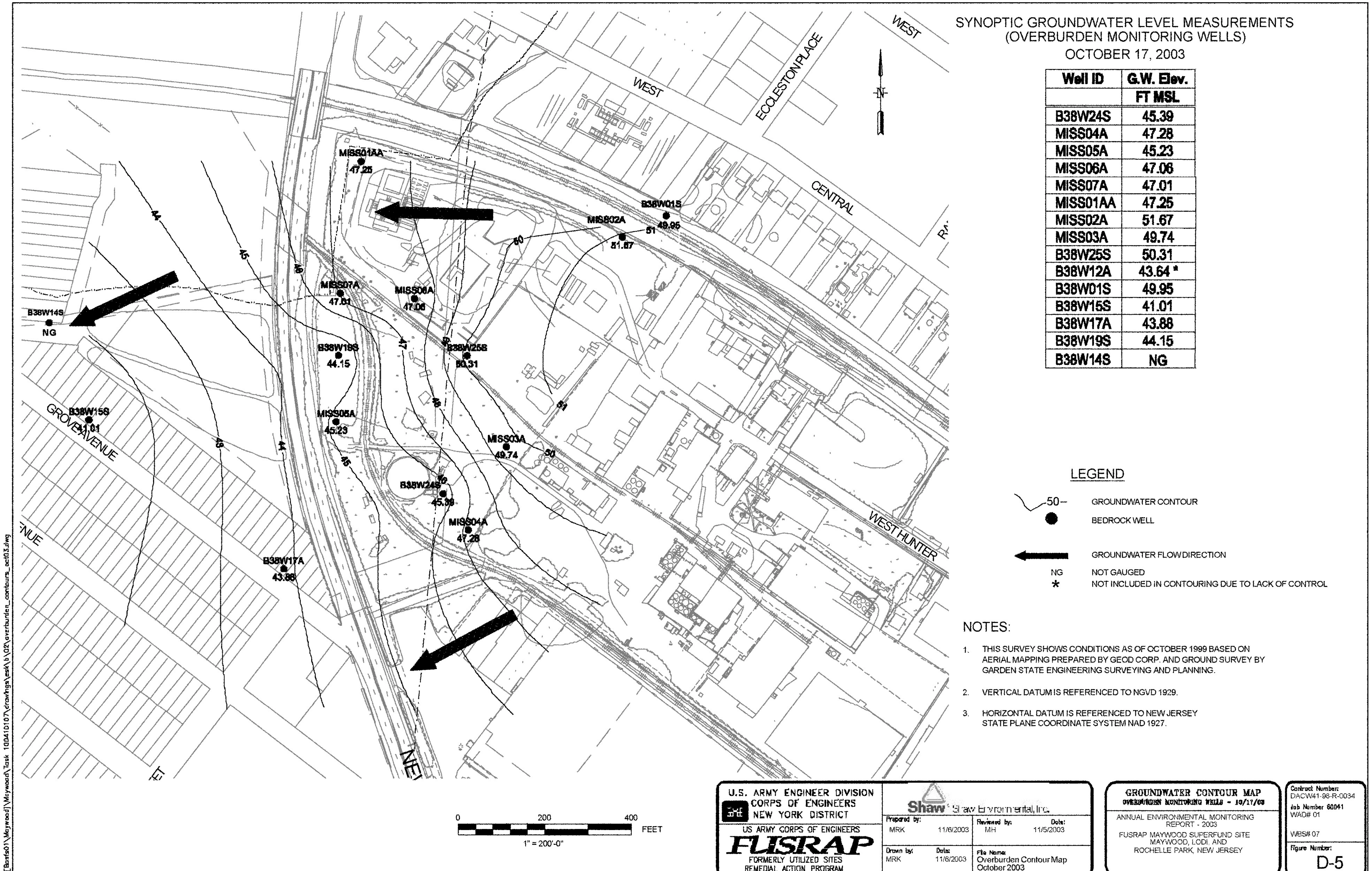
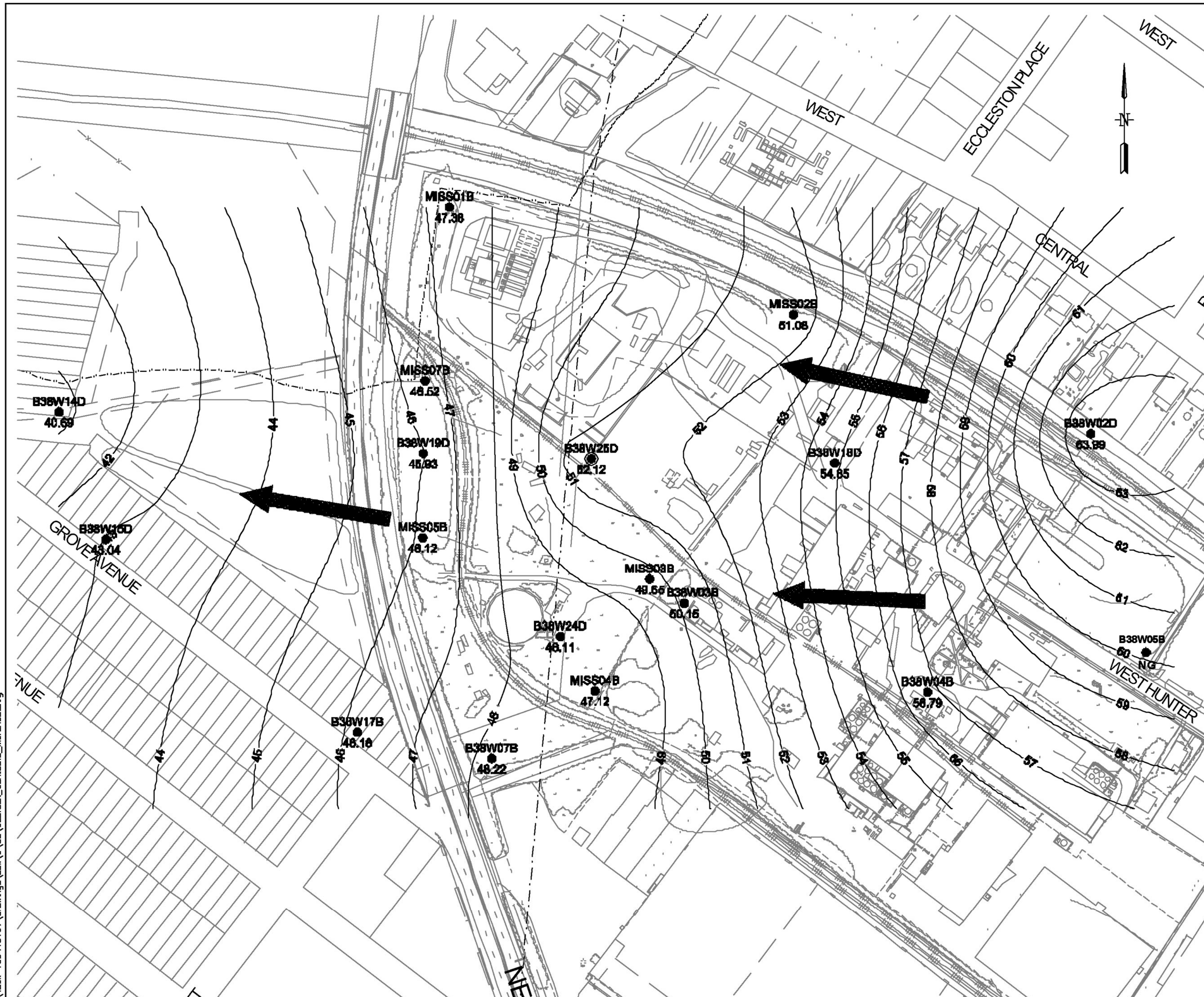


Figure D-5
Synoptic Groundwater Level Measurements, Overburden Monitoring Wells – October 17, 2003



SYNOPTIC GROUNDWATER LEVEL MEASUREMENTS (BEDROCK MONITORING WELLS)

MARCH 12, 2003

Well ID	G.W. Elev. FT MSL
B38W02D	63.99
B38W03B	50.15
B38W04B	56.79
B38W05B	NG
B38W07B	48.22
B38W12B	45.52 *
B38W14D	40.69
B38W15D	43.04
B38W17B	46.18
B38W18D	54.85
B38W19D	45.93
B38W24D	48.11
B38W25D	52.12
MISS 1B	47.38
MISS 2B	51.08
MISS 3B	49.65
MISS 4B	47.12
MISS 5B	46.12
MISS 7B	46.52

LEGEND

- 50 — GROUNDWATER CONTOUR
- BEDROCK WELL
- GROUNDWATER FLOW DIRECTION
- NG NOT GAUGED
- * NOT CONTOURED DUE TO LACK OF CONTROL

NOTES:

1. THIS SURVEY SHOWS CONDITIONS AS OF OCTOBER 1999 BASED ON AERIAL MAPPING PREPARED BY GEOD CORP. AND GROUND SURVEY BY GARDEN STATE ENGINEERING SURVEYING AND PLANNING.
2. VERTICAL DATUM IS REFERENCED TO NGVD 1929.
3. HORIZONTAL DATUM IS REFERENCED TO NEW JERSEY STATE PLANE COORDINATE SYSTEM NAD 1927.

0 200 400 FEET
1" = 200'-0"

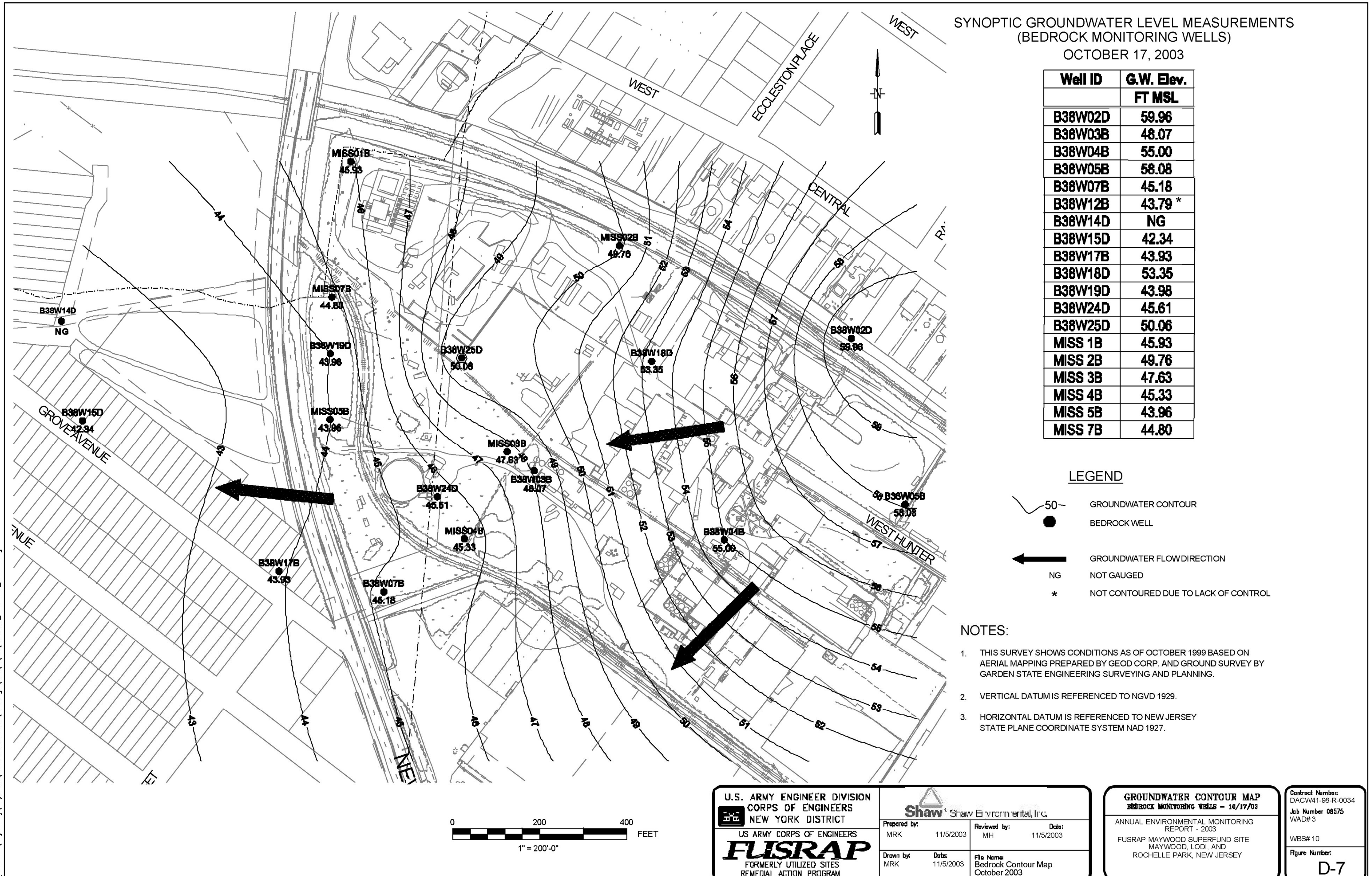
U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
NEW YORK DISTRICT
US ARMY CORPS OF ENGINEERS
FUSRAP
FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

Shaw Environmental, Inc.
Prepared by: MRK 11/5/2003
Reviewed by: MH Date: 11/5/2003
Drawn by: MRK Date: 11/5/2003
File Name: Bedrock Contour Map March 2003

GROUNDWATER CONTOUR MAP
BEDROCK MONITORING WELLS – 3/12/03
ANNUAL ENVIRONMENTAL MONITORING REPORT - 2003
FUSRAP MAYWOOD SUPERFUND SITE
MAYWOOD, LODI, AND ROCHELLE PARK, NEW JERSEY

Contract Number: DACW41-98-R-0034
Job Number 06575
WAD# 3
WBS# 10
Figure Number: D-6

Figure D-6
Synoptic Groundwater Level Measurements, Bedrock Monitoring Wells – March 12, 2003



Well ID	G.W. Elev. FT MSL
B38W02D	59.96
B38W03B	48.07
B38W04B	55.00
B38W05B	58.08
B38W07B	45.18
B38W12B	43.79 *
B38W14D	NG
B38W15D	42.34
B38W17B	43.93
B38W18D	53.35
B38W19D	43.98
B38W24D	45.61
B38W25D	50.06
MISS 1B	45.93
MISS 2B	49.76
MISS 3B	47.63
MISS 4B	45.33
MISS 5B	43.96
MISS 7B	44.80

Figure D-7
Synoptic Groundwater Level Measurements, Bedrock Monitoring Wells – October 17, 2003

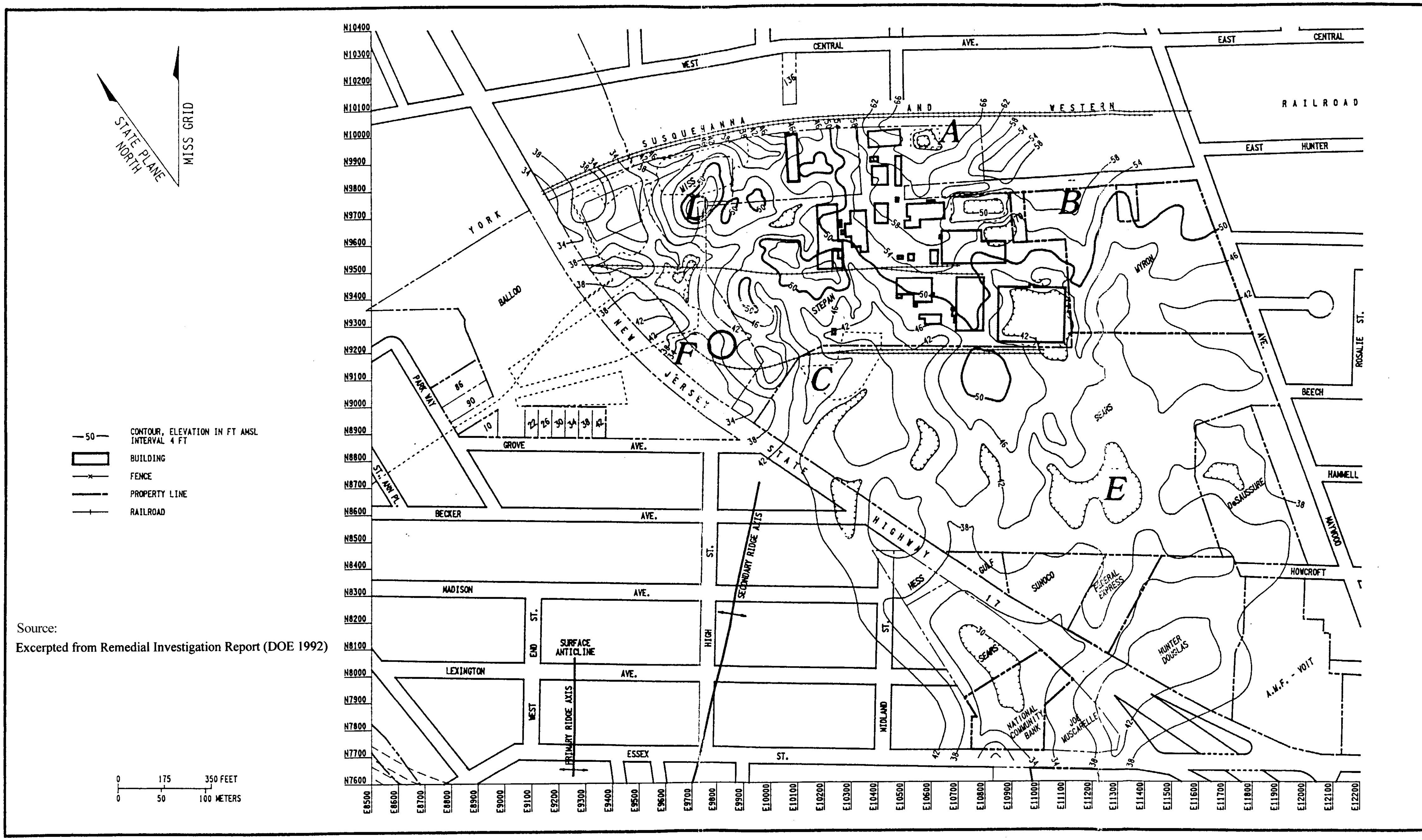


Figure D-8
Contour Map of the Top of Bedrock in the Maywood Area

APPENDIX E
ANNUAL NESHAP COMPLIANCE REPORT FOR THE YEAR 2003

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FUSRAP
Maywood Superfund Site

Annual NESHAP Compliance Report for the Year 2003

Formerly Utilized Sites Remedial Action Program
Maywood Superfund Site

Prepared by:

Shaw Environmental, Inc.
100 West Hunter Avenue
Maywood, New Jersey 07607

Prepared for:

US Army Corps of Engineers®

Contract No. DACW41-99-D-9001

June 2004

ANNUAL NESHAP COMPLIANCE REPORT, YEAR 2003

FUSRAP MAYWOOD SUPERFUND SITE
MAYWOOD, NEW JERSEY

SITE-SPECIFIC ENVIRONMENTAL RESTORATION
CONTRACT No. DACW41-99-D-9001
TASK ORDER No. 0002
WAD 01, WBS 07

Submitted to

Department of the Army
U.S. Army Engineer District, Kansas City
Corps of Engineers
700 Federal Building
Kansas City, Missouri 64106

Department of the Army
U.S. Army Engineer District, New York
Corps of Engineers
FUSRAP Project Office
26 Federal Plaza
New York, New York 10007

Submitted by:
Shaw Environmental, Inc.
100 West Hunter Avenue
Maywood, NJ 07607

June 2004

Issued to: ______________________________ Date: ________________

Copy No. _______ ☐ Controlled ☐ Uncontrolled

ANNUAL NESHAP COMPLIANCE REPORT, YEAR 2003

FUSRAP MAYWOOD SUPERFUND SITE
MAYWOOD, NEW JERSEY

SITE-SPECIFIC ENVIRONMENTAL RESTORATION
CONTRACT No. DACW41-99-D-9001
TASK ORDER No. 0002
WAD 01, WBS 07

Submitted to

Department of the Army
U.S. Army Engineer District, Kansas City
Corps of Engineers
700 Federal Building
Kansas City, Missouri 64106

Department of the Army
U.S. Army Engineer District, New York
Corps of Engineers
FUSRAP Project Office
26 Federal Plaza
New York, New York 10007

Submitted by:
Shaw Environmental, Inc.
100 West Hunter Avenue
Maywood, NJ 07607

June 2004

Reviewed / Approved by: ______________________ Date: __________
Andy Mills
Project Manager

Reviewed / Approved by: ______________________ Date: __________
Kevin F. Donnelly, P.E.
Project Environmental Engineer

Reviewed / Approved by: ______________________ Date: __________
Alan F. Brown, P.E.
Contractor Quality Control System Manager

Reviewed / Approved by: ______________________ Date: __________
Barbara Reider
Certified Health Physicist

RECORD OF REVISIONS

Revision No.	Description of Revision	Date
A	Draft issue for internal review and comment	March 2004
B	Draft issue for USACE review and comment	April 2004
Draft Final	Draft Final issue for USACE review and comment	June 2004
Final	Issue to regulators	June 2004

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TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

Note: Appendix C also contains an MS-Excel Spreadsheet on CD-ROM.

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ABBREVIATIONS AND ACRONYMS

AEC	Atomic Energy Commission
AP-42	Compilation of Air Pollutant Emission Factors – Volume 1
°C	degrees Centigrade
CAP88-PC	Clean Air Act Assessment Package 1988 – Personal Computer (Version 2)
CERCLA	Comprehensive Environmental Response, Compensation and Liabilities Act
Ci/yr	Curies per year
cm	centimeters
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
E	east
EPA	U.S. Environmental Protection Agency
°F	degrees Fahrenheit
FFA	Federal Facilities Agreement
FMSS	Formerly Utilized Sites Remedial Action Program Maywood Superfund Site
ft^2	square feet
FUSRAP	Formerly Utilized Sites Remedial Action Program
g	gram
HEPA	High Efficiency Particulate Air
I-80	Interstate-80
in.	inches
ICRP	International Commission on Radiological Protection
kph	kilometers per hour
km	kilometers
m	meters
m^2	square meters
m^3	cubic meters
mi	miles
MCW	Maywood Chemical Works
MISS	Maywood Interim Storage Site
mph	miles per hour
mSv/yr	millisievert per year
mrem	millirem
mrem/yr	millirem per year
NESHAP	National Emission Standards for Hazardous Air Pollutants
NJ	New Jersey
NJDOT	New Jersey Department of Transportation
NJMVC	New Jersey Motor Vehicle Commission
N	north
N/A	not applicable
NNE	north-northeast
NOAA	National Oceanic and Atmospheric Administration
ORNL	Oak Ridge National Laboratory
pCi/g	picocuries per gram
$pCi/m^2/s$	picocuries per square meter per second

ABBREVIATIONS AND ACRONYMS

Ra	radium
Ra-226	radium-226
Rn	radon
Rn-220	radon-220
Rn-222	radon-222
ROW	right-of-way
S	south
SSE	south-southeast
Th	thorium
Th-232	thorium-232
U	uranium
U-238	uranium-238
UST	underground storage tank
USACE	U.S. Army Corps of Engineers
W	west
yd^3	cubic yards

1.0 FACILITY INFORMATION

1.1 REGULATORY OVERVIEW

The provisions of the National Emission Standards for Hazardous Air Pollutants (NESHAP), as codified in the Code of Federal Regulations, Title 40, Part 61 (40 CFR 61), Subpart H, apply to operations at any facility owned or operated by the U.S. Department of Energy (DOE) that emits any radionuclides other than radon–222 (Rn-222) or radon-220 (Rn-220) into the air. These provisions state that emissions of radionuclides to the ambient air from DOE facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 millirem per year (mrem/yr).

To determine compliance with the NESHAP-Subpart H standard, radionuclide emissions shall be determined and effective dose equivalent values to members of the public calculated using U.S. Environmental Protection Agency (EPA) approved sampling procedures, computer models Clean Air Act Assessment Package – 1988 Personal Computer (CAP88-PC) or AIRDOS-PC, or other procedures for which the EPA has granted prior approval. Compliance with this standard shall be determined by calculating the highest effective dose equivalent to any member of the public at any off-site point where there is a residence, school, business or office. The owners or operators of an applicable facility shall submit an annual compliance report to both the EPA headquarters and the appropriate regional office by June 30.

Activities at the DOE-owned Maywood Interim Storage Site (MISS) result in the emissions of radiologically contaminated particulates into the air. Thus, the MISS is an applicable facility and this report has been prepared to satisfy the requirements of 40 CFR 61, Subpart H. A detailed description of the MISS, the site history, and emission sources of radionuclides is provided below.

1.2 SITE DESCRIPTION

The MISS is an 11.7-acre (4.7-hectare) property located in the Borough of Maywood and the Township of Rochelle Park in Bergen County, New Jersey (NJ). The MISS lies approximately 12 miles (mi) (20 kilometers [km]) northwest of New York City and 13 mi (21 km) northeast of Newark, NJ (see Appendix A, **Figure A-1**). The MISS property was previously part of a 30-acre (12-hectare) property owned by the Stepan Company and it was formerly part of the Maywood Chemical Works (MCW). The property is bordered on the west by NJ Route 17; on the north by the New York, Susquehanna, and Western Railway line; and on the south and east by commercial and industrial properties.

The MISS is part of the Formerly Utilized Sites Remedial Action Program (FUSRAP) Maywood Superfund Site, or FMSS. The FMSS consists of 88 residential, commercial, municipal, and state or Federal properties designated under the Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA). All 64 residential and municipal properties have been remediated either by the DOE or U.S. Army Corps of Engineers (USACE) during Phase I. The remaining 24 properties are being addressed by the USACE in Phase II and were sub-divided into 12 Clusters (i.e., sets of contiguous properties) to facilitate the pre-design investigation and subsequent removal actions for those properties (see Appendix A, **Figure A-2**). The interim storage of radiologically contaminated material removed from the clusters occurs at the DOE-owned MISS.

Land use in the vicinity of the MISS is primarily commercial and residential (see Appendix A, **Figure A-3**). The nearest schools are located approximately 0.5 mi (0.8 km) northeast and northwest of the MISS. There is no farmland in the vicinity of the MISS.

Based on the National Oceanic and Atmospheric Administration (NOAA) records for the year 2003 for Teterboro Airport, monthly average temperatures ranged from a low of 26.9 degrees Fahrenheit (°F) (-2.8 degrees Centigrade [°C]) in December to a high of 76.3°F (24.6°C) in July. Total monthly precipitation ranged from a low of 1.64 inches (in.) (4.2 centimeters [cm]) in July to a high of 8.33 in. (21.2 cm) in June. Monthly average wind speed ranged from a low of 5.8 miles per hour (mph) (9.3 kilometers per hour [kph]) from the northwest in June to a high of 9.2 mph (14.8 kph) from the northwest in January. The most frequent winds are from the north closely followed by north-northwest and the south (see Appendix A, **Figure A-4**). In addition, winds with a westerly component occur more frequently than those with an easterly component while southeast winds are by far the least frequent wind direction.

Due to the absence of on-site meteorological monitoring data, observations from Teterboro Airport were used to represent the general climatic conditions at the MISS. Teterboro Airport is located approximately 3 mi (4.8 km) south of the MISS and thus, meteorological data collected at this location is considered to be the best available data to represent the climatic regime at the MISS.

1.3 SITE HISTORY

The MISS was established to provide storage for low level radioactive soils found in the vicinity of the former MCW. From 1916 through 1959, the MCW processed monazite sand (a thorium-containing ore) for industrial uses. Process wastes were placed in surface impoundments on-site. Some of these process wastes migrated off-site via surface water drainage and some were later used as mulch and fill on nearby properties, contaminating them with radioactive thorium (Th).

After the enactment of the Atomic Energy Act of 1954, the Atomic Energy Commission (AEC) issued a license to the MCW for the processing and manufacture of radioactive material. The MCW stopped processing Th in 1959 and shortly thereafter was sold to the Stepan Company. Based on AEC inspections and information, remedial actions were performed by the Stepan Company.

Subsequent radiological surveys from 1980 to 1984 identified additional areas of contamination, both on-site and off-site. Through a provision of the Energy and Water Development Appropriations Act of 1984, Congress authorized the DOE to conduct a decontamination research and development project at the former MCW site. The site was subsequently assigned to FUSRAP. In 1984, the DOE negotiated a lease for Stepan Company land on which the MISS would be established. The land was transferred in 1985 to DOE ownership and currently provides interim storage for contaminated materials removed from vicinity properties.

FUSRAP was transferred from DOE to the USACE by Congressional action. The limits of USACE's responsibilities for the FMSS are defined under a Federal Facilities Agreement (FFA) between DOE and the EPA, Region II, which became effective April 22, 1991. The USACE became a successor to the DOE as of March 17, 1999.

1.4 MODEL SOURCES

The computer program used to model potential off-site exposure from airborne emissions is the CAP88-PC program (Version 2.0). Airborne emissions contributing to off-site exposure could occur from areas where the radioactively contaminated soil is exposed to the elements and from operations that generate airborne emissions (see Appendix A, **Figure A-5**). During the year 2003, the potential sources of airborne emissions at the MISS and vicinity properties were as follows:

- In situ, contaminated areas totaling approximately 635,000 square feet (ft^2) (59,000 square meters [m^2]) of the MISS and the adjacent Stepan Company property (within the MISS fence line) were potentially exposed to wind erosion during the year 2003.
- The performance of soil load-out, transportation and disposal operations at the MISS during the year 2003. Specifically, 10 soil load-out operations were performed during the year 2003. The various soil stockpiles consisted of soil and debris that had been transported to the MISS from the following sources: Cluster No. 4A removal action; Cluster No. 5B removal action; Cluster No. 5C removal action; drainage line replacement at Cluster 9A; water line repairs at Cluster 9A; Cluster 6C removal action; and the Cluster No. 2D remedial action. These 10 load-outs involved the movement of approximately 27,778 tons of material, which was placed into rail cars for transport to a disposal facility in Utah. The nearest commercial / residential buildings are located approximately 440 feet (135 meters [m]) west of the MISS soil load-out area.
- Continuation of the Cluster No. 4 removal action that began in 2002. Over the years, radiologically contaminated soil was transported downstream to the Cluster No. 4 properties via the Lodi Brook. The year 2002 removal action involved the excavation of soil from the following properties in the Borough of Lodi: 150 Essex Street, 160 Essex Street, 174 Essex Street and the Interstate 80 Westbound right-of-way (ROW). During the year 2003, excavation continued at Cluster No. 4A, which consists of the 160 Essex Street and 174 Essex Street properties. The year 2003 portion of this removal action involved the excavation of approximately 4,108 tons of soil that was loaded into trucks for transport to the fabric structure at the MISS. The nearest commercial buildings are located approximately 100 feet (30 m) southeast of Cluster No. 4A; the nearest residences are located approximately 490 feet (145 m) southwest of Cluster No. 4A.
- The performance of the removal action at Cluster No. 5B (113 Essex Street), which is comprised of a single lot in the Borough of Maywood: Block 125, Lot 2, covering an area of approximately 2.1 acres. Over the years, radiologically contaminated soil was transported downstream to the Cluster No. 5 properties via the Lodi Brook. This removal action involved the excavation of approximately 5,867 tons of soil that was loaded into trucks for transport to the fabric structure at the MISS. The nearest commercial buildings are located approximately 100 feet (30 m) northwest of Cluster No.5B; the nearest residences are located approximately 490 feet (150 m) northwest of Cluster No. 5B.
- The performance of the removal action at Cluster No. 5C (200 NJ Route 17 South), which is comprised of a single lot in the Borough of Maywood: Block 125, Lot 3, occupying an area of about 2.3 acres. Over the years, radiologically contaminated soil was transported downstream to the Cluster No. 5 properties via the Lodi Brook. This removal action involved the excavation of approximately 6,043 tons of soil that was loaded into trucks for transport to the fabric structure at the MISS. The nearest commercial buildings are located approximately 100 feet (30 m) northwest of Cluster No.5C; the nearest residences are located approximately 490 feet (150 m) northwest of Cluster No. 5C.
- Excavations performed for the replacement of the drainage line located at Cluster 9A (149-151 Maywood Avenue). Extensive sedimentation over the years had reduced the function of the drainage line resulting in localized flooding at times of heavy rainfall. The purpose of the replacement was to restore hydraulic flow to the drainage line to reduce flooding and the potential spread of radiologically contaminated soils. This action involved the excavation of approximately 1,183 tons of soil that was loaded into trucks for transport to the fabric structure at the MISS. The nearest commercial buildings are located approximately 330 feet (100 m)

south-southwest of Cluster No.9A; the nearest residences are located approximately 130 feet (40 m) southeast of Cluster No. 9A.

- Excavations performed for the repair of a ruptured water supply line located at Cluster 9A (149-151 Maywood Avenue). The repair work was performed on an emergency response basis on three separate occasions: January 4 through 6, 2003; August 19 through 22, 2003 and November 7 through 19, 2003. The purpose of the repair was to restore adequate water pressure and eliminate the resultant flooding and potential spread of radiologically contaminated soils. These actions involved the excavation of approximately 548 tons of soil that was loaded into trucks and transported to the fabric structure at the MISS. The nearest commercial buildings are located approximately 330 feet (100 m) south-southwest of Cluster No.9A; the nearest residences are located approximately130 feet (40 m) southeast of Cluster No. 9A.
- The performance of the removal action at Cluster 6C (167 NJ Route 17 North), which is comprised of a single lot in the Borough of Maywood: Block 124, Lot 2, occupying an area of approximately 1.7 acres. The property, which is currently owned and formerly operated by Sunoco, includes an inactive gasoline service area (pump islands) and a one-story 800 ft^2 cinder block building. Over the years, radiologically contaminated soil was transported downstream to the Cluster 6C properties via Lodi Brook. The removal action involved the excavation of approximately 8,231 tons of soil that was loaded into trucks and transported to the fabric structure at the MISS. The nearest commercial buildings are located approximately 100 feet (30 m) west of Cluster No.6C; the nearest residences are located approximately 655 feet (200 m) west-northwest of Cluster No. 6C.
- The performance of a remedial action at a portion of Cluster 2D (8 Mill Street), which is comprised of a single lot in the Borough of Lodi: Block 205.02, Lot 1.05, occupying an area of approximately 13.6 acres. The property is currently owned by the State of New Jersey and occupied by the Lodi Motor Vehicle Agency and the New Jersey Motor Vehicle Commission (NJMVC) Inspection Station. This remedial action was performed on an expedited basis for a small portion (approximately 1 acre) of Cluster 2D to facilitate the installation of drainage lines by the New Jersey Department of Transportation's (NJDOT) contractors. This action involved the excavation of approximately 1,798 tons of soil that was loaded into trucks for transport to the fabric structure at the MISS. The nearest commercial buildings are located approximately 200 feet (60 m) northeast of Cluster No. 2D; the nearest residences are located approximately 490 feet (150 m) west-southwest of Cluster No. 2D.
- The operation of the exhaust system for the soil sample preparation laboratory located in Building No. 76 (see Appendix A, **Figure A-3**). Soil samples collected from the various soil load-outs and the removal / remedial actions at the vicinity properties were brought to this laboratory to prepare the samples for radiological analysis. The individual soil samples were dried and then ground before placing the soil into sealed containers. The grinding operations, which generated very small amounts of dust, were performed under a laboratory hood. Air from the exhaust hood is passed through a high efficiency particulate air (HEPA) filter prior to discharge to the ambient air. Effective December 1, 2003, the soil sample preparation activities were transferred to the new on-site radiochemistry laboratory at the MISS resulting in negligible particulate emissions.

The simulated airborne emissions from these potential sources are used by CAP88-PC to estimate the annual dose from airborne particulates to the population within 50 mi (80 km) of the site (see Appendix C). In addition, for user-defined distances from the center of the emission areas, CAP88-PC estimates individual effective dose equivalents in all compass directions. For specific potentially exposed individuals (workers and residents) at known distances and compass directions from the site, the user can determine and compare the calculated effective dose equivalents.

Analyses were performed separately for the various soil load-outs, Cluster No. 4A, Cluster No. 5B, Cluster No. 5C, and Cluster No. 6C removal actions, the excavations for the drainage line replacement and water line repairs at Cluster 9A, and the Cluster 2D remedial action given the differences in receptor locations most affected by each of these areas. The in situ wind erosion emissions and the exhaust hood emissions were found to be negligible and thus, these sources were not included in the modeling analyses. Where individual receptors are affected by more than one emission source, doses caused by those sources are added. The individual (worker and resident) corresponding to the maximum effective dose equivalent is identified as the hypothetical maximally exposed individual. Because the dose received from airborne emissions is dependent on prevailing wind direction in addition to the proximity to the site, the hypothetical maximally exposed individual is not necessarily the person nearest the site. The model was used to predict the annual effective dose at numerous receptors resulting from the combined impact of the above sources. Although the model determined the annual effective dose at numerous receptors, only the hypothetical maximally exposed resident and worker are discussed in this report.

The individual effective dose equivalents given in the CAP88-PC output are based on the default assumption that the receptor occupies the location 100% of the time (i.e., 24 hours per day, 7 days per week, 52 weeks per year). The occupancy factor of 100%, although conservative, is considered to be appropriate for a resident. To estimate the dose to an employee working normal hours, an occupancy factor of 27% (i.e., 9 hours per day, 5 days per week, 52 weeks per year) is applied to the CAP88-PC result.

The program calculates the effective dose equivalents by combining the inhalation and ingestion intake rates and the air and ground surface concentrations with dose conversion factors, using the weighting factors in the International Commission on Radiological Protection's Publication 26, "Recommendations of the International Commission on Radiological Protection" (ICRP 1977). CAP88-PC calculates dose to the gonads, breast, lungs, red marrow, thyroid, and endosteum in addition to the 50-year effective dose equivalent. Doses can be tabulated as a function of radionuclide, pathway, location, and organ as shown in the output (see Appendix C, pages 27 - 131) for the CAP88-PC runs.

1.5 DETAILED SOURCE DESCRIPTIONS

As discussed in the previous section, the key sources of potential airborne radioactive particulate releases to the atmosphere during the year 2003 were the 10 soil load-outs, Cluster Nos. 4A, 5B, 5C, and 6C removal actions, excavations for the drainage line replacement and water line repairs at Cluster 9A, and Cluster 2D remedial actions (see Appendix A, **Figures A-2** and **A-5)**. In addition, in situ wind erosion at the MISS and operation of the exhaust system for the sample preparation laboratory in Building No. 76 were potential sources of radioactive particulates. A more comprehensive discussion of the activities performed at the above sources, including the soil radiological concentrations and the potential pathways for the airborne release of contaminated particulates, is provided below.

1.5.1 Soil Load-Outs

During the year 2003, various stockpiles were created consisting of soil and debris that was transported to the fabric structure at the MISS from: the Cluster Nos. 4A, 5B, 5C, and 6C removal actions, excavations performed for the drainage line replacements and water line repairs at Cluster 9A, and the Cluster No. 2D remedial action. The fabric structure is a 72 feet wide (21.9 m), 100 feet (30.5 m) long, and 24 feet (7.3 m) high truss frame building (see Appendix B, **Figure B-1**). The trusses are made of galvanized steel located 10 feet (3.1 m) apart. The cover is made of a heavy duty, fire rated, rip stop reinforced polyethylene. Each end of the structure has a roll-up fabric door. Placement of the soil stockpiles inside the fabric structure prevented wind erosion and the generation of storm water runoff from the piles.

Concrete blocks were placed around the fabric structure to prevent storm water run-on from entering the structure and contacting the piles.

Ten (10) soil load-out, transportation, and disposal operations were performed during the year 2003. The first soil load-out commenced on January 8, 2003 and was completed on February 11, 2003. This action involved the load-out of approximately 5,648 tons of soil primarily from the Cluster Nos. 4A and 5B removal actions, which was placed into rail cars for transport to Envirocare's Clive, Utah facility for disposal. Each rail car held approximately 70 to 85 cubic yards (yd^3) (53.5 to 65.0 cubic meters [m^3]) of soil. A total of 53 rail cars were utilized to complete the soil load-out

The second soil load-out commenced on February 21, 2003 and was completed on March 13, 2003. This action involved the load-out of approximately 2,459 tons of soil primarily from the Cluster Nos. 4 and 5B removal actions, which was placed into rail cars for transport to the Envirocare facility for disposal. Each rail car held 70 to 85 yd^3 (53.5 to 65.0 m^3) of soil. A total of 23 rail cars were utilized to complete the soil load-out.

The third soil load-out commenced on March 24, 2003 and was completed on March 28, 2003. This action involved the load-out of approximately 1,390 tons of soil, which was placed into rail cars for transport to the Envirocare facility for disposal. This soil originated primarily from the Cluster No. 5B removal action. Each rail car held approximately 70 to 85 yd^3 (53.5 to 65.0 m^3) of soil. A total of 13 rail cars were used to complete the soil load-out.

The fourth soil load-out commenced on April 25, 2003 and was completed on May 2, 2003. This action involved the load-out of approximately 1,496 tons of soil, which was placed into rail cars for transport to the Envirocare facility for disposal. This soil originated primarily from the Cluster No. 5B removal action. Each rail car held approximately 70 to 85 yd^3 (53.5 to 65.0 m^3) of soil. A total of 14 rail cars were used to complete the soil load-out.

The fifth soil load-out commenced on June 19, 2003 and was completed on June 25, 2003. This action involved the load-out of approximately 1,604 tons of soil, which was placed into rail cars for transport to the Envirocare facility for disposal. This soil originated primarily from the Cluster No. 5B removal action and drainage line replacement at Cluster 9A. Each rail car held approximately 70 to 85 yd^3 (53.5 to 65.0 m^3) of soil. A total of 15 rail cars were used to complete the soil load-out.

The sixth soil load-out commenced on August 19, 2003 and was completed on September 2, 2003. This action involved the load-out of approximately 4,167 tons of soil, which was placed into rail cars for transport to the Envirocare facility for disposal. This soil originated primarily from the Cluster No. 5B removal action and water line repair at Cluster 9A. Each rail car held approximately 70 to 85 yd^3 (53.5 to 65.0 m^3) of soil. A total of 39 rail cars were used to complete the soil load-out.

The seventh soil load-out commenced on September 17, 2003 and was completed on October 1, 2003. This action involved the load-out of approximately 2,223 tons of soil, which was placed into rail cars for transport to the Envirocare facility for disposal. This soil originated primarily from the Cluster Nos. 5C and 6C removal actions. Each rail car held approximately 70 to 85 yd^3 (53.5 to 65.0 m^3) of soil. A total of 21 rail cars were used to complete the soil load-out.

The eighth load-out commenced on October 14, 2003 and was completed on October 29, 2003. This action involved the load-out of approximately 3,874 tons of soil, which was placed into rail cars for transport to the Envirocare facility for disposal. This soil originated primarily from the Cluster Nos. 5C and 6C removal actions. Each rail car held approximately 70 to 85 yd^3 (53.5 to 65.0 m^3) of soil. A total of 37 rail cars were used to complete the soil load-out.

The ninth load-out commenced on November 24, 2003 and was completed on December 17, 2003. This action involved the load-out of approximately 3,034 tons of soil, which was placed into rail cars for transport to the Envirocare facility for disposal. This soil originated primarily from the Cluster Nos. 5C and 6C removal actions. Each rail car held approximately 70 to 85 yd^3 (53.5 to 65.0 m^3) of soil. A total of 29 rail cars were used to complete the soil load-out.

The tenth load-out commenced on December 18, 2003 and was completed on December 26, 2003. This action involved the load-out of approximately 1,883 tons of soil, which was placed into rail cars for transport to the Envirocare facility for disposal. This soil originated primarily from the Cluster Nos. 6C and 2D removal actions. Each rail car held approximately 70 to 85 yd^3 (53.5 to 65.0 m^3) of soil. A total of 18 rail cars were used to complete the soil load-out.

A front-end loader was used to transport soil from the fabric structure to the storage bins located near the rail car access ramp. The storage bins were sized to hold approximately 80 to 85 yd^3 of soil. An excavator was then used to place the soil from the storage bins into rail cars containing liners. The use of a liner ensured that the rail cars complied with U.S. Department of Transportation (DOT) requirements, the waste materials were protected from the elements, the potential loss of soil during shipping was prevented, and potential impacts to the community were minimized. In Appendix B, **Figure B-1** shows various photographs depicting the soil load-out operation.

Prior to loading the soil into each rail car, a composite sample was generated from the soil in the stockpile. Five soil samples were collected from the perimeter of the stockpile. These samples were homogenized into one composite sample and analyzed by gamma spectroscopy for Th, radium (Ra), and uranium (U). The average soil radionuclide concentrations of thorium-232 (Th-232), radium-226 (Ra-226), and uranium-238 (U-238) for the various soil load-outs are shown in **Table 1-1**.

In addition, the soil moisture content was determined for each individual rail car. A portion of the composite sample generated for radiological analysis of each rail car was used to determine the soil moisture content. If the moisture content of the soil was too high, a pre-determined amount of absorbent, based upon the soil moisture content of the soil, was blended into the soil stockpile.

Upon completion of loading, the rail cars were moved eastward down the rail spur, the liner was closed and an outgoing rail car survey performed. Prior to a loaded rail car being shipped off-site for disposal, the proper labels and placards were attached and a radiological release survey performed.

Table 1-1
Year 2003 Soil Load-Outs at the MISS – Average Soil Radionuclide Concentrations

Soil Load-Out	Time Period	Soil (tons)	Th-232 Concentration (pCi/g)[1]	Ra-226 Concentration (pCi/g)	U-238 Concentration (pCi/g)
Number 1	Jan. 8 – Feb. 11	5,648	2.67	0.89	3.53
Number 2	Feb 21 – Mar. 13	2,459	2.11	0.65	2.04
Number 3	Mar. 24 – Mar. 28	1,390	2.81	0.70	1.74
Number 4	April 25 – May 2	1,496	6.86	1.04	3.67
Number 5	June 19 – June 25	1,604	3.83	1.03	2.13
Number 6	Aug. 19 – Sep. 2	4,167	7.47	1.38	2.72
Number 7	Sep. 17 – Oct. 1	2,223	12.28	1.87	8.94
Number 8	Oct. 14 – Oct. 29	3,874	14.12	2.09	10.03
Number 9	Nov. 24 – Dec. 17	3,034	7.66	1.30	6.34
Number 10	Dec. 18 – Dec. 26	1,883	9.96	1.64	7.85
	Total	27,778			

Note 1: (pCi/g) = picocuries per gram.

1.5.2 Cluster No. 4A Removal Action

Cluster No. 4 consists of four properties located within the Borough of Lodi. The properties at 160 and 174 Essex Street are collectively called Property No. 04A and a portion of Interstate 80 Westbound (I-80W) ROW is called Property No. 04B. In addition, the property at 150 Essex Street was subsequently incorporated into Cluster No. 4.

The removal action at Cluster No. 4 began in the year 2002 and involved the excavation of soil from the following properties in the Borough of Lodi: 150 Essex Street, 160 Essex Street, 174 Essex Street and the I-80 ROW. During the year 2003, the removal action at Cluster 4A continued and was completed with additional excavations performed at the 160 Essex Street and 174 Essex Street properties.

Property No. 04A consists of Block 186.01, Lot 1 (174 Essex Street) and Block 174, Lot 1.02 (160 Essex Street), located in a commercial area in the Borough of Lodi. The two parcels, which occupy an area of approximately 3.1 acres, were purchased by the Bank of New York in 1994. The property at 160 Essex Street is a partially paved parking lot located adjacent to and west of 174 Essex Street.

A chain link fence separates the two properties. A single story stucco office building (approximately 23,000 ft^2 or 2,137 m^2) is centrally located at 174 Essex Street. Most of the property surrounding the office building is paved. There is also a smaller storage building (approximately 2,500 ft^2 or 232 m^2) in the southern corner of 174 Essex Street. A Military Reserve Facility lies to the east of 174 Essex Street.

A commercial building and the I-80W ROW are west of 160 Essex Street. The I-80W ROW also runs south of 160 and 174 Essex Street.

Over the years, radiologically contaminated soil from the former MCW was transported downstream to the Cluster No. 4 properties via an open channel (i.e., Lodi Brook). After time, the open channel was diverted into a culvert that channels the Lodi Brook and local stormwater to the Saddle River. During the installation of the culvert at the Cluster No. 4 properties, the contamination was spread unknowingly when the contaminated soil was used as backfill. In addition, residents were known to use the process waste generated by the former MCW as fill material. These were the major mechanisms for the distribution of radiologically impacted materials to off-site properties such as Cluster No. 4.

The excavations at Cluster No. 4A resumed on January 2, 2003 and were completed on February 28, 2003. An excavator was used to remove and load the soil into lined dump trucks. The dump trucks were covered with a tarp before proceeding to the MISS. Upon arrival at the MISS, the trucks were emptied and soil stockpiled using a front-end loader before placement into the fabric structure. At both the Cluster No. 4A properties and at the MISS, water sprays were used for dust suppression.

A total of approximately 4,108 tons of soil was excavated and transported by truck to the MISS for subsequent disposal during the year 2003. Approximately 4,021 tons of soil were excavated from the 160 Essex Street property. In addition, a small excavation of approximately 87 tons was performed at 174 Essex Street. In Appendix B, **Figure B-2** shows selected photographs of the Cluster No. 4A removal action.

The average soil radionuclide concentrations for the excavated soil were determined from sampling that was conducted during the various load-outs at the MISS that included the Cluster No. 4A soil. Composite samples were collected from the railcar soil stockpiles prior to loading. These samples were analyzed by gamma spectroscopy for Th, Ra, and U. The average radionuclide concentrations of Th-232, Ra-226, and U-238 obtained from the applicable soil load-outs (i.e., numbers 1 and 2) were 2.39, 0.77, and 2.79 pCi/g, respectively.

1.5.3 Cluster No. 5B Removal Action

Cluster No. 5 is comprised of three properties located within the Borough of Maywood. The property located at 99 Essex Street is called Property No. 05A; the property located at 113 Essex Street is called Property No. 05B; while the property located at 200 NJ Route 17 is called Property No. 05C.

Property No. 05B is comprised of a single lot within the Borough of Maywood: Block 125, Lot 2, which has a size of approximately 2.1 acres. A two-story, brick veneer building, constructed in the mid-1960's, is located on the property. This building is owned by and houses the Bank of New York; it employs 150 full-time personnel in the bank's service center, which is not open to the public. Most of the property is covered with asphalt pavement utilized for parking areas, with a small landscaped lawn area located in front of the building. Property No. 05B is bounded to the north by Property No. 05C, to the east by NJ Route 17, to the west by commercial properties, and to the south by Property No. 05A.

Over the years, radiologically contaminated soil from the former MCW was transported downstream to the Cluster No. 5 properties via an open channel (i.e., Lodi Brook). After time, the open channel was diverted into a culvert that channels the Lodi Brook and local stormwater to the Saddle River. At present, the Lodi Brook crosses the property in a 10-foot wide concrete box culvert located a few feet south of the original easement, which is at the rear of the on-site building. The four catch basins located in the parking lot collect storm runoff from the site and ultimately direct the flow to the eastern section of the site and to the Lodi Brook culvert.

During the installation of the culvert at Cluster No. 5 properties, the contamination was spread unknowingly when the contaminated soil was used as backfill. In addition, residents were known to use the process waste generated by the former MCW as fill material. These were the major mechanisms for the distribution of radiologically impacted materials to off-site properties such as Cluster No. 5.

The excavation for the removal action at Cluster No. 5B commenced on January 15, 2003 and was completed on June 11, 2003. The removal action involved the excavation and transport of approximately 5,867 tons of soil. Approximately 5,362 tons of soil were excavated from the asphalt parking area located north-northeast of the service center. In addition, a small excavation of approximately 505 tons of soil was performed from the lawn area located in front of the building.

An excavator was used to remove and load the soil into lined dump trucks. The dump trucks were covered with a tarp before proceeding to the MISS. Upon arrival at the MISS, the trucks were emptied and soil stockpiled using a front-end loader before placement into the fabric structure. At both the Cluster No. 5B properties and the MISS, water sprays were used for dust suppression. In Appendix B, **Figure B-3** shows selected photographs of the Cluster No. 5B removal action.

The average soil radionuclide concentrations for the excavated soil were determined from sampling that was conducted during the various load-outs at the MISS that included Cluster No. 5B soil. Composite samples were collected from the railcar soil stockpiles prior to loading. These samples were analyzed by gamma spectroscopy for Th, Ra, and U. The average radionuclide concentrations of Th-232, Ra-226, and U-238 obtained from the applicable soil load-outs were 3.66, 0.86, and 2.62 pCi/g, respectively.

1.5.4 Cluster No. 5C Removal Action

Cluster No. 5 is comprised of three properties located within the Borough of Maywood. The property located at 99 Essex Street is called Property No. 05A; the property located at 113 Essex Street is called Property No. 05B; while the property located at 200 NJ Route 17 is called Property No. 05C.

Property No. 05C is comprised of a single lot within the Borough of Maywood: Block 125, Lot 3, which has a size of approximately 2.3 acres. The property is occupied by a single story building that contains a retail sales area, telemarketing area, television repair area, small engine area, an office for clerical personnel, a parts warehouse, an employee lunchroom, and a loading dock of the Sears Appliance Service Center (the site owner). The Sears Appliance Center operates 6 days per week, with approximately 40 employees. Most of the remaining property is covered with asphalt pavement parking areas. Access to the property is from NJ Route 17, which lies just east of the property.

Over the years, radiologically contaminated soil from the former MCW was transported downstream to the Cluster No. 5 properties via an open channel (i.e., Lodi Brook). After time, the open channel was diverted into a culvert that channels the Lodi Brook and local stormwater to the Saddle River. During the installation of the culvert at Cluster No. 5 properties, the contamination was spread unknowingly when the contaminated soil was used as backfill. In addition, residents were known to use the process waste generated by the former MCW as fill material. These were the major mechanisms for the distribution of radiologically impacted materials to off-site properties such as Cluster No. 5.

An open unconfined portion of the Lodi Brook is located parallel to NJ Route 17 South along the southeastern boundary of Property No. 05C. At the location where Lodi Brook exits the property, it enters a concrete conduit and flows to a box culvert located on the adjacent property. A storm drains runs parallel to NJ Route 17 South and discharges into Lodi Brook.

The excavation for the removal action at Cluster No. 5C commenced on July 16, 2003 and was completed on September 9, 2003. The removal action involved the excavation and transport of approximately 6,043 tons of soil. An excavator was used to remove and load the soil into lined dump trucks. The dump trucks were covered with a tarp before proceeding to the MISS.

Upon arrival at the MISS, the trucks were emptied and soil stockpiled using a front-end loader before placement into the fabric structure. At both the Cluster No. 5C properties and the MISS, water sprays were used for dust suppression. In Appendix B, **Figure B-4** shows selected photographs of the Cluster No. 5C removal action.

The average soil radionuclide concentrations for the excavated soil were determined from sampling that was conducted during the various load-outs at the MISS that included Cluster No. 5C soil. Composite samples were collected from the railcar soil stockpiles prior to loading. These samples were analyzed by gamma spectroscopy for Th, Ra, and U. The average radionuclide concentrations of Th-232, Ra-226, and U-238 obtained from the applicable soil load-outs were 10.38, 1.66, and 7.01 pCi/g, respectively.

1.5.5 Cluster 9A Drainage Line Replacement

Damage was observed to the drainage line that runs along the entrance to the Sears Logistics Services at Cluster No. 9A (149-151 Maywood Avenue). Initially, the intent of this effort was to repair the damaged section of the line to reduce flooding and the potential spread of radiologically contaminated soil. However, during the repair effort, it was revealed that extensive sedimentation over the years had reduced the function of the entire drainage line resulting in localized flooding at times of heavy rainfall. Thus, a decision was made to replace the drainage line to restore hydraulic flow.

Mobilization activities were initiated on June 10, 2003. Site preparation involved the establishment of a restricted area, removal of trees and surface vegetation, and placement of swamp mats to support excavation equipment. The cut trees and associated vegetation were removed by the tree removal contractors. The tree stumps were transported to the MISS for disposal since they had contaminated soil attached. Twenty-four (24) hour by-pass pumping was established and a small excavation was performed to expose the broken drainage line.

Upon opening the broken section of pipe, the hydraulic flow was determined to be non-existent due to extensive sedimentation. The decision was made to remove the existing semi-pipe (semi-circular arch) and install a new temporary drainage pipe.

The excavation began on June 19, 2003 and was completed on July 11, 2003. The drainage line replacement involved the excavation and transport of approximately 1,183 tons of soil. An excavator was used to remove and load the soil into lined dump trucks. The dump trucks were covered with a tarp before proceeding to the MISS.

Upon arrival at the MISS, the trucks were emptied and soil stockpiled using a front-end loader before placement into the fabric structure. At both the Cluster No. 9A properties and the MISS, water sprays were used for dust suppression. In Appendix B, **Figure B-5** shows selected photographs of the Cluster No. 9A drainage line replacement.

A total of 416 linear feet of new drainage pipe (two concrete pipes each 8 feet in length and 24 inches in diameter and 20 HDPE pipe sections each 20 feet in length and 30 inches in diameter) was installed. Structural fill was used to backfill around the pipe and restore the disturbed area to the original grade.

The average soil radionuclide concentrations for the excavated soil were determined from sampling that was conducted during the various load-outs at the MISS that included Cluster No. 9A soil. Composite samples were collected from the railcar soil stockpiles prior to loading. These samples were analyzed by gamma spectroscopy for Th, Ra, and U. The average radionuclide concentrations of Th-232, Ra-226, and U-238 obtained from the applicable soil load-outs were 5.65, 1.21, and 2.43 pCi/g, respectively.

1.5.6 Cluster 9A Water Line Repairs

During the year 2003, emergency repairs were performed on three separate occasions to the water supply line that runs through Cluster 9A (149-151 Maywood Avenue). The 10-inch water supply line ruptured for the first time on January 3, 2003. The line provides dedicated service to the warehouse fire suppression system.

The rupture resulted in the creation of a 5-foot diameter hole over the break. The soil and debris from the rupture was surveyed and determined to be radiologically contaminated. The USACE decided to excavate the radiologically contaminated soils to provide a clean work area for the property owner's plumber to repair the break. Excavation of the contaminated soils around the rupture was started and completed on January 4, 2003.

The second rupture of the water supply line at Cluster 9A occurred in August 2003 near the location of the initial water line rupture. In order to provide a clean work area for the property owner's plumber, excavation of the contaminated soils around the rupture was performed. The excavation began on August 19, 2003 and was completed on August 21, 2003.

In November 2003, the water supply line at Cluster No 9A ruptured for the third time. This rupture occurred in the general vicinity of the previous two ruptures. Excavation of the contaminated soils around the rupture was initiated on November 6, 2003 and was completed on November 14, 2003. This effort provided a clean work area for the property owner's plumber to repair the water supply line.

The three water line repairs involved the excavation and transport of a total of approximately 548 tons of soil. For these projects, an excavator was used to remove and load the soil into lined dump trucks. The dump trucks were covered with a tarp before proceeding to the MISS.

Upon arrival at the MISS, the trucks were emptied and soil stockpiled using a front-end loader before placement into the fabric structure. At both the Cluster No. 9A properties and the MISS, water sprays were used for dust suppression. In Appendix B, **Figure B-6** shows selected photographs of the Cluster No. 9A water line repair projects.

The average soil radionuclide concentrations for the excavated soil were determined from sampling that was conducted during the various load-outs at the MISS that included Cluster No. 9A soil. Composite samples were collected from the railcar soil stockpiles prior to loading. These samples were analyzed by gamma spectroscopy for Th, Ra, and U. The average radionuclide concentrations of Th-232, Ra-226, and U-238 obtained from the applicable soil load-outs were 5.65, 1.21, and 2.43 pCi/g, respectively.

1.5.7 Cluster No. 6C Removal Action

Cluster No. 6 consists of five properties within the Borough of Maywood. The property located at 85-101 NJ Route 17 North is called Property No. 06A; 137 NJ Route 17 North is called Property No. 06B; 167 Route 17 North is called Property No. 06C; 239 NJ Route 17 is called Property No. 06D; while 29 Essex Street is called Property No. 06E.

Property No. 06C occupies Block 124, Lot 2 in the Borough of Maywood and is owned, and was formerly operated, by Sunoco. The gasoline service area and a one-story 800 ft^2 cinder block building are inactive. The 1.7 acre parcel is bordered to the northwest by Property No. 06D, to the southeast by Property No. 06B, to the north by Cluster No. 9, and to the southwest by the northbound lane of NJ Route 17.

The area adjacent to northbound lane of NJ Route 17 is covered by asphalt pavement in the area of a utility corridor. Immediately east of the NJ Route 17 guardrail and behind the gated fence, the ground pavement is broken up around two concrete pads in a gasoline service area near three 6,000 gallon fuel underground storage tanks (USTs). One existing waste oil UST (capacity unknown) is located north of the existing building. Another UST was removed from the area beyond the northeast building corner.

The sheeted and braced hole remains open and contains standing water. A chain link fence surrounds the perimeter. A nearby mound of debris appears to be spoils that were left on-site due to radiological contamination.

On the eastern side of the property, a southwest-draining swale carries the east branch of Upper Lodi Brook along the approximate course of the former natural stream channel. The centerline and right embankment are located on Property No. 06C and the top of the left embankment is located on adjacent Property No. 06B. After heavy rainfalls in September 1999 associated with Hurricane Floyd, a surface layer of sediments was cleaned out and the swale was reshaped and seeded in this reach. The work was authorized under a time-critical removal action to reduce the potential for sediment contaminant transport.

To the northwest, perimeter drains and culverts drain the western portion of Cluster No. 9 and other areas from the northwest to the southeast. There is a southeastward-draining interceptor in the utility corridor alongside the northbound lane of NJ Route 17.

Downstream from Property No. 06C, the Upper Lodi Brook's east and west branches flow in separate conduits through the NJ Route 17 embankment. They combine downstream in a junction box just west of the southbound lane, within Cluster No. 5. The transport of Lodi Brook sediments and erosion of contaminated fill from along its course were the primary mechanisms for radioactive contamination to this, neighboring, and downstream properties.

The excavation for the removal action at Cluster No. 6C commenced on September 11, 2003 and continued throughout the remainder of the year. The removal action involved the excavation and transport of approximately 8,231 tons of soil. An excavator was used to remove and load the soil into lined dump trucks. The dump trucks were covered with a tarp before proceeding to the MISS.

Upon arrival at the MISS, the trucks were emptied and soil stockpiled using a front-end loader. The soil at Cluster No. 6C contained a considerable amount of large debris; thus, mechanical separation was used to segregate the large debris. An excavator was used to place the material onto a vibrating screen with 6 inch square punch plates to separate the material into two piles: one pile contained soil and debris less than 6 inches; the other pile consisted of debris greater than 6 inches. A front-end loader was then used to either place the soil / small debris into the fabric structure or create an outside stockpile for the debris greater than 6 inches. At both the Cluster No. 6C properties and the MISS, water sprays were used for dust suppression. In Appendix B, **Figure B-7** shows selected photographs of the Cluster No. 6C removal action.

The average soil radionuclide concentrations for the excavated soil were determined from sampling that was conducted during the various load-outs at the MISS that included Cluster No. 6C soil. Composite samples were collected from the railcar soil stockpiles prior to loading. These samples were analyzed by gamma spectroscopy for Th, Ra, and U. The average radionuclide concentrations of Th-232, Ra-226, and U-238 obtained from the applicable soil load-outs were 11.01, 1.73, and 8.29 pCi/g, respectively.

1.5.8 Cluster No. 2D Remedial Action

Cluster No. 2 consists of four properties in the Borough of Lodi. The property located at 100 Hancock Street is called Property No. 02A; 80 Hancock Street is called Property No. 02B, 80 Industrial Road is called Property No. 02C; while the property located at 8 Mill Street is called Property No. 02D.

Property No. 02D occupies Block 205.02, Lot 1 in the Borough of Lodi and is approximately 13.6 acres in area. The property is bordered on the north by Property No. 02C, on the south by Columbia Lane, on the east by Gregg Street, and on the west by Hancock Street.

The property is currently owned by the State of New Jersey and occupied by the Lodi Motor Vehicle Agency and the New Jersey Motor Vehicle Commission (NJMVC) Inspection Station. There is a one-story cinder block / brick veneer building that houses offices for inspection station personnel and personnel employed by the Lodi Motor Vehicle Agency. Approximately half of the property is covered with asphalt pavement and the other half with grassy islands.

The Lodi Motor Vehicle Agency issues titles, licenses and registration; and administers the associated written and driving tests to obtain a license. Parsons Technology, a contractor, runs the NJMVC Inspection Station. The western portion of the property is used for driving tests and the eastern section is used for vehicle inspections. The remainder of the property and northeast portion of the building are used for licensing and driver testing. The primary access to the building is via the northern entrance. Typically, several hundred people are present on the property daily for vehicle inspections, licensing and driver testing.

A buried culvert containing the present-day channel of the historic Lodi Brook runs through the western portion of this property. Prior to realignment during the property development, the Lodi Brook ran across the property in a southwesterly direction. This former channel is the suspected transport mechanism for the radiological contamination found at the site.

During December 2003, it was discovered that the New Jersey Department of Transportation (NJDOT) was performing excavation at a portion of Cluster 2D to construct a staging area to support a drainage improvement project along Gregg Street. The NJDOT's contractor had stockpiled the excavated soil at the site. The USACE agreed to perform a remedial action for the proposed staging area (approximately 1 acre in area) on an expedited basis since the soil was radiologically contaminated.

The remedial action commenced on December 10, 2003 and was completed on December 22, 2003. This action initially involved the transport of the soil stockpiled by the NJDOT contractors as well as the excavation and transport of the remaining radiologically contaminated soil in the construction area. Approximately 1,798 tons of soil were transported to the MISS. An excavator was used to remove and load the soil into lined dump trucks. The dump trucks were covered with a tarp before proceeding to the MISS.

Upon arrival at the MISS, the trucks were emptied and soil stockpiled using a front-end loader before placement into the fabric structure. At both the Cluster No. 2D properties and the MISS, water sprays were used for dust suppression.

The average soil radionuclide concentrations for the excavated soil were determined from sampling that was conducted during the various load-outs at the MISS that included Cluster No. 2D soil. Composite samples were collected from the railcar soil stockpiles prior to loading. These samples were analyzed by gamma spectroscopy for Th, Ra, and U. The average radionuclide concentrations of Th-232, Ra-226, and U-238 obtained from the applicable soil load-outs were 9.96, 1.64, and 7.85 pCi/g, respectively.

1.5.9 In Situ Wind Erosion

The MISS and adjacent Stepan Company property (within the MISS fence line) consists of approximately 635,000 ft^2 (59,000 m^2) of contaminated areas that were potentially exposed to wind erosion throughout the year 2002. The surface characteristics of the northern portion of the MISS (north of the Stepan Company rail spur) did not change significantly during the year 2003.

The amount of bare soil present at the MISS, which has the greatest wind erosion potential, has decreased considerably from past years due to the placement of gravel / stone and a plastic liner over much of the area as well as the installation of a fabric structure for storage. At present, the approximate breakdown of the types of various surfaces found at the MISS and adjacent Stepan Company property (see Appendix A, **Figure A-3**) is the following: bare soil is 54,000 ft^2 (5,000 m^2), vegetation is 245,000 ft^2 (22,760 m^2), gravel / stone is 238,000 ft^2 (22,110 m^2), water basin is 8,000 ft^2 (740 m^2) and asphalt is 90,000 ft^2 (835 m^2).

Other than for bare soil, the wind erosion potential for the other surfaces at the MISS is negligible. It should be noted that any storage piles created as a result of construction activities or removal actions were covered with tarps and sandbags to prevent wind erosion. In addition, best management practices such as spraying water on dry soil and the application of dust suppressants were used during the year to reduce the potential for wind erosion. A chloride dust suppressant (Dust Fyghter$_{TM}$)was applied at the MISS on February 6, 2003. This product continuously absorbs moisture from the air and locks it into the soil, thereby suppressing dust emissions on a long term basis. In addition, another dust suppressant (Soil Sement®) was applied at the MISS on July 28, 2003. This product is an environmentally safe, powerful polymer emulsion that produces highly effective dust control, erosion control and stabilization on a long-term basis. Both of these products were either applied by spray or by truck to the various surface types (i.e., gravel / stone, sparsely vegetated areas, and bare soil) at the MISS as well as the access roads. The wind erosion potential of radiologically contaminated particulates at the vicinity properties is minimal since significant ground cover is generally present and primarily subsurface contamination exists at these locations.

In order to assess the amount of wind erosion that occurred during the year 2003 at the MISS, it is necessary to determine the fastest 2-minute wind speeds over the course of the year and then compare them to the friction velocity most representative of bare soil as defined in EPA publication AP-42, *Compilation of Air Pollutant Emission Factors Volume 1*, Chapter 13 "Industrial Wind Erosion" (EPA 1995). The fastest 2-minute wind speed is the highest observed wind speed over a 2-minute averaging period as compared to a peak gust with an averaging time of a few seconds. The fastest 2-minute wind speed is typically on the order of 30 mph, while a peak gust can be 60 mph or more. The threshold friction velocity is that wind speed just above ground level that is capable of causing erodible particles to become airborne.

As mentioned previously, meteorological data from nearby Teterboro Airport was used to represent conditions at the MISS. The results of this analysis showed that the fastest 2-minute wind speeds obtained from Teterboro Airport for the year 2003 do not result in the threshold friction velocity being exceeded at any time during the year. The fastest 2-minute wind speed at 20 feet above ground level would need to be 41 mph or greater to exceed the threshold friction velocity while the highest observed value during the year 2003 was 33 mph. Thus, by definition, no in situ wind erosion occurred at the MISS during the year 2003.

1.5.10 System Exhaust for Soil Sample Preparation Laboratory

The soil sample preparation laboratory is located in Building No. 76 (see Appendix A, **Figure A-3**). Soil samples collected for the various soil load-outs, Cluster Nos. 4A, 5B, 5C, and 6C removal actions, the excavations performed for the drainage line replacement and water line repairs at Cluster 9A, and the Cluster 2D remedial action were taken to this laboratory to prepare them for radiological analysis. Each sample was dried thoroughly to minimize the moisture content and then ground to create a homogeneous mixture. The presence of moisture, rocks, or void spaces in the prepared sample could lead to inaccurate radioanalytical laboratory results.

The laboratory operates two electric ovens to dry the samples. These ovens are vented directly to the main laboratory fume hood for the removal of waste heat. The grinding of the soil samples is performed in a bench grinder positioned under the main laboratory fume hood. Each soil sample is weighed before and after the grinding process. The grinding of the individual soil samples produces minimal particulate emissions as detailed below.

The fume hood operates anytime that the ovens or grinder are operational. Dust generated by the grinding process is collected by the fume hood and passed through a HEPA filter with a 99.97% removal efficiency before being discharged to the outside air. In Appendix B, **Figure B-8** shows selected photographs depicting operations at the soil sample preparation laboratory in Building No. 76 and the radiochemistry laboratory.

Approximately 1,980 "tuna can" style soil samples were prepared for radiological analysis from January 8 to November 30, 2003. The total time that grinding was performed during soil sample preparation was approximately 330 hours. The average weight of the soil samples prior to grinding was 540.2 grams (g). The average weight of the soil samples after grinding was 537.6 g. Thus, the average amount of "unrecovered" dried soil during the grinding process was approximately 2.6 g. At least 75% (1.95 g) of the "unrecovered" mass was subsequently recovered from the remaining soil not used to fill the "tuna can" and during the grinder decontamination process with no more than 25% (0.65 g) entering the hood ventilation system as particulate emissions.

Based on the above, the total amount of airborne particulate emissions generated during the preparation of all the soil samples was approximately 1,287 g. However, after passage through the HEPA filter, the particulate emissions discharged to the outside air was less than 0.4 g. The discharge of this miniscule amount of contaminated particulate to the atmosphere would have a negligible impact on the off-site radiological exposure; therefore, this source was not included in the CAP88-PC modeling analyses.

Effective December 1, 2003, the soil sample preparation activities were transferred to the new onsite radiochemistry laboratory at the MISS. The laboratory is divided into three main functional areas: Preparation Lab, Wet Chemistry Lab, and the Counting Room. The Preparation Lab contains the convection ovens, the pulverizer grinder, the canner, analytic balances and a downdraft table. Only 122 samples were prepared for radiological analysis in the Preparation Laboratory during the month of December 2003.

Soil samples from the field operations or core samples are brought to the Preparation Lab. Samples are dried and homogenized to meet regulatory and industry standards for the analysis of soils. The contents of the samples are emptied into a "meatloaf" pan and placed into an electric convection oven for at least four hours to dry the samples. Each sample is weighed before and after drying to establish the moisture content.

The presence of rocks or void spaces in the prepared sample could lead to inaccurate radioanalytical results. Therefore, after drying, the soil samples are transferred to a bench pulverizer grinder positioned on a downdraft table. The purpose of the grinding operation is to reduce the particulate size of the sample and to homogenize it for analysis. Rocks are separated from the sample and are not ground in the pulverizer. The dried and pulverized samples are then transferred to the "tuna can" and weighed. The particle size reduction allows for compaction of the soil into the given volume of the "tuna can" minimizing void space. The remaining sample is also weighed to determine sample loss from the operation. The grinding of the individual soil samples results in very minimal particulate emissions.

The purpose of the downdraft table is to prevent the release of particulate emissions to the laboratory air from the grinding operation. The grinder sits atop the working surface of the downdraft table. The working surface is also where samples are transferred once dried and pulverized into the "tuna cans". Air flow from the downdraft table is routed to a HEPA filter (particulate removal efficiency of 99.97%) and then exhausted into the general room air of the Preparation Lab. The emissions of particulate to the ambient air from the grinding operations in the radiochemistry laboratory are nil; therefore, particulate emissions from the radiochemistry laboratory were not included in the CAP88-PC modeling analyses. In Appendix B, **Figure B-9** shows selected photographs depicting operations at the soil sample preparation laboratory in the new on-site radiochemistry laboratory.

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2.0 AIR EMISSIONS DATA

The potential radionuclide particulate emission sources and controls for the year 2003 are summarized in **Table 2-1**.

Table 2-1
Description of Radionuclide Particulate Emissions Sources

Point Sources	**Type Control**	**Efficiency**
Soil Sample Preparation Laboratory	HEPA Filter	99.97%
Non-Point Sources	**Type Controls**	**Efficiency**
In situ soil	Gravel / Stone Vegetative Cover Bare Soil Application of dust suppressants	99% 99% 0% Highly Effective
Soil Load-outs	Water sprays for dust suppression. Use of lined rail cars to prevent soil loss.	No credit taken for dust controls
Cluster Nos . 4A, 5B, 5C,and 6C, Removal Actions	Water sprays for dust suppression. Use of lined containers / dump trucks with tarps when transporting soil to the fabric structure at the MISS.	No credit taken for dust controls
Cluster 9A Drainage Line Replacement and Water Line Repairs	Water sprays for dust suppression, if necessary. Use of lined containers / dump trucks with tarps when transporting soil to the fabric structure at the MISS.	No credit taken for dust controls
Cluster 2D Remedial Action	Water sprays for dust suppression. Use of lined containers / dump trucks with tarps when transporting soil to the fabric structure at the MISS.	No credit taken for dust controls

Radionuclide emission rates are based on the particulate release rates and average radionuclide source concentrations determined from sample measurements. The radioactive particulate release rates from in situ wind erosion, the various soil load-outs, and soil handling activities at Cluster Nos. 2D, 4A, 5B, 5C, 6C, and 9A are calculated using EPA document AP-42, *Compilation of Air Pollutant Emission Factors – Volume 1: Stationary Point and Area Sources* (EPA 1995).

Source concentration for isotopes of Th-232, Ra-226, and U-238 are based on average values determined for the excavated soils resulting from the various soil load-outs, Cluster Nos. 4A, 5B, 5C, and 6C removal actions, the drainage line replacement and waterline repairs at Cluster No. 9A, and the Cluster No. 2D remedial action. Unknown radionuclide source concentrations are based on the known source concentrations assuming secular equilibrium in the decay chains. The radionuclide emissions for the year 2003 from each of the above emission sources, with the exception of the soil sample preparation laboratory, are shown in **Table 2-2**.

Table 2-2
Year 2003 – Airborne Radionuclide Emissions from Various Source Operations (Ci/yr)[1, 2]

Source Radionuclides	In Situ Soil[3]	Soil Load-Outs	Cluster No. 2D Remedial Action	Cluster No. 4A Removal Action	Cluster No. 5B/5C Removal Action	Cluster No. 6C Removal Action	Cluster No. 9A Removal Action
U-238	0	4.50E-08	9.72E-10	7.89E-10	3.97E-09	4.70E-09	2.90E-10
Th-234	0	4.50E-08	9.72E-10	7.89E-10	3.97E-09	4.70E-09	2.90E-10
Pa-234m	0	4.50E-08	9.72E-10	7.89E-10	3.97E-09	4.70E-09	2.90E-10
Pa-234	0	5.85E-11	1.26E-12	1.03E-12	5.17E-12	6.11E-12	3.76E-13
U-234	0	4.82E-08	1.04E-09	8.44E-10	4.25E-09	5.02E-09	3.10E-10
Th-230	0	4.82E-08	1.04E-09	8.44E-10	4.25E-09	5.02E-09	3.10E-10
Ra-226	0	1.12E-08	2.03E-10	2.18E-10	1.04E-09	9.80E-10	1.44E-10
Po-218	0	1.12E-08	2.03E-10	2.18E-10	1.04E-09	9.80E-10	1.44E-10
Pb-214	0	1.12E-08	2.03E-10	2.18E-10	1.04E-09	9.80E-10	1.44E-10
Bi-214	0	1.12E-08	2.03E-10	2.18E-10	1.04E-09	9.80E-10	1.44E-10
Po-214	0	1.12E-08	2.03E-10	2.18E-10	1.04E-09	9.80E-10	1.44E-10
Pb-210	0	1.12E-08	2.03E-10	2.18E-10	1.04E-09	9.80E-10	1.44E-10
Bi-210	0	1.12E-08	2.03E-10	2.18E-10	1.04E-09	9.80E-10	1.44E-10
Po-210	0	1.12E-08	2.03E-10	2.18E-10	1.04E-09	9.80E-10	1.44E-10
U-235	0	2.11E-09	4.55E-11	3.69E-11	1.86E-10	2.20E-10	1.36E-11
Th-231	0	2.11E-09	4.55E-11	3.69E-11	1.86E-10	2.20E-10	1.36E-11
Pa-231	0	2.11E-09	4.55E-11	3.69E-11	1.86E-10	2.20E-10	1.36E-11
Ac-227	0	2.11E-09	4.55E-11	3.69E-11	1.86E-10	2.20E-10	1.36E-11
Th-227	0	2.08E-09	4.49E-11	3.64E-11	1.83E-10	2.17E-10	1.34E-11
Fr-223	0	2.91E-11	6.28E-13	5.10E-13	2.57E-12	3.03E-12	1.87E-13
Ra-223	0	2.11E-09	4.55E-11	3.69E-11	1.86E-10	2.20E-10	1.36E-11
Po-215	0	2.11E-09	4.55E-11	3.69E-11	1.86E-10	2.20E-10	1.36E-11
Pb-211	0	2.11E-09	4.55E-11	3.69E-11	1.86E-10	2.20E-10	1.36E-11
Bi-211	0	2.11E-09	4.55E-11	3.69E-11	1.86E-10	2.20E-10	1.36E-11
Po-211	0	5.76E-12	1.24E-13	1.01E-13	5.08E-13	6.00E-13	3.70E-14
Tl-207	0	2.10E-09	4.54E-11	3.68E-11	1.86E-10	2.19E-10	1.35E-11
Th-232	0	6.24E-08	1.23E-09	6.76E-10	5.80E-09	6.24E-09	6.73E-10
Ra-228	0	6.24E-08	1.23E-09	6.76E-10	5.80E-09	6.24E-09	6.73E-10
Ac-228	0	6.24E-08	1.23E-09	6.76E-10	5.80E-09	6.24E-09	6.73E-10
Th-228	0	6.24E-08	1.23E-09	6.76E-10	5.80E-09	6.24E-09	6.73E-10
Ra-224	0	6.24E-08	1.23E-09	6.76E-10	5.80E-09	6.24E-09	6.73E-10
Po-216	0	6.24E-08	1.23E-09	6.76E-10	5.80E-09	6.24E-09	6.73E-10
Pb-212	0	6.24E-08	1.23E-09	6.76E-10	5.80E-09	6.24E-09	6.73E-10
Bi-212	0	6.24E-08	1.23E-09	6.76E-10	5.80E-09	6.24E-09	6.73E-10
Po-212	0	4.00E-08	7.90E-10	4.33E-10	3.71E-09	4.00E-09	4.31E-10
Tl-208	0	2.24E-08	4.43E-10	2.43E-10	2.08E-09	2.24E-09	2.42E-10

Notes:
1. Ci/yr = curies per year.
2. Soil sample preparation laboratory is not considered a source due to the miniscule amount of particulates released to the atmosphere.
3. The in situ soil emissions are zero as the fastest 2-min wind speeds at Teterboro Airport for the year 2003 did not result in the threshold friction velocity being exceeded at any time.

3.0 DOSE ASSESSMENTS

3.1 DESCRIPTION OF DOSE MODEL

The effective dose equivalent for the collective population and for the hypothetical maximally exposed individual were calculated in a three-step process. The first step was to model the release of particulates from the site using the methodology given in the EPA's "Estimation of Air Impacts from Area Sources of Particulate Matter Emissions at Superfund Sites" (EPA-451 / R-93-004). Particulate emissions were determined based on the number of times the soil was disturbed (e.g., excavated, stockpiled, loaded into trucks / containers / rail cars, unloaded, moved) at both the source and at the MISS. The second step was to input these particulate release rates, along with local population and meteorological data, into the CAP88-PC program (EPA 1992). The third step involved summing the doses calculated by the CAP88-PC program from the various activities at the individual receptors and determining the dose for the hypothetical maximally exposed individual.

The model was used to predict the annual effective dose at numerous receptors resulting from the combined impacts of radiologically contaminated particulate emissions from the various soil load-outs, the Cluster Nos. 4A, 5B, 5C and 6C removal actions, excavations performed for the drainage line replacement and water line repairs at Cluster 9A, and the Cluster 2D remedial action. Although the emission of radon (Rn) gas is not considered in this analysis, the daughters of Rn gas generated by the decay of Ra-226 in dust off-site is accounted for by the model in the computation of the effective dose equivalents for the various internal and external exposure pathways.

The CAP88-PC model uses a modified Gaussian plume equation to estimate the average dispersion of radionuclides released from a site. Assessments are done for a circular grid of distances and directions for a radius of 50 mi (80 km) around the site. The program computes radionuclide concentrations in air, rates of deposition on ground surfaces, concentrations in food, and intake rates to people from ingestion of food produced in the assessment area.

By coupling the output of the atmospheric transport models with the terrestrial food chain models from the U.S. Nuclear Regulatory Commission Regulatory Guide 1.109 ("Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I"), the program estimates the radionuclide concentrations in produce, leafy vegetables, milk, and meat consumed by humans. The population distribution array used in the computer model was calculated from known land uses surrounding the site and year 2000 census figures.

CAP88-PC also uses a modified version of DARTAB (ORNL5692) and a database of dose and risk factors generated by RADRISK (ORNL7105 and ORNL7745) for estimating dose and risk. Dose and risk factors are provided for the pathways of ingestion and inhalation intake, ground level immersion, and ground surface irradiation. For assessments where Rn-222 decay products are not considered, the dose estimates are made by combining the inhalation and ingestion intake rates as well as the air and ground surface concentrations with the appropriate dose conversion factors.

3.2 SUMMARY OF INPUT PARAMETERS

- Average Annual Temperature for the year 2003: 52.5°F (11.4°C)
- Total Annual Precipitation for year the 2003: 52.3 in. (132.8 cm)
- Wind Speed and Direction: Teterboro Airport, NJ – Stability Array (STAR) Data (1994-2003)

- Population Distribution: calculated from the year 2000 census data
- Annual Radionuclide Emission Rates (see **Table 2-2**)
- Surface Areas of Emission Sources
- Distances to Individual Resident and Worker Receptor Locations

3.3 COMPLIANCE ASSESSMENT

The maximum annual effective dose to residents and workers resulting from each of the key sources during the year 2003 (various soil load-outs, the Cluster Nos. 4A, 5B, 5C, and 6C, removal actions, excavations performed for the drainage line replacement and water line repairs at Cluster 9A, and the Cluster 2D remedial action) as determined by the CAP88-PC modeling analyses are shown in **Table 3-1**. The annual effective dose to the hypothetical maximally exposed resident and worker, as well as the collective population dose, resulting from total site activities during the year 2003 are the following:

- Resident located 771 feet (235 m) north-northeast (NNE) of the MISS (100% occupancy):
  1.12×10^{-5} millisievert per year (mSv/yr) or 1.12×10^{-3} mrem/yr.
- Employee located 98 feet (30 m) west (W) of Cluster 6C (27% occupancy):
  8.64×10^{-6} mSv/yr (8.64×10^{-4} mrem/yr).
- Annual effective dose to the public within 50 mi (80 km) of the MISS:
  6.36×10^{-3} person-rem/year.

Although exposures from other directions and distances may be reported in the model output, only those directions / distances corresponding to a potential receptor are reported here. All calculated exposures were on a similar order of magnitude of those reported above (much less than 1 mrem/yr).

The maximum annual effective dose to the residents and workers are well below the NESHAP-Subpart H standard of 10 mrem/yr (40 CFR 61.92). The maximum annual effective doses are almost entirely the result of the internal doses received from the inhalation of dust particles with a small contribution from the ingestion of plant borne dust. Air immersion in the dust plume and ground surface irradiation contribute a negligible amount to the total dose.

Table 3-1
Maximum Annual Effective Dose Equivalents

Source	Location of Maximum Impact[1]	Annual Dose Rate (mrem/yr)	Occupancy Factor (%)	Annual Effective Dose (mrem/yr)
MISS Soil Load-outs				
• Population (person-rem/yr)[3]	N/A	5.14E-03	N/A	1.20E-03
• Maximally Exposed Resident	235 m north-northeast (NNE)	1.12E-03	100	1.12E-03
• Maximally Exposed Worker	160 m N	2.00E-03	27	5.40E-04
Cluster No. 2D				
• Population (person-rem/yr)	N/A	1.05E-04	N/A	2.87E-05
• Maximally Exposed Resident	160 m SW	2.80E-05	100	2.80E-05
• Maximally Exposed Worker	60 m south (S)	3.20E-04	27	8.64E-05
Cluster No. 4A				
• Population (person-rem/yr)	N/A	6.99E-05	N/A	6.99E-05
• Maximally Exposed Resident	210 m S	3.20E-05	100	3.20E-05
• Maximally Exposed Worker	30 m south-southeast (SSE)	7.00E-04	27	1.89E-04
Cluster No. 5B/5C				
• Population (person-rem/yr)	N/A	4.69E-04	N/A	4.69E-04
• Maximally Exposed Resident	170 m NNW	6.50E-05	100	6.50E-05
• Maximally Exposed Worker	30 m NW	1.60E-03	27	4.32E-04
Cluster No. 6C				
• Population (person-rem/yr)	N/A	5.23E-04	N/A	5.23E-04
• Maximally Exposed Resident	300 m E	5.90E-05	100	5.90E-05
• Maximally Exposed Worker	30 m west (W)	1.90E-03	27	5.13E-04
Cluster No. 9A				
• Population (person-rem/yr)	N/A	4.89E-05	N/A	4.89E-05
• Maximally Exposed Resident	40 m S	3.40E-04	100	3.40E-04
• Maximally Exposed Worker	110 m N	4.00E-05	27	1.08E-05
Total Site[2]				
• Population (person-rem/yr)	N/A	6.36E-03	N/A	6.36E-03
• Maximally Exposed Resident	235 m NNE of Soil Load-outs	1.12E-03	100	1.12E-03
• Maximally Exposed Worker	30 m W of Cluster 6C	3.20E-03	27	8.64E-04

Notes:
1. Although exposures from other directions and distances may be reported in the model output, only those directions / distances corresponding to a potential receptor are reported here. Note: all calculated exposures were on a similar order of magnitude of those reported here (much less than 1 mrem/yr).
2. The total site doses for the maximally exposed resident and worker represent the combined impacts of radiologically contaminated particulate emissions from the various soil loadouts, Cluster Nos. 4A, 5B, 5C, 6C removal actions, Cluster 9A drainage line replacement, Cluster 9A water line repairs, and the Cluster 2D remedial action at the specified locations. The location of the "total site" maximally exposed resident is relative to the MISS soil load-out area while the "total site" maximally exposed worker location is relative to the Cluster 6C area.
3. The collective population dose is the total dose received by the public living within 50 mi (80 km) of the MISS.

3.4 CERTIFICATION

I certify under penalty of law that I have personally examined, and am familiar with, the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment (see 18 U.S.C. 1001).

Name / Title: ____

Signature: ___________________________ Date: ____________

4.0 RADON-222 FLUX MONITORING

Rn-222 flux monitoring is typically performed to determine compliance with 40 CFR 61, Subpart Q for stockpiles that are present for a significant period of time such as 6 months or greater. Although this was not the case at the MISS during the year 2003, it was decided to perform flux monitoring since the soil is now stored inside a fabric structure instead of in the open air. Furthermore, soil was being stockpiled / loaded-out on a fairly continuous basis during 2003. Thus, it was deemed prudent to perform Rn-222 flux monitoring for the soil stockpiles to assess regulatory compliance.

Rn-222 flux monitoring was performed on July 29-30, 2003 to determine compliance with 40 CFR 61, Subpart Q. To determine the Rn flux from the storage pile, charcoal canisters were placed on the stockpile inside the fabric structure at six locations. The Rn-222 flux measurement locations are shown in Appendix A on **Figure A-6**.

The results of the Rn-222 flux monitoring are presented in **Table 4-1**. The Rn-222 concentrations obtained from the flux monitoring were below the minimum detected activity at all of the sampling locations. Thus, the measured concentrations from the storage piles inside the fabric structure were well in compliance with the 20 picocuries per square meter per second (pCi/m^2/s) Rn-222 flux standard specified in 40 CFR 61, Subpart Q.

Table 4-1
Year 2003 – Rn Flux Monitoring Results for
Soil Stockpiles Inside the Fabric Structure at the MISS

Sample ID[1]	Date Collected	Date Analyzed	Analyte	Result (pCi/m^2/s)	Error (pCi/m^2/s)	MDA[2] (pCi/m^2/s)
RC-4	O7/30/03	08/01/03	Rn-222	6.0E-02	5.05E-02	12.65E-02
RC-5	07/30/03	08/01/03	Rn-222	3.98E-02	4.13E-02	10.68E-02
RC-8	07/30/03	08/01/03	Rn-222	5.74E-02	4.05E-02	11.23E-02
RC-9	07/30/03	08/01/03	Rn-222	2.67E-02	2.26E-02	2.67E-02
RC-10	07/30/03	08/01/03	Rn-222	0.44E-02	4.09E-02	8.89E-02
RC-10A	07/30/03	08/01/03	Rn-222	12.70E-02	6.48E-02	15.84E-02

Notes: 1. All monitoring locations for the storage piles are shown on **Figure A-4**.
2. Minimum Detected Activity (MDA).

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5.0 REFERENCES / BIBLIOGRAPHY

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APPENDIX A
SELECTED FUSRAP MAYWOOD SUPERFUND SITE MAPS

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APPENDIX A
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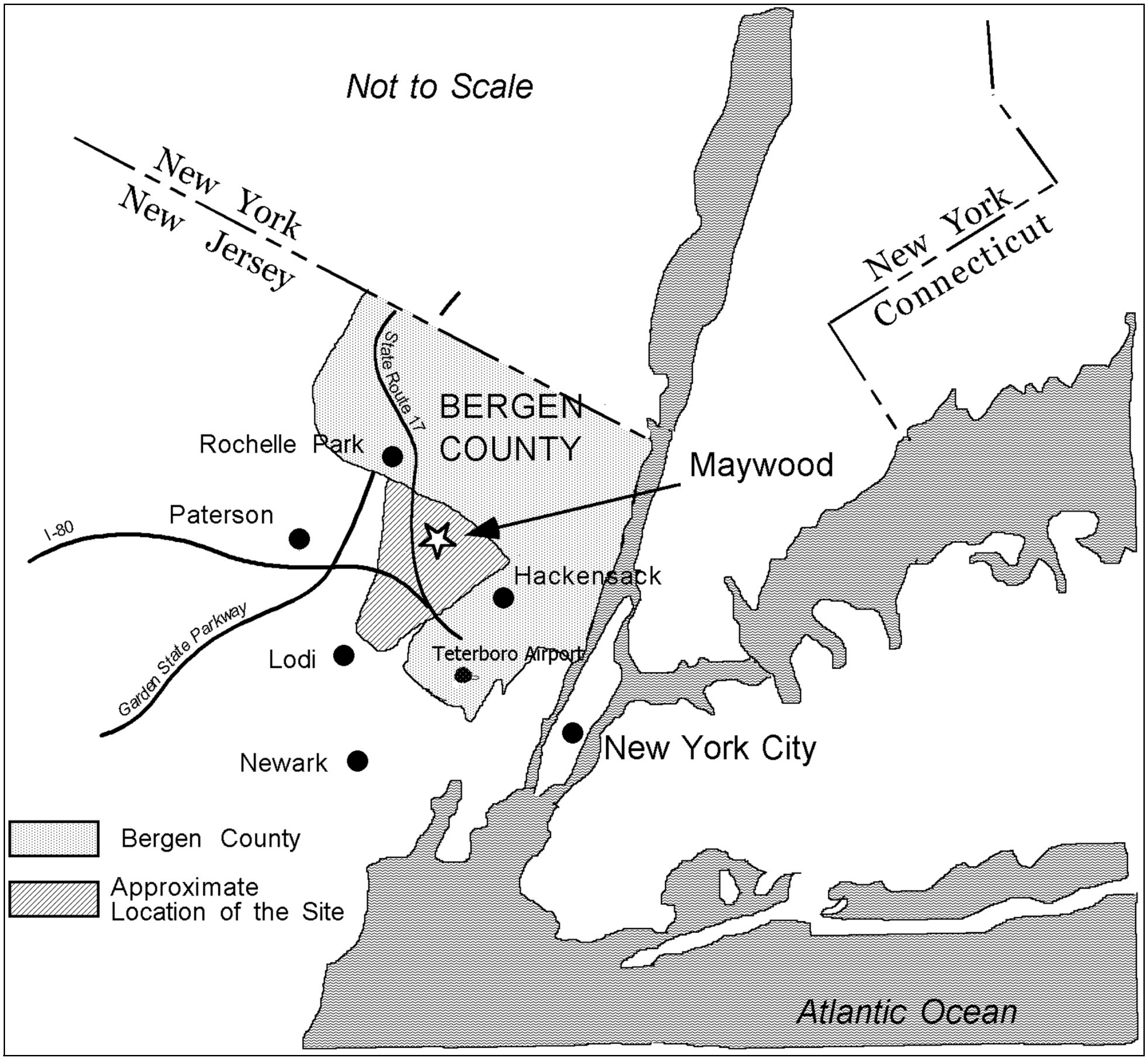

Figure A-1
FMSS and MISS General Location Map

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Figure A-2

Phase II Vicinity Property Clusters

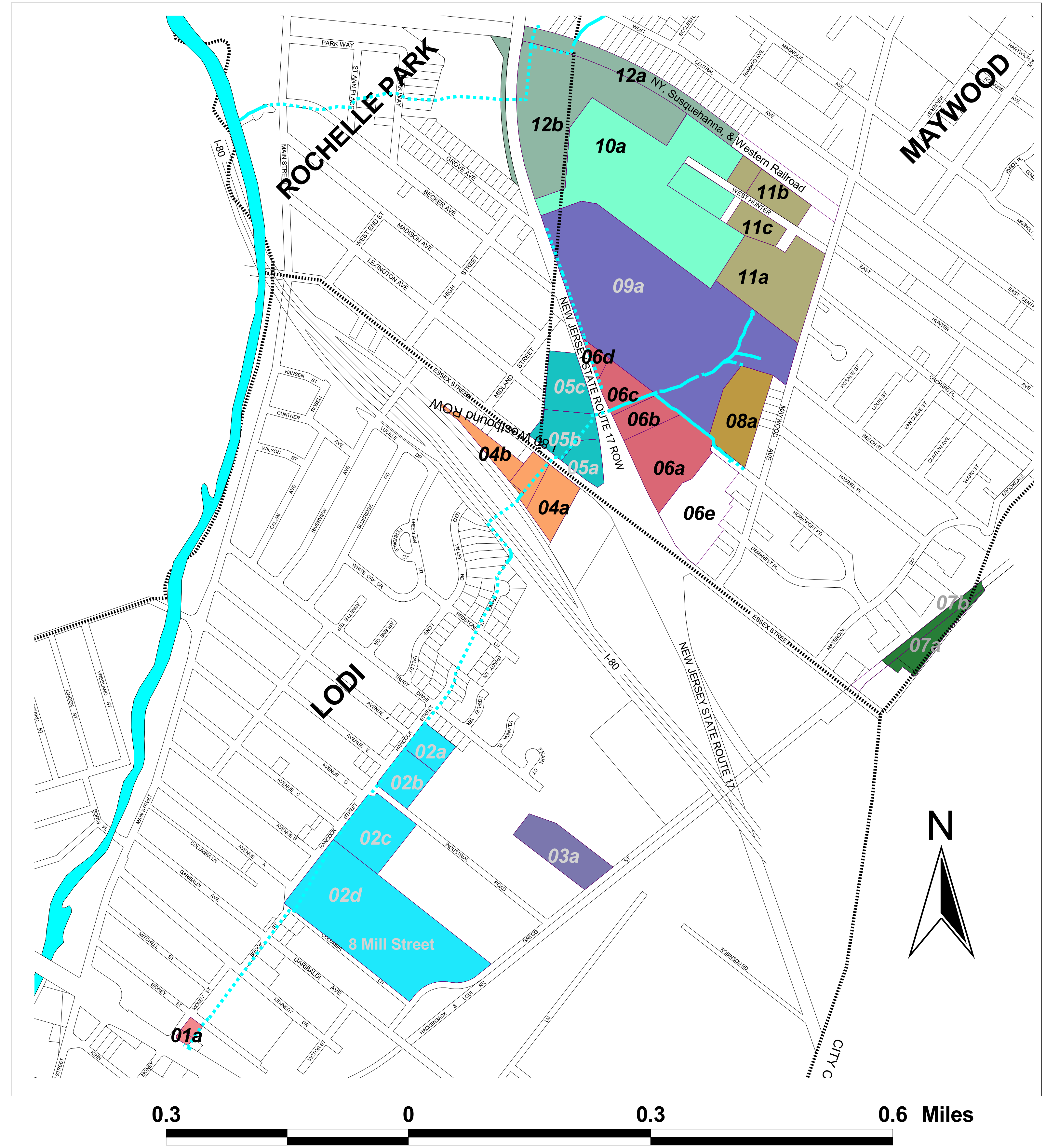
- Cluster 1
- Cluster 2
- Cluster 3
- Cluster 4
- Cluster 5
- Cluster 6
- Cluster 7
- Cluster 8
- Cluster 9
- Cluster 10
- Cluster 11
- Cluster 12

Cluster Number	Property Address	ID #
1	72 Sidney Street	01a
2	100 Hancock Street	02a
2	80 Hancock Street	02b
2	80 Industrial Road	02c
2	8 Mill Street	02d
3	170 Gregg Street	03a
4	160/174 Essex Street	04a
4	I-80 Westbound ROW	04b
5	99 Essex Street	05a
5	113 Essex Street	05b
5	200 NJ Rt. 17 South	05c
6	85-103 NJ Rt. 17 North	06a
6	137 NJ Rt. 17 North	06b
6	167 NJ Rt. 17 North	06c
6	239 NJ Rt. 17 North	06d
6	29 Essex Street	06e
7	111 Essex Street	07a
7	Hackensack & Lodi Railroad	07b
8	23 West Howcroft Road	08a
9	149-151 Maywood Avenue	09a
10	100 West Hunter Avenue (Stepan)	10a
11	205 Maywood Avenue	11a
11	61 West Hunter Avenue	11b
11	50 West Hunter Avenue	11c
12	NY, Susquehanna,& Western Railroad	12a
12	100 West Hunter Avenue (MISS)	12b
12	NJ Rt. 17 ROW	12c

US Army Corps of Engineers

FUSRAP Maywood Superfund Site

Shaw® Shaw Environmental, Inc.



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03/10/2004 - Draft

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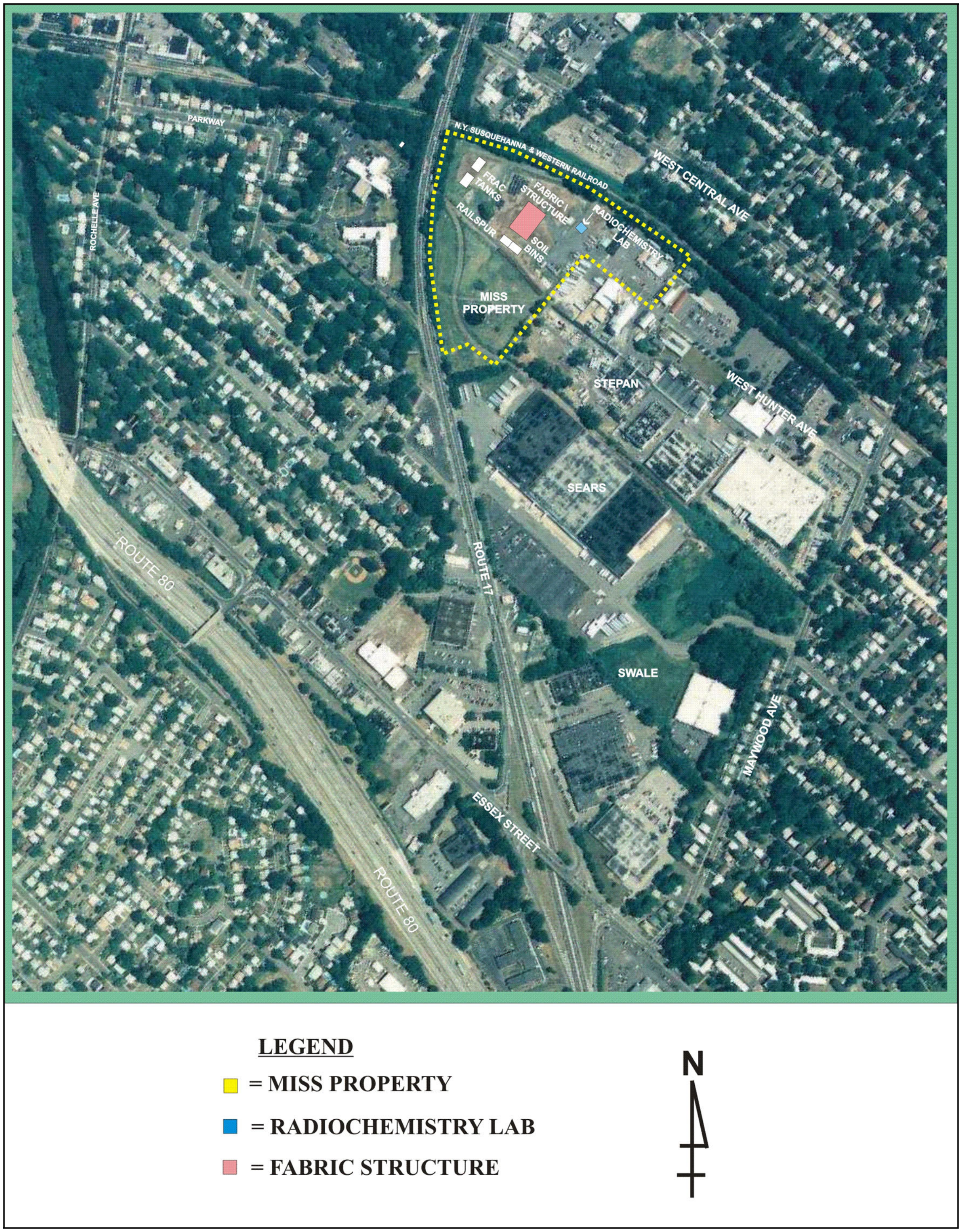

Figure A-3
Aerial View of MISS and Adjacent Properties

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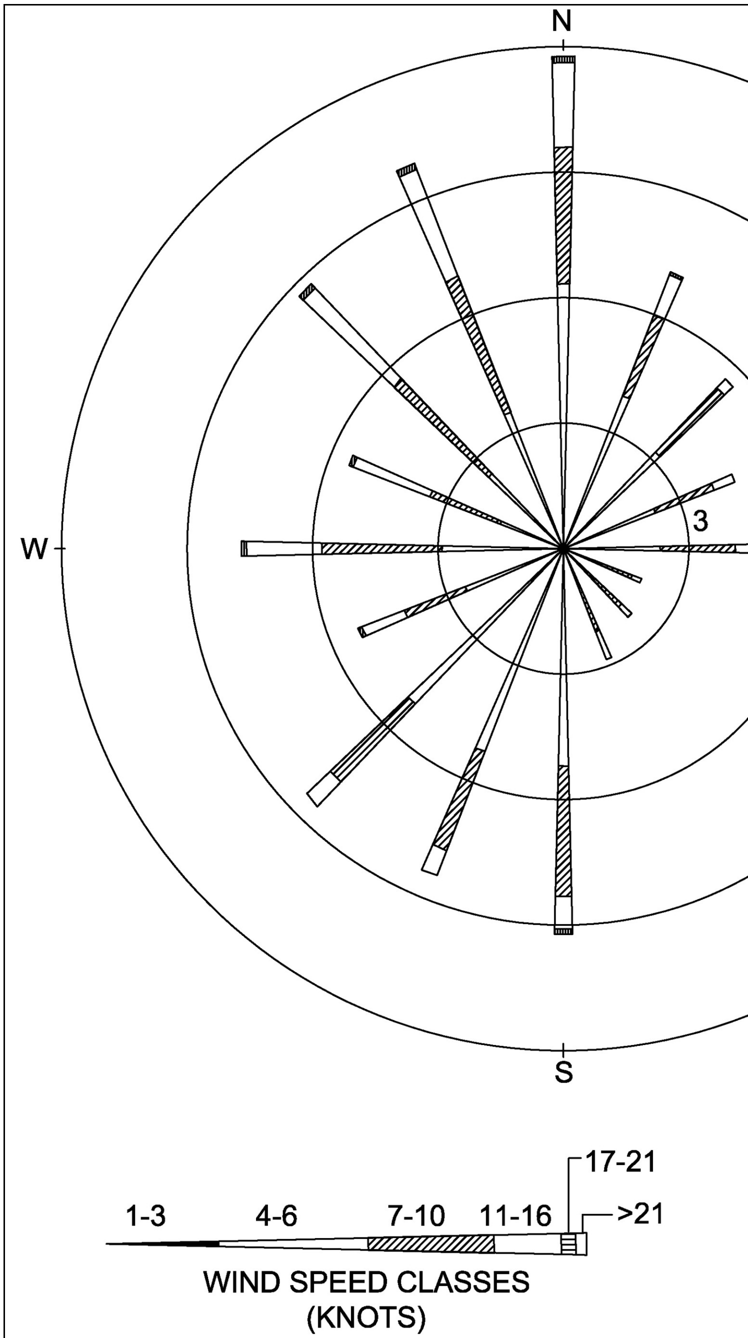

NOTES:
DIAGRAM OF THE FREQUENCY OF OCCURRENCE FOR EACH WIND DIRECTION. WIND DIRECTION IS THE DIRECTION FROM WHICH THE WIND IS BLOWING. EXAMPLE - WIND IS BLOWING FROM THE NORTH 11.1 PERCENT OF THE TIME.

Figure A-4
Windrose, Teterboro, NJ (1994-2003)

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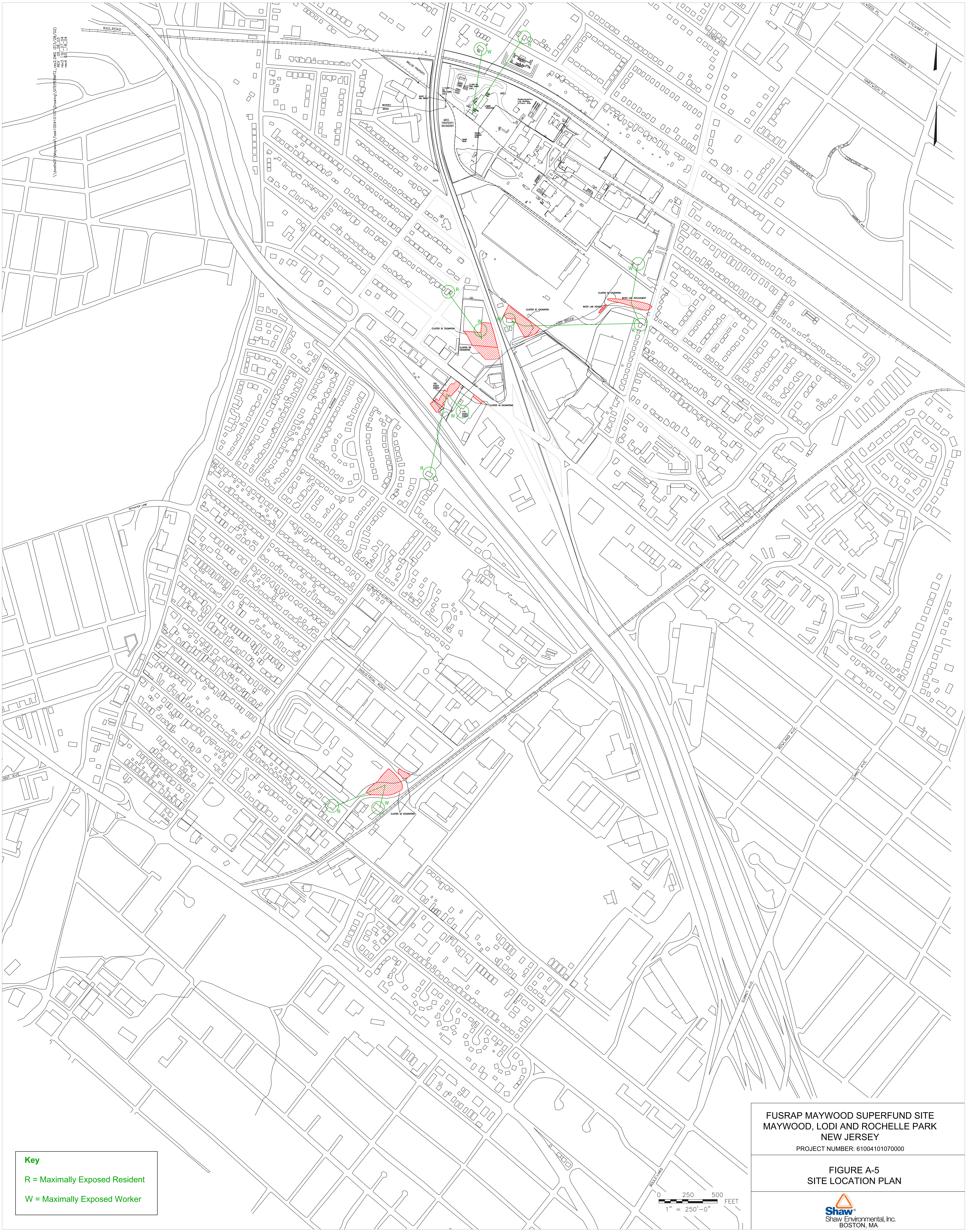

FUSRAP MAYWOOD SUPERFUND SITE
MAYWOOD, LODI AND ROCHELLE PARK
NEW JERSEY

PROJECT NUMBER: 61004101070000

FIGURE A-5
SITE LOCATION PLAN

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Key

R = Maximally Exposed Resident

W = Maximally Exposed Worker

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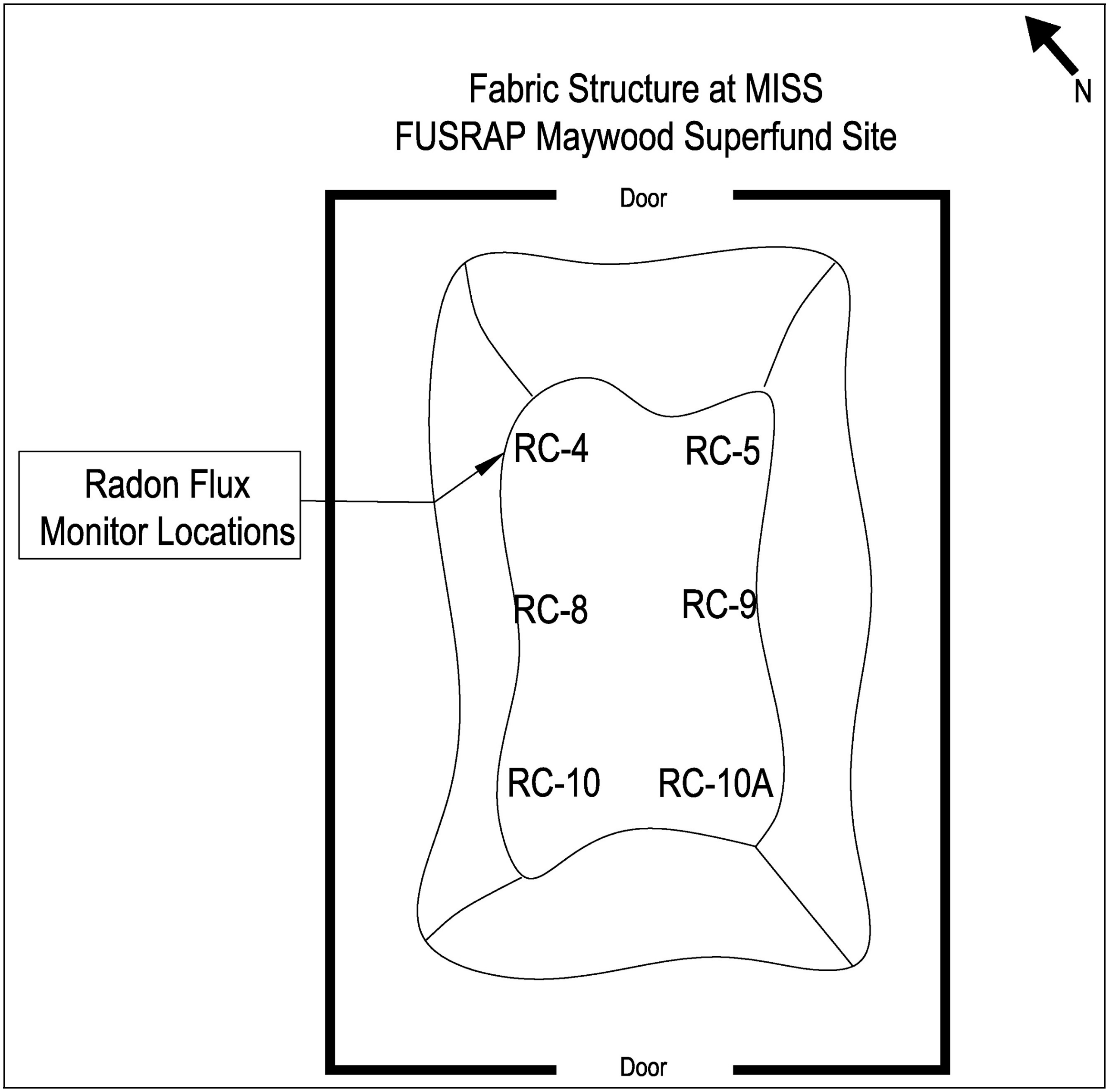

Figure A-6
Location of Radon Flux Monitors inside the Fabric Structure at the MISS

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APPENDIX B
SELECTED PHOTOGRAPHS

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Soil stockpile stored inside fabric structure at MISS prior to start of load-out activities.

Front-end loader is use to transport soil from inside fabric structure to load-out bins near rail cars.

Excavator removing soil from load-out bins and placing into rail cars. Water spray used for dust control.

Excavators loading soil into rail cars from storage bins for shipment to off-site disposal facility.

View of partially loaded rail car. When full, the liner will be closed and tied to prevent soil loss during shipping.

View of empty fabric structure at MISS after completion of successful soil load-out.

Figure B-1
Soil Load-Out Activities at MISS

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Excavation performed in parking areas at 160-174 Essex street properties.

Installation of temporary diversion piping and diversion structure.

Accumulation of ground water in excavation at 160-174 Street properties.

An excavator removing soil from the parking areas and loading into dump trucks for transport to the MISS.

The establishment of final sub-grade for asphalt repaving.

Asphalt repaving in progress at parking areas.

Figure B-2
Cluster No. 4A Removal Action

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An excavator removing soil from parking area at 113 Essex Street.

Continuation of excavation from the parking areas.

Plastic sheeting is used to cover the contaminated “face” of excavation at the end of the work day.

The excavated soil is loaded into lined dump trucks for transport to the MISS for disposal.

Backfilling and compaction is being performed at the excavated areas.

Asphalt repaving in progress in the parking areas at 113 Essex Street.

Figure B-3
Cluster No. 5B Removal Action

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Excavated area at 200 NJ Route 17 South.

Pumps are used to remove accumulated water in the excavation.

An excavator removing soil from the parking areas.

Excavation being performed in the parking areas on the north side of the building.

Final grade established in preparation for asphalt repaving.

Completion of asphalt repaving and restriping.

Figure B-4
Cluster No. 5C Removal Action

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An excavator was used to remove the soil for installation of the concrete drainage pipe.

Pipe bedding and structural fill was placed around the new section of drainage pipe.

The excavated soil was placed into a lined dump truck for transport to the MISS for disposal.

Backfilling and compaction of the pipe bedding and structural fill is being performed.

Installation of HDPE pipe sections. Tree clearing was performed prior to excavation..

Installation of final sections of HDPE pipe.

Figure B-5
Cluster No. 9A Drainage Line Replacement

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Excavation to repair broken water line at the 149-151 Maywood property during January , 2003

The ruptured water line has been isolated and the excavation covered with geo-textile fabric.

Excavation to repair the second rupture of the water line at 149-151 Maywood Avenue during August 2003.

An excavator removes soil to expose the ruptured section of the water line.

An excavator loads soil into a lined dump truck for transport to MISS for disposal.

The excavation reveals the broken section of the water line.

Figure B-6
Cluster No. 9A Water Line Repairs

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The start of excavation activities at the 167 NJ Route 17 property.

Additional excavation being performed at the property. Significant amounts of debris was found in the soil.

An excavator is used to load soil into lined dump trucks for transport to the MISS for disposal.

Debris is visible from excavation. A vibrating screen was used at the MISS to remove debris from the soil.

A dump truck is unloading backfill for the excavated areas.

Final grade has been established at the property.

Figure B-7
Cluster No. 6C Removal Action

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Building 76 on MISS – Location of Soil Sample Preparation Laboratory.

Electric ovens are used to dry the soil samples prior to grinding.

Grinding of soil sample is performed under the fume hood, which exhausts to the HEPA filter.

Exhaust fan and HEPA filter in rear of lab. Air monitor is stored in cat carrier for protection from elements.

Figure B-8
Soil Sample Preparation Laboratory

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View of west side of radiochemistry laboratory at the MISS. The exhaust stack for the fume hoods is visible.


Soil Preparation Laboratory. View of the vented drying ovens and muffle furnace (center).


The downdraft table and pulverizer in the Soil Preparation Laboratory.


View of downdraft table and adjacent unit containing the High Efficiency Particulate Air (HEPA) filter.

View of soil digestion microwaves and condenser units.


View of fume hoods with centrifuge on table in the forefront.

Figure B-9
On-Site Radiochemistry Laboratory

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APPENDIX C
CALCULATIONS

Note: Appendix C also contains an MS-Excel Spreadsheet on CD-ROM.

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Shaw Environmental & Infrastructure, Inc.

CALCULATION TITLE PAGE

CLIENT & PROJECT: U.S. ARMY CORPS OF ENGINEERS/FUSRAP-MISS	PAGE 1 of 131 Total Pages: 146 w/attachments pages
CALCULATION TITLE: MISS 2003 Annual NESHAPS Calculation	QA CATEGORY (✓) ☐ I ☐ III ☐ II

CALCULATION IDENTIFICATION NUMBER				OPTIONAL WORK PACKAGE NO.
JOB ORDER NO.	DISCIPLINE	CURRENT CALC NO	OPTIONAL TASK CODE	
610041-0107	E(B)	11		

APPROVALS - SIGNATURE & DATE			REVISION NO. OR NEW CALCULATION NO.	SUPERSEDES CALCULATION NO. OR REVISON NO.	CONFIRMATION REQUIRED (✓)	
PREPARES(S) / DATE(S)	REVIEWER(S) / DATES(S)	INDEPENDENT REVIEWER(S) / DATE(S)	.	.	YES	NO
Stephen A. Vigeant	Joseph McLaughlin		0			

DISTRIBUTION

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Specialist	Stephen A. Vigeant: Stoughton - 4	cc			

CHANGE HISTORY PAGE

REVISION NO.	DESCRIPTION OF CHANGES	PAGES REVISED	PAGES ADDED	PAGES REPLACED
0	N/A	N/A	N/A	N/A

TABLE OF CONTENTS

1. OBJECTIVE

To estimate the annual effective dose to nearby residents and workers from airborne radioactivity releases at the Maywood Interim Storage Site (MISS) generated during calendar year 2003. The activities potentially generating these releases include: in situ wind erosion; soil load-out operations at the MISS; the remedial action at Cluster No. 2D; the removal action at Cluster No. 4A; the removal action at Cluster Nos. 5B and 5C; the removal action at Cluster No. 6C; and the drainage line replacement and water line repairs at Cluster No. 9A.

2. METHODOLOGY

During the calendar year 2003, the potential sources of airborne emissions at MISS and nearby properties were:

1. In situ, contaminated areas totaling approximately 635,000 square feet (ft^2) (59,000 square meters [m^2]) of the MISS and the adjacent Stepan Company property (within the MISS fence line) were potentially exposed to wind erosion during the year 2003.
2. The performance of soil load-out, transportation and disposal operations at the MISS during the year 2003. Specifically, ten soil load-out operations were performed during the year 2003. The various soil stockpiles consisted of soil and debris that had been transported to the MISS from the following sources: Cluster No. 4A removal action; Cluster No. 5B removal action; Cluster No. 5C removal action; drainage line replacement at Cluster 9A; water line repairs at Cluster 9A; Cluster 6C removal action; and the Cluster No. 2D remedial action. These ten load-outs involved the movement of approximately 27,778 tons of material, which was placed into rail cars for transport to a disposal facility in Utah. The nearest commercial / residential buildings are located approximately 440 feet (135 meters [m]) west of the MISS soil load-out area.
3. Continuation of the Cluster No. 4 removal action that began in 2002. Over the years, radiologically contaminated soil was transported downstream to the Cluster No. 4 properties via the Lodi Brook. The year 2002 removal action involved the excavation of soil from the following properties in the Borough of Lodi: 150 Essex Street, 160 Essex Street, 174 Essex Street and the Interstate 80 Westbound right-of-way (ROW). During the year 2003, excavation continued at Cluster No. 4A which consists of the 160 Essex Street and 174 Essex Street properties. The year 2003 portion of this removal action involved the excavation of approximately 4,108 tons of soil which was loaded into trucks for transport to the fabric structure at MISS. The nearest commercial buildings are located approximately 100 feet (30 m) south-southeast of Cluster No.4; the nearest residences are located approximately 490 feet (150 m) southwest of Cluster No. 4A.
4. The performance of the removal action at Cluster No. 5B (113 Essex Street) which is comprised of a single lot in the Borough of Maywood: Block 125, Lot 2, covering an area of approximately 2.1 acres. Over the years, radiologically contaminated soil was transported downstream to the Cluster No. 5 properties via the Lodi Brook. This removal action involved the excavation of approximately 5, 867 tons of soil that was loaded into trucks for transport to the fabric structure at the MISS. The nearest commercial buildings are located approximately 100 feet (30 m) northwest of Cluster No. 5B; the nearest residences are located approximately 490 feet (150 m) northwest of Cluster No. 5B.
5. The performance of the removal action at Cluster No. 5C (200 NJ Route 17 South) which is comprised of a single lot in the Borough of Maywood: Block 125, Lot 3, occupying an area of about 2.3 acres. Over the years, radiologically contaminated soil was transported downstream to the Cluster No. 5 properties via the Lodi Brook. This removal action involved the excavation of approximately 6,043 tons of soil that was loaded into trucks for transport to the fabric structure at the MISS. The nearest commercial buildings are located approximately 100 feet (30 m) northwest of Cluster No. 5C; the nearest residences are located approximately 490 feet (150 m) northwest of Cluster No. 5C.

6. Excavations performed for the replacement of the drainage line located at Cluster 9A (149-151 Maywood Avenue). Extensive sedimentation over the years had reduced the function of the drainage line resulting in localized flooding at times of heavy rainfall. The purpose of the replacement was to restore hydraulic flow to the drainage line to reduce flooding and the potential spread of radiologically contaminated soils. This action involved the excavation of approximately 1,183 tons of soil that was loaded into trucks for transport to the fabric structure at the MISS. The nearest commercial buildings are located approximately 330 feet (100 m) west-southwest of Cluster No.9A; the nearest residences are located approximately 130 feet (40 m) southeast of Cluster No. 9A.

7. Excavations performed for the repair of a ruptured water supply line located at Cluster 9A (149-151 Maywood Avenue). The repair work was performed on an emergency response basis on three separate occasions: January 4-6, 2003; August 19-22, 2003 and November 7-19, 2003. The purpose of the repair was to restore adequate water pressure and eliminate the resultant flooding and potential spread of radiologically contaminated soils. This action involved the excavation of approximately 548 tons of soil that was loaded into trucks and transported to the fabric structure at the MISS. The nearest commercial buildings are located approximately 300 feet (100 m) west-southwest of Cluster No.9A; the nearest residences are located approximately 130 feet (40 m) southeast of Cluster No. 9A.

8. The performance of the removal action at Cluster 6C (167 NJ Route 17 North) which is comprised of a single lot in the Borough of Maywood: Block 124, Lot 2, occupying an area of approximately 1.7 acres. The property, which is currently owned and formerly operated by Sunoco, includes an inactive gasoline service area (pump islands) and a one-story 800 square foot cinder block building. Over the years, radiologically contaminated soil was transported downstream to the Cluster 6C properties via Lodi Brook. The removal action involved the excavation of approximately 8,231 tons of soil that was loaded into trucks and transported to the fabric structure at the MISS. The nearest commercial buildings are located approximately 100 feet (30 m) west of Cluster No.6C; the nearest residences are located approximately 655 feet (200 m) west-northwest of Cluster No. 6C.

9. The performance of a remedial action at a portion of Cluster 2D (8 Mill Street) which is comprised of a single lot in the Borough of Lodi: Block 205.02, Lot 1.05, occupying an area of approximately 13.6 acres. The property is currently owned by the State of New Jersey and occupied by the Lodi Motor Vehicle Agency and the New Jersey Motor Vehicle Commission (NJMVC) Inspection Station. This removal action was performed on an expedited basis for a small portion (approximately 1 acre) of Cluster 2D to facilitate the installation of drainage lines by the New Jersey Department of Transportation's (NJDOT) contractors. This action involved the excavation of approximately 1,798 tons of soil that was loaded into trucks for transport to the fabric structure at the MISS. The nearest commercial buildings are located approximately 200 feet (60 m) northeast of Cluster No.2D; the nearest residences are located approximately 490 feet (150 m) west-southwest of Cluster No. 2D.

10. The operation of the exhaust system for the soil sample preparation laboratory located in Building No. 76. Soil samples collected from the various soil load-outs and construction activities at the MISS as well as the removal actions at the vicinity properties were brought to this laboratory to prepare the samples for radiological analysis. The individual soil samples were dried and then ground before placing the soil into sealed containers. The grinding operations, which generated very small amounts of dust, were performed under a laboratory hood. Air from the exhaust hood is passed through a high efficiency particulate air (HEPA) filter prior to discharge to the ambient air. Effective December 1, 2003, the soil sample preparation activities were transferred to the new onsite radiochemistry laboratory at the MISS which produced negligible particulate emissions.

The calculation is performed using the U.S. Environmental Protection Agency (EPA) Clean Air Act Assessment Package - 1988 (CAP88-PC) model (Ref. 9.1) to estimate air doses to the population and hypothetical maximally exposed individuals. The radioactive particulate release rates from in situ wind erosion and the other load-out and remediation/excavation activities are calculated using EPA's Compilation of Air Pollutant Emission Factors - Volume 1:Stationary Point and Area Sources, also known as AP-42 (Ref. 9.2). The AP-42 expressions used to perform these calculations are provided in the "Equations" section of this calculation. The actual calculations are performed using an Excel spreadsheet, the results of which are provided in Attachment A.

Radionuclide emission rates are based on the particulate release rates and average radionuclide source concentrations based on sample measurements. Source concentrations for isotopes of uranium (U_{238}), radium (Ra_{226}), and thorium (Th_{232}) are based on average values for in situ soil (Ref. 9.7) and average values measured during the load-out and remediation/excavation activities. Unknown radionuclide source concentrations are based on the known source concentrations assuming secular equilibrium in the decay chains (Ref. 9.4).

The CAP88-PC computer model is a set of computer programs, databases, and associated utility programs developed by the EPA for estimation of dose and risk from radionuclide emissions to air. CAP88-PC is used for the purpose of demonstrating compliance with Subpart H of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) as codified in 40 CFR 61.93a. CAP88-PC performs dose and risk assessments for both collective populations and maximally-exposed individuals.

This computer code estimates the annual average dispersion of radionuclides released from up to six sources. The sources may be either elevated stacks or uniform area sources. All sources are modeled as if located at the same point. Uniform contamination is assumed for area sources. Plume rise can be calculated assuming either a momentum or buoyancy driven plume. Assessments are done for a circular grid of distances and directions with a radius of 80 kilometers around the facility. The program computes radionuclide concentrations in air, rates of deposition on ground surfaces, concentrations in food, and intake rates to people from ingestion of food produced in the assessment area.

CAP88-PC uses a modified version of the AIRDOS-EPA (Mo79) program to calculate environmental transport. Plume dispersion is based on the Gaussian plume equation of Pasquill as modified by Gifford, using sector-average concentrations. Plume rise is calculated using either Rupp's equation for momentum dominated plume rise or Briggs equation for buoyancy dominated plume rise. Dry deposition is handled using a proportionality constant applied to the ground-level concentration of the radionuclide and wet deposition is based on a scavenging coefficient related to the rainfall rate. Radionuclides are depleted from the plume by precipitation scavenging, dry deposition, and radioactive decay.

CAP88-PC also uses a modified version of DARTAB (ORNL5692) and a database of dose and risk factors generated by RADRISK (ORNL7105 and ORNL7745) for estimating dose and risk. Dose and risk factors are provided for the pathways of: ingestion and inhalation intake; ground level immersion; and ground surface irradiation. For assessments where Rn-222 decay products are not considered, doses are estimated combining the inhalation and ingestion intake rates as well as the air and ground surface concentrations with the appropriate dose conversion factors. CAP88-PC calculates dose to the gonads, breast, lungs, red marrow, thyroid, and endosteum in addition to the 50-year effective dose equivalent. Doses can be tabulated as a function of radionuclide, pathway, location, and organ.

For a given distance, the CAP88-PC model computes the annual effective dose equivalent for all compass directions. Specifically, the model computes the annual dose at a user-defined distance for all 22.5-degree compass point sectors (i.e., N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, W, WNW, NW, NNW). The CAP88-PC model computes an average sector concentration; thus, the annual dose computed for receptors at a given distance within a sector will be the same.

A review of land use surrounding the site and the prevailing wind directions was performed to select the appropriate receptors for inclusion in the modeling analyses. Analyses were performed separately for the soil load-outs and Cluster No. 2D, 4A, 5B and 5C, 6C, and 9A removal actions. The in situ wind erosion emissions and the exhaust hood emissions were found to be negligible and thus, these sources were not included in the modeling analyses. Where individual receptors are affected by more than one emission source, doses caused by those sources are added.

The individual (i.e., worker and resident) corresponding to the maximum effective dose equivalent is identified as the hypothetical maximally exposed individual. Because the dose received from airborne emissions is dependent on prevailing wind direction in addition to proximity to the site, the hypothetical maximally exposed individual is not necessarily the person nearest the site. The model was used to predict the annual effective dose at numerous receptors resulting from the combined impact of the above sources. Although the model determined the annual effective dose at numerous receptors, only the hypothetical maximally exposed resident and worker are discussed in this report.

Based on this information, residences and commercial properties located to the north, northeast and east of the MISS along West Central Avenue were selected as the receptors of most concern for the MISS activities. Receptor locations in other compass directions such as west and west-southwest of the MISS (i.e., west of Route 17) were also selected for the analysis, along with commercial receptors south and southeast of the MISS.

The residential receptors relative to Cluster No. 2d are closest in the west-southwest and west directions while commercial receptors are found in essentially all directions. For Cluster No. 4a activities, the residential receptors are congregated to the southwest of the cluster on the other side of I-80. The commercial receptors are mainly located along Essex Street. The residential receptors closest to Cluster 5b and 5c activities are located mainly to the northwest of the cluster, on the west side of I-80, while commercial receptors essentially surround the cluster. The receptors for Cluster 6c are very similar to those for Clusters 5b and 5c, being surrounded by commercial properties in all directions and residences to the northwest. Cluster 9a has residences close by to the south and east, on the other side of Maywood Avenue, with commercial receptors in essentially all other directions.

These receptor locations were used to establish the downwind distances that were input into the model to capture the maximally exposed individual (see Assumption 3.4 below for specific receptor locations).

3. ASSUMPTIONS

3.1 The contamination is uniformly distributed over a symmetrical land area with the concentration in respirable particles (PM-10) equaling the bulk contamination concentration in the surface material.

3.2 The erodibility classification of the site is "limited reservoir" characterized by a finite availability of erodible particles impregnated with non-erodible elements.

3.3 Emissions due to wind erosion and mechanical entrainment processes are continuous and steady state.

3.4 The locations of potential maximally exposed individuals (i.e., nearest residents and off-site workers) are based on a central point representative of each of the MISS site and nearby property emissions areas (Ref. 9.10) as follows:

Area	Distance (meters)	Direction
MISS Soil Load-outs		
Residents:	135	West
	145	West-southwest
	155	West-northwest
	185	Southwest
	215	East-northeast
	235	South-southwest
	235	North-northeast
	235	Northeast
	270	East
Workers:	135	West
	145	West-southwest
	155	West-northwest
	160	North
	165	Northeast
	165	East-southeast
	165	Southeast
	190	North-northeast
	225	South-southeast
	235	North-northwest
	250	East
	255	South
Cluster No. 2D		
Residents:	150	West-southwest
	160	Southwest
	170	West
	240	South-southeast
	270	West-northwest
	330	South-southwest
	330	South

Area	**Distance** (meters)	**Direction**
Workers:	60	Northeast
	60	North-northeast
	60	Southeast
	60	South-southeast
	60	South
	60	South-southwest
	70	East-northeast
	80	Southwest
	110	West
	110	West-northwest
	110	North
	120	East
Cluster No. 4A		
Residents:	150	Southwest
	150	West-southwest
	210	West
	210	South-southwest
	210	South
Workers:	30	South-southeast
	30	Southeast
	30	East-southeast
	40	East
	40	South
	50	Northwest
	50	North-northwest
	90	North-northeast
	90	Northeast
	110	East-northeast
Cluster No. 5B/5C		
Residents:	150	Northwest
	170	North-northwest
	240	West-northwest
	320	South-west
	330	West-southwest
	360	East
Workers:	30	Northwest
	40	West-northwest
	40	North-northwest
	60	Southwest
	60	South-southwest
	60	South
	60	Northeast
	110	East
	150	Southeast

Area	Distance (meters)	Direction
Cluster No. 6C		
Residents:	200	West-northwest
	210	Northwest
	300	East
	300	East-southeast
	320	Southeast
	360	East-northeast
	420	Southwest
Workers:	30	West
	60	South-southeast
	60	Southeast
	70	South
	70	East-southeast
	70	Northwest
	70	West-northwest
	120	North-northeast
	120	Northeast
	120	North
Cluster No. 9A		
Residents:	40	Southeast
	40	South-southeast
	40	South
	60	East
	60	East-southeast
	60	East-northeast
	90	Northeast
Workers:	100	South-southwest
	100	Southwest
	110	North
	130	North-northwest
	170	North-northeast
	190	West-northwest
	190	Northwest
	210	West
	230	West-southwest

3.5 The occupancy factor for the residents is 100 percent and 27 percent for workers (i.e., 45-hour work-week x 52 weeks per year = 2340 hours/8760 hours).

3.6 The number of disturbances relative to wind erosion of in situ soil is 3 times per week for the entire year for a total of 156 disturbances per year (3 x 52 weeks/yr). The highest 2-minute wind speed for a given week is conservatively used for the 3 disturbances per week. A separate calculation is performed for soils covered by vegetation/gravel and for bare soils.

3.7 Daughters in the decay chain of radionuclides are considered to be in secular equilibrium with their parents until a radionuclide in the chain is encountered with a measured concentration whereupon the measured concentration is used (Ref. 9.4). Although the direct emission of radon gas is not considered in the analysis, the daughters of radon generated by the decay of Ra-226 in dust offsite is accounted for by the model in the computation of the effective dose equivalents for the various internal and external exposure pathways.

4. EQUATIONS

4.1 In Situ Wind Erosion Emissions: (Ref. 9.2, Section 13.2.5, "Industrial Wind Erosion")

The wind speed profile in the surface boundary layer is found to follow a logarithmic distribution:

$$u(z) = \frac{u^*}{0.4} \ln \frac{z}{z_o} \quad (z > z_o) \tag{1}$$

where:

u = wind speed (cm/s)
u^* = friction velocity (cm/s)
z = height above test surface (cm)
z_o = roughness height (cm)
0.4 = von Karman's constant (dimensionless)

The friction velocity (u^*) is a measure of wind shear stress on the erodible surface, as determined from the slope of the logarithmic velocity profile. The roughness height (z_o) is a measure of the roughness of the exposed surface as determined from the y intercept of the velocity profile (i.e., the height at which the wind speed is zero).

Emissions generated by wind erosion are also dependent on the frequency of disturbance of the erodible surface because each time that a surface is disturbed, its erosion potential is restored. A disturbance is defined as an action that results in the exposure of fresh surface material. On a storage pile, this would occur whenever aggregate material is either added to or removed from the old surface. A disturbance of an exposed area may also result from the turning of surface material to a depth exceeding the size of the largest pieces of material present.

The emission factor for wind-generated particulate emissions from mixtures of erodible and nonerodible surface material subject to disturbance may be expressed in units of grams per square meter (g/m^2) per year as follows:

$$\text{Emission factor} = k \sum_{i=1}^{N} P_i \tag{2}$$

where:

k = particle size multiplier
N = number of disturbances per year
P_i = erosion potential corresponding to the observed (or probable) fastest mile of wind for the ith period between disturbances (g/m^2)

The particle size multiplier (k) for Equation 2 varies with aerodynamic particle size as follows:

Aerodynamic Particle Size Multipliers For Equation 2			
30 µm	<15 µm	<10 µm	<2.5 µm
1.0	0.6	0.5	0.2

This distribution of particle size within the under 30 micrometer (µm) fraction is comparable to the distributions reported for other fugitive dust sources where wind speed is a factor. This is illustrated, for example, in the distributions for batch and continuous drop operations encompassing a number of test aggregate materials (see AP-42 Section 13.2.4).

In calculating emission factors, each area of an erodible surface that is subject to a different frequency of disturbance should be treated separately. For a surface disturbed daily, N = 365 per year and for a surface disturbance once every 6 months, N = 2 per year.

The erosion potential function for a dry, exposed surface is:

$$P = 58\ (u^* - u_t^*)^2 + 25(u^* - u_t^*)$$

$$P = 0 \text{ for } u^* \le u_t^* \tag{3}$$

where:

u^* = friction velocity (m/s)
u_t = threshold friction velocity (m/s)

Because of the nonlinear form of the erosion potential function, each erosion event must be treated separately. Equations 2 and 3 apply only to dry, exposed materials with limited erosion potential. The resulting calculation is valid only for a time period as long or longer than the period between disturbances.

Threshold friction velocities for several surface types have been determined by field measurements with a portable wind tunnel. These values are presented below:

THRESHOLD FRICTION VELOCITIES

Material	Threshold Friction Velocity (m/s)	Roughness Height (cm)	Threshold Wind Velocity At 10 m (m/s)	
			z_o = Act	z_o = 0.5 cm
Overburden[a]	1.02	0.3	21	19
Scoria (roadbed material)[a]	1.33	0.3	27	25
Ground coal (surrounding coal pile)[a]	0.55	0.01	16	10
Uncrusted coal pile[a]	1.12	0.3	23	21
Scraper tracks on coal pile[a,b]	0.62	0.06	15	12
Fine coal dust on concrete pad[c]	0.54	0.2	11	10

[a] Western surface coal mine.
[b] Lightly crusted.
[c] Eastern power plant.

The fastest mile of wind for the periods between disturbances may be obtained from the monthly LCD summaries for the nearest reporting weather station that is representative of the site in question. These summaries report actual fastest mile values for each day of a given month. Because the erosion potential is a highly nonlinear function of the fastest mile, mean values of the fastest mile are inappropriate. The anemometer heights of reporting weather should be corrected to a 10-m reference height using Equation 1.

To convert the fastest mile of wind (u^+) from a reference anemometer height of 10 m to the equivalent friction velocity (u^*), the logarithmic wind speed profile may be used to yield the following equation:

$$u^* = 0.053\, u^+_{10} \qquad (4)$$

where:

u^* = friction velocity (m/s)
u^+_{10} = fastest mile of reference anemometer for period between disturbances (m/s)

This assumes a typical roughness height of 0.5 cm for open terrain. Equation 4 is restricted to large relatively flat piles or exposed areas with little penetration into the surface wind layer.

Implementation of the above procedure is carried out in the following steps:

1. Determine threshold friction velocity for erodible material of interest (see above table or determine from mode of aggregate size distribution).

2. Divide the exposed surface area into subareas of constant frequency of disturbance (N).

3. Tabulate fastest mile values (u^+) for each frequency of disturbance and correct them to 10 m (u^+) using Equation 1

4. Convert fastest mile values (u_{10}) to equivalent friction velocities (u^*), taking into account (a) the uniform wind exposure of nonelevated surfaces, using Equation 4.

5. Multiply the resulting emission factor for each subarea by the size of the subarea, and add the emission contributions of all subareas. Note that the highest 24-hour (hr) emissions would be expected to occur on the windiest day of the year. Maximum emissions are calculated assuming a single event with the highest fastest mile value for the annual period.

4.2 Drop Operations Emissions: (Ref. 9.2, Section 13.2.4, "Aggregate Handling and Storage Piles")

$$E = k\,(0.0032)[U/5]^{1.3} / [M/2]^{1.4} \qquad (5)$$

where:

E = emission factor (lb/ton)
k = particle size multiplier (dimensionless)
U = mean wind speed, meters per second (mps)
M = material moisture content (%)

The particle size multiplier in the equation, k, varies with aerodynamic particle size range, as follows:

Aerodynamic Particle Size Multiplier (k) For Equation 5				
< 30 µm	< 15 µm	< 10 µm	< 5 µm	< 2.5 µm
0.74	0.48	0.35	0.20	0.11

4.3 Radionuclide Emission Rates

The radionuclide source concentrations (S) for isotopes of uranium (U_{238}), radium (Ra_{226}), and thorium (Th_{232}) are based on average values for in situ soil (Ref. 9.7) and average values measured during soil transfers and excavations. These values are as follows:

Emission Source	S_{U238} (pCi/g)	S_{Ra226} (pCi/g))	S_{Th232} (pCi/g)
• In situ soil	27.5	4.30	24.80
• MISS Soil Load-outs			
- No. 1	3.53	0.89	2.67
- No. 2	2.04	0.65	2.11
- No. 3	1.74	0.70	2.81
- No. 4	3.67	1.04	6.86
- No. 5	2.13	1.03	3.83
- No. 6	2.72	1.38	7.47
- No. 7	8.94	1.87	12.28
- No. 9	10.03	2.09	14.12
- No. 9	6.34	1.30	7.66
- No. 10	7.85	1.64	9.96
• Cluster No. 2D	7.85	1.64	9.96
• Cluster No. 4A	2.79	0.77	2.39
• Cluster No. 5B	2.62	0.86	3.66
• Cluster No. 5C	7.01	1.66	10.38
• Cluster No. 6C	8.29	1.73	11.01
• Cluster No. 9A	2.43	1.21	5.65

Ratios of uranium isotopes are calculated from the percentage of activity of U_{238}, U_{234}, and U_{235} in natural uranium as these components make up total uranium. The percentage (P) of each isotope comprising total uranium activity (Ref. 9.8) is:

Emission Source	P_{U238}	P_{U234}	P_{U235}
All sources (%)	47.249	50.539	2.212

The source concentrations (S) of total uranium, U_{234}, and U_{235} are then given by:

S_{Utot} = (S_{U238}/ P_{U238}) = (27.5/0.47249) = 58.2 pCi/g (In situ soil)
S_{U234} = (S_{Utot} x P_{U234}) = (58.2 pCi/g) x 0.50539 = 29.4 pCi/g (In situ soil)
S_{U235} = (S_{Utot} x P_{U235}) = (58.2 pCi/g) x 0.02212 = 1.29 pCi/g (In situ soil)

The annual radionuclide emissions (R) are then the individual radionuclide source concentrations (S) multiplied by the annual particulate emissions rate (E) for the in situ wind erosion and the other load-out and remediation/excavation activities (R = S x E). Unknown radionuclide source emission rates are based on the known source emission rates assuming secular equilibrium in the five decay chains (Ref. 9.4) as follows:

U_{238}	U_{234}	Ra_{226}	U_{235}	Th_{232}
$R_{Th234} = R_{U238}$	$R_{Th230} = R_{U234}$	$R_{Po218} = R_{Ra226}$	$R_{Th231} = R_{U235}$	$R_{Ra228} = R_{Th232}$
$R_{Pa234m} = R_{U238}$		$R_{Pb214} = 0.9998R_{Po218}$	$R_{Pa231} = R_{Th231}$	$R_{Ac228} = R_{Ra228}$
$R_{Pa234} = 0.0013R_{Pa234m}$		$R_{Bi214} = R_{Po218}$	$R_{Ac227} = R_{Pa231}$	$R_{Th228} = R_{Ac228}$
		$R_{Po214} = 0.99979R_{Bi214}$	$R_{Th227} = 0.9862R_{Ac227}$	$R_{Ra224} = R_{Th228}$
		$R_{Pb210} = R_{Bi214}$	$R_{Fr223} = 0.0138R_{Ac227}$	$R_{Po216} = R_{Ra224}$
		$R_{Bi210} = R_{Pb210}$	$R_{Ra223} = R_{Ac227}$	$R_{Pb212} = R_{Po216}$
		$R_{Po210} = 0.9999987R_{Bi210}$	$R_{Po215} = R_{Ra223}$	$R_{Bi212} = R_{Pb212}$
			$R_{Pb211} = 0.9999977R_{Po215}$	$R_{Po212} = 0.6407R_{Bi212}$
			$R_{Bi211} = R_{Po215}$	$R_{Tl208} = 0.3593R_{Bi212}$
			$R_{Po211} = 0.00273R_{Bi211}$	
			$R_{Tl207} = 0.99727R_{Bi211}$	

Secular equilibrium is a condition in which the parent species in a radioactive series has a much longer half-life than its succeeding species, such that there is no significant change in its concentration during the time interval over which the shorter-lived species attain their equilibria, whereupon all species appear to decay at the same rate.

Although the direct emission of radon gas is not considered in this analysis, the daughters of radon generated by the decay of Ra-226 in dust offsite is accounted for by the model in the computation of the effective dose equivalents for the various internal and external exposure pathways.

5. INPUT DATA

5.1 In Situ Soil Wind Erosion Emissions:

- k =0.50 (PM-10) - (Ref. 9.2, Section 13.2.5)
- No. of Disturbances = 156 per year (See Assumption 3.6)
- Surface Area of MISS vegetative soil = 22,760 m^2 (Ref. 9.10)
- Surface Area of MISS bare soil = 5,000 m^2 (Ref. 9.10)
- Surface Area of gravel/crushed stone = 22,110 m^2 (Ref. 9.10)
- u^* = 1.02 m/sec - (Ref. 9.2, Section 13.2.5 – value for "overburden" from page 9)
- Anemometer Height = 6.1 m (Ref. 9.3)

Month	Week	Maximum 2-Minute Wind Speed (mph)[1]
Jan.	1	21
	2	25
	3	26
	4	25
Feb.	1	30
	2	28
	3	20
	4	30
Mar.	1	29
	2	24
	3	22
	4	25
	5	25
Apr.	1	26
	2	20
	3	25
	4	26
May	1	20
	2	26
	3	24
	4	21
	5	21
Jun.	1	23
	2	22
	3	23
	4	24
Jul.	1	20
	2	22
	3	20
	4	25
	5	25
Aug.	1	18
	2	16
	3	24
	4	20
	5	20

Sep.	1	14
	2	18
	3	31
	4	28
Oct.	1	25
	2	21
	3	29
	4	22
Nov.	1	16
	2	33
	3	28
	4	31
Dec.	1	32
	2	31
	3	28
	4	32

1. Fastest mile wind speed required by the AP-42 methodology is represented by the maximum 2-minute wind speed from Ref. 9.3.

5.2 Drop Operations Emissions:

- k=0.35 (PM-10) - (Ref. 9.2, Section 13.2.4)
- U = 7.4 mph - (Ref. 9.3)
- M =12.0 % - (Ref. 9.2, Section 13.2.4)

	Soil Moved (tons)	No. Times Dropped	Soil Handled (tons)	Surface Area (m^2)
• MISS Soil Load-outs				
- No. 1	5,648	4	22,592	163.5
- No. 2	2,459	4	9,836	163.5
- No. 3	1,390	4	5,560	163.5
- No. 4	1,496	4	5,984	163.5
- No. 5	1,604	4	6,416	163.5
- No. 6	4,167	4	16,668	163.5
- No. 7	2,223	5	11,115	163.5
- No. 8	3,874	5	19,370	163.5
- No. 9	3,034	5	15,170	163.5
- No. 10	1,883	5	9,415	163.5
• Cluster No. 2D	1,798	1	1,798	4,225
• Cluster No. 4A	4,108	1	4,108	1,850
• Cluster No. 5B	5,867	1	5,867	3,323
• Cluster No. 5C	6,043	1	6,043	1,662
• Cluster No. 6C	8,231	1	8,231	2,978
• Cluster No. 9A	1,731	1	1,731	1,163

The soil-handled amounts account for the total tonnage of soil that is moved and the number of times that it is dropped. For example, the total amount of soil moved during the MISS soil load-out No. 1 was 3,016 tons but it was handled or dropped 4 times for a total amount handled of 4 x 3,016 tons or 12,064 tons. Upon arrival at the MISS, the soil in the dump trucks was emptied on the ground (first drop) near the fabric structure and then placed inside the fabric structure using a front end loader (second drop). During load-outs, the soil inside the fabric structure was placed into the load-out bins by a front end loader for temporary storage (third drop) before placement by a front end loader into the lined rail cars for offsite disposal (fourth drop). Thus, the soil load-out activities were represented by four drops to account for the entire soil transfer process at the MISS.

5.3 CAP88-PC Input Data

- Meteorological Data (1994-2003 Teterboro, NJ data, Ref. 9.9):

ARITHMETIC AVERAGE WIND SPEEDS (WIND TOWARDS)

	Pasquill Stability Class						
Dir	A	B	C	D	E	F	G
N	1.253	2.685	4.022	4.518	3.397	1.608	0.000
NNW	1.212	2.829	3.987	4.588	3.172	1.566	0.000
NW	1.305	2.697	3.602	3.963	3.070	1.520	0.000
WNW	1.072	2.886	3.665	3.505	2.961	1.405	0.000
W	1.247	2.650	3.760	3.735	2.995	1.441	0.000
WSW	1.200	2.562	3.361	3.605	2.938	1.380	0.000
SW	1.372	2.398	3.457	3.561	3.064	1.435	0.000
SSW	1.272	2.386	3.436	4.166	3.372	1.571	0.000
S	1.172	2.657	3.586	4.485	3.576	1.495	0.000
SSE	1.272	2.790	4.148	5.786	3.970	1.611	0.000
SE	1.222	2.817	4.318	6.162	4.002	1.844	0.000
ESE	1.267	3.168	4.252	6.119	3.962	1.850	0.000
E	1.278	3.050	4.267	5.633	3.799	1.855	0.000
ENE	1.272	3.028	4.357	5.243	3.819	1.822	0.000
NE	1.272	2.704	3.892	4.482	3.477	1.586	0.000
NNE	1.237	2.608	3.802	4.095	3.395	1.494	0.000

FREQUENCIES OF STABILITY CLASSES (WIND TOWARDS)

	Pasquill Stability Class						
Dir	A	B	C	D	E	F	G
N	0.0091	0.0420	0.1254	0.4646	0.1445	0.2144	0.0000
NNW	0.0153	0.0501	0.1173	0.5663	0.0941	0.1568	0.0000
NW	0.0145	0.0618	0.1284	0.5671	0.0913	0.1369	0.0000
WNW	0.0202	0.0871	0.1219	0.5938	0.0860	0.0910	0.0000
W	0.0161	0.0574	0.0872	0.6973	0.0545	0.0874	0.0000
WSW	0.0162	0.0453	0.0683	0.6772	0.0533	0.1396	0.0000
SW	0.0017	0.0513	0.0921	0.5609	0.0775	0.2165	0.0000
SSW	0.0026	0.0440	0.0963	0.5468	0.0951	0.2152	0.0000
S	0.0032	0.0399	0.1058	0.4177	0.1201	0.3132	0.0000
SSE	0.0036	0.0360	0.1020	0.4842	0.1495	0.2246	0.0000
SE	0.0043	0.0365	0.1148	0.5466	0.1483	0.1495	0.0000
ESE	0.0073	0.0456	0.1169	0.5443	0.1442	0.1418	0.0000
E	0.0042	0.0457	0.1296	0.4737	0.1559	0.1908	0.0000

ENE	0.0105	0.0499	0.1220	0.4493	0.1990	0.1693	0.0000
NE	0.0044	0.0488	0.1087	0.3817	0.1604	0.2959	0.0000
NNE	0.0075	0.0521	0.1225	0.3478	0.1408	0.3294	0.0000
TOTAL	0.0068	0.0458	0.1102	0.4932	0.1293	0.2146	0.0000

- Annual average temperature = 52.5 °F (11.4 °C) – Ref. 9.3
- Annual precipitation = 52.3 inches (132.8 cm) – Ref. 9.3

- Radionuclide Emission Rates:

  - See Attachment A (Excel spreadsheet)

- Population Data based on 2000 Census (Ref. 9.11):

  - 1990 population distribution adjusted for the 8.4 percent increase from 1990 to 2000 for the New York-Northern New Jersey-Long Island, NY-NJ-CT-PA Metropolitan Statistical Area/Consolidated Metropolitan Statistical Area (see page 30)

- Individual Receptors:

Area	**Distance** (meters)	**Direction**
MISS Soil Load-outs		
Residents:	135	West
	145	West-southwest
	155	West-northwest
	185	Southwest
	215	East-northeast
	235	South-southwest
	235	North-northeast
	235	Northeast
	270	East
Workers:	135	West
	145	West-southwest
	155	West-northwest
	160	North
	165	Northeast
	165	East-southeast
	165	Southeast
	190	North-northeast
	225	South-southeast
	235	North-northwest
	250	East
	255	South

Area	**Distance** (meters)	**Direction**
Cluster No. 2D		
Residents:	150	West-southwest
	160	Southwest
	170	West
	240	South-southeast
	270	West-northwest
	330	South-southwest
	330	South
Workers:	60	Northeast
	60	North-northeast
	60	Southeast
	60	South-southeast
	60	South
	60	South-southwest
	70	East-northeast
	80	Southwest
	110	West
	110	West-northwest
	110	North
	120	East
Cluster No. 4A		
Residents:	150	Southwest
	150	West-southwest
	210	West
	210	South-southwest
	210	South
Workers:	30	South-southeast
	30	Southeast
	30	East-southeast
	40	East
	40	South
	50	Northwest
	50	North-northwest
	90	North-northeast
	90	Northeast
	110	East-northeast
Cluster No. 5B/5C		
Residents:	150	Northwest
	170	North-northwest
	240	West-northwest
	320	South-west
	330	West-southwest
	360	East

Area	Distance (meters)	Direction
Workers:	30	Northwest
	40	West-northwest
	40	North-northwest
	60	Southwest
	60	South-southwest
	60	South
	60	Northeast
	110	East
	150	Southeast
Cluster No. 6C		
Residents:	200	West-northwest
	210	Northwest
	300	East
	300	East-southeast
	320	Southeast
	360	East-northeast
	420	Southwest
Workers:	30	West
	60	South-southeast
	60	Southeast
	70	South
	70	East-southeast
	70	Northwest
	70	West-northwest
	120	North-northeast
	120	Northeast
	120	North
Cluster No. 9A		
Residents:	40	Southeast
	40	South-southeast
	40	South
	60	East
	60	East-southeast
	60	East-northeast
	90	Northeast
Workers:	100	South-southwest
	100	Southwest
	110	North
	130	North-northwest
	170	North-northeast
	190	West-northwest
	190	Northwest
	210	West
	230	West-southwest

6. CALCULATION

The actual radionuclide emission rate calculations are performed using an Excel spreadsheet, a printout of which is provided in Attachment A. The dose calculations are performed by the CAP88-PC model, the output of which is provided on pages 27-131.

7. RESULTS

The CAP88-PC output for the annual doses to the maximally exposed individuals (MEI) and population (POP) within 80 km of MISS is provided on pages 27-131 as follows:

Release Area	Page Numbers	
	MEI	POP
MISS Soil Load-outs	27 - 40	76 - 91
Cluster No. 2D	41 - 47	92 - 99
Cluster No. 4A	48 - 54	100 - 107
Cluster No. 5B/C	55 - 61	108 - 115
Cluster No. 6C	62 - 68	116 - 123
Cluster No. 9A	69 - 75	124 - 131

As stated earlier, analyses are performed separately for the various release areas given the differences in receptor locations most affected by each of these areas. Where individual receptors are affected by more than one emission source, doses caused by those sources are added.

The maximum annual effective doses are summarized below first by individual activities and then for all activities combined. The maximum total site doses are the result of the combination of doses from the individual activities causing the highest dose at a particular receptor.

Receptor	Location	Annual Dose Rate (mrem/yr)	Occupancy Factor (%)	Annual Effective Dose (mrem/yr)
MISS Soil Load-outs				
• Population (person-rem/yr)	N/A	5.14E-03	N/A	1.20E-03
• Maximally Exposed Resident	235 m NNE	1.12E-03	100	1.12E-03
• Maximally Exposed Worker	160 m N	2.00E-03	27	5.40E-04
Cluster No. 2D				
• Population (person-rem/yr)	N/A	1.05E-04	N/A	2.87E-05
• Maximally Exposed Resident	160 m SW	2.80E-05	100	2.80E-05
• Maximally Exposed Worker	60 m S	3.20E-04	27	8.64E-05
Cluster No. 4A				
• Population (person-rem/yr)	N/A	6.99E-05	N/A	6.99E-05
• Maximally Exposed Resident	210 m S	3.20E-05	100	3.20E-05
• Maximally Exposed Worker	30 m SSE	7.00E-04	27	1.89E-04
Cluster No. 5B/5C				
• Population (person-rem/yr)	N/A	4.69E-04	N/A	4.69E-04
• Maximally Exposed Resident	170 m NNW	6.50E-05	100	6.50E-05
• Maximally Exposed Worker	30 m NW	1.60E-03	27	4.32E-04
Cluster No. 6C				
• Population (person-rem/yr)	N/A	5.23E-04	N/A	5.23E-04
• Maximally Exposed Resident	300 m E	5.90E-05	100	5.90E-05
• Maximally Exposed Worker	30 m W	1.90E-03	27	5.13E-04
Cluster No. 9A				
• Population (person-rem/yr)	N/A	4.89E-05	N/A	4.89E-05
• Maximally Exposed Resident	40 m S	3.40E-04	100	3.40E-04
• Maximally Exposed Worker	110 m N	4.00E-05	27	1.08E-05
Total Site				
• Population (person-rem/yr)	N/A	6.36E-03	N/A	6.36E-03
• Maximally Exposed Resident	235 m NNE of Soil Load-outs	1.12E-03	100	1.12E-03
• Maximally Exposed Worker	30 m W of Cluster 6C	3.20E-03	27	8.64E-04

The maximum annual effective doses are almost entirely the result of the internal doses from the inhalation of dust particles and the ingestion of plant borne dust. The air immersion in the dust plume and ground surface irradiation from dust deposition pathways contribute a negligible amount to the total dose. The percent contribution of the various pathways to the total effective dose, based on the dose calculated for the maximally exposed individual from the MISS Soil Load-outs, is as follows :

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	1.12E-05
INHALATION	8.54E-04
AIR IMMERSION	1.26E-09
GROUND SURFACE	1.61E-07
INTERNAL	8.65E-04
EXTERNAL	1.62E-07
TOTAL	8.65E-04

8. CONCLUSIONS

The annual effective dose to the public within 80 km of MISS from airborne particulate releases during 2003 was **6.36E-03 person-rem/yr**. The annual effective dose to the maximally exposed resident (located north-northeast of MISS was **1.12E-03 mrem/yr** while the annual effective dose to the maximally exposed worker (located west of Cluster 6C) was **8.64E-04 mrem/yr** during 2003. These annual effective doses are due primarily to inhalation of airborne particulate releases.

These doses are well below the NESHAPS standard of 10 mrem/yr (40 CFR 61.92).

9. REFERENCES

9.1 Parks, Barry, "CAP88-PC Version 2.0 User's Guide". U.S. Department of Energy, ER-8/GTN, Germantown, Maryland, June, 1997. Stone & Webster Library Reference No. EN-293, V00, L00.

9.2 U. S. Environmental Protection Agency, "Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources", 5th Edition, AP-42, January 1, 1995 (Sections 13.2.4 and 13.2.5).

9.3 National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service, National Climatic Data Center. Unedited Local Climatological Data for January - December, 2003, Teterboro, NJ.

9.4 Shlein, "The Health Physics and Radiological Health Handbook", Revised Edition, Scinta, Inc. Silver Springs, MD, 1992.

9.5 U.S. Environmental Protection Agency, "Rapid Assessment of Exposure to Particulate Emissions from Surface Contaminated Sites". EPA Report No. EPA-600/8-85/002, Office of Health and Environmental Assessment, Washington, D.C., February, 1985.

9.6 U.S. Environmental Protection Agency, "Estimation of Impacts from Area Sources of Particulate Matter Emissions at Superfund Sites". EPA Report No. EPA-451/R-93/004, Office of Air Quality Planning and Standards, Research Triangle Park, NC, April, 1993.

9.7 Bechtel National, Inc. (BNI), "Characterization Report for the Maywood Interim Storage Site, Maywood, New Jersey". DOE/OR/20722-139, Oak Ridge, TN, June, 1987.

9.8 Bechtel National, Inc. (BNI), "Natural Uranium Specific Activity", 14501-191-CV-005, Rev. 2, Oak Ridge, TN, 1995.

9.9 1994-2003 Stability Array (STAR) data for Teterboro, NJ supplied by the National Oceanic and Atmospheric Administration, National Climatic Data Center, Asheville, NC.

9.10 Figure A-5 - Site Location Plan, FUSRAP Maywood Superfund Site - Maywood, Lodi and Rochelle Park. Prepared by Shaw Environmental, Inc., February 2004.

9.11 U.S. Census Bureau, Census 2000 Redistricting Data (P.L. 94-171) Summary File and 1990 Census. Census 2000 PHC-T-3, Ranking Table for Metropolitan Areas: 1990 and 2000, Table 1: Metropolitan Areas and their Geographic Components in Alphabetical Sort, 1990 and 2000 Population and Numeric and Percent Population Change: 1990 to 2000.

10. CAP88-PC OUTPUT (Maximally Exposed Individual)

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Individual Assessment
Feb 25, 2004 09:41 am

Facility: Maywood Interim Storage Site - MISS Soil Load 1-5
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ   Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

8.65E-04

At This Location: 135 Meters South

Dataset Name: MISS Load-out 1
Dataset Date: Feb 25, 2004 08:28 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND

Feb 25, 2004 09:41 am

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 135 Meters South
Lifetime Fatal Cancer Risk: 9.62E-09

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	5.76E-06
BREAST	4.38E-06
R MAR	4.22E-04
LUNGS	5.38E-03
THYROID	4.21E-06
ENDOST	5.25E-03
RMNDR	2.87E-05
EFFEC	8.65E-04

RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	Source #2 Ci/y	Source #3 Ci/y	Source #4 Ci/y	Source #5 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
AC-228	Y	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
BI-211	W	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
BI-212	W	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
FR-223	D	1.00	3.5E-12	8.9E-13	4.3E-13	9.8E-13	6.1E-13	6.5E-12
PA-234M	Y	1.00	5.5E-09	1.4E-09	6.7E-10	1.5E-09	9.4E-10	1.0E-08
PA-231	Y	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
PB-211	D	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
PO-211	-	0.00	7.0E-13	1.8E-13	8.5E-14	1.9E-13	1.2E-13	1.3E-12
PO-216	W	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
PB-212	D	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
PO-212	W	1.00	2.7E-09	9.2E-10	6.9E-10	1.8E-09	1.1E-09	7.2E-09
PO-215	W	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
RA-223	W	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
RA-224	W	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
TH-232	Y	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
TH-228	Y	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
TH-231	Y	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
TH-227	Y	1.00	2.5E-10	6.4E-11	3.1E-11	7.0E-11	4.3E-11	4.6E-10
TL-208	D	1.00	1.5E-09	5.1E-10	3.9E-10	1.0E-09	6.1E-10	4.0E-09
U-235	Y	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
TL-207	D	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
U-238	Y	1.00	5.5E-09	1.4E-09	6.7E-10	1.5E-09	9.4E-10	1.0E-08
TH-234	Y	1.00	5.5E-09	1.4E-09	6.7E-10	1.5E-09	9.4E-10	1.0E-08
PA-234	Y	1.00	7.1E-12	1.8E-12	8.7E-13	2.0E-12	1.2E-12	1.3E-11
U-234	Y	1.00	5.9E-09	1.5E-09	7.1E-10	1.6E-09	1.0E-09	1.1E-08
TH-230	Y	1.00	5.9E-09	1.5E-09	7.1E-10	1.6E-09	1.0E-09	1.1E-08
RA-226	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
PO-218	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
PB-214	D	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
BI-214	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
PO-214	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
PB-210	D	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
BI-210	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
PO-210	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
RA-228	W	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08

SITE INFORMATION

Temperature: 12 degrees C
Precipitation: 133 cm/y
Mixing Height: 1000 m

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SYNOPSIS
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SOURCE INFORMATION

Source Number:	1	2	3	4	5
Source Height (m):	0.	0.	0.	0.	0.
Area (sq m):	164.	164.	164.	164.	164.

Plume Rise

Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

135	145	155	160	165	185	190	215	225	235
250	255	270							

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SUMMARY
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ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	5.76E-06
BREAST	4.38E-06
R MAR	4.22E-04
LUNGS	5.38E-03
THYROID	4.21E-06
ENDOST	5.25E-03
RMNDR	2.87E-05
EFFEC	8.65E-04

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	1.12E-05
INHALATION	8.54E-04
AIR IMMERSION	1.26E-09
GROUND SURFACE	1.61E-07
INTERNAL	8.65E-04
EXTERNAL	1.62E-07
TOTAL	8.65E-04

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
AC-227	2.01E-05
AC-228	6.46E-08
BI-211	2.01E-11
BI-212	2.50E-08
FR-223	1.12E-12
PA-234M	2.85E-12
PA-231	1.53E-05
PB-211	2.90E-10
PO-211	4.53E-30
PO-216	0.00E+00
PB-212	1.26E-07
PO-212	0.00E+00
PO-215	0.00E+00
RA-223	2.69E-07
RA-224	2.62E-06
TH-232	2.68E-04
TH-228	1.88E-04
TH-231	3.14E-11
TH-227	3.60E-07
TL-208	4.41E-10
U-235	3.93E-06
TL-207	2.36E-13
U-238	7.90E-05
TH-234	3.34E-08
PA-234	2.69E-12
U-234	9.51E-05
TH-230	1.78E-04
RA-226	2.38E-06
PO-218	7.13E-12
PB-214	2.10E-10
BI-214	2.66E-10
PO-214	0.00E+00
PB-210	5.32E-06
BI-210	3.86E-08
PO-210	2.44E-06
RA-228	3.01E-06
TOTAL	8.65E-04

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SUMMARY
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INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	135	145	155	160	165	185	190
N	5.5E-04	4.8E-04	4.2E-04	4.0E-04	3.7E-04	3.0E-04	2.9E-04
NNW	1.5E-04	1.3E-04	1.2E-04	1.1E-04	1.0E-04	8.5E-05	8.1E-05
NW	9.7E-05	8.6E-05	7.6E-05	7.2E-05	6.9E-05	5.7E-05	5.4E-05
WNW	8.4E-05	7.4E-05	6.6E-05	6.3E-05	6.0E-05	5.0E-05	4.8E-05
W	1.9E-04	1.7E-04	1.5E-04	1.4E-04	1.3E-04	1.1E-04	1.0E-04
WSW	2.1E-04	1.9E-04	1.6E-04	1.6E-04	1.5E-04	1.2E-04	1.1E-04
SW	3.5E-04	3.1E-04	2.7E-04	2.5E-04	2.4E-04	1.9E-04	1.9E-04
SSW	4.1E-04	3.6E-04	3.2E-04	3.0E-04	2.8E-04	2.3E-04	2.2E-04
S	8.7E-04	7.5E-04	6.6E-04	6.2E-04	5.9E-04	4.7E-04	4.5E-04
SSE	5.6E-04	4.8E-04	4.3E-04	4.0E-04	3.8E-04	3.1E-04	2.9E-04
SE	3.3E-04	2.9E-04	2.6E-04	2.4E-04	2.3E-04	1.9E-04	1.8E-04
ESE	2.1E-04	1.9E-04	1.6E-04	1.5E-04	1.5E-04	1.2E-04	1.1E-04
E	3.5E-04	3.1E-04	2.7E-04	2.6E-04	2.4E-04	2.0E-04	1.9E-04
ENE	2.4E-04	2.1E-04	1.8E-04	1.7E-04	1.6E-04	1.3E-04	1.3E-04
NE	5.9E-04	5.1E-04	4.5E-04	4.3E-04	4.0E-04	3.2E-04	3.1E-04
NNE	6.3E-04	5.5E-04	4.9E-04	4.6E-04	4.3E-04	3.5E-04	3.3E-04

	Distance (m)					
Direction	215	225	235	250	255	270
N	2.3E-04	2.1E-04	1.9E-04	1.7E-04	1.7E-04	1.5E-04
NNW	6.6E-05	6.1E-05	5.7E-05	5.2E-05	5.0E-05	4.6E-05
NW	4.5E-05	4.2E-05	3.9E-05	3.6E-05	3.5E-05	3.2E-05
WNW	3.9E-05	3.7E-05	3.5E-05	3.2E-05	3.1E-05	2.8E-05
W	8.4E-05	7.8E-05	7.3E-05	6.5E-05	6.3E-05	5.8E-05
WSW	9.2E-05	8.5E-05	7.9E-05	7.1E-05	6.9E-05	6.2E-05
SW	1.5E-04	1.4E-04	1.3E-04	1.1E-04	1.1E-04	9.8E-05
SSW	1.7E-04	1.6E-04	1.5E-04	1.3E-04	1.3E-04	1.1E-04
S	3.6E-04	3.3E-04	3.0E-04	2.7E-04	2.6E-04	2.3E-04
SSE	2.3E-04	2.1E-04	2.0E-04	1.7E-04	1.7E-04	1.5E-04
SE	1.4E-04	1.3E-04	1.2E-04	1.1E-04	1.0E-04	9.4E-05
ESE	9.2E-05	8.5E-05	7.9E-05	7.1E-05	6.9E-05	6.2E-05
E	1.5E-04	1.4E-04	1.3E-04	1.1E-04	1.1E-04	9.9E-05
ENE	1.0E-04	9.4E-05	8.7E-05	7.8E-05	7.6E-05	6.9E-05
NE	2.4E-04	2.2E-04	2.1E-04	1.8E-04	1.8E-04	1.6E-04
NNE	2.6E-04	2.4E-04	2.2E-04	2.0E-04	1.9E-04	1.7E-04

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Individual Assessment
Feb 25, 2004 09:41 am

Facility: Maywood Interim Storage Site - MISS Soil Load 6-10
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

3.52E-03

At This Location: 135 Meters South

Dataset Name: MISS Load-out 2
Dataset Date: Feb 25, 2004 08:47 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 135 Meters South
Lifetime Fatal Cancer Risk: 3.95E-08

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	2.21E-05
BREAST	1.73E-05
R MAR	1.70E-03
LUNGS	2.21E-02
THYROID	1.66E-05
ENDOST	2.12E-02
RMNDR	9.80E-05
EFFEC	3.52E-03

Feb 25, 2004 09:41 am

SYNOPSIS
Page 2

RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	Source #2 Ci/y	Source #3 Ci/y	Source #4 Ci/y	Source #5 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
AC-228	Y	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
BI-211	W	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
BI-212	W	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
FR-223	D	1.00	2.0E-12	4.4E-12	8.6E-12	4.3E-12	3.3E-12	2.3E-11
PA-234M	Y	1.00	3.1E-09	6.8E-09	1.3E-08	6.6E-09	5.1E-09	3.5E-08
PA-231	Y	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
PB-211	D	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
PO-211	-	0.00	4.0E-13	8.7E-13	1.7E-12	8.5E-13	6.5E-13	4.5E-12
PO-216	W	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
PB-212	D	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
PO-212	W	1.00	5.5E-09	6.0E-09	1.2E-08	5.1E-09	4.1E-09	3.3E-08
PO-215	W	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
RA-223	W	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
RA-224	W	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
TH-232	Y	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
TH-228	Y	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
TH-231	Y	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
TH-227	Y	1.00	1.4E-10	3.2E-10	6.2E-10	3.1E-10	2.3E-10	1.6E-09
TL-208	D	1.00	3.1E-09	3.4E-09	6.8E-09	2.9E-09	2.3E-09	1.8E-08
U-235	Y	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
TL-207	D	1.00	1.5E-10	3.2E-10	6.2E-10	3.1E-10	2.4E-10	1.6E-09
U-238	Y	1.00	3.1E-09	6.8E-09	1.3E-08	6.6E-09	5.1E-09	3.5E-08
TH-234	Y	1.00	3.1E-09	6.8E-09	1.3E-08	6.6E-09	5.1E-09	3.5E-08
PA-234	Y	1.00	4.1E-12	8.9E-12	1.7E-11	8.6E-12	6.6E-12	4.6E-11
U-234	Y	1.00	3.3E-09	7.3E-09	1.4E-08	7.1E-09	5.4E-09	3.7E-08
TH-230	Y	1.00	3.3E-09	7.3E-09	1.4E-08	7.1E-09	5.4E-09	3.7E-08
RA-226	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
PO-218	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-10	7.3E-09
PB-214	D	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
BI-214	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
PO-214	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
PB-210	D	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
BI-210	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
PO-210	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
RA-228	W	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08

SITE INFORMATION

Temperature: 12 degrees C
Precipitation: 133 cm/y
Mixing Height: 1000 m

Feb 25, 2004 09:41 am

SYNOPSIS
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SOURCE INFORMATION

Source Number:	1	2	3	4	5
Source Height (m):	0.	0.	0.	0.	0.
Area (sq m):	164.	164.	164.	164.	164.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

135	145	155	160	165	185	190	215	225	235
250	255	270							

Feb 25, 2004 09:41 am

SUMMARY
Page 1

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	2.21E-05
BREAST	1.73E-05
R MAR	1.70E-03
LUNGS	2.21E-02
THYROID	1.66E-05
ENDOST	2.12E-02
RMNDR	9.80E-05
EFFEC	3.52E-03

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	3.88E-05
INHALATION	3.48E-03
AIR IMMERSION	5.39E-09
GROUND SURFACE	5.54E-07
INTERNAL	3.52E-03
EXTERNAL	5.60E-07
TOTAL	3.52E-03

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
AC-227	7.04E-05
AC-228	2.96E-07
BI-211	7.06E-11
BI-212	1.15E-07
FR-223	3.94E-12
PA-234M	1.00E-11
PA-231	5.37E-05
PB-211	1.02E-09
PO-211	1.59E-29
PO-216	0.00E+00
PB-212	5.76E-07
PO-212	0.00E+00
PO-215	0.00E+00
RA-223	9.43E-07
RA-224	1.20E-05
TH-232	1.23E-03
TH-228	8.62E-04
TH-231	1.10E-10
TH-227	1.26E-06
TL-208	2.02E-09
U-235	1.38E-05
TL-207	8.27E-13
U-238	2.77E-04
TH-234	1.17E-07
PA-234	9.43E-12
U-234	3.33E-04
TH-230	6.25E-04
RA-226	6.59E-06
PO-218	1.74E-11
PB-214	5.80E-10
BI-214	7.36E-10
PO-214	0.00E+00
PB-210	1.47E-05
BI-210	1.07E-07
PO-210	6.75E-06
RA-228	1.38E-05
TOTAL	3.52E-03

Feb 25, 2004 09:41 am

SUMMARY
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INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

Direction	135	145	155	160	165	185	190
	Distance (m)						
N	2.2E-03	1.9E-03	1.7E-03	1.6E-03	1.5E-03	1.2E-03	1.2E-03
NNW	6.0E-04	5.3E-04	4.7E-04	4.4E-04	4.2E-04	3.4E-04	3.3E-04
NW	3.9E-04	3.4E-04	3.1E-04	2.9E-04	2.8E-04	2.3E-04	2.2E-04
WNW	3.4E-04	3.0E-04	2.6E-04	2.5E-04	2.4E-04	2.0E-04	1.9E-04
W	7.8E-04	6.8E-04	6.0E-04	5.7E-04	5.4E-04	4.4E-04	4.2E-04
WSW	8.6E-04	7.5E-04	6.6E-04	6.3E-04	5.9E-04	4.8E-04	4.6E-04
SW	1.4E-03	1.2E-03	1.1E-03	1.0E-03	9.8E-04	7.9E-04	7.5E-04
SSW	1.7E-03	1.5E-03	1.3E-03	1.2E-03	1.1E-03	9.2E-04	8.8E-04
S	3.5E-03	3.1E-03	2.7E-03	2.5E-03	2.4E-03	1.9E-03	1.8E-03
SSE	2.3E-03	2.0E-03	1.7E-03	1.6E-03	1.5E-03	1.2E-03	1.2E-03
SE	1.3E-03	1.2E-03	1.0E-03	9.8E-04	9.3E-04	7.5E-04	7.1E-04
ESE	8.6E-04	7.5E-04	6.6E-04	6.3E-04	5.9E-04	4.8E-04	4.6E-04
E	1.4E-03	1.2E-03	1.1E-03	1.0E-03	9.8E-04	7.9E-04	7.5E-04
ENE	9.6E-04	8.4E-04	7.4E-04	7.0E-04	6.6E-04	5.4E-04	5.1E-04
NE	2.4E-03	2.1E-03	1.8E-03	1.7E-03	1.6E-03	1.3E-03	1.2E-03
NNE	2.6E-03	2.2E-03	2.0E-03	1.9E-03	1.8E-03	1.4E-03	1.3E-03

Direction	215	225	235	250	255	270
	Distance (m)					
N	9.3E-04	8.5E-04	7.9E-04	7.0E-04	6.8E-04	6.1E-04
NNW	2.6E-04	2.4E-04	2.3E-04	2.1E-04	2.0E-04	1.8E-04
NW	1.8E-04	1.7E-04	1.5E-04	1.4E-04	1.4E-04	1.2E-04
WNW	1.6E-04	1.4E-04	1.4E-04	1.2E-04	1.2E-04	1.1E-04
W	3.4E-04	3.1E-04	2.9E-04	2.6E-04	2.5E-04	2.3E-04
WSW	3.7E-04	3.4E-04	3.2E-04	2.8E-04	2.7E-04	2.5E-04
SW	6.0E-04	5.5E-04	5.1E-04	4.5E-04	4.4E-04	4.0E-04
SSW	7.0E-04	6.4E-04	5.9E-04	5.3E-04	5.1E-04	4.6E-04
S	1.4E-03	1.3E-03	1.2E-03	1.1E-03	1.0E-03	9.4E-04
SSE	9.4E-04	8.6E-04	7.9E-04	7.1E-04	6.8E-04	6.1E-04
SE	5.7E-04	5.2E-04	4.9E-04	4.3E-04	4.2E-04	3.8E-04
ESE	3.7E-04	3.4E-04	3.2E-04	2.8E-04	2.7E-04	2.5E-04
E	6.0E-04	5.5E-04	5.1E-04	4.6E-04	4.4E-04	4.0E-04
ENE	4.1E-04	3.8E-04	3.5E-04	3.1E-04	3.0E-04	2.8E-04
NE	9.9E-04	9.1E-04	8.4E-04	7.5E-04	7.2E-04	6.5E-04
NNE	1.1E-03	9.7E-04	9.0E-04	8.0E-04	7.7E-04	6.9E-04

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Individual Assessment
Feb 25, 2004 09:42 am

Facility: Maywood Interim Storage Site - Cluster No. 2d
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ   Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent (mrem/year)
3.21E-04

At This Location: 60 Meters South

Dataset Name: MISS Cluster #2d
Dataset Date: Feb 25, 2004 08:55 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND

Feb 25, 2004 09:42 am

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 60 Meters South
Lifetime Fatal Cancer Risk: 3.59E-09

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	1.95E-06
BREAST	1.47E-06
R MAR	1.55E-04
LUNGS	2.01E-03
THYROID	1.41E-06
ENDOST	1.93E-03
RMNDR	8.53E-06
EFFEC	3.21E-04

RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	4.5E-11	4.5E-11
AC-228	Y	1.00	1.2E-09	1.2E-09
BI-211	W	1.00	4.5E-11	4.5E-11
BI-212	W	1.00	1.2E-09	1.2E-09
FR-223	D	1.00	6.3E-13	6.3E-13
PA-234M	Y	1.00	9.7E-10	9.7E-10
PA-231	Y	1.00	4.5E-11	4.5E-11
PB-211	D	1.00	4.5E-11	4.5E-11
PO-211	-	0.00	1.2E-13	1.2E-13
PO-216	W	1.00	1.2E-09	1.2E-09
PB-212	D	1.00	1.2E-09	1.2E-09
PO-212	W	1.00	7.9E-10	7.9E-10
PO-215	W	1.00	4.5E-11	4.5E-11
RA-223	W	1.00	4.5E-11	4.5E-11
RA-224	W	1.00	1.2E-09	1.2E-09
TH-232	Y	1.00	1.2E-09	1.2E-09
TH-228	Y	1.00	1.2E-09	1.2E-09
TH-231	Y	1.00	4.5E-11	4.5E-11
TH-227	Y	1.00	4.5E-11	4.5E-11
TL-208	D	1.00	4.4E-10	4.4E-10
U-235	Y	1.00	4.5E-11	4.5E-11
TL-207	D	1.00	4.5E-11	4.5E-11
U-238	Y	1.00	9.7E-10	9.7E-10
TH-234	Y	1.00	9.7E-10	9.7E-10
PA-234	Y	1.00	1.3E-12	1.3E-12
U-234	Y	1.00	1.0E-09	1.0E-09
TH-230	Y	1.00	1.0E-09	1.0E-09
RA-226	W	1.00	2.0E-10	2.0E-10
PO-218	W	1.00	2.0E-10	2.0E-10
PB-214	D	1.00	2.0E-10	2.0E-10
BI-214	W	1.00	2.0E-10	2.0E-10
PO-214	W	1.00	2.0E-10	2.0E-10
PB-210	D	1.00	2.0E-10	2.0E-10
BI-210	W	1.00	2.0E-10	2.0E-10
PO-210	W	1.00	2.0E-10	2.0E-10
RA-228	W	1.00	1.2E-09	1.2E-09

SITE INFORMATION

Temperature:	12 degrees C
Precipitation:	133 cm/y
Mixing Height:	1000 m

SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.
Area (sq m): 4225.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

60 70 80 110 120 150 160 170 240 270
330

Feb 25, 2004 09:42 am

SUMMARY
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ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	1.95E-06
BREAST	1.47E-06
R MAR	1.55E-04
LUNGS	2.01E-03
THYROID	1.41E-06
ENDOST	1.93E-03
RMNDR	8.53E-06
EFFEC	3.21E-04

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	3.00E-06
INHALATION	3.18E-04
AIR IMMERSION	5.14E-10
GROUND SURFACE	5.29E-08
INTERNAL	3.21E-04
EXTERNAL	5.34E-08
TOTAL	3.21E-04

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
AC-227	6.98E-06
AC-228	2.55E-08
BI-211	9.65E-12
BI-212	9.98E-09
FR-223	4.05E-13
PA-234M	1.68E-12
PA-231	5.32E-06
PB-211	1.03E-10
PO-211	5.41E-23
PO-216	1.12E-33
PB-212	4.96E-08
PO-212	0.00E+00
PO-215	0.00E+00
RA-223	9.31E-08
RA-224	1.03E-06
TH-232	1.06E-04
TH-228	7.42E-05
TH-231	1.09E-11
TH-227	1.26E-07
TL-208	2.19E-10
U-235	1.37E-06
TL-207	9.56E-14
U-238	2.75E-05
TH-234	1.11E-08
PA-234	9.34E-13
U-234	3.30E-05
TH-230	6.22E-05
RA-226	5.59E-07
PO-218	2.19E-12
PB-214	5.28E-11
BI-214	6.76E-11
PO-214	0.00E+00
PB-210	1.20E-06
BI-210	9.45E-09
PO-210	5.68E-07
RA-228	1.11E-06
TOTAL	3.21E-04

Feb 25, 2004 09:42 am

SUMMARY
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INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	60	70	80	110	120	150	160
N	2.3E-04	1.7E-04	1.4E-04	7.8E-05	6.8E-05	4.7E-05	4.2E-05
NNW	1.3E-04	9.3E-05	6.9E-05	3.3E-05	2.7E-05	1.6E-05	1.3E-05
NW	5.4E-05	4.0E-05	3.1E-05	1.7E-05	1.4E-05	9.8E-06	8.9E-06
WNW	6.0E-05	4.3E-05	3.3E-05	1.7E-05	1.4E-05	9.0E-06	7.9E-06
W	8.1E-05	6.1E-05	4.8E-05	2.8E-05	2.5E-05	1.7E-05	1.6E-05
WSW	1.3E-04	9.2E-05	7.0E-05	3.7E-05	3.1E-05	2.0E-05	1.8E-05
SW	1.7E-04	1.2E-04	9.6E-05	5.3E-05	4.6E-05	3.1E-05	2.8E-05
SSW	2.8E-04	2.0E-04	1.5E-04	7.5E-05	6.2E-05	3.8E-05	3.3E-05
S	3.2E-04	2.4E-04	2.0E-04	1.2E-04	1.0E-04	7.2E-05	6.6E-05
SSE	3.0E-04	2.2E-04	1.7E-04	9.0E-05	7.6E-05	4.9E-05	4.3E-05
SE	1.9E-04	1.4E-04	1.0E-04	5.5E-05	4.7E-05	3.0E-05	2.7E-05
ESE	1.5E-04	1.1E-04	8.0E-05	4.1E-05	3.4E-05	2.1E-05	1.8E-05
E	1.4E-04	1.0E-04	8.3E-05	4.9E-05	4.3E-05	3.0E-05	2.8E-05
ENE	2.0E-04	1.4E-04	1.0E-04	5.0E-05	4.1E-05	2.3E-05	2.0E-05
NE	2.5E-04	1.9E-04	1.5E-04	8.5E-05	7.3E-05	5.0E-05	4.5E-05
NNE	3.1E-04	2.3E-04	1.8E-04	9.7E-05	8.2E-05	5.5E-05	4.9E-05

	Distance (m)			
Direction	170	240	270	330
N	3.8E-05	2.1E-05	1.7E-05	1.2E-05
NNW	1.2E-05	7.0E-06	6.0E-06	4.7E-06
NW	8.1E-06	5.2E-06	4.6E-06	3.8E-06
WNW	7.2E-06	4.7E-06	4.2E-06	3.5E-06
W	1.4E-05	8.5E-06	7.2E-06	5.6E-06
WSW	1.6E-05	9.1E-06	7.7E-06	5.9E-06
SW	2.5E-05	1.4E-05	1.1E-05	8.4E-06
SSW	2.9E-05	1.6E-05	1.3E-05	9.6E-06
S	5.9E-05	3.1E-05	2.5E-05	1.8E-05
SSE	3.9E-05	2.1E-05	1.7E-05	1.2E-05
SE	2.4E-05	1.3E-05	1.1E-05	8.2E-06
ESE	1.6E-05	9.1E-06	7.7E-06	5.9E-06
E	2.5E-05	1.4E-05	1.2E-05	8.5E-06
ENE	1.7E-05	1.0E-05	8.4E-06	6.4E-06
NE	4.1E-05	2.2E-05	1.8E-05	1.3E-05
NNE	4.4E-05	2.3E-05	1.9E-05	1.4E-05

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Individual Assessment
Feb 25, 2004 09:42 am

Facility: Maywood Interim Storage Site - Cluster No. 4a
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ   Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

7.33E-04

At This Location: 30 Meters South

Dataset Name: MISS Cluster #4
Dataset Date: Feb 25, 2004 08:58 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND

Feb 25, 2004 09:42 am

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 30 Meters South
Lifetime Fatal Cancer Risk: 8.09E-09

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	4.84E-06
BREAST	3.50E-06
R MAR	3.60E-04
LUNGS	4.55E-03
THYROID	3.34E-06
ENDOST	4.48E-03
RMNDR	2.47E-05
EFFEC	7.33E-04

Feb 25, 2004 09:42 am

SYNOPSIS
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RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	3.7E-11	3.7E-11
AC-228	Y	1.00	6.8E-10	6.8E-10
BI-211	W	1.00	3.7E-11	3.7E-11
BI-212	W	1.00	6.8E-10	6.8E-10
FR-223	D	1.00	5.1E-13	5.1E-13
PA-234M	Y	1.00	7.9E-10	7.9E-10
PA-231	Y	1.00	3.7E-11	3.7E-11
PB-211	D	1.00	3.7E-11	3.7E-11
PO-211	-	0.00	1.0E-13	1.0E-13
PO-216	W	1.00	6.8E-10	6.8E-10
PB-212	D	1.00	6.8E-10	6.8E-10
PO-212	W	1.00	4.3E-10	4.3E-10
PO-215	W	1.00	3.7E-11	3.7E-11
RA-223	W	1.00	3.7E-11	3.7E-11
RA-224	W	1.00	6.8E-10	6.8E-10
TH-232	Y	1.00	6.8E-10	6.8E-10
TH-228	Y	1.00	6.8E-10	6.8E-10
TH-231	Y	1.00	3.7E-11	3.7E-11
TH-227	Y	1.00	3.6E-11	3.6E-11
TL-208	D	1.00	2.4E-10	2.4E-10
U-235	Y	1.00	3.7E-11	3.7E-11
TL-207	D	1.00	3.7E-11	3.7E-11
U-238	Y	1.00	7.9E-10	7.9E-10
TH-234	Y	1.00	7.9E-10	7.9E-10
PA-234	Y	1.00	1.0E-12	1.0E-12
U-234	Y	1.00	8.4E-10	8.4E-10
TH-230	Y	1.00	8.4E-10	8.4E-10
RA-226	W	1.00	2.2E-10	2.2E-10
PO-218	W	1.00	2.2E-10	2.2E-10
PB-214	D	1.00	2.2E-10	2.2E-10
BI-214	W	1.00	2.2E-10	2.2E-10
PO-214	W	1.00	2.2E-10	2.2E-10
PB-210	D	1.00	2.2E-10	2.2E-10
BI-210	W	1.00	2.2E-10	2.2E-10
PO-210	W	1.00	2.2E-10	2.2E-10
RA-228	W	1.00	6.8E-10	6.8E-10

SITE INFORMATION

Temperature:	12 degrees C
Precipitation:	133 cm/y
Mixing Height:	1000 m

SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.
Area (sq m): 1850.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

30 40 50 90 110 150 210

Feb 25, 2004 09:42 am

SUMMARY
Page 1

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	4.84E-06
BREAST	3.50E-06
R MAR	3.60E-04
LUNGS	4.55E-03
THYROID	3.34E-06
ENDOST	4.48E-03
RMNDR	2.47E-05
EFFEC	7.33E-04

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	8.95E-06
INHALATION	7.23E-04
AIR IMMERSION	1.11E-09
GROUND SURFACE	1.48E-07
INTERNAL	7.32E-04
EXTERNAL	1.50E-07
TOTAL	7.32E-04

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
AC-227	1.94E-05
AC-228	4.81E-08
BI-211	3.03E-11
BI-212	1.89E-08
FR-223	1.14E-12
PA-234M	5.81E-12
PA-231	1.48E-05
PB-211	2.89E-10
PO-211	1.26E-19
PO-216	4.18E-23
PB-212	9.35E-08
PO-212	0.00E+00
PO-215	0.00E+00
RA-223	2.60E-07
RA-224	1.95E-06
TH-232	1.99E-04
TH-228	1.40E-04
TH-231	3.04E-11
TH-227	3.50E-07
TL-208	4.49E-10
U-235	3.80E-06
TL-207	2.82E-13
U-238	7.65E-05
TH-234	3.14E-08
PA-234	2.61E-12
U-234	9.20E-05
TH-230	1.73E-04
RA-226	2.09E-06
PO-218	8.81E-12
PB-214	1.96E-10
BI-214	2.52E-10
PO-214	0.00E+00
PB-210	4.53E-06
BI-210	3.48E-08
PO-210	2.13E-06
RA-228	2.13E-06
TOTAL	7.32E-04

Feb 25, 2004 09:42 am

SUMMARY
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INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	30	40	50	90	110	150	210
N	5.5E-04	3.3E-04	2.2E-04	8.4E-05	6.2E-05	3.7E-05	2.2E-05
NNW	3.6E-04	1.9E-04	1.2E-04	3.2E-05	2.1E-05	1.4E-05	1.1E-05
NW	2.0E-04	8.0E-05	5.3E-05	2.0E-05	1.6E-05	1.1E-05	9.1E-06
WNW	1.7E-04	8.9E-05	5.7E-05	1.9E-05	1.4E-05	1.1E-05	8.7E-06
W	2.2E-04	1.2E-04	8.1E-05	3.3E-05	2.5E-05	1.7E-05	1.2E-05
WSW	3.2E-04	1.8E-04	1.2E-04	3.9E-05	2.7E-05	1.8E-05	1.2E-05
SW	4.6E-04	2.4E-04	1.6E-04	5.7E-05	4.2E-05	2.6E-05	1.7E-05
SSW	6.7E-04	4.0E-04	2.5E-04	7.3E-05	4.8E-05	2.9E-05	1.8E-05
S	7.3E-04	4.7E-04	3.2E-04	1.3E-04	9.5E-05	5.5E-05	3.2E-05
SSE	7.0E-04	4.3E-04	2.8E-04	9.1E-05	6.3E-05	3.7E-05	2.3E-05
SE	5.3E-04	2.7E-04	1.7E-04	5.7E-05	4.0E-05	2.5E-05	1.6E-05
ESE	4.1E-04	2.2E-04	1.4E-04	4.1E-05	2.7E-05	1.8E-05	1.2E-05
E	3.9E-04	2.0E-04	1.4E-04	5.5E-05	4.2E-05	2.6E-05	1.7E-05
ENE	5.2E-04	2.9E-04	1.8E-04	4.7E-05	3.0E-05	1.9E-05	1.3E-05
NE	6.3E-04	3.7E-04	2.4E-04	9.0E-05	6.6E-05	3.9E-05	2.3E-05
NNE	6.8E-04	4.4E-04	2.9E-04	1.0E-04	7.1E-05	4.2E-05	2.5E-05

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Individual Assessment
Feb 25, 2004 09:42 am

Facility: Maywood Interim Storage Site - Cluster No. 5b/5c
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ   Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

4.76E-03

At This Location: 30 Meters South Southwest

Dataset Name: MISS Cluster 5bc
Dataset Date: Feb 25, 2004 09:04 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND

Feb 25, 2004 09:42 am

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 30 Meters South Southwest
Lifetime Fatal Cancer Risk: 5.34E-08

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	2.82E-05
BREAST	2.18E-05
R MAR	2.28E-03
LUNGS	2.99E-02
THYROID	2.09E-05
ENDOST	2.84E-02
RMNDR	1.21E-04
EFFEC	4.76E-03

Feb 25, 2004 09:42 am

SYNOPSIS
Page 2

RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	Source #2 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	5.0E-11	1.4E-10	1.9E-10
AC-228	Y	1.00	1.5E-09	4.3E-09	5.8E-09
BI-211	W	1.00	5.0E-11	1.4E-10	1.9E-10
BI-212	W	1.00	1.5E-09	4.3E-09	5.8E-09
FR-223	D	1.00	6.8E-13	1.9E-12	2.6E-12
PA-234M	Y	1.00	1.1E-09	2.9E-09	4.0E-09
PA-231	Y	1.00	5.0E-11	1.4E-10	1.9E-10
PB-211	D	1.00	5.0E-11	1.4E-10	1.9E-10
PO-211	-	0.00	1.4E-13	3.7E-13	5.1E-13
PO-216	W	1.00	1.5E-09	4.3E-09	5.8E-09
PB-212	D	1.00	1.5E-09	4.3E-09	5.8E-09
PO-212	W	1.00	9.5E-10	2.8E-09	3.7E-09
PO-215	W	1.00	5.0E-11	1.4E-10	1.9E-10
RA-223	W	1.00	5.0E-11	1.4E-10	1.9E-10
RA-224	W	1.00	1.5E-09	4.3E-09	5.8E-09
TH-232	Y	1.00	1.5E-09	4.3E-09	5.8E-09
TH-228	Y	1.00	1.5E-09	4.3E-09	5.8E-09
TH-231	Y	1.00	5.0E-11	1.4E-10	1.9E-10
TH-227	Y	1.00	4.9E-11	1.3E-10	1.8E-10
TL-208	D	1.00	5.3E-10	1.6E-09	2.1E-09
U-235	Y	1.00	5.0E-11	1.4E-10	1.9E-10
TL-207	D	1.00	4.9E-11	1.4E-10	1.9E-10
U-238	Y	1.00	1.1E-09	2.9E-09	4.0E-09
TH-234	Y	1.00	1.1E-09	2.9E-09	4.0E-09
PA-234	Y	1.00	1.1E-09	2.9E-09	4.0E-09
U-234	Y	1.00	1.1E-09	3.1E-09	4.2E-09
TH-230	Y	1.00	1.1E-09	3.1E-09	4.2E-09
RA-226	W	1.00	3.5E-10	6.9E-10	1.0E-09
PO-218	W	1.00	3.5E-10	6.9E-10	1.0E-09
PB-214	D	1.00	3.5E-10	6.9E-10	1.0E-09
BI-214	W	1.00	3.5E-10	6.9E-10	1.0E-09
PO-214	W	1.00	3.5E-10	6.9E-10	1.0E-09
PB-210	D	1.00	3.5E-10	6.9E-10	1.0E-09
BI-210	W	1.00	3.5E-10	6.9E-10	1.0E-09
PO-210	W	1.00	3.5E-10	6.9E-10	1.0E-09
RA-228	W	1.00	1.5E-09	4.3E-09	5.8E-09

SITE INFORMATION

Temperature:	12 degrees C
Precipitation:	133 cm/y
Mixing Height:	1000 m

SOURCE INFORMATION

Source Number:	1	2
Source Height (m):	0.	0.
Area (sq m):	3323.	1662.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

30 40 60 110 150 170 240 320 330 360

Feb 25, 2004 09:42 am

SUMMARY
Page 1

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	2.82E-05
BREAST	2.18E-05
R MAR	2.28E-03
LUNGS	2.99E-02
THYROID	2.09E-05
ENDOST	2.84E-02
RMNDR	1.21E-04
EFFEC	4.76E-03

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	3.71E-05
INHALATION	4.72E-03
AIR IMMERSION	1.24E-08
GROUND SURFACE	7.50E-07
INTERNAL	4.76E-03
EXTERNAL	7.62E-07
TOTAL	4.76E-03

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
AC-227	9.52E-05
AC-228	4.01E-07
BI-211	1.50E-10
BI-212	1.58E-07
FR-223	5.58E-12
PA-234M	2.87E-11
PA-231	7.25E-05
PB-211	1.42E-09
PO-211	7.70E-19
PO-216	8.90E-22
PB-212	7.80E-07
PO-212	0.00E+00
PO-215	0.00E+00
RA-223	1.26E-06
RA-224	1.62E-05
TH-232	1.66E-03
TH-228	1.17E-03
TH-231	1.50E-10
TH-227	1.72E-06
TL-208	3.75E-09
U-235	1.86E-05
TL-207	1.38E-12
U-238	3.74E-04
TH-234	1.45E-07
PA-234	9.82E-09
U-234	4.49E-04
TH-230	8.46E-04
RA-226	9.17E-06
PO-218	4.10E-11
PB-214	9.12E-10
BI-214	1.17E-09
PO-214	0.00E+00
PB-210	1.88E-05
BI-210	1.61E-07
PO-210	9.26E-06
RA-228	1.63E-05
TOTAL	4.76E-03

Feb 25, 2004 09:42 am

SUMMARY
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INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	30	40	60	110	150	170	240
N	2.0E-03	9.6E-04	6.4E-04	1.9E-04	2.3E-04	1.8E-04	1.1E-04
NNW	1.6E-03	8.0E-04	3.3E-04	1.0E-04	7.7E-05	6.5E-05	4.5E-05
NW	1.6E-03	7.8E-04	2.5E-04	7.9E-05	5.7E-05	5.0E-05	3.7E-05
WNW	1.9E-03	1.1E-03	3.5E-04	1.3E-04	5.2E-05	4.6E-05	3.5E-05
W	2.7E-03	1.4E-03	4.9E-04	1.6E-04	9.4E-05	7.8E-05	5.2E-05
WSW	3.9E-03	2.3E-03	7.0E-04	2.4E-04	1.0E-04	8.4E-05	5.5E-05
SW	4.7E-03	2.8E-03	1.0E-03	2.9E-04	1.5E-04	1.2E-04	7.6E-05
SSW	4.8E-03	2.8E-03	1.5E-03	5.4E-04	1.8E-04	1.4E-04	8.5E-05
S	3.9E-03	2.1E-03	1.3E-03	4.4E-04	3.5E-04	2.8E-04	1.5E-04
SSE	3.2E-03	1.8E-03	9.3E-04	2.9E-04	2.3E-04	1.9E-04	1.1E-04
SE	3.0E-03	1.5E-03	6.5E-04	1.9E-04	1.5E-04	1.2E-04	7.3E-05
ESE	3.4E-03	1.8E-03	6.6E-04	2.4E-04	1.0E-04	8.4E-05	5.5E-05
E	4.0E-03	2.2E-03	7.2E-04	2.0E-04	1.5E-04	1.3E-04	7.6E-05
ENE	4.5E-03	2.7E-03	1.1E-03	3.7E-04	1.1E-04	9.1E-05	5.9E-05
NE	4.0E-03	2.3E-03	1.3E-03	4.4E-04	2.4E-04	2.0E-04	1.1E-04
NNE	2.9E-03	1.6E-03	1.2E-03	4.1E-04	2.6E-04	2.1E-04	1.2E-04

	Distance (m)		
Direction	320	330	360
N	7.1E-05	6.8E-05	6.1E-05
NNW	3.6E-05	3.5E-05	3.4E-05
NW	3.2E-05	3.1E-05	3.0E-05
WNW	3.0E-05	3.0E-05	2.9E-05
W	4.0E-05	3.9E-05	3.7E-05
WSW	4.2E-05	4.1E-05	3.8E-05
SW	5.4E-05	5.2E-05	4.7E-05
SSW	5.9E-05	5.7E-05	5.2E-05
S	9.8E-05	9.3E-05	8.3E-05
SSE	7.1E-05	6.9E-05	6.2E-05
SE	5.2E-05	5.1E-05	4.6E-05
ESE	4.2E-05	4.1E-05	3.8E-05
E	5.4E-05	5.2E-05	4.8E-05
ENE	4.4E-05	4.3E-05	4.0E-05
NE	7.4E-05	7.1E-05	6.4E-05
NNE	7.8E-05	7.4E-05	6.6E-05

```
                         C A P 8 8 - P C

                          Version 2.00

              Clean Air Act Assessment Package - 1988


                    S Y N O P S I S   R E P O R T

                  Non-Radon Individual Assessment
                       Feb  25, 2004  02:17 pm


   Facility:  Maywood Interim Storage Site - Cluster No. 6c
    Address:  100 W. Hunter Avenue
       City:  Maywood
      State:  NJ           Zip:  07607-


   Source Category:  Particulate Emission w radon daughters
       Source Type:  Area
     Emission Year:  2003


   Comments:  Shaw E&I for
              U.S. Army Corps of Engineers


                     Effective Dose Equivalent
                            (mrem/year)
                     _________________________

                             5.54E-03
                     _________________________


  At This Location:      30 Meters South

      Dataset Name:  MISS Cluster #6c
      Dataset Date:  Feb  25, 2004  02:14 pm
         Wind File:  C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND
```

Feb 25, 2004 02:17 pm

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 30 Meters South
Lifetime Fatal Cancer Risk: 6.20E-08

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	3.17E-05
BREAST	2.38E-05
R MAR	2.66E-03
LUNGS	3.48E-02
THYROID	2.28E-05
ENDOST	3.31E-02
RMNDR	1.31E-04
EFFEC	5.54E-03

Feb 25, 2004 02:17 pm

SYNOPSIS
Page 2

RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	2.2E-10	2.2E-10
AC-228	Y	1.00	6.2E-09	6.2E-09
BI-211	W	1.00	2.2E-10	2.2E-10
BI-212	W	1.00	6.2E-09	6.2E-09
FR-223	D	1.00	3.0E-12	3.0E-12
PA-234M	Y	1.00	4.7E-09	4.7E-09
PA-231	Y	1.00	2.2E-10	2.2E-10
PB-211	D	1.00	2.2E-10	2.2E-10
PO-211	-	0.00	6.0E-13	6.0E-13
PO-216	W	1.00	6.2E-09	6.2E-09
PB-212	D	1.00	6.2E-09	6.2E-09
PO-212	W	1.00	4.0E-09	4.0E-09
PO-215	W	1.00	2.2E-10	2.2E-10
RA-223	W	1.00	2.2E-10	2.2E-10
RA-224	W	1.00	6.2E-09	6.2E-09
TH-232	Y	1.00	6.2E-09	6.2E-09
TH-228	Y	1.00	6.2E-09	6.2E-09
TH-231	Y	1.00	2.2E-10	2.2E-10
TH-227	Y	1.00	2.2E-10	2.2E-10
TL-208	D	1.00	2.2E-09	2.2E-09
U-235	Y	1.00	2.2E-10	2.2E-10
TL-207	D	1.00	2.2E-10	2.2E-10
U-238	Y	1.00	4.7E-09	4.7E-09
TH-234	Y	1.00	4.7E-09	4.7E-09
PA-234	Y	1.00	6.1E-12	6.1E-12
U-234	Y	1.00	5.0E-09	5.0E-09
TH-230	Y	1.00	5.0E-09	5.0E-09
RA-226	W	1.00	9.8E-10	9.8E-10
PO-218	W	1.00	9.8E-10	9.8E-10
PB-214	D	1.00	9.8E-10	9.8E-10
BI-214	W	1.00	9.8E-10	9.8E-10
PO-214	W	1.00	9.8E-10	9.8E-10
PB-210	D	1.00	9.8E-10	9.8E-10
BI-210	W	1.00	9.8E-10	9.8E-10
PO-210	W	1.00	9.8E-10	9.8E-10
RA-228	W	1.00	6.2E-09	6.2E-09

SITE INFORMATION

Temperature: 12 degrees C
Precipitation: 133 cm/y
Mixing Height: 1000 m

Feb 25, 2004 02:17 pm

SYNOPSIS
Page 3

SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.
Area (sq m): 2978.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

30 60 70 120 200 210 300 320 360 420

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	3.17E-05
BREAST	2.38E-05
R MAR	2.66E-03
LUNGS	3.48E-02
THYROID	2.28E-05
ENDOST	3.31E-02
RMNDR	1.31E-04
EFFEC	5.54E-03

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	3.63E-05
INHALATION	5.50E-03
AIR IMMERSION	9.40E-09
GROUND SURFACE	8.87E-07
INTERNAL	5.54E-03
EXTERNAL	8.96E-07
TOTAL	5.54E-03

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
AC-227	1.17E-04
AC-228	4.51E-07
BI-211	1.85E-10
BI-212	1.77E-07
FR-223	6.89E-12
PA-234M	3.56E-11
PA-231	8.90E-05
PB-211	1.75E-09
PO-211	1.15E-18
PO-216	1.54E-21
PB-212	8.76E-07
PO-212	0.00E+00
PO-215	0.00E+00
RA-223	1.55E-06
RA-224	1.82E-05
TH-232	1.87E-03
TH-228	1.31E-03
TH-231	1.84E-10
TH-227	2.11E-06
TL-208	4.22E-09
U-235	2.29E-05
TL-207	1.70E-12
U-238	4.60E-04
TH-234	1.74E-07
PA-234	1.57E-11
U-234	5.52E-04
TH-230	1.04E-03
RA-226	8.77E-06
PO-218	4.04E-11
PB-214	8.96E-10
BI-214	1.15E-09
PO-214	0.00E+00
PB-210	1.75E-05
BI-210	1.59E-07
PO-210	8.82E-06
RA-228	1.75E-05
TOTAL	5.54E-03

Feb 25, 2004 02:17 pm

SUMMARY
Page 5

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	30	60	70	120	200	210	300
N	4.4E-03	1.2E-03	8.8E-04	3.6E-04	1.5E-04	1.4E-04	8.1E-05
NNW	3.2E-03	6.2E-04	4.4E-04	1.3E-04	5.5E-05	5.2E-05	3.7E-05
NW	2.1E-03	2.7E-04	2.0E-04	8.1E-05	4.3E-05	4.1E-05	3.1E-05
WNW	1.5E-03	2.9E-04	2.1E-04	7.5E-05	3.9E-05	3.8E-05	3.0E-05
W	1.9E-03	4.1E-04	3.2E-04	1.4E-04	6.6E-05	6.2E-05	4.2E-05
WSW	2.6E-03	6.1E-04	4.5E-04	1.6E-04	7.1E-05	6.6E-05	4.4E-05
SW	4.2E-03	8.3E-04	6.2E-04	2.4E-04	1.0E-04	9.6E-05	5.9E-05
SSW	5.2E-03	1.3E-03	9.6E-04	3.0E-04	1.2E-04	1.1E-04	6.6E-05
S	5.5E-03	1.6E-03	1.3E-03	5.5E-04	2.3E-04	2.1E-04	1.1E-04
SSE	5.2E-03	1.5E-03	1.1E-03	3.8E-04	1.5E-04	1.4E-04	8.1E-05
SE	4.8E-03	9.1E-04	6.7E-04	2.4E-04	1.0E-04	9.3E-05	5.7E-05
ESE	3.5E-03	7.2E-04	5.2E-04	1.6E-04	7.0E-05	6.6E-05	4.4E-05
E	3.6E-03	7.0E-04	5.4E-04	2.3E-04	1.0E-04	9.7E-05	5.9E-05
ENE	4.3E-03	9.3E-04	6.6E-04	1.9E-04	7.6E-05	7.2E-05	4.7E-05
NE	5.1E-03	1.3E-03	9.7E-04	3.9E-04	1.6E-04	1.5E-04	8.5E-05
NNE	4.8E-03	1.5E-03	1.1E-03	4.2E-04	1.7E-04	1.6E-04	8.9E-05

	Distance (m)		
Direction	320	360	420
N	7.4E-05	6.3E-05	5.2E-05
NNW	3.5E-05	3.2E-05	2.9E-05
NW	3.0E-05	2.8E-05	2.6E-05
WNW	2.9E-05	2.7E-05	2.6E-05
W	4.0E-05	3.6E-05	3.2E-05
WSW	4.1E-05	3.7E-05	3.3E-05
SW	5.5E-05	4.8E-05	4.1E-05
SSW	6.0E-05	5.2E-05	4.4E-05
S	1.0E-04	8.7E-05	7.0E-05
SSE	7.4E-05	6.3E-05	5.2E-05
SE	5.3E-05	4.7E-05	4.0E-05
ESE	4.1E-05	3.7E-05	3.3E-05
E	5.5E-05	4.8E-05	4.1E-05
ENE	4.4E-05	3.9E-05	3.4E-05
NE	7.7E-05	6.6E-05	5.4E-05
NNE	8.1E-05	6.9E-05	5.6E-05

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Individual Assessment
Feb 25, 2004 09:52 am

Facility: Maywood Interim Storage Site - Cluster No. 9a
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

3.35E-04

At This Location: 40 Meters South

Dataset Name: MISS Cluster #9a
Dataset Date: Feb 25, 2004 09:15 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND

Feb 25, 2004 09:52 am

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 40 Meters South
Lifetime Fatal Cancer Risk: 3.75E-09

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	1.97E-06
BREAST	1.67E-06
R MAR	1.67E-04
LUNGS	2.08E-03
THYROID	1.61E-06
ENDOST	2.08E-03
RMNDR	8.47E-06
EFFEC	3.35E-04

Feb 25, 2004 09:52 am

SYNOPSIS
Page 2

RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	1.4E-11	1.4E-11
AC-228	Y	1.00	6.7E-10	6.7E-10
BI-211	W	1.00	1.4E-11	1.4E-11
BI-212	W	1.00	6.7E-10	6.7E-10
FR-223	D	1.00	1.9E-13	1.9E-13
PA-234M	Y	1.00	2.9E-10	2.9E-10
PA-231	Y	1.00	1.4E-11	1.4E-11
PB-211	D	1.00	1.4E-11	1.4E-11
PO-211	-	0.00	3.7E-14	3.7E-14
PO-216	W	1.00	6.7E-10	6.7E-10
PB-212	D	1.00	6.7E-10	6.7E-10
PO-212	W	1.00	4.3E-10	4.3E-10
PO-215	W	1.00	1.4E-11	1.4E-11
RA-223	W	1.00	1.4E-11	1.4E-11
RA-224	W	1.00	6.7E-10	6.7E-10
TH-232	Y	1.00	6.7E-10	6.7E-10
TH-228	Y	1.00	6.7E-10	6.7E-10
TH-231	Y	1.00	1.4E-11	1.4E-11
TH-227	Y	1.00	1.3E-11	1.3E-11
TL-208	D	1.00	2.4E-10	2.4E-10
U-235	Y	1.00	1.4E-11	1.4E-11
TL-207	D	1.00	1.3E-11	1.3E-11
U-238	Y	1.00	2.9E-10	2.9E-10
TH-234	Y	1.00	2.9E-10	2.9E-10
PA-234	Y	1.00	3.8E-13	3.8E-13
U-234	Y	1.00	3.1E-10	3.1E-10
TH-230	Y	1.00	4.3E-10	4.3E-10
RA-226	W	1.00	1.4E-10	1.4E-10
PO-218	W	1.00	1.4E-10	1.4E-10
PB-214	D	1.00	1.4E-10	1.4E-10
BI-214	W	1.00	1.4E-10	1.4E-10
PO-214	W	1.00	1.4E-10	1.4E-10
PB-210	D	1.00	1.4E-10	1.4E-10
BI-210	W	1.00	1.4E-10	1.4E-10
PO-210	W	1.00	1.4E-10	1.4E-10
RA-228	W	1.00	6.7E-10	6.7E-10

SITE INFORMATION

Temperature: 12 degrees C
Precipitation: 133 cm/y
Mixing Height: 1000 m

SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.
Area (sq m): 1163.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

40 60 90 100 110 130 170 190 210 230

Feb 25, 2004 09:52 am

SUMMARY
Page 1

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	1.97E-06
BREAST	1.67E-06
R MAR	1.67E-04
LUNGS	2.08E-03
THYROID	1.61E-06
ENDOST	2.08E-03
RMNDR	8.47E-06
EFFEC	3.35E-04

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	2.50E-06
INHALATION	3.33E-04
AIR IMMERSION	6.64E-10
GROUND SURFACE	4.43E-08
INTERNAL	3.35E-04
EXTERNAL	4.50E-08
TOTAL	3.35E-04

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
AC-227	4.68E-06
AC-228	3.14E-08
BI-211	6.98E-12
BI-212	1.23E-08
FR-223	2.73E-13
PA-234M	1.29E-12
PA-231	3.56E-06
PB-211	6.96E-11
PO-211	2.41E-21
PO-216	4.29E-27
PB-212	6.11E-08
PO-212	0.00E+00
PO-215	0.00E+00
RA-223	6.21E-08
RA-224	1.27E-06
TH-232	1.30E-04
TH-228	9.13E-05
TH-231	7.36E-12
TH-227	8.44E-08
TL-208	2.83E-10
U-235	9.15E-07
TL-207	6.61E-14
U-238	1.84E-05
TH-234	7.04E-09
PA-234	6.26E-13
U-234	2.21E-05
TH-230	5.78E-05
RA-226	8.45E-07
PO-218	3.69E-12
PB-214	8.47E-11
BI-214	1.09E-10
PO-214	0.00E+00
PB-210	1.72E-06
BI-210	1.51E-08
PO-210	8.52E-07
RA-228	1.25E-06
TOTAL	3.35E-04

Feb 25, 2004 09:52 am

SUMMARY
Page 5

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	40	60	90	100	110	130	170
N	2.3E-04	1.2E-04	5.9E-05	4.8E-05	4.0E-05	3.0E-05	1.8E-05
NNW	1.2E-04	4.6E-05	1.6E-05	1.4E-05	1.2E-05	8.8E-06	5.9E-06
NW	5.1E-05	2.3E-05	1.1E-05	9.1E-06	7.9E-06	6.1E-06	4.3E-06
WNW	5.5E-05	2.3E-05	9.4E-06	7.9E-06	6.9E-06	5.4E-06	3.9E-06
W	8.1E-05	4.0E-05	2.1E-05	1.7E-05	1.5E-05	1.1E-05	7.3E-06
WSW	1.2E-04	5.2E-05	2.3E-05	1.9E-05	1.6E-05	1.2E-05	7.8E-06
SW	1.6E-04	7.8E-05	3.8E-05	3.1E-05	2.6E-05	1.9E-05	1.2E-05
SSW	2.6E-04	1.1E-04	4.4E-05	3.6E-05	3.0E-05	2.2E-05	1.4E-05
S	3.4E-04	1.7E-04	9.3E-05	7.5E-05	6.3E-05	4.6E-05	2.8E-05
SSE	2.9E-04	1.3E-04	5.9E-05	4.9E-05	4.1E-05	3.0E-05	1.8E-05
SE	1.8E-04	7.9E-05	3.6E-05	2.9E-05	2.5E-05	1.8E-05	1.2E-05
ESE	1.4E-04	5.7E-05	2.3E-05	1.9E-05	1.6E-05	1.2E-05	7.8E-06
E	1.4E-04	7.1E-05	3.8E-05	3.1E-05	2.6E-05	1.9E-05	1.2E-05
ENE	1.8E-04	7.1E-05	2.6E-05	2.1E-05	1.8E-05	1.3E-05	8.6E-06
NE	2.6E-04	1.3E-04	6.3E-05	5.1E-05	4.3E-05	3.2E-05	1.9E-05
NNE	3.0E-04	1.4E-04	6.8E-05	5.5E-05	4.6E-05	3.4E-05	2.1E-05

	Distance (m)		
Direction	190	210	230
N	1.5E-05	1.3E-05	1.1E-05
NNW	5.1E-06	4.4E-06	4.0E-06
NW	3.8E-06	3.4E-06	3.1E-06
WNW	3.4E-06	3.1E-06	2.8E-06
W	6.2E-06	5.4E-06	4.8E-06
WSW	6.6E-06	5.7E-06	5.1E-06
SW	1.0E-05	8.6E-06	7.4E-06
SSW	1.2E-05	9.8E-06	8.5E-06
S	2.3E-05	1.9E-05	1.6E-05
SSE	1.5E-05	1.3E-05	1.1E-05
SE	9.6E-06	8.2E-06	7.2E-06
ESE	6.6E-06	5.7E-06	5.1E-06
E	1.0E-05	8.6E-06	7.5E-06
ENE	7.2E-06	6.2E-06	5.5E-06
NE	1.6E-05	1.3E-05	1.2E-05
NNE	1.7E-05	1.4E-05	1.2E-05

11. CAP88-PC OUTPUT (Population)

```
                         C A P 8 8 - P C

                          Version 2.00


              Clean Air Act Assessment Package - 1988


                    S Y N O P S I S   R E P O R T

                  Non-Radon Population Assessment
                       Feb  25, 2004  10:58 am


   Facility:  Maywood Interim Storage Site - MISS Soil Load 1-5
    Address:  100 W. Hunter Avenue
       City:  Maywood
      State:  NJ          Zip:  07607-


   Source Category:  Particulate Emission w radon daughters
       Source Type:  Area
     Emission Year:  2003


   Comments:  Shaw E&I for
              U.S. Army Corps of Engineers


               Effective Dose Equivalent
                      (mrem/year)
               _________________________

                       2.58E-04
               _________________________


  At This Location:    250 Meters South

      Dataset Name:  MISSP LO 1-5
      Dataset Date:  Feb  25, 2004  10:52 am
         Wind File:  C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND
   Population File:  C:\DATA\CAP88PC2\POPFILES\MAYWOOD.POP
```

Feb 25, 2004 10:58 am

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 250 Meters South
Lifetime Fatal Cancer Risk: 2.89E-09

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	1.36E-06	5.78E-06
BREAST	9.62E-07	4.33E-06
R MAR	1.23E-04	4.86E-04
LUNGS	1.63E-03	6.37E-03
THYROID	9.10E-07	3.99E-06
ENDOST	1.54E-03	6.05E-03
RMNDR	5.24E-06	2.34E-05
EFFEC	2.58E-04	1.01E-03

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	0	0	0.00E+00	0.00E+00
LESS THAN 1.0E-06	17937859	17937859	1.60E-07	1.60E-07

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SYNOPSIS
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RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	Source #2 Ci/y	Source #3 Ci/y	Source #4 Ci/y	Source #5 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
AC-228	Y	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
BI-211	W	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
BI-212	W	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
FR-223	D	1.00	3.5E-12	8.9E-13	4.3E-13	9.8E-13	6.1E-13	6.5E-12
PA-234M	Y	1.00	5.5E-09	1.4E-09	6.7E-10	1.5E-09	9.4E-10	1.0E-08
PA-231	Y	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
PB-211	D	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
PO-211	-	0.00	7.0E-13	1.8E-13	8.5E-14	1.9E-13	1.2E-13	1.3E-12
PO-216	W	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
PB-212	D	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
PO-212	W	1.00	2.7E-09	9.2E-10	6.9E-10	1.8E-09	1.1E-09	7.2E-09
PO-215	W	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
RA-223	W	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
RA-224	W	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
TH-232	Y	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
TH-228	Y	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08
TH-231	Y	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
TH-227	Y	1.00	2.5E-10	6.4E-11	3.1E-11	7.0E-11	4.3E-11	4.6E-10
TL-208	D	1.00	1.5E-09	5.1E-10	3.9E-10	1.0E-09	6.1E-10	4.0E-09
U-235	Y	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
TL-207	D	1.00	2.6E-10	6.5E-11	3.1E-11	7.1E-11	4.4E-11	4.7E-10
U-238	Y	1.00	5.5E-09	1.4E-09	6.7E-10	1.5E-09	9.4E-10	1.0E-08
TH-234	Y	1.00	5.5E-09	1.4E-09	6.7E-10	1.5E-09	9.4E-10	1.0E-08
PA-234	Y	1.00	7.1E-12	1.8E-12	8.7E-13	2.0E-12	1.2E-12	1.3E-11
U-234	Y	1.00	5.9E-09	1.5E-09	7.1E-10	1.6E-09	1.0E-09	1.1E-08
TH-230	Y	1.00	5.9E-09	1.5E-09	7.1E-10	1.6E-09	1.0E-09	1.1E-08
RA-226	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
PO-218	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
PB-214	D	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
BI-214	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
PO-214	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
PB-210	D	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
BI-210	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
PO-210	W	1.00	1.4E-09	4.4E-10	2.7E-10	4.3E-10	4.6E-10	3.0E-09
RA-228	W	1.00	4.1E-09	1.4E-09	1.1E-09	2.8E-09	1.7E-09	1.1E-08

SITE INFORMATION

Temperature: 12 degrees C
Precipitation: 133 cm/y
Mixing Height: 1000 m

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SYNOPSIS
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SOURCE INFORMATION

Source Number:	1	2	3	4	5
Source Height (m):	0.	0.	0.	0.	0.
Area (sq m):	164.	164.	164.	164.	164.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density:	4.25E-02
Milk Cattle Density:	3.29E-02
Land Fraction Cultivated for Vegetable Crops:	1.82E-02

POPULATION DATA

	Distance (m)						
Direction	250	750	1500	2500	3500	4500	7500
N	67	201	802	1337	1872	2407	20057
NNW	67	201	802	1337	1872	2407	20057
NW	67	201	802	1337	1872	2407	20057
WNW	67	201	802	1337	1872	2407	18015
W	67	201	802	1337	1872	2407	15973
WSW	67	201	802	1337	1872	2407	15973
SW	67	201	802	1337	1872	2407	16228
SSW	67	201	802	1337	1872	2407	20057
S	67	201	802	1337	1872	2407	20057
SSE	67	201	802	1337	1872	2407	25914
SE	67	201	802	1337	1872	2407	20057
ESE	67	201	802	1337	1872	2407	20057
E	67	201	802	1337	1872	2407	20057
ENE	67	201	802	1337	1872	2407	20057
NE	67	201	802	1337	1872	2407	20057
NNE	67	201	802	1337	1872	2407	20057

	Distance (m)						
Direction	15000	25000	35000	45000	55000	65000	75000
N	74537	60196	70814	29909	28375	32864	31652
NNW	80228	100151	38356	25800	31534	37267	40828
NW	74537	78697	106487	126587	47978	25581	31795
WNW	56704	65308	91431	43632	20950	24760	25044
W	64114	84087	47693	59939	47949	40968	30281
WSW	112233	167453	56447	59420	70303	592514	29756
SW	120063	227594	237745	147380	112163	79165	127971
SSW	142152	249194	283497	211897	153403	180380	385790
S	236424	356896	290094	27391	48812	100953	91523
SSE	537391	974408	1119592	38176	0	0	0
SE	813384	678682	772130	363126	35070	0	0
ESE	837313	483781	278841	306070	279511	103569	51542
E	566935	290745	57469	146563	75595	89339	103084
ENE	84525	76576	79890	60083	55076	65090	75104
NE	65381	57432	102568	129885	161178	126989	143397
NNE	65457	30109	80543	125688	76315	38109	40796

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SUMMARY
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ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	1.36E-06	5.78E-06
BREAST	9.62E-07	4.33E-06
R MAR	1.23E-04	4.86E-04
LUNGS	1.63E-03	6.37E-03
THYROID	9.10E-07	3.99E-06
ENDOST	1.54E-03	6.05E-03
RMNDR	5.24E-06	2.34E-05
EFFEC	2.58E-04	1.01E-03

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)	Collective Population (person-rem/y)
INGESTION	6.61E-08	3.02E-06
INHALATION	2.58E-04	1.01E-03
AIR IMMERSION	3.44E-10	6.69E-10
GROUND SURFACE	4.96E-08	3.30E-07
INTERNAL	2.58E-04	1.01E-03
EXTERNAL	5.00E-08	3.30E-07
TOTAL	2.58E-04	1.01E-03

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclides	Selected Individual (mrem/y)	Collective Population (person-rem/y)
AC-227	5.98E-06	2.35E-05
AC-228	1.95E-08	6.00E-08
BI-211	4.10E-12	2.57E-12
BI-212	7.44E-09	1.27E-08
FR-223	3.24E-13	3.51E-13
PA-234M	4.90E-13	3.08E-13
PA-231	4.53E-06	1.78E-05
PB-211	8.51E-11	1.16E-10
PO-211	0.00E+00	0.00E+00
PO-216	0.00E+00	0.00E+00
PB-212	3.79E-08	1.28E-07
PO-212	0.00E+00	0.00E+00
PO-215	0.00E+00	0.00E+00
RA-223	7.80E-08	3.06E-07
RA-224	7.90E-07	3.03E-06
TH-232	8.10E-05	3.17E-04
TH-228	5.69E-05	2.22E-04
TH-231	9.49E-12	3.54E-11
TH-227	1.09E-07	4.23E-07
TL-208	9.89E-11	6.30E-11
U-235	1.17E-06	4.65E-06
TL-207	5.82E-14	3.90E-14
U-238	2.34E-05	9.20E-05
TH-234	7.30E-09	3.09E-08
PA-234	8.16E-13	3.00E-12
U-234	2.82E-05	1.11E-04
TH-230	5.37E-05	2.10E-04
RA-226	5.39E-07	2.28E-06
PO-218	1.60E-12	1.02E-12
PB-214	6.10E-11	7.28E-11
BI-214	7.64E-11	8.01E-11
PO-214	0.00E+00	0.00E+00
PB-210	8.39E-07	3.92E-06
BI-210	1.16E-08	4.49E-08
PO-210	5.21E-07	2.22E-06
RA-228	5.55E-07	2.47E-06
TOTAL	2.58E-04	1.01E-03

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SUMMARY
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COLLECTIVE EFFECTIVE DOSE EQUIVALENT (person rem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	250	750	1500	2500	3500	4500	7500
N	1.1E-05	3.9E-06	4.4E-06	3.0E-06	2.4E-06	2.1E-06	7.6E-06
NNW	2.9E-06	1.0E-06	1.2E-06	8.1E-07	6.5E-07	5.6E-07	2.0E-06
NW	1.8E-06	6.6E-07	7.5E-07	5.2E-07	4.1E-07	3.6E-07	1.3E-06
WNW	1.6E-06	5.7E-07	6.5E-07	4.5E-07	3.6E-07	3.1E-07	1.0E-06
W	3.8E-06	1.4E-06	1.6E-06	1.1E-06	9.0E-07	7.7E-07	2.2E-06
WSW	4.2E-06	1.5E-06	1.7E-06	1.2E-06	9.5E-07	8.1E-07	2.3E-06
SW	7.0E-06	2.5E-06	2.8E-06	1.9E-06	1.5E-06	1.3E-06	3.8E-06
SSW	8.2E-06	2.9E-06	3.3E-06	2.3E-06	1.8E-06	1.6E-06	5.7E-06
S	1.7E-05	6.1E-06	6.8E-06	4.6E-06	3.7E-06	3.2E-06	1.1E-05
SSE	1.1E-05	3.9E-06	4.4E-06	3.0E-06	2.4E-06	2.1E-06	9.9E-06
SE	6.6E-06	2.4E-06	2.8E-06	1.9E-06	1.5E-06	1.3E-06	5.0E-06
ESE	4.2E-06	1.5E-06	1.7E-06	1.2E-06	9.7E-07	8.4E-07	3.1E-06
E	7.0E-06	2.5E-06	2.9E-06	2.0E-06	1.6E-06	1.4E-06	5.1E-06
ENE	4.7E-06	1.7E-06	1.9E-06	1.3E-06	1.1E-06	9.3E-07	3.5E-06
NE	1.2E-05	4.1E-06	4.6E-06	3.2E-06	2.5E-06	2.2E-06	7.9E-06
NNE	1.3E-05	4.4E-06	4.9E-06	3.3E-06	2.7E-06	2.3E-06	8.2E-06

	Distance (m)						
Direction	15000	25000	35000	45000	55000	65000	75000
N	9.8E-06	3.1E-06	2.2E-06	6.0E-07	3.8E-07	2.6E-07	1.9E-07
NNW	2.8E-06	1.4E-06	3.2E-07	1.4E-07	1.2E-07	8.4E-08	7.2E-08
NW	1.6E-06	6.9E-07	5.6E-07	4.4E-07	1.1E-07	3.8E-08	3.8E-08
WNW	1.1E-06	5.0E-07	4.2E-07	1.3E-07	4.3E-08	3.5E-08	2.8E-08
W	3.0E-06	1.6E-06	5.3E-07	4.3E-07	2.3E-07	1.3E-07	7.5E-08
WSW	5.5E-06	3.2E-06	6.2E-07	4.2E-07	3.3E-07	1.7E-06	6.6E-08
SW	9.4E-06	6.7E-06	4.1E-06	1.6E-06	8.0E-07	3.3E-07	4.0E-07
SSW	1.4E-05	9.3E-06	6.2E-06	3.0E-06	1.4E-06	9.8E-07	1.6E-06
S	4.5E-05	2.5E-05	1.2E-05	7.3E-07	8.4E-07	9.3E-07	6.4E-07
SSE	7.1E-05	5.0E-05	3.5E-05	7.7E-07	0.0E+00	0.0E+00	0.0E+00
SE	7.1E-05	2.5E-05	1.7E-05	5.4E-06	3.6E-07	0.0E+00	0.0E+00
ESE	4.6E-05	1.1E-05	4.0E-06	2.9E-06	1.8E-06	4.3E-07	1.7E-07
E	5.2E-05	1.1E-05	1.3E-06	2.2E-06	7.9E-07	5.6E-07	5.0E-07
ENE	5.2E-06	2.0E-06	1.3E-06	6.3E-07	4.0E-07	2.9E-07	2.7E-07
NE	8.9E-06	3.0E-06	3.2E-06	2.6E-06	2.1E-06	9.2E-07	7.9E-07
NNE	9.1E-06	1.6E-06	2.4E-06	2.5E-06	9.6E-07	2.6E-07	2.1E-07

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Population Assessment
Feb 25, 2004 10:58 am

Facility: Maywood Interim Storage Site - MISS Soil Load 6-10
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

1.05E-03

At This Location: 250 Meters South

Dataset Name: MISSP LO 2
Dataset Date: Feb 25, 2004 10:52 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND
Population File: C:\DATA\CAP88PC2\POPFILES\MAYWOOD.POP

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SYNOPSIS
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MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 250 Meters South
Lifetime Fatal Cancer Risk: 1.19E-08

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	5.26E-06	2.23E-05
BREAST	3.88E-06	1.72E-05
R MAR	4.99E-04	1.97E-03
LUNGS	6.67E-03	2.61E-02
THYROID	3.69E-06	1.60E-05
ENDOST	6.21E-03	2.44E-02
RMNDR	1.86E-05	8.21E-05
EFFEC	1.05E-03	4.13E-03

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	0	0	0.00E+00	0.00E+00
LESS THAN 1.0E-06	17937859	17937859	6.57E-07	6.57E-07

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SYNOPSIS
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RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	Source #2 Ci/y	Source #3 Ci/y	Source #4 Ci/y	Source #5 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
AC-228	Y	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
BI-211	W	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
BI-212	W	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
FR-223	D	1.00	2.0E-12	4.4E-12	8.6E-12	4.3E-12	3.3E-12	2.3E-11
PA-234M	Y	1.00	3.1E-09	6.8E-09	1.3E-08	6.6E-09	5.1E-09	3.5E-08
PA-231	Y	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
PB-211	D	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
PO-211	-	0.00	4.0E-13	8.7E-13	1.7E-12	8.5E-13	6.5E-13	4.5E-12
PO-216	W	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
PB-212	D	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
PO-212	W	1.00	5.5E-09	6.0E-09	1.2E-08	5.1E-09	4.1E-09	3.3E-08
PO-215	W	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
RA-223	W	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
RA-224	W	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
TH-232	Y	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
TH-228	Y	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08
TH-231	Y	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
TH-227	Y	1.00	1.4E-10	3.2E-10	6.2E-10	3.1E-10	2.3E-10	1.6E-09
TL-208	D	1.00	3.1E-09	3.4E-09	6.8E-09	2.9E-09	2.3E-09	1.8E-08
U-235	Y	1.00	1.5E-10	3.2E-10	6.3E-10	3.1E-10	2.4E-10	1.6E-09
TL-207	D	1.00	1.5E-10	3.2E-10	6.2E-10	3.1E-10	2.4E-10	1.6E-09
U-238	Y	1.00	3.1E-09	6.8E-09	1.3E-08	6.6E-09	5.1E-09	3.5E-08
TH-234	Y	1.00	3.1E-09	6.8E-09	1.3E-08	6.6E-09	5.1E-09	3.5E-08
PA-234	Y	1.00	4.1E-12	8.9E-12	1.7E-11	8.6E-12	6.6E-12	4.6E-11
U-234	Y	1.00	3.3E-09	7.3E-09	1.4E-08	7.1E-09	5.4E-09	3.7E-08
TH-230	Y	1.00	3.3E-09	7.3E-09	1.4E-08	7.1E-09	5.4E-09	3.7E-08
RA-226	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
PO-218	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-10	7.3E-09
PB-214	D	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
BI-214	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
PO-214	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
PB-210	D	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
BI-210	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
PO-210	W	1.00	1.6E-09	1.4E-09	2.8E-09	1.4E-09	1.1E-09	8.2E-09
RA-228	W	1.00	8.6E-09	9.4E-09	1.9E-08	8.0E-09	6.5E-09	5.1E-08

SITE INFORMATION

Temperature: 12 degrees C
Precipitation: 133 cm/y
Mixing Height: 1000 m

SOURCE INFORMATION

Source Number:	1	2	3	4	5
Source Height (m):	0.	0.	0.	0.	0.
Area (sq m):	164.	164.	164.	164.	164.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density: 4.25E-02
Milk Cattle Density: 3.29E-02
Land Fraction Cultivated
for Vegetable Crops: 1.82E-02

POPULATION DATA

Direction	250	750	1500	2500	3500	4500	7500
	Distance (m)						
N	67	201	802	1337	1872	2407	20057
NNW	67	201	802	1337	1872	2407	20057
NW	67	201	802	1337	1872	2407	20057
WNW	67	201	802	1337	1872	2407	18015
W	67	201	802	1337	1872	2407	15973
WSW	67	201	802	1337	1872	2407	15973
SW	67	201	802	1337	1872	2407	16228
SSW	67	201	802	1337	1872	2407	20057
S	67	201	802	1337	1872	2407	20057
SSE	67	201	802	1337	1872	2407	25914
SE	67	201	802	1337	1872	2407	20057
ESE	67	201	802	1337	1872	2407	20057
E	67	201	802	1337	1872	2407	20057
ENE	67	201	802	1337	1872	2407	20057
NE	67	201	802	1337	1872	2407	20057
NNE	67	201	802	1337	1872	2407	20057

Direction	15000	25000	35000	45000	55000	65000	75000
	Distance (m)						
N	74537	60196	70814	29909	28375	32864	31652
NNW	80228	100151	38356	25800	31534	37267	40828
NW	74537	78697	106487	126587	47978	25581	31795
WNW	56704	65308	91431	43632	20950	24760	25044
W	64114	84087	47693	59939	47949	40968	30281
WSW	112233	167453	56447	59420	70303	592514	29756
SW	120063	227594	237745	147380	112163	79165	127971
SSW	142152	249194	283497	211897	153403	180380	385790
S	236424	356896	290094	27391	48812	100953	91523
SSE	537391	974408	1119592	38176	0	0	0
SE	813384	678682	772130	363126	35070	0	0
ESE	837313	483781	278841	306070	279511	103569	51542
E	566935	290745	57469	146563	75595	89339	103084
ENE	84525	76576	79890	60083	55076	65090	75104
NE	65381	57432	102568	129885	161178	126989	143397
NNE	65457	30109	80543	125688	76315	38109	40796

Version 2.00

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SUMMARY
Page 1

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	5.26E-06	2.23E-05
BREAST	3.88E-06	1.72E-05
R MAR	4.99E-04	1.97E-03
LUNGS	6.67E-03	2.61E-02
THYROID	3.69E-06	1.60E-05
ENDOST	6.21E-03	2.44E-02
RMNDR	1.86E-05	8.21E-05
EFFEC	1.05E-03	4.13E-03

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)	Collective Population (person-rem/y)
INGESTION	2.29E-07	1.05E-05
INHALATION	1.05E-03	4.12E-03
AIR IMMERSION	1.46E-09	2.93E-09
GROUND SURFACE	1.71E-07	1.14E-06
INTERNAL	1.05E-03	4.13E-03
EXTERNAL	1.73E-07	1.14E-06
TOTAL	1.05E-03	4.13E-03

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclides	Selected Individual (mrem/y)	Collective Population (person-rem/y)
AC-227	2.10E-05	8.23E-05
AC-228	8.92E-08	2.75E-07
BI-211	1.44E-11	9.00E-12
BI-212	3.41E-08	5.83E-08
FR-223	1.14E-12	1.23E-12
PA-234M	1.72E-12	1.08E-12
PA-231	1.59E-05	6.25E-05
PB-211	2.99E-10	4.06E-10
PO-211	0.00E+00	0.00E+00
PO-216	0.00E+00	0.00E+00
PB-212	1.74E-07	5.86E-07
PO-212	0.00E+00	0.00E+00
PO-215	0.00E+00	0.00E+00
RA-223	2.73E-07	1.07E-06
RA-224	3.62E-06	1.39E-05
TH-232	3.71E-04	1.45E-03
TH-228	2.61E-04	1.02E-03
TH-231	3.33E-11	1.24E-10
TH-227	3.82E-07	1.49E-06
TL-208	4.53E-10	2.89E-10
U-235	4.09E-06	1.63E-05
TL-207	2.04E-13	1.37E-13
U-238	8.23E-05	3.23E-04
TH-234	2.56E-08	1.09E-07
PA-234	2.86E-12	1.05E-11
U-234	9.89E-05	3.88E-04
TH-230	1.88E-04	7.37E-04
RA-226	1.49E-06	6.31E-06
PO-218	3.91E-12	2.49E-12
PB-214	1.69E-10	2.01E-10
BI-214	2.11E-10	2.22E-10
PO-214	0.00E+00	0.00E+00
PB-210	2.32E-06	1.08E-05
BI-210	3.22E-08	1.24E-07
PO-210	1.44E-06	6.13E-06
RA-228	2.54E-06	1.13E-05
TOTAL	1.05E-03	4.13E-03

COLLECTIVE EFFECTIVE DOSE EQUIVALENT (person rem/y)
(All Radionuclides and Pathways)

Direction	250	750	1500	2500	3500	4500	7500
N	4.5E-05	1.6E-05	1.8E-05	1.2E-05	9.9E-06	8.6E-06	3.1E-05
NNW	1.2E-05	4.3E-06	4.8E-06	3.3E-06	2.6E-06	2.3E-06	8.3E-06
NW	7.4E-06	2.7E-06	3.1E-06	2.1E-06	1.7E-06	1.4E-06	5.3E-06
WNW	6.3E-06	2.3E-06	2.7E-06	1.8E-06	1.5E-06	1.3E-06	4.1E-06
W	1.6E-05	5.8E-06	6.6E-06	4.6E-06	3.7E-06	3.1E-06	9.2E-06
WSW	1.7E-05	6.2E-06	7.1E-06	4.8E-06	3.9E-06	3.3E-06	9.6E-06
SW	2.8E-05	1.0E-05	1.1E-05	7.8E-06	6.2E-06	5.3E-06	1.6E-05
SSW	3.3E-05	1.2E-05	1.4E-05	9.3E-06	7.4E-06	6.4E-06	2.3E-05
S	7.1E-05	2.5E-05	2.8E-05	1.9E-05	1.5E-05	1.3E-05	4.6E-05
SSE	4.5E-05	1.6E-05	1.8E-05	1.2E-05	9.9E-06	8.6E-06	4.0E-05
SE	2.7E-05	9.9E-06	1.1E-05	7.8E-06	6.3E-06	5.5E-06	2.0E-05
ESE	1.7E-05	6.2E-06	7.1E-06	4.9E-06	3.9E-06	3.4E-06	1.3E-05
E	2.9E-05	1.0E-05	1.2E-05	8.1E-06	6.5E-06	5.7E-06	2.1E-05
ENE	1.9E-05	6.9E-06	7.9E-06	5.4E-06	4.4E-06	3.8E-06	1.4E-05
NE	4.8E-05	1.7E-05	1.9E-05	1.3E-05	1.0E-05	8.9E-06	3.2E-05
NNE	5.1E-05	1.8E-05	2.0E-05	1.4E-05	1.1E-05	9.3E-06	3.3E-05

Distance (m)

Direction	15000	25000	35000	45000	55000	65000	75000
N	4.0E-05	1.3E-05	8.9E-06	2.5E-06	1.5E-06	1.0E-06	7.7E-07
NNW	1.1E-05	5.7E-06	1.3E-06	5.7E-07	4.7E-07	3.4E-07	2.9E-07
NW	6.7E-06	2.8E-06	2.3E-06	1.8E-06	4.5E-07	1.5E-07	1.5E-07
WNW	4.4E-06	2.1E-06	1.7E-06	5.3E-07	1.8E-07	1.4E-07	1.1E-07
W	1.2E-05	6.5E-06	2.1E-06	1.7E-06	9.5E-07	5.3E-07	3.0E-07
WSW	2.2E-05	1.3E-05	2.5E-06	1.7E-06	1.3E-06	7.0E-06	2.7E-07
SW	3.9E-05	2.8E-05	1.7E-05	6.6E-06	3.3E-06	1.3E-06	1.6E-06
SSW	5.6E-05	3.8E-05	2.5E-05	1.2E-05	5.8E-06	4.0E-06	6.5E-06
S	1.8E-04	1.0E-04	4.9E-05	3.0E-06	3.4E-06	3.8E-06	2.6E-06
SSE	2.9E-04	2.0E-04	1.4E-04	3.1E-06	0.0E+00	0.0E+00	0.0E+00
SE	2.9E-04	1.0E-04	7.0E-05	2.2E-05	1.5E-06	0.0E+00	0.0E+00
ESE	1.9E-04	4.6E-05	1.6E-05	1.2E-05	7.5E-06	1.7E-06	6.8E-07
E	2.1E-04	4.5E-05	5.4E-06	9.1E-06	3.2E-06	2.3E-06	2.0E-06
ENE	2.1E-05	8.0E-06	5.1E-06	2.6E-06	1.6E-06	1.2E-06	1.1E-06
NE	3.6E-05	1.2E-05	1.3E-05	1.1E-05	8.6E-06	3.7E-06	3.2E-06
NNE	3.7E-05	6.3E-06	1.0E-05	1.0E-05	3.9E-06	1.0E-06	8.4E-07

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Population Assessment
Feb 25, 2004 10:59 am

Facility: Maywood Interim Storage Site - Cluster No. 2d
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ   Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

2.69E-05

At This Location: 250 Meters South

Dataset Name: MISSP Cluster 2d
Dataset Date: Feb 25, 2004 10:53 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND
Population File: C:\DATA\CAP88PC2\POPFILES\MAYWOOD.POP

Feb 25, 2004 10:59 am

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 250 Meters South
Lifetime Fatal Cancer Risk: 3.01E-10

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	1.35E-07	5.71E-07
BREAST	9.65E-08	4.30E-07
R MAR	1.28E-05	5.03E-05
LUNGS	1.70E-04	6.63E-04
THYROID	9.14E-08	3.97E-07
ENDOST	1.59E-04	6.26E-04
RMNDR	4.79E-07	2.12E-06
EFFEC	2.69E-05	1.05E-04

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	0	0	0.00E+00	0.00E+00
LESS THAN 1.0E-06	17937859	17937859	1.67E-08	1.67E-08

Feb 25, 2004 10:59 am

SYNOPSIS
Page 2

RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	4.5E-11	4.5E-11
AC-228	Y	1.00	1.2E-09	1.2E-09
BI-211	W	1.00	4.5E-11	4.5E-11
BI-212	W	1.00	1.2E-09	1.2E-09
FR-223	D	1.00	6.3E-13	6.3E-13
PA-234M	Y	1.00	9.7E-10	9.7E-10
PA-231	Y	1.00	4.5E-11	4.5E-11
PB-211	D	1.00	4.5E-11	4.5E-11
PO-211	-	0.00	1.2E-13	1.2E-13
PO-216	W	1.00	1.2E-09	1.2E-09
PB-212	D	1.00	1.2E-09	1.2E-09
PO-212	W	1.00	7.9E-10	7.9E-10
PO-215	W	1.00	4.5E-11	4.5E-11
RA-223	W	1.00	4.5E-11	4.5E-11
RA-224	W	1.00	1.2E-09	1.2E-09
TH-232	Y	1.00	1.2E-09	1.2E-09
TH-228	Y	1.00	1.2E-09	1.2E-09
TH-231	Y	1.00	4.5E-11	4.5E-11
TH-227	Y	1.00	4.5E-11	4.5E-11
TL-208	D	1.00	4.4E-10	4.4E-10
U-235	Y	1.00	4.5E-11	4.5E-11
TL-207	D	1.00	4.5E-11	4.5E-11
U-238	Y	1.00	9.7E-10	9.7E-10
TH-234	Y	1.00	9.7E-10	9.7E-10
PA-234	Y	1.00	1.3E-12	1.3E-12
U-234	Y	1.00	1.0E-09	1.0E-09
TH-230	Y	1.00	1.0E-09	1.0E-09
RA-226	W	1.00	2.0E-10	2.0E-10
PO-218	W	1.00	2.0E-10	2.0E-10
PB-214	D	1.00	2.0E-10	2.0E-10
BI-214	W	1.00	2.0E-10	2.0E-10
PO-214	W	1.00	2.0E-10	2.0E-10
PB-210	D	1.00	2.0E-10	2.0E-10
BI-210	W	1.00	2.0E-10	2.0E-10
PO-210	W	1.00	2.0E-10	2.0E-10
RA-228	W	1.00	1.2E-09	1.2E-09

SITE INFORMATION

Temperature: 12 degrees C
Precipitation: 133 cm/y
Mixing Height: 1000 m

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SYNOPSIS
Page 3

SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.
Area (sq m): 4225.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density: 4.25E-02
Milk Cattle Density: 3.29E-02
Land Fraction Cultivated
for Vegetable Crops: 1.82E-02

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SYNOPSIS
Page 4

POPULATION DATA

Direction	250	750	1500	2500	3500	4500	7500
N	67	201	802	1337	1872	2407	20057
NNW	67	201	802	1337	1872	2407	20057
NW	67	201	802	1337	1872	2407	20057
WNW	67	201	802	1337	1872	2407	18015
W	67	201	802	1337	1872	2407	15973
WSW	67	201	802	1337	1872	2407	15973
SW	67	201	802	1337	1872	2407	16228
SSW	67	201	802	1337	1872	2407	20057
S	67	201	802	1337	1872	2407	20057
SSE	67	201	802	1337	1872	2407	25914
SE	67	201	802	1337	1872	2407	20057
ESE	67	201	802	1337	1872	2407	20057
E	67	201	802	1337	1872	2407	20057
ENE	67	201	802	1337	1872	2407	20057
NE	67	201	802	1337	1872	2407	20057
NNE	67	201	802	1337	1872	2407	20057

Distance (m)

Direction	15000	25000	35000	45000	55000	65000	75000
N	74537	60196	70814	29909	28375	32864	31652
NNW	80228	100151	38356	25800	31534	37267	40828
NW	74537	78697	106487	126587	47978	25581	31795
WNW	56704	65308	91431	43632	20950	24760	25044
W	64114	84087	47693	59939	47949	40968	30281
WSW	112233	167453	56447	59420	70303	592514	29756
SW	120063	227594	237745	147380	112163	79165	127971
SSW	142152	249194	283497	211897	153403	180380	385790
S	236424	356896	290094	27391	48812	100953	91523
SSE	537391	974408	1119592	38176	0	0	0
SE	813384	678682	772130	363126	35070	0	0
ESE	837313	483781	278841	306070	279511	103569	51542
E	566935	290745	57469	146563	75595	89339	103084
ENE	84525	76576	79890	60083	55076	65090	75104
NE	65381	57432	102568	129885	161178	126989	143397
NNE	65457	30109	80543	125688	76315	38109	40796

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SUMMARY
Page 1

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	1.35E-07	5.71E-07
BREAST	9.65E-08	4.30E-07
R MAR	1.28E-05	5.03E-05
LUNGS	1.70E-04	6.63E-04
THYROID	9.14E-08	3.97E-07
ENDOST	1.59E-04	6.26E-04
RMNDR	4.79E-07	2.12E-06
EFFEC	2.69E-05	1.05E-04

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)	Collective Population (person-rem/y)
INGESTION	5.93E-09	2.71E-07
INHALATION	2.68E-05	1.05E-04
AIR IMMERSION	3.52E-11	7.06E-11
GROUND SURFACE	4.63E-09	3.08E-08
INTERNAL	2.69E-05	1.05E-04
EXTERNAL	4.67E-09	3.08E-08
TOTAL	2.69E-05	1.05E-04

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclides	Selected Individual (mrem/y)	Collective Population (person-rem/y)
AC-227	5.82E-07	2.28E-06
AC-228	2.14E-09	6.61E-09
BI-211	3.99E-13	2.50E-13
BI-212	8.18E-10	1.40E-09
FR-223	3.15E-14	3.42E-14
PA-234M	4.77E-14	3.00E-14
PA-231	4.41E-07	1.73E-06
PB-211	8.28E-12	1.13E-11
PO-211	0.00E+00	0.00E+00
PO-216	0.00E+00	0.00E+00
PB-212	4.17E-09	1.41E-08
PO-212	0.00E+00	0.00E+00
PO-215	0.00E+00	0.00E+00
RA-223	7.58E-09	2.97E-08
RA-224	8.69E-08	3.33E-07
TH-232	8.91E-06	3.48E-05
TH-228	6.26E-06	2.45E-05
TH-231	9.23E-13	3.45E-12
TH-227	1.06E-08	4.13E-08
TL-208	1.09E-11	6.95E-12
U-235	1.14E-07	4.53E-07
TL-207	5.67E-15	3.80E-15
U-238	2.28E-06	8.96E-06
TH-234	7.10E-10	3.01E-09
PA-234	7.91E-14	2.91E-13
U-234	2.74E-06	1.08E-05
TH-230	5.23E-06	2.05E-05
RA-226	3.68E-08	1.56E-07
PO-218	1.09E-13	6.96E-14
PB-214	4.17E-12	4.97E-12
BI-214	5.22E-12	5.47E-12
PO-214	0.00E+00	0.00E+00
PB-210	5.73E-08	2.68E-07
BI-210	7.95E-10	3.06E-09
PO-210	3.56E-08	1.51E-07
RA-228	6.11E-08	2.71E-07
TOTAL	2.69E-05	1.05E-04

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SUMMARY
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COLLECTIVE EFFECTIVE DOSE EQUIVALENT (person rem/y)
(All Radionuclides and Pathways)

Direction	250	750	1500	2500	3500	4500	7500
N	1.1E-06	4.1E-07	4.6E-07	3.2E-07	2.5E-07	2.2E-07	7.9E-07
NNW	3.0E-07	1.1E-07	1.2E-07	8.4E-08	6.7E-08	5.8E-08	2.1E-07
NW	1.9E-07	6.9E-08	7.8E-08	5.4E-08	4.3E-08	3.7E-08	1.3E-07
WNW	1.6E-07	6.0E-08	6.8E-08	4.7E-08	3.7E-08	3.2E-08	1.0E-07
W	4.0E-07	1.5E-07	1.7E-07	1.2E-07	9.3E-08	8.0E-08	2.3E-07
WSW	4.3E-07	1.6E-07	1.8E-07	1.2E-07	9.8E-08	8.5E-08	2.4E-07
SW	7.2E-07	2.6E-07	2.9E-07	2.0E-07	1.6E-07	1.4E-07	4.0E-07
SSW	8.5E-07	3.1E-07	3.4E-07	2.4E-07	1.9E-07	1.6E-07	5.9E-07
S	1.8E-06	6.3E-07	7.0E-07	4.8E-07	3.8E-07	3.3E-07	1.2E-06
SSE	1.2E-06	4.1E-07	4.6E-07	3.2E-07	2.5E-07	2.2E-07	1.0E-06
SE	6.9E-07	2.5E-07	2.9E-07	2.0E-07	1.6E-07	1.4E-07	5.1E-07
ESE	4.3E-07	1.6E-07	1.8E-07	1.2E-07	1.0E-07	8.7E-08	3.2E-07
E	7.3E-07	2.6E-07	3.0E-07	2.1E-07	1.7E-07	1.4E-07	5.3E-07
ENE	4.9E-07	1.8E-07	2.0E-07	1.4E-07	1.1E-07	9.7E-08	3.6E-07
NE	1.2E-06	4.3E-07	4.8E-07	3.3E-07	2.6E-07	2.3E-07	8.2E-07
NNE	1.3E-06	4.6E-07	5.1E-07	3.5E-07	2.8E-07	2.4E-07	8.5E-07

Distance (m)

Direction	15000	25000	35000	45000	55000	65000	75000
N	1.0E-06	3.2E-07	2.3E-07	6.3E-08	3.9E-08	2.7E-08	2.0E-08
NNW	2.9E-07	1.4E-07	3.3E-08	1.4E-08	1.2E-08	8.7E-09	7.4E-09
NW	1.7E-07	7.2E-08	5.8E-08	4.5E-08	1.2E-08	3.9E-09	3.8E-09
WNW	1.1E-07	5.2E-08	4.3E-08	1.4E-08	4.5E-09	3.5E-09	2.8E-09
W	3.1E-07	1.7E-07	5.5E-08	4.5E-08	2.4E-08	1.4E-08	7.7E-09
WSW	5.7E-07	3.3E-07	6.4E-08	4.3E-08	3.4E-08	1.8E-07	6.8E-09
SW	9.8E-07	7.0E-07	4.2E-07	1.7E-07	8.3E-08	3.4E-08	4.2E-08
SSW	1.4E-06	9.6E-07	6.5E-07	3.1E-07	1.5E-07	1.0E-07	1.7E-07
S	4.7E-06	2.6E-06	1.3E-06	7.6E-08	8.7E-08	9.7E-08	6.6E-08
SSE	7.4E-06	5.2E-06	3.6E-06	8.0E-08	0.0E+00	0.0E+00	0.0E+00
SE	7.4E-06	2.6E-06	1.8E-06	5.6E-07	3.7E-08	0.0E+00	0.0E+00
ESE	4.8E-06	1.2E-06	4.1E-07	3.0E-07	1.9E-07	4.4E-08	1.7E-08
E	5.4E-06	1.1E-06	1.4E-07	2.3E-07	8.2E-08	5.8E-08	5.2E-08
ENE	5.4E-07	2.0E-07	1.3E-07	6.6E-08	4.1E-08	3.0E-08	2.7E-08
NE	9.2E-07	3.1E-07	3.3E-07	2.7E-07	2.2E-07	9.5E-08	8.2E-08
NNE	9.5E-07	1.6E-07	2.5E-07	2.5E-07	1.0E-07	2.7E-08	2.2E-08

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Population Assessment
Feb 25, 2004 10:59 am

Facility: Maywood Interim Storage Site - Cluster No. 4a
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

1.78E-05

At This Location: 250 Meters South

Dataset Name: MISSP Cluster4
Dataset Date: Feb 25, 2004 10:54 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND
Population File: C:\DATA\CAP88PC2\POPFILES\MAYWOOD.POP

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SYNOPSIS
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MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 250 Meters South
Lifetime Fatal Cancer Risk: 1.98E-10

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	9.60E-08	4.08E-07
BREAST	6.44E-08	2.93E-07
R MAR	8.59E-06	3.38E-05
LUNGS	1.12E-04	4.38E-04
THYROID	6.05E-08	2.67E-07
ENDOST	1.07E-04	4.21E-04
RMNDR	3.81E-07	1.71E-06
EFFEC	1.78E-05	6.99E-05

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	0	0	0.00E+00	0.00E+00
LESS THAN 1.0E-06	17937859	17937859	1.10E-08	1.10E-08

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SYNOPSIS
Page 2

RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	3.7E-11	3.7E-11
AC-228	Y	1.00	6.8E-10	6.8E-10
BI-211	W	1.00	3.7E-11	3.7E-11
BI-212	W	1.00	6.8E-10	6.8E-10
FR-223	D	1.00	5.1E-13	5.1E-13
PA-234M	Y	1.00	7.9E-10	7.9E-10
PA-231	Y	1.00	3.7E-11	3.7E-11
PB-211	D	1.00	3.7E-11	3.7E-11
PO-211	-	0.00	1.0E-13	1.0E-13
PO-216	W	1.00	6.8E-10	6.8E-10
PB-212	D	1.00	6.8E-10	6.8E-10
PO-212	W	1.00	4.3E-10	4.3E-10
PO-215	W	1.00	3.7E-11	3.7E-11
RA-223	W	1.00	3.7E-11	3.7E-11
RA-224	W	1.00	6.8E-10	6.8E-10
TH-232	Y	1.00	6.8E-10	6.8E-10
TH-228	Y	1.00	6.8E-10	6.8E-10
TH-231	Y	1.00	3.7E-11	3.7E-11
TH-227	Y	1.00	3.6E-11	3.6E-11
TL-208	D	1.00	2.4E-10	2.4E-10
U-235	Y	1.00	3.7E-11	3.7E-11
TL-207	D	1.00	3.7E-11	3.7E-11
U-238	Y	1.00	7.9E-10	7.9E-10
TH-234	Y	1.00	7.9E-10	7.9E-10
PA-234	Y	1.00	1.0E-12	1.0E-12
U-234	Y	1.00	8.4E-10	8.4E-10
TH-230	Y	1.00	8.4E-10	8.4E-10
RA-226	W	1.00	2.2E-10	2.2E-10
PO-218	W	1.00	2.2E-10	2.2E-10
PB-214	D	1.00	2.2E-10	2.2E-10
BI-214	W	1.00	2.2E-10	2.2E-10
PO-214	W	1.00	2.2E-10	2.2E-10
PB-210	D	1.00	2.2E-10	2.2E-10
BI-210	W	1.00	2.2E-10	2.2E-10
PO-210	W	1.00	2.2E-10	2.2E-10
RA-228	W	1.00	6.8E-10	6.8E-10

SITE INFORMATION

Temperature:	12 degrees C
Precipitation:	133 cm/y
Mixing Height:	1000 m

SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.
Area (sq m): 1850.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density: 4.25E-02
Milk Cattle Density: 3.29E-02
Land Fraction Cultivated
for Vegetable Crops: 1.82E-02

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SYNOPSIS
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POPULATION DATA

Direction	250	750	1500	2500	3500	4500	7500
	Distance (m)						
N	67	201	802	1337	1872	2407	20057
NNW	67	201	802	1337	1872	2407	20057
NW	67	201	802	1337	1872	2407	20057
WNW	67	201	802	1337	1872	2407	18015
W	67	201	802	1337	1872	2407	15973
WSW	67	201	802	1337	1872	2407	15973
SW	67	201	802	1337	1872	2407	16228
SSW	67	201	802	1337	1872	2407	20057
S	67	201	802	1337	1872	2407	20057
SSE	67	201	802	1337	1872	2407	25914
SE	67	201	802	1337	1872	2407	20057
ESE	67	201	802	1337	1872	2407	20057
E	67	201	802	1337	1872	2407	20057
ENE	67	201	802	1337	1872	2407	20057
NE	67	201	802	1337	1872	2407	20057
NNE	67	201	802	1337	1872	2407	20057

Direction	15000	25000	35000	45000	55000	65000	75000
	Distance (m)						
N	74537	60196	70814	29909	28375	32864	31652
NNW	80228	100151	38356	25800	31534	37267	40828
NW	74537	78697	106487	126587	47978	25581	31795
WNW	56704	65308	91431	43632	20950	24760	25044
W	64114	84087	47693	59939	47949	40968	30281
WSW	112233	167453	56447	59420	70303	592514	29756
SW	120063	227594	237745	147380	112163	79165	127971
SSW	142152	249194	283497	211897	153403	180380	385790
S	236424	356896	290094	27391	48812	100953	91523
SSE	537391	974408	1119592	38176	0	0	0
SE	813384	678682	772130	363126	35070	0	0
ESE	837313	483781	278841	306070	279511	103569	51542
E	566935	290745	57469	146563	75595	89339	103084
ENE	84525	76576	79890	60083	55076	65090	75104
NE	65381	57432	102568	129885	161178	126989	143397
NNE	65457	30109	80543	125688	76315	38109	40796

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SUMMARY
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ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	9.60E-08	4.08E-07
BREAST	6.44E-08	2.93E-07
R MAR	8.59E-06	3.38E-05
LUNGS	1.12E-04	4.38E-04
THYROID	6.05E-08	2.67E-07
ENDOST	1.07E-04	4.21E-04
RMNDR	3.81E-07	1.71E-06
EFFEC	1.78E-05	6.99E-05

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)	Collective Population (person-rem/y)
INGESTION	4.84E-09	2.21E-07
INHALATION	1.78E-05	6.96E-05
AIR IMMERSION	2.17E-11	4.16E-11
GROUND SURFACE	3.82E-09	2.54E-08
INTERNAL	1.78E-05	6.98E-05
EXTERNAL	3.84E-09	2.54E-08
TOTAL	1.78E-05	6.99E-05

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SUMMARY
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NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclides	Selected Individual (mrem/y)	Collective Population (person-rem/y)
AC-227	4.72E-07	1.85E-06
AC-228	1.18E-09	3.63E-09
BI-211	3.23E-13	2.03E-13
BI-212	4.50E-10	7.69E-10
FR-223	2.56E-14	2.77E-14
PA-234M	3.87E-14	2.43E-14
PA-231	3.57E-07	1.41E-06
PB-211	6.72E-12	9.14E-12
PO-211	0.00E+00	0.00E+00
PO-216	0.00E+00	0.00E+00
PB-212	2.29E-09	7.73E-09
PO-212	0.00E+00	0.00E+00
PO-215	0.00E+00	0.00E+00
RA-223	6.15E-09	2.41E-08
RA-224	4.77E-08	1.83E-07
TH-232	4.90E-06	1.92E-05
TH-228	3.44E-06	1.34E-05
TH-231	7.49E-13	2.80E-12
TH-227	8.59E-09	3.35E-08
TL-208	5.98E-12	3.81E-12
U-235	9.21E-08	3.67E-07
TL-207	4.61E-15	3.09E-15
U-238	1.85E-06	7.27E-06
TH-234	5.76E-10	2.44E-09
PA-234	6.46E-14	2.38E-13
U-234	2.23E-06	8.75E-06
TH-230	4.24E-06	1.66E-05
RA-226	3.96E-08	1.67E-07
PO-218	1.17E-13	7.47E-14
PB-214	4.48E-12	5.34E-12
BI-214	5.61E-12	5.88E-12
PO-214	0.00E+00	0.00E+00
PB-210	6.16E-08	2.87E-07
BI-210	8.53E-10	3.29E-09
PO-210	3.82E-08	1.63E-07
RA-228	3.36E-08	1.49E-07
TOTAL	1.78E-05	6.99E-05

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SUMMARY
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COLLECTIVE EFFECTIVE DOSE EQUIVALENT (person rem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	250	750	1500	2500	3500	4500	7500
N	7.6E-07	2.7E-07	3.1E-07	2.1E-07	1.7E-07	1.4E-07	5.3E-07
NNW	2.0E-07	7.2E-08	8.1E-08	5.6E-08	4.5E-08	3.9E-08	1.4E-07
NW	1.3E-07	4.6E-08	5.2E-08	3.6E-08	2.8E-08	2.4E-08	8.9E-08
WNW	1.1E-07	4.0E-08	4.5E-08	3.1E-08	2.5E-08	2.1E-08	6.9E-08
W	2.6E-07	9.8E-08	1.1E-07	7.7E-08	6.2E-08	5.3E-08	1.5E-07
WSW	2.9E-07	1.1E-07	1.2E-07	8.2E-08	6.5E-08	5.6E-08	1.6E-07
SW	4.8E-07	1.7E-07	1.9E-07	1.3E-07	1.1E-07	9.0E-08	2.6E-07
SSW	5.7E-07	2.0E-07	2.3E-07	1.6E-07	1.3E-07	1.1E-07	3.9E-07
S	1.2E-06	4.2E-07	4.7E-07	3.2E-07	2.5E-07	2.2E-07	7.8E-07
SSE	7.7E-07	2.7E-07	3.1E-07	2.1E-07	1.7E-07	1.5E-07	6.8E-07
SE	4.6E-07	1.7E-07	1.9E-07	1.3E-07	1.1E-07	9.2E-08	3.4E-07
ESE	2.9E-07	1.0E-07	1.2E-07	8.3E-08	6.7E-08	5.8E-08	2.1E-07
E	4.8E-07	1.8E-07	2.0E-07	1.4E-07	1.1E-07	9.6E-08	3.5E-07
ENE	3.2E-07	1.2E-07	1.3E-07	9.2E-08	7.4E-08	6.4E-08	2.4E-07
NE	8.1E-07	2.9E-07	3.2E-07	2.2E-07	1.7E-07	1.5E-07	5.4E-07
NNE	8.7E-07	3.0E-07	3.4E-07	2.3E-07	1.8E-07	1.6E-07	5.6E-07

	Distance (m)						
Direction	15000	25000	35000	45000	55000	65000	75000
N	6.8E-07	2.1E-07	1.5E-07	4.2E-08	2.6E-08	1.8E-08	1.3E-08
NNW	1.9E-07	9.6E-08	2.2E-08	9.6E-09	8.0E-09	5.8E-09	5.0E-09
NW	1.1E-07	4.8E-08	3.8E-08	3.0E-08	7.8E-09	2.7E-09	2.6E-09
WNW	7.4E-08	3.5E-08	2.9E-08	9.1E-09	3.0E-09	2.4E-09	1.9E-09
W	2.1E-07	1.1E-07	3.6E-08	3.0E-08	1.6E-08	9.1E-09	5.2E-09
WSW	3.8E-07	2.2E-07	4.3E-08	2.9E-08	2.3E-08	1.2E-07	4.6E-09
SW	6.5E-07	4.7E-07	2.8E-07	1.1E-07	5.6E-08	2.3E-08	2.8E-08
SSW	9.5E-07	6.4E-07	4.3E-07	2.1E-07	9.9E-08	6.8E-08	1.1E-07
S	3.1E-06	1.7E-06	8.3E-07	5.0E-08	5.8E-08	6.4E-08	4.4E-08
SSE	4.9E-06	3.5E-06	2.4E-06	5.3E-08	0.0E+00	0.0E+00	0.0E+00
SE	4.9E-06	1.7E-06	1.2E-06	3.7E-07	2.5E-08	0.0E+00	0.0E+00
ESE	3.2E-06	7.7E-07	2.7E-07	2.0E-07	1.3E-07	3.0E-08	1.2E-08
E	3.6E-06	7.5E-07	9.1E-08	1.5E-07	5.4E-08	3.9E-08	3.5E-08
ENE	3.6E-07	1.4E-07	8.7E-08	4.4E-08	2.8E-08	2.0E-08	1.8E-08
NE	6.1E-07	2.1E-07	2.2E-07	1.8E-07	1.5E-07	6.4E-08	5.5E-08
NNE	6.3E-07	1.1E-07	1.7E-07	1.7E-07	6.6E-08	1.8E-08	1.4E-08

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Population Assessment
Feb 25, 2004 10:59 am

Facility: Maywood Interim Storage Site - Cluster No. 5b/5c
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ   Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

1.20E-04

At This Location: 250 Meters South

Dataset Name: MISSP Cluster5bc
Dataset Date: Feb 25, 2004 10:55 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND
Population File: C:\DATA\CAP88PC2\POPFILES\MAYWOOD.POP

Feb 25, 2004 10:59 am

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 250 Meters South
Lifetime Fatal Cancer Risk: 1.35E-09

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	6.02E-07	2.55E-06
BREAST	4.45E-07	1.98E-06
R MAR	5.66E-05	2.23E-04
LUNGS	7.56E-04	2.96E-03
THYROID	4.23E-07	1.84E-06
ENDOST	7.05E-04	2.77E-03
RMNDR	2.16E-06	9.59E-06
EFFEC	1.20E-04	4.69E-04

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	0	0	0.00E+00	0.00E+00
LESS THAN 1.0E-06	17937859	17937859	7.45E-08	7.45E-08

Feb 25, 2004 10:59 am

SYNOPSIS
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RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	Source #2 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	5.0E-11	1.4E-10	1.9E-10
AC-228	Y	1.00	1.5E-09	4.3E-09	5.8E-09
BI-211	W	1.00	5.0E-11	1.4E-10	1.9E-10
BI-212	W	1.00	1.5E-09	4.3E-09	5.8E-09
FR-223	D	1.00	6.8E-13	1.9E-12	2.6E-12
PA-234M	Y	1.00	1.1E-09	2.9E-09	4.0E-09
PA-231	Y	1.00	5.0E-11	1.4E-10	1.9E-10
PB-211	D	1.00	5.0E-11	1.4E-10	1.9E-10
PO-211	-	0.00	1.4E-13	3.7E-13	5.1E-13
PO-216	W	1.00	1.5E-09	4.3E-09	5.8E-09
PB-212	D	1.00	1.5E-09	4.3E-09	5.8E-09
PO-212	W	1.00	9.5E-10	2.8E-09	3.7E-09
PO-215	W	1.00	5.0E-11	1.4E-10	1.9E-10
RA-223	W	1.00	5.0E-11	1.4E-10	1.9E-10
RA-224	W	1.00	1.5E-09	4.3E-09	5.8E-09
TH-232	Y	1.00	1.5E-09	4.3E-09	5.8E-09
TH-228	Y	1.00	1.5E-09	4.3E-09	5.8E-09
TH-231	Y	1.00	5.0E-11	1.4E-10	1.9E-10
TH-227	Y	1.00	4.9E-11	1.3E-10	1.8E-10
TL-208	D	1.00	5.3E-10	1.6E-09	2.1E-09
U-235	Y	1.00	5.0E-11	1.4E-10	1.9E-10
TL-207	D	1.00	4.9E-11	1.4E-10	1.9E-10
U-238	Y	1.00	1.1E-09	2.9E-09	4.0E-09
TH-234	Y	1.00	1.1E-09	2.9E-09	4.0E-09
PA-234	Y	1.00	1.1E-09	2.9E-09	4.0E-09
U-234	Y	1.00	1.1E-09	3.1E-09	4.2E-09
TH-230	Y	1.00	1.1E-09	3.1E-09	4.2E-09
RA-226	W	1.00	3.5E-10	6.9E-10	1.0E-09
PO-218	W	1.00	3.5E-10	6.9E-10	1.0E-09
PB-214	D	1.00	3.5E-10	6.9E-10	1.0E-09
BI-214	W	1.00	3.5E-10	6.9E-10	1.0E-09
PO-214	W	1.00	3.5E-10	6.9E-10	1.0E-09
PB-210	D	1.00	3.5E-10	6.9E-10	1.0E-09
BI-210	W	1.00	3.5E-10	6.9E-10	1.0E-09
PO-210	W	1.00	3.5E-10	6.9E-10	1.0E-09
RA-228	W	1.00	1.5E-09	4.3E-09	5.8E-09

SITE INFORMATION

Temperature: 12 degrees C
Precipitation: 133 cm/y
Mixing Height: 1000 m

SOURCE INFORMATION

Source Number:	1	2
Source Height (m):	0.	0.
Area (sq m):	3323.	1662.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density:	4.25E-02
Milk Cattle Density:	3.29E-02
Land Fraction Cultivated for Vegetable Crops:	1.82E-02

POPULATION DATA

	Distance (m)						
Direction	250	750	1500	2500	3500	4500	7500
N	67	201	802	1337	1872	2407	20057
NNW	67	201	802	1337	1872	2407	20057
NW	67	201	802	1337	1872	2407	20057
WNW	67	201	802	1337	1872	2407	18015
W	67	201	802	1337	1872	2407	15973
WSW	67	201	802	1337	1872	2407	15973
SW	67	201	802	1337	1872	2407	16228
SSW	67	201	802	1337	1872	2407	20057
S	67	201	802	1337	1872	2407	20057
SSE	67	201	802	1337	1872	2407	25914
SE	67	201	802	1337	1872	2407	20057
ESE	67	201	802	1337	1872	2407	20057
E	67	201	802	1337	1872	2407	20057
ENE	67	201	802	1337	1872	2407	20057
NE	67	201	802	1337	1872	2407	20057
NNE	67	201	802	1337	1872	2407	20057

	Distance (m)						
Direction	15000	25000	35000	45000	55000	65000	75000
N	74537	60196	70814	29909	28375	32864	31652
NNW	80228	100151	38356	25800	31534	37267	40828
NW	74537	78697	106487	126587	47978	25581	31795
WNW	56704	65308	91431	43632	20950	24760	25044
W	64114	84087	47693	59939	47949	40968	30281
WSW	112233	167453	56447	59420	70303	592514	29756
SW	120063	227594	237745	147380	112163	79165	127971
SSW	142152	249194	283497	211897	153403	180380	385790
S	236424	356896	290094	27391	48812	100953	91523
SSE	537391	974408	1119592	38176	0	0	0
SE	813384	678682	772130	363126	35070	0	0
ESE	837313	483781	278841	306070	279511	103569	51542
E	566935	290745	57469	146563	75595	89339	103084
ENE	84525	76576	79890	60083	55076	65090	75104
NE	65381	57432	102568	129885	161178	126989	143397
NNE	65457	30109	80543	125688	76315	38109	40796

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	6.02E-07	2.55E-06
BREAST	4.45E-07	1.98E-06
R MAR	5.66E-05	2.23E-04
LUNGS	7.56E-04	2.96E-03
THYROID	4.23E-07	1.84E-06
ENDOST	7.05E-04	2.77E-03
RMNDR	2.16E-06	9.59E-06
EFFEC	1.20E-04	4.69E-04

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)	Collective Population (person-rem/y)
INGESTION	2.68E-08	1.22E-06
INHALATION	1.20E-04	4.67E-04
AIR IMMERSION	2.67E-10	6.45E-10
GROUND SURFACE	1.98E-08	1.32E-07
INTERNAL	1.20E-04	4.68E-04
EXTERNAL	2.01E-08	1.32E-07
TOTAL	1.20E-04	4.69E-04

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SUMMARY
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NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclides	Selected Individual (mrem/y)	Collective Population (person-rem/y)
AC-227	2.39E-06	9.36E-06
AC-228	1.01E-08	3.11E-08
BI-211	1.63E-12	1.02E-12
BI-212	3.86E-09	6.60E-09
FR-223	1.29E-13	1.39E-13
PA-234M	1.95E-13	1.23E-13
PA-231	1.81E-06	7.10E-06
PB-211	3.40E-11	4.62E-11
PO-211	0.00E+00	0.00E+00
PO-216	0.00E+00	0.00E+00
PB-212	1.97E-08	6.64E-08
PO-212	0.00E+00	0.00E+00
PO-215	0.00E+00	0.00E+00
RA-223	3.11E-08	1.22E-07
RA-224	4.10E-07	1.57E-06
TH-232	4.20E-05	1.64E-04
TH-228	2.95E-05	1.15E-04
TH-231	3.78E-12	1.41E-11
TH-227	4.34E-08	1.69E-07
TL-208	5.12E-11	3.26E-11
U-235	4.66E-07	1.86E-06
TL-207	2.32E-14	1.55E-14
U-238	9.34E-06	3.67E-05
TH-234	2.91E-09	1.23E-08
PA-234	2.50E-10	9.18E-10
U-234	1.12E-05	4.40E-05
TH-230	2.14E-05	8.36E-05
RA-226	1.88E-07	7.96E-07
PO-218	5.59E-13	3.56E-13
PB-214	2.13E-11	2.54E-11
BI-214	2.67E-11	2.80E-11
PO-214	0.00E+00	0.00E+00
PB-210	2.93E-07	1.37E-06
BI-210	4.06E-09	1.57E-08
PO-210	1.82E-07	7.74E-07
RA-228	2.88E-07	1.28E-06
TOTAL	1.20E-04	4.69E-04

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SUMMARY
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COLLECTIVE EFFECTIVE DOSE EQUIVALENT (person rem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	250	750	1500	2500	3500	4500	7500
N	5.1E-06	1.8E-06	2.0E-06	1.4E-06	1.1E-06	9.7E-07	3.5E-06
NNW	1.3E-06	4.8E-07	5.5E-07	3.7E-07	3.0E-07	2.6E-07	9.4E-07
NW	8.4E-07	3.1E-07	3.5E-07	2.4E-07	1.9E-07	1.6E-07	6.0E-07
WNW	7.2E-07	2.7E-07	3.0E-07	2.1E-07	1.7E-07	1.4E-07	4.7E-07
W	1.8E-06	6.6E-07	7.5E-07	5.2E-07	4.1E-07	3.6E-07	1.0E-06
WSW	1.9E-06	7.1E-07	8.0E-07	5.5E-07	4.4E-07	3.8E-07	1.1E-06
SW	3.2E-06	1.2E-06	1.3E-06	8.8E-07	7.1E-07	6.1E-07	1.8E-06
SSW	3.8E-06	1.4E-06	1.5E-06	1.0E-06	8.4E-07	7.2E-07	2.6E-06
S	8.0E-06	2.8E-06	3.1E-06	2.1E-06	1.7E-06	1.5E-06	5.2E-06
SSE	5.1E-06	1.8E-06	2.1E-06	1.4E-06	1.1E-06	9.7E-07	4.6E-06
SE	3.1E-06	1.1E-06	1.3E-06	8.8E-07	7.1E-07	6.2E-07	2.3E-06
ESE	1.9E-06	7.0E-07	8.0E-07	5.5E-07	4.5E-07	3.9E-07	1.4E-06
E	3.2E-06	1.2E-06	1.3E-06	9.2E-07	7.4E-07	6.5E-07	2.4E-06
ENE	2.2E-06	7.8E-07	8.9E-07	6.2E-07	5.0E-07	4.3E-07	1.6E-06
NE	5.4E-06	1.9E-06	2.1E-06	1.5E-06	1.2E-06	1.0E-06	3.7E-06
NNE	5.8E-06	2.0E-06	2.3E-06	1.5E-06	1.2E-06	1.1E-06	3.8E-06

	Distance (m)						
Direction	15000	25000	35000	45000	55000	65000	75000
N	4.5E-06	1.4E-06	1.0E-06	2.8E-07	1.8E-07	1.2E-07	8.8E-08
NNW	1.3E-06	6.4E-07	1.5E-07	6.4E-08	5.3E-08	3.9E-08	3.3E-08
NW	7.6E-07	3.2E-07	2.6E-07	2.0E-07	5.2E-08	1.8E-08	1.7E-08
WNW	5.0E-07	2.3E-07	1.9E-07	6.0E-08	2.0E-08	1.6E-08	1.3E-08
W	1.4E-06	7.4E-07	2.4E-07	2.0E-07	1.1E-07	6.0E-08	3.4E-08
WSW	2.5E-06	1.5E-06	2.9E-07	1.9E-07	1.5E-07	7.9E-07	3.0E-08
SW	4.4E-06	3.1E-06	1.9E-06	7.5E-07	3.7E-07	1.5E-07	1.9E-07
SSW	6.3E-06	4.3E-06	2.9E-06	1.4E-06	6.6E-07	4.5E-07	7.4E-07
S	2.1E-05	1.2E-05	5.6E-06	3.4E-07	3.9E-07	4.3E-07	2.9E-07
SSE	3.3E-05	2.3E-05	1.6E-05	3.6E-07	0.0E+00	0.0E+00	0.0E+00
SE	3.3E-05	1.2E-05	8.0E-06	2.5E-06	1.7E-07	0.0E+00	0.0E+00
ESE	2.1E-05	5.2E-06	1.8E-06	1.3E-06	8.5E-07	2.0E-07	7.7E-08
E	2.4E-05	5.1E-06	6.1E-07	1.0E-06	3.6E-07	2.6E-07	2.3E-07
ENE	2.4E-06	9.1E-07	5.8E-07	2.9E-07	1.8E-07	1.4E-07	1.2E-07
NE	4.1E-06	1.4E-06	1.5E-06	1.2E-06	9.8E-07	4.2E-07	3.7E-07
NNE	4.2E-06	7.2E-07	1.1E-06	1.1E-06	4.4E-07	1.2E-07	9.6E-08

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Population Assessment
Feb 25, 2004 02:17 pm

Facility: Maywood Interim Storage Site - Cluster No. 6c
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ   Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

1.33E-04

At This Location: 250 Meters South

Dataset Name: MISSP CLuster 6c
Dataset Date: Feb 25, 2004 02:15 pm
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND
Population File: C:\DATA\CAP88PC2\POPFILES\MAYWOOD.POP

Feb 25, 2004 02:17 pm

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 250 Meters South
Lifetime Fatal Cancer Risk: 1.50E-09

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	6.68E-07	2.82E-06
BREAST	4.82E-07	2.14E-06
R MAR	6.34E-05	2.49E-04
LUNGS	8.44E-04	3.30E-03
THYROID	4.56E-07	1.98E-06
ENDOST	7.88E-04	3.10E-03
RMNDR	2.35E-06	1.04E-05
EFFEC	1.33E-04	5.23E-04

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	0	0	0.00E+00	0.00E+00
LESS THAN 1.0E-06	17937859	17937859	8.29E-08	8.29E-08

Feb 25, 2004 02:17 pm

SYNOPSIS
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RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	2.2E-10	2.2E-10
AC-228	Y	1.00	6.2E-09	6.2E-09
BI-211	W	1.00	2.2E-10	2.2E-10
BI-212	W	1.00	6.2E-09	6.2E-09
FR-223	D	1.00	3.0E-12	3.0E-12
PA-234M	Y	1.00	4.7E-09	4.7E-09
PA-231	Y	1.00	2.2E-10	2.2E-10
PB-211	D	1.00	2.2E-10	2.2E-10
PO-211	-	0.00	6.0E-13	6.0E-13
PO-216	W	1.00	6.2E-09	6.2E-09
PB-212	D	1.00	6.2E-09	6.2E-09
PO-212	W	1.00	4.0E-09	4.0E-09
PO-215	W	1.00	2.2E-10	2.2E-10
RA-223	W	1.00	2.2E-10	2.2E-10
RA-224	W	1.00	6.2E-09	6.2E-09
TH-232	Y	1.00	6.2E-09	6.2E-09
TH-228	Y	1.00	6.2E-09	6.2E-09
TH-231	Y	1.00	2.2E-10	2.2E-10
TH-227	Y	1.00	2.2E-10	2.2E-10
TL-208	D	1.00	2.2E-09	2.2E-09
U-235	Y	1.00	2.2E-10	2.2E-10
TL-207	D	1.00	2.2E-10	2.2E-10
U-238	Y	1.00	4.7E-09	4.7E-09
TH-234	Y	1.00	4.7E-09	4.7E-09
PA-234	Y	1.00	6.1E-12	6.1E-12
U-234	Y	1.00	5.0E-09	5.0E-09
TH-230	Y	1.00	5.0E-09	5.0E-09
RA-226	W	1.00	9.8E-10	9.8E-10
PO-218	W	1.00	9.8E-10	9.8E-10
PB-214	D	1.00	9.8E-10	9.8E-10
BI-214	W	1.00	9.8E-10	9.8E-10
PO-214	W	1.00	9.8E-10	9.8E-10
PB-210	D	1.00	9.8E-10	9.8E-10
BI-210	W	1.00	9.8E-10	9.8E-10
PO-210	W	1.00	9.8E-10	9.8E-10
RA-228	W	1.00	6.2E-09	6.2E-09

SITE INFORMATION

Temperature: 12 degrees C
Precipitation: 133 cm/y
Mixing Height: 1000 m

SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.
Area (sq m): 2978.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density: 4.25E-02
Milk Cattle Density: 3.29E-02
Land Fraction Cultivated
for Vegetable Crops: 1.82E-02

POPULATION DATA

Direction	250	750	1500	2500	3500	4500	7500
	Distance (m)						
N	67	201	802	1337	1872	2407	20057
NNW	67	201	802	1337	1872	2407	20057
NW	67	201	802	1337	1872	2407	20057
WNW	67	201	802	1337	1872	2407	18015
W	67	201	802	1337	1872	2407	15973
WSW	67	201	802	1337	1872	2407	15973
SW	67	201	802	1337	1872	2407	16228
SSW	67	201	802	1337	1872	2407	20057
S	67	201	802	1337	1872	2407	20057
SSE	67	201	802	1337	1872	2407	25914
SE	67	201	802	1337	1872	2407	20057
ESE	67	201	802	1337	1872	2407	20057
E	67	201	802	1337	1872	2407	20057
ENE	67	201	802	1337	1872	2407	20057
NE	67	201	802	1337	1872	2407	20057
NNE	67	201	802	1337	1872	2407	20057

Direction	15000	25000	35000	45000	55000	65000	75000
	Distance (m)						
N	74537	60196	70814	29909	28375	32864	31652
NNW	80228	100151	38356	25800	31534	37267	40828
NW	74537	78697	106487	126587	47978	25581	31795
WNW	56704	65308	91431	43632	20950	24760	25044
W	64114	84087	47693	59939	47949	40968	30281
WSW	112233	167453	56447	59420	70303	592514	29756
SW	120063	227594	237745	147380	112163	79165	127971
SSW	142152	249194	283497	211897	153403	180380	385790
S	236424	356896	290094	27391	48812	100953	91523
SSE	537391	974408	1119592	38176	0	0	0
SE	813384	678682	772130	363126	35070	0	0
ESE	837313	483781	278841	306070	279511	103569	51542
E	566935	290745	57469	146563	75595	89339	103084
ENE	84525	76576	79890	60083	55076	65090	75104
NE	65381	57432	102568	129885	161178	126989	143397
NNE	65457	30109	80543	125688	76315	38109	40796

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SUMMARY
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ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	6.68E-07	2.82E-06
BREAST	4.82E-07	2.14E-06
R MAR	6.34E-05	2.49E-04
LUNGS	8.44E-04	3.30E-03
THYROID	4.56E-07	1.98E-06
ENDOST	7.88E-04	3.10E-03
RMNDR	2.35E-06	1.04E-05
EFFEC	1.33E-04	5.23E-04

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)	Collective Population (person-rem/y)
INGESTION	2.90E-08	1.32E-06
INHALATION	1.33E-04	5.21E-04
AIR IMMERSION	1.77E-10	3.57E-10
GROUND SURFACE	2.25E-08	1.49E-07
INTERNAL	1.33E-04	5.23E-04
EXTERNAL	2.26E-08	1.50E-07
TOTAL	1.33E-04	5.23E-04

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclides	Selected Individual (mrem/y)	Collective Population (person-rem/y)
AC-227	2.81E-06	1.10E-05
AC-228	1.09E-08	3.35E-08
BI-211	1.93E-12	1.21E-12
BI-212	4.15E-09	7.10E-09
FR-223	1.52E-13	1.65E-13
PA-234M	2.31E-13	1.45E-13
PA-231	2.13E-06	8.38E-06
PB-211	4.01E-11	5.45E-11
PO-211	0.00E+00	0.00E+00
PO-216	0.00E+00	0.00E+00
PB-212	2.12E-08	7.14E-08
PO-212	0.00E+00	0.00E+00
PO-215	0.00E+00	0.00E+00
RA-223	3.67E-08	1.44E-07
RA-224	4.41E-07	1.69E-06
TH-232	4.52E-05	1.77E-04
TH-228	3.17E-05	1.24E-04
TH-231	4.46E-12	1.67E-11
TH-227	5.12E-08	1.99E-07
TL-208	5.51E-11	3.51E-11
U-235	5.49E-07	2.19E-06
TL-207	2.74E-14	1.83E-14
U-238	1.10E-05	4.33E-05
TH-234	3.43E-09	1.45E-08
PA-234	3.83E-13	1.41E-12
U-234	1.32E-05	5.20E-05
TH-230	2.52E-05	9.87E-05
RA-226	1.78E-07	7.52E-07
PO-218	5.28E-13	3.36E-13
PB-214	2.01E-11	2.40E-11
BI-214	2.52E-11	2.64E-11
PO-214	0.00E+00	0.00E+00
PB-210	2.77E-07	1.29E-06
BI-210	3.84E-09	1.48E-08
PO-210	1.72E-07	7.31E-07
RA-228	3.10E-07	1.38E-06
TOTAL	1.33E-04	5.23E-04

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SUMMARY
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COLLECTIVE EFFECTIVE DOSE EQUIVALENT (person rem/y)
(All Radionuclides and Pathways)

Distance (m)

Direction	250	750	1500	2500	3500	4500	7500
N	5.7E-06	2.0E-06	2.3E-06	1.6E-06	1.3E-06	1.1E-06	3.9E-06
NNW	1.5E-06	5.4E-07	6.1E-07	4.2E-07	3.3E-07	2.9E-07	1.1E-06
NW	9.4E-07	3.4E-07	3.9E-07	2.7E-07	2.1E-07	1.8E-07	6.7E-07
WNW	8.0E-07	3.0E-07	3.4E-07	2.3E-07	1.8E-07	1.6E-07	5.2E-07
W	2.0E-06	7.3E-07	8.4E-07	5.8E-07	4.6E-07	4.0E-07	1.2E-06
WSW	2.2E-06	7.9E-07	8.9E-07	6.1E-07	4.9E-07	4.2E-07	1.2E-06
SW	3.6E-06	1.3E-06	1.4E-06	9.9E-07	7.9E-07	6.8E-07	2.0E-06
SSW	4.2E-06	1.5E-06	1.7E-06	1.2E-06	9.4E-07	8.1E-07	2.9E-06
S	8.9E-06	3.1E-06	3.5E-06	2.4E-06	1.9E-06	1.6E-06	5.8E-06
SSE	5.7E-06	2.0E-06	2.3E-06	1.6E-06	1.3E-06	1.1E-06	5.1E-06
SE	3.4E-06	1.2E-06	1.4E-06	9.8E-07	7.9E-07	6.9E-07	2.6E-06
ESE	2.2E-06	7.9E-07	9.0E-07	6.2E-07	5.0E-07	4.3E-07	1.6E-06
E	3.6E-06	1.3E-06	1.5E-06	1.0E-06	8.3E-07	7.2E-07	2.7E-06
ENE	2.4E-06	8.8E-07	1.0E-06	6.9E-07	5.5E-07	4.8E-07	1.8E-06
NE	6.1E-06	2.1E-06	2.4E-06	1.6E-06	1.3E-06	1.1E-06	4.1E-06
NNE	6.5E-06	2.3E-06	2.5E-06	1.7E-06	1.4E-06	1.2E-06	4.2E-06

Distance (m)

Direction	15000	25000	35000	45000	55000	65000	75000
N	5.1E-06	1.6E-06	1.1E-06	3.1E-07	2.0E-07	1.3E-07	9.8E-08
NNW	1.4E-06	7.2E-07	1.6E-07	7.2E-08	5.9E-08	4.3E-08	3.7E-08
NW	8.5E-07	3.6E-07	2.9E-07	2.2E-07	5.7E-08	2.0E-08	1.9E-08
WNW	5.6E-07	2.6E-07	2.1E-07	6.7E-08	2.2E-08	1.8E-08	1.4E-08
W	1.6E-06	8.2E-07	2.7E-07	2.2E-07	1.2E-07	6.7E-08	3.8E-08
WSW	2.8E-06	1.6E-06	3.2E-07	2.1E-07	1.7E-07	8.8E-07	3.4E-08
SW	4.9E-06	3.5E-06	2.1E-06	8.4E-07	4.1E-07	1.7E-07	2.1E-07
SSW	7.1E-06	4.8E-06	3.2E-06	1.6E-06	7.4E-07	5.0E-07	8.2E-07
S	2.3E-05	1.3E-05	6.2E-06	3.8E-07	4.3E-07	4.8E-07	3.3E-07
SSE	3.7E-05	2.6E-05	1.8E-05	4.0E-07	0.0E+00	0.0E+00	0.0E+00
SE	3.7E-05	1.3E-05	8.9E-06	2.8E-06	1.9E-07	0.0E+00	0.0E+00
ESE	2.4E-05	5.8E-06	2.0E-06	1.5E-06	9.5E-07	2.2E-07	8.6E-08
E	2.7E-05	5.6E-06	6.8E-07	1.2E-06	4.1E-07	2.9E-07	2.6E-07
ENE	2.7E-06	1.0E-06	6.5E-07	3.3E-07	2.1E-07	1.5E-07	1.4E-07
NE	4.6E-06	1.5E-06	1.6E-06	1.3E-06	1.1E-06	4.7E-07	4.1E-07
NNE	4.7E-06	8.0E-07	1.3E-06	1.3E-06	4.9E-07	1.3E-07	1.1E-07

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S   R E P O R T

Non-Radon Population Assessment
Feb 25, 2004 11:00 am

Facility: Maywood Interim Storage Site - Cluster No. 9a
Address: 100 W. Hunter Avenue
City: Maywood
State: NJ   Zip: 07607-

Source Category: Particulate Emission w radon daughters
Source Type: Area
Emission Year: 2003

Comments: Shaw E&I for
U.S. Army Corps of Engineers

Effective Dose Equivalent
(mrem/year)

1.25E-05

At This Location: 250 Meters South

Dataset Name: MISSP Cluster 9a
Dataset Date: Feb 25, 2004 10:56 am
Wind File: C:\DATA\CAP88PC2\WNDFILES\TET94-03.WND
Population File: C:\DATA\CAP88PC2\POPFILES\MAYWOOD.POP

Feb 25, 2004 11:00 am

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 250 Meters South
Lifetime Fatal Cancer Risk: 1.40E-10

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	6.16E-08	2.62E-07
BREAST	5.06E-08	2.23E-07
R MAR	6.14E-06	2.42E-05
LUNGS	7.80E-05	3.05E-04
THYROID	4.85E-08	2.10E-07
ENDOST	7.64E-05	3.01E-04
RMNDR	2.28E-07	1.01E-06
EFFEC	1.25E-05	4.89E-05

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	0	0	0.00E+00	0.00E+00
LESS THAN 1.0E-06	17937859	17937859	7.76E-09	7.76E-09

Feb 25, 2004 11:00 am

SYNOPSIS
Page 2

RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AC-227	Y	1.00	1.4E-11	1.4E-11
AC-228	Y	1.00	6.7E-10	6.7E-10
BI-211	W	1.00	1.4E-11	1.4E-11
BI-212	W	1.00	6.7E-10	6.7E-10
FR-223	D	1.00	1.9E-13	1.9E-13
PA-234M	Y	1.00	2.9E-10	2.9E-10
PA-231	Y	1.00	1.4E-11	1.4E-11
PB-211	D	1.00	1.4E-11	1.4E-11
PO-211	-	0.00	3.7E-14	3.7E-14
PO-216	W	1.00	6.7E-10	6.7E-10
PB-212	D	1.00	6.7E-10	6.7E-10
PO-212	W	1.00	4.3E-10	4.3E-10
PO-215	W	1.00	1.4E-11	1.4E-11
RA-223	W	1.00	1.4E-11	1.4E-11
RA-224	W	1.00	6.7E-10	6.7E-10
TH-232	Y	1.00	6.7E-10	6.7E-10
TH-228	Y	1.00	6.7E-10	6.7E-10
TH-231	Y	1.00	1.4E-11	1.4E-11
TH-227	Y	1.00	1.3E-11	1.3E-11
TL-208	D	1.00	2.4E-10	2.4E-10
U-235	Y	1.00	1.4E-11	1.4E-11
TL-207	D	1.00	1.3E-11	1.3E-11
U-238	Y	1.00	2.9E-10	2.9E-10
TH-234	Y	1.00	2.9E-10	2.9E-10
PA-234	Y	1.00	3.8E-13	3.8E-13
U-234	Y	1.00	3.1E-10	3.1E-10
TH-230	Y	1.00	4.3E-10	4.3E-10
RA-226	W	1.00	1.4E-10	1.4E-10
PO-218	W	1.00	1.4E-10	1.4E-10
PB-214	D	1.00	1.4E-10	1.4E-10
BI-214	W	1.00	1.4E-10	1.4E-10
PO-214	W	1.00	1.4E-10	1.4E-10
PB-210	D	1.00	1.4E-10	1.4E-10
BI-210	W	1.00	1.4E-10	1.4E-10
PO-210	W	1.00	1.4E-10	1.4E-10
RA-228	W	1.00	6.7E-10	6.7E-10

SITE INFORMATION

Temperature:	12 degrees C
Precipitation:	133 cm/y
Mixing Height:	1000 m

Feb 25, 2004 11:00 am

SYNOPSIS
Page 3

SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.
Area (sq m): 1163.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.076	0.000	0.008
Fraction From Assessment Area:	0.924	1.000	0.992
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density: 4.25E-02
Milk Cattle Density: 3.29E-02
Land Fraction Cultivated
for Vegetable Crops: 1.82E-02

Feb 25, 2004 11:00 am

SYNOPSIS
Page 4

POPULATION DATA

	Distance (m)						
Direction	250	750	1500	2500	3500	4500	7500
N	67	201	802	1337	1872	2407	20057
NNW	67	201	802	1337	1872	2407	20057
NW	67	201	802	1337	1872	2407	20057
WNW	67	201	802	1337	1872	2407	18015
W	67	201	802	1337	1872	2407	15973
WSW	67	201	802	1337	1872	2407	15973
SW	67	201	802	1337	1872	2407	16228
SSW	67	201	802	1337	1872	2407	20057
S	67	201	802	1337	1872	2407	20057
SSE	67	201	802	1337	1872	2407	25914
SE	67	201	802	1337	1872	2407	20057
ESE	67	201	802	1337	1872	2407	20057
E	67	201	802	1337	1872	2407	20057
ENE	67	201	802	1337	1872	2407	20057
NE	67	201	802	1337	1872	2407	20057
NNE	67	201	802	1337	1872	2407	20057

	Distance (m)						
Direction	15000	25000	35000	45000	55000	65000	75000
N	74537	60196	70814	29909	28375	32864	31652
NNW	80228	100151	38356	25800	31534	37267	40828
NW	74537	78697	106487	126587	47978	25581	31795
WNW	56704	65308	91431	43632	20950	24760	25044
W	64114	84087	47693	59939	47949	40968	30281
WSW	112233	167453	56447	59420	70303	592514	29756
SW	120063	227594	237745	147380	112163	79165	127971
SSW	142152	249194	283497	211897	153403	180380	385790
S	236424	356896	290094	27391	48812	100953	91523
SSE	537391	974408	1119592	38176	0	0	0
SE	813384	678682	772130	363126	35070	0	0
ESE	837313	483781	278841	306070	279511	103569	51542
E	566935	290745	57469	146563	75595	89339	103084
ENE	84525	76576	79890	60083	55076	65090	75104
NE	65381	57432	102568	129885	161178	126989	143397
NNE	65457	30109	80543	125688	76315	38109	40796

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SUMMARY
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ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	6.16E-08	2.62E-07
BREAST	5.06E-08	2.23E-07
R MAR	6.14E-06	2.42E-05
LUNGS	7.80E-05	3.05E-04
THYROID	4.85E-08	2.10E-07
ENDOST	7.64E-05	3.01E-04
RMNDR	2.28E-07	1.01E-06
EFFEC	1.25E-05	4.89E-05

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)	Collective Population (person-rem/y)
INGESTION	2.85E-09	1.30E-07
INHALATION	1.25E-05	4.88E-05
AIR IMMERSION	1.98E-11	3.90E-11
GROUND SURFACE	1.73E-09	1.15E-08
INTERNAL	1.25E-05	4.89E-05
EXTERNAL	1.75E-09	1.15E-08
TOTAL	1.25E-05	4.89E-05

Feb 25, 2004 11:00 am

SUMMARY
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NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclides	Selected Individual (mrem/y)	Collective Population (person-rem/y)
AC-227	1.74E-07	6.82E-07
AC-228	1.17E-09	3.61E-09
BI-211	1.19E-13	7.47E-14
BI-212	4.48E-10	7.65E-10
FR-223	9.38E-15	1.02E-14
PA-234M	1.42E-14	8.95E-15
PA-231	1.32E-07	5.18E-07
PB-211	2.48E-12	3.37E-12
PO-211	0.00E+00	0.00E+00
PO-216	0.00E+00	0.00E+00
PB-212	2.28E-09	7.70E-09
PO-212	0.00E+00	0.00E+00
PO-215	0.00E+00	0.00E+00
RA-223	2.27E-09	8.89E-09
RA-224	4.75E-08	1.82E-07
TH-232	4.87E-06	1.91E-05
TH-228	3.42E-06	1.34E-05
TH-231	2.76E-13	1.03E-12
TH-227	3.16E-09	1.23E-08
TL-208	5.96E-12	3.80E-12
U-235	3.39E-08	1.35E-07
TL-207	1.69E-15	1.13E-15
U-238	6.81E-07	2.67E-06
TH-234	2.12E-10	8.97E-10
PA-234	2.36E-14	8.67E-14
U-234	8.18E-07	3.21E-06
TH-230	2.16E-06	8.46E-06
RA-226	2.61E-08	1.10E-07
PO-218	7.75E-14	4.94E-14
PB-214	2.96E-12	3.53E-12
BI-214	3.70E-12	3.88E-12
PO-214	0.00E+00	0.00E+00
PB-210	4.07E-08	1.90E-07
BI-210	5.64E-10	2.17E-09
PO-210	2.52E-08	1.07E-07
RA-228	3.34E-08	1.48E-07
TOTAL	1.25E-05	4.89E-05

Feb 25, 2004 11:00 am

SUMMARY
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COLLECTIVE EFFECTIVE DOSE EQUIVALENT (person rem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	250	750	1500	2500	3500	4500	7500
N	5.3E-07	1.9E-07	2.1E-07	1.5E-07	1.2E-07	1.0E-07	3.7E-07
NNW	1.4E-07	5.0E-08	5.7E-08	3.9E-08	3.1E-08	2.7E-08	9.8E-08
NW	8.8E-08	3.2E-08	3.6E-08	2.5E-08	2.0E-08	1.7E-08	6.2E-08
WNW	7.5E-08	2.8E-08	3.2E-08	2.2E-08	1.7E-08	1.5E-08	4.9E-08
W	1.8E-07	6.9E-08	7.9E-08	5.4E-08	4.3E-08	3.7E-08	1.1E-07
WSW	2.0E-07	7.4E-08	8.4E-08	5.7E-08	4.6E-08	3.9E-08	1.1E-07
SW	3.4E-07	1.2E-07	1.4E-07	9.2E-08	7.4E-08	6.3E-08	1.8E-07
SSW	4.0E-07	1.4E-07	1.6E-07	1.1E-07	8.8E-08	7.6E-08	2.7E-07
S	8.4E-07	2.9E-07	3.3E-07	2.2E-07	1.8E-07	1.5E-07	5.5E-07
SSE	5.4E-07	1.9E-07	2.1E-07	1.5E-07	1.2E-07	1.0E-07	4.8E-07
SE	3.2E-07	1.2E-07	1.3E-07	9.2E-08	7.4E-08	6.5E-08	2.4E-07
ESE	2.0E-07	7.3E-08	8.4E-08	5.8E-08	4.7E-08	4.1E-08	1.5E-07
E	3.4E-07	1.2E-07	1.4E-07	9.6E-08	7.8E-08	6.7E-08	2.5E-07
ENE	2.3E-07	8.2E-08	9.3E-08	6.4E-08	5.2E-08	4.5E-08	1.7E-07
NE	5.7E-07	2.0E-07	2.2E-07	1.5E-07	1.2E-07	1.1E-07	3.8E-07
NNE	6.1E-07	2.1E-07	2.4E-07	1.6E-07	1.3E-07	1.1E-07	4.0E-07

	Distance (m)						
Direction	15000	25000	35000	45000	55000	65000	75000
N	4.7E-07	1.5E-07	1.1E-07	2.9E-08	1.8E-08	1.2E-08	9.2E-09
NNW	1.4E-07	6.7E-08	1.5E-08	6.7E-09	5.5E-09	4.0E-09	3.4E-09
NW	7.9E-08	3.3E-08	2.7E-08	2.1E-08	5.4E-09	1.8E-09	1.8E-09
WNW	5.2E-08	2.4E-08	2.0E-08	6.3E-09	2.1E-09	1.7E-09	1.3E-09
W	1.5E-07	7.7E-08	2.5E-08	2.1E-08	1.1E-08	6.3E-09	3.6E-09
WSW	2.7E-07	1.5E-07	3.0E-08	2.0E-08	1.6E-08	8.3E-08	3.2E-09
SW	4.6E-07	3.3E-07	2.0E-07	7.8E-08	3.9E-08	1.6E-08	1.9E-08
SSW	6.6E-07	4.5E-07	3.0E-07	1.5E-07	6.9E-08	4.7E-08	7.7E-08
S	2.2E-06	1.2E-06	5.8E-07	3.5E-08	4.1E-08	4.5E-08	3.1E-08
SSE	3.4E-06	2.4E-06	1.7E-06	3.7E-08	0.0E+00	0.0E+00	0.0E+00
SE	3.5E-06	1.2E-06	8.3E-07	2.6E-07	1.7E-08	0.0E+00	0.0E+00
ESE	2.2E-06	5.4E-07	1.9E-07	1.4E-07	8.9E-08	2.1E-08	8.1E-09
E	2.5E-06	5.3E-07	6.4E-08	1.1E-07	3.8E-08	2.7E-08	2.4E-08
ENE	2.5E-07	9.5E-08	6.0E-08	3.0E-08	1.9E-08	1.4E-08	1.3E-08
NE	4.3E-07	1.4E-07	1.5E-07	1.3E-07	1.0E-07	4.4E-08	3.8E-08
NNE	4.4E-07	7.5E-08	1.2E-07	1.2E-07	4.6E-08	1.2E-08	1.0E-08

ATTACHMENT A

RADIONUCLIDE SOURCE TERM EMISSIONS CALCULATIONS

FUSRAP Maywood Superfund Site and Vicinity Properties

YEAR 2003

IN SITU SOIL WIND EROSION EMISSIONS (AP-42, Chapter 13.2.5, "Industrial Wind Erosion", 01/95)

					Vegetative Cover/Gravel		Bare Soil	
INPUT PARAMETERS:					TSP	PM-10	TSP	PM-10
Particle Size Multiplier (k)					1	0.5	1	0.5
Number of Disturbances per Period		(Assumption)			3	3	3	3
Surface Area of Soil (m^2)		(Assumption)			44870	44870	5000	5000
Threshold Friction Velocity (m/s)		(Table 13.2.5-2)	Overburden		1.02	1.02	1.02	1.02
Anemometer Height (m)		(Teterboro LCD)			6.10	6.10	6.10	6.10
Roughness Height (m)		(Table 13.2.5-2)	Overburden		0.003	0.003	0.003	0.003
Highest 2-Minute Wind Speed (mph)		(Teterboro LCD)		Week				
	January			1	21	21	21	21
				2	25	25	25	25
				3	26	26	26	26
				4	25	25	25	25
	February			1	30	30	30	30
				2	28	28	28	28
				3	20	20	20	20
				4	30	30	30	30
	March			1	29	29	29	29
				2	24	24	24	24
				3	22	22	22	22
				4	25	25	25	25
				5	25	25	25	25
	April			1	26	26	26	26
				2	20	20	20	20
				3	25	25	25	25
				4	26	26	26	26
	May			1	20	20	20	20
				2	26	26	26	26
				3	24	24	24	24
				4	21	21	21	21
				5	21	21	21	21
	June			1	23	23	23	23
				2	22	22	22	22
				3	23	23	23	23
				4	24	24	24	24
	July			1	20	20	20	20
				2	22	22	22	22
				3	20	20	20	20
				4	25	25	25	25
				5	25	25	25	25

	August	1	18	18	18	18
		2	16	16	16	16
		3	24	24	24	24
		4	20	20	20	20
		5	20	20	20	20
	September	1	14	14	14	14
		2	18	18	18	18
		3	31	31	31	31
		4	28	28	28	28
	October	1	25	25	25	25
		2	21	21	21	21
		3	29	29	29	29
		4	22	22	22	22
	November	1	16	16	16	16
		2	33	33	33	33
		3	28	28	28	28
		4	31	31	31	31
	December	1	32	32	32	32
		2	31	31	31	31
		3	28	28	28	28
		4	32	32	32	32
Friction Velocity (m/s)						
	January	1	0.53	0.53	0.53	0.53
		2	0.63	0.63	0.63	0.63
		3	0.66	0.66	0.66	0.66
		4	0.63	0.63	0.63	0.63
	February	1	0.76	0.76	0.76	0.76
		2	0.71	0.71	0.71	0.71
		3	0.50	0.50	0.50	0.50
		4	0.76	0.76	0.76	0.76
	March	1	0.73	0.73	0.73	0.73
		2	0.61	0.61	0.61	0.61
		3	0.56	0.56	0.56	0.56
		4	0.63	0.63	0.63	0.63
		5	0.63	0.63	0.63	0.63
	April	1	0.66	0.66	0.66	0.66
		2	0.50	0.50	0.50	0.50
		3	0.63	0.63	0.63	0.63
		4	0.66	0.66	0.66	0.66
	May	1	0.50	0.50	0.50	0.50
		2	0.66	0.66	0.66	0.66
		3	0.61	0.61	0.61	0.61
		4	0.53	0.53	0.53	0.53
		5	0.53	0.53	0.53	0.53
	June	1	0.58	0.58	0.58	0.58
		2	0.56	0.56	0.56	0.56
		3	0.58	0.58	0.58	0.58
		4	0.61	0.61	0.61	0.61

July		1	0.50	0.50		0.50	0.50	
		2	0.56	0.56		0.56	0.56	
		3	0.50	0.50		0.50	0.50	
		4	0.63	0.63		0.63	0.63	
		5	0.63	0.63		0.63	0.63	
August		1	0.45	0.45		0.45	0.45	
		2	0.40	0.40		0.40	0.40	
		3	0.61	0.61		0.61	0.61	
		4	0.50	0.50		0.50	0.50	
		5	0.50	0.50		0.50	0.50	
September		1	0.35	0.35		0.35	0.35	
		2	0.45	0.45		0.45	0.45	
		3	0.78	0.78		0.78	0.78	
		4	0.71	0.71		0.71	0.71	
October		1	0.63	0.63		0.63	0.63	
		2	0.53	0.53		0.53	0.53	
		3	0.73	0.73		0.73	0.73	
		4	0.56	0.56		0.56	0.56	
November		1	0.40	0.40		0.40	0.40	
		2	0.83	0.83		0.83	0.83	
		3	0.71	0.71		0.71	0.71	
		4	0.78	0.78		0.78	0.78	
December		1	0.81	0.81		0.81	0.81	
		2	0.78	0.78		0.78	0.78	
		3	0.71	0.71		0.71	0.71	
		4	0.81	0.81		0.81	0.81	
	Vegetative Cover	Bare Soil						
CONTROL EFFICIENCY (%)-	99	0						
EMISSION FACTOR -E (g/m^2):								
January		1	0.00	0.00	1.68	0.00	0.00	1.68
		2	0.00	0.00	-0.94	0.00	0.00	-0.94
		3	0.00	0.00	-1.41	0.00	0.00	-1.41
		4	0.00	0.00	-0.94	0.00	0.00	-0.94
February		1	0.00	0.00	-2.56	0.00	0.00	-2.56
		2	0.00	0.00	-2.14	0.00	0.00	-2.14
		3	0.00	0.00	2.52	0.00	0.00	2.52
		4	0.00	0.00	-2.56	0.00	0.00	-2.56
March		1	0.00	0.00	-2.39	0.00	0.00	-2.39
		2	0.00	0.00	-0.40	0.00	0.00	-0.40
		3	0.00	0.00	0.92	0.00	0.00	0.92
		4	0.00	0.00	-0.94	0.00	0.00	-0.94
		5	0.00	0.00	-0.94	0.00	0.00	-0.94
April		1	0.00	0.00	-1.41	0.00	0.00	-1.41
		2	0.00	0.00	2.52	0.00	0.00	2.52
		3	0.00	0.00	-0.94	0.00	0.00	-0.94
		4	0.00	0.00	-1.41	0.00	0.00	-1.41

May	1	0.00	0.00	2.52	0.00	0.00	2.52
	2	0.00	0.00	-1.41	0.00	0.00	-1.41
	3	0.00	0.00	-0.40	0.00	0.00	-0.40
	4	0.00	0.00	1.68	0.00	0.00	1.68
	5	0.00	0.00	1.68	0.00	0.00	1.68
June	1	0.00	0.00	0.22	0.00	0.00	0.22
	2	0.00	0.00	0.92	0.00	0.00	0.92
	3	0.00	0.00	0.22	0.00	0.00	0.22
	4	0.00	0.00	-0.40	0.00	0.00	-0.40
July	1	0.00	0.00	2.52	0.00	0.00	2.52
	2	0.00	0.00	0.92	0.00	0.00	0.92
	3	0.00	0.00	2.52	0.00	0.00	2.52
	4	0.00	0.00	-0.94	0.00	0.00	-0.94
	5	0.00	0.00	-0.94	0.00	0.00	-0.94
August	1	0.00	0.00	4.43	0.00	0.00	4.43
	2	0.00	0.00	6.62	0.00	0.00	6.62
	3	0.00	0.00	-0.40	0.00	0.00	-0.40
	4	0.00	0.00	2.52	0.00	0.00	2.52
	5	0.00	0.00	2.52	0.00	0.00	2.52
September	1	0.00	0.00	9.12	0.00	0.00	9.12
	2	0.00	0.00	4.43	0.00	0.00	4.43
	3	0.00	0.00	-2.66	0.00	0.00	-2.66
	4	0.00	0.00	-2.14	0.00	0.00	-2.14
October	1	0.00	0.00	-0.94	0.00	0.00	-0.94
	2	0.00	0.00	1.68	0.00	0.00	1.68
	3	0.00	0.00	-2.39	0.00	0.00	-2.39
	4	0.00	0.00	0.92	0.00	0.00	0.92
November	1	0.00	0.00	6.62	0.00	0.00	6.62
	2	0.00	0.00	-2.65	0.00	0.00	-2.65
	3	0.00	0.00	-2.14	0.00	0.00	-2.14
	4	0.00	0.00	-2.66	0.00	0.00	-2.66
December	1	0.00	0.00	-2.69	0.00	0.00	-2.69
	2	0.00	0.00	-2.66	0.00	0.00	-2.66
	3	0.00	0.00	-2.14	0.00	0.00	-2.14
	4	0.00	0.00	-2.69	0.00	0.00	-2.69

ANNUAL EMISSIONS (grams/year):	Vegetative Cover/Gravel	Bare Soil	Total Emissions
E (TSP) =	0.00	0.00	0.00
E (PM-10) =	0.00	0.00	0.00

RADIONUCLIDE SOURCE CONCENTRATION AVERAGE DETECTED ACTIVITY (MEASURED)

INPUT PARAMETERS:	U238	U234	U235	Ra226	Th232
Activity Concentration (S) - pCi/g	27.5	N/A	N/A	4.3	24.8
Isotope Contribution to Total Uranium (P) - %	47.249	50.539	2.212	N/A	N/A

ANNUAL RADIOACTIVITY EMISSION RATES (Ci/yr)

U238	0.00E+00
Th234	0.00E+00
Pa234m	0.00E+00
Pa234	0.00E+00
U234	0.00E+00
Th230	0.00E+00
Ra226	0.00E+00
Po218	0.00E+00
Pb214	0.00E+00
Bi214	0.00E+00
Po214	0.00E+00
Pb210	0.00E+00
Bi210	0.00E+00
Po210	0.00E+00
U235	0.00E+00
Th231	0.00E+00
Pa231	0.00E+00
Ac227	0.00E+00
Th227	0.00E+00
Fr-223	0.00E+00
Ra223	0.00E+00
Po215	0.00E+00
Pb211	0.00E+00
Bi211	0.00E+00
Po211	0.00E+00
Tl207	0.00E+00
Th232	0.00E+00
Ra228	0.00E+00
Ac228	0.00E+00
Th228	0.00E+00
Ra224	0.00E+00
Po216	0.00E+00
Pb212	0.00E+00
Bi212	0.00E+00
Po212	0.00E+00
Tl208	0.00E+00

MISS SOIL LOAD-OUT EMISSIONS

EQUATION: E = k(0.0032)(U/5)^1.3/(M/2)^1.4 (AP-42, Chapter 13.2.4, "Aggregate Handling and Storage Piles", 01/95)

INPUT PARAMETERS:		Load-out No. 1		Load-out No. 2		Load-out No. 3		Load-out No. 4		Load-out No. 5	
		TSP	PM-10	TSP	PM-10	TSP	PM-10	TSP	PM-10	TSP	PM-10
Particle Size Multiplier (k)		0.74	0.35	0.74	0.35	0.74	0.35	0.74	0.35	0.74	0.35
Mean Wind Speed - U (mph)	(Teterboro, LCD)	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Material Moisture Content - M (%)		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Tons of Material Dropped		22592	22592	9836	9836	5560	5560	5984	5984	6416	6416
		Load-out No. 6		Load-out No. 7		Load-out No. 8		Load-out No. 9		Load-out No. 10	

INPUT PARAMETERS:		TSP	PM-10	TSP	PM-10	TSP	PM-10	TSP	PM-10	TSP	PM-10
Particle Size Multiplier (k)		0.74	0.35	0.74	0.35	0.74	0.35	0.74	0.35	0.74	0.35
Mean Wind Speed - U (mph)	(Teterboro, LCD)	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Material Moisture Content - M (%)		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Tons of Material Dropped		16668	16668	11115	11115	19370	19370	15170	15170	9415	9415

EMISSION FACTOR -E (lb/ton):	Load-out No. 1	Load-out No. 2	Load-out No. 3	Load-out No. 4	Load-out No. 5
E (TSP) =	3.21E-04	3.21E-04	3.21E-04	3.21E-04	3.21E-04
E (PM-10) =	1.52E-04	1.52E-04	1.52E-04	1.52E-04	1.52E-04
CONTROL EFFICIENCY (%)-	0	0	0	0	0
ANNUAL EMISSIONS (grams/year):					
E (TSP) =	3288.0	1431.5	809.2	870.9	933.8
E (PM-10) =	1555.2	677.1	382.7	411.9	441.7

EMISSION FACTOR -E (lb/ton):	Load-out No. 6	Load-out No. 7	Load-out No. 8	Load-out No. 9	Load-out No. 10
E (TSP) =	3.21E-04	3.21E-04	3.21E-04	3.21E-04	3.21E-04
E (PM-10) =	1.52E-04	1.52E-04	1.52E-04	1.52E-04	1.52E-04
CONTROL EFFICIENCY (%)-	0	0	0	0	0
ANNUAL EMISSIONS (grams/year):					
E (TSP) =	2425.9	1617.7	2819.1	2207.8	1370.3
E (PM-10) =	1147.4	765.1	1333.4	1044.3	648.1

RADIONUCLIDE SOURCE CONCENTRATIONS

AVERAGE DETECTED ACTIVITY (MEASURED)

INPUT PARAMETERS:		U238	U234	U235	Ra226	Th232
Activity Concentration (S) - pCi/g	(Load-out No. 1)	3.53	N/A	N/A	0.89	2.67
Activity Concentration (S) - pCi/g	(Load-out No. 2)	2.04	N/A	N/A	0.65	2.11
Activity Concentration (S) - pCi/g	(Load-out No. 3)	1.74	N/A	N/A	0.70	2.81
Activity Concentration (S) - pCi/g	(Load-out No. 4)	3.67	N/A	N/A	1.04	6.86
Activity Concentration (S) - pCi/g	(Load-out No. 5)	2.13	N/A	N/A	1.03	3.83
Activity Concentration (S) - pCi/g	(Load-out No. 6)	2.72	N/A	N/A	1.38	7.47
Activity Concentration (S) - pCi/g	(Load-out No. 7)	8.94	N/A	N/A	1.87	12.28
Activity Concentration (S) - pCi/g	(Load-out No. 8)	10.03	N/A	N/A	2.09	14.12
Activity Concentration (S) - pCi/g	(Load-out No. 9)	6.34	N/A	N/A	1.30	7.66
Activity Concentration (S) - pCi/g	(Load-out No. 10)	7.85	N/A	N/A	1.64	9.96
Isotope Contribution to Total Uranium (P) - %		47.249	50.539	2.212	N/A	N/A

ANNUAL RADIOACTIVITY EMISSION RATES (Ci/yr)	Load-out No. 1	Load-out No. 2	Load-out No. 3	Load-out No. 4	Load-out No. 5	Load-out No. 6	Load-out No. 7	Load-out No. 8	Load-out No. 9	Load-out No. 10	Total
U238	5.49E-09	1.38E-09	6.66E-10	1.51E-09	9.41E-10	3.12E-09	6.84E-09	1.34E-08	6.62E-09	5.09E-09	9.99E-09
Th234	5.49E-09	1.38E-09	6.66E-10	1.51E-09	9.41E-10	3.12E-09	6.84E-09	1.34E-08	6.62E-09	5.09E-09	9.99E-09
Pa234m	5.49E-09	1.38E-09	6.66E-10	1.51E-09	9.41E-10	3.12E-09	6.84E-09	1.34E-08	6.62E-09	5.09E-09	9.99E-09
Pa234	7.14E-12	1.80E-12	8.66E-13	1.97E-12	1.22E-12	4.06E-12	8.89E-12	1.74E-11	8.61E-12	6.61E-12	1.30E-11
U234	5.87E-09	1.48E-09	7.12E-10	1.62E-09	1.01E-09	3.34E-09	7.32E-09	1.43E-08	7.08E-09	5.44E-09	1.07E-08
Th230	5.87E-09	1.48E-09	7.12E-10	1.62E-09	1.01E-09	3.34E-09	7.32E-09	1.43E-08	7.08E-09	5.44E-09	1.07E-08
Ra226	1.38E-09	4.40E-10	2.68E-10	4.28E-10	4.55E-10	1.58E-09	1.43E-09	2.79E-09	1.36E-09	1.06E-09	2.98E-09
Po218	1.38E-09	4.40E-10	2.68E-10	4.28E-10	4.55E-10	1.58E-09	1.43E-09	2.79E-09	1.36E-09	1.06E-09	2.98E-09
Pb214	1.38E-09	4.40E-10	2.68E-10	4.28E-10	4.55E-10	1.58E-09	1.43E-09	2.79E-09	1.36E-09	1.06E-09	2.97E-09
Bi214	1.38E-09	4.40E-10	2.68E-10	4.28E-10	4.55E-10	1.58E-09	1.43E-09	2.79E-09	1.36E-09	1.06E-09	2.98E-09
Po214	1.38E-09	4.40E-10	2.68E-10	4.28E-10	4.55E-10	1.58E-09	1.43E-09	2.79E-09	1.36E-09	1.06E-09	2.97E-09
Pb210	1.38E-09	4.40E-10	2.68E-10	4.28E-10	4.55E-10	1.58E-09	1.43E-09	2.79E-09	1.36E-09	1.06E-09	2.98E-09
Bi210	1.38E-09	4.40E-10	2.68E-10	4.28E-10	4.55E-10	1.58E-09	1.43E-09	2.79E-09	1.36E-09	1.06E-09	2.98E-09
Po210	1.38E-09	4.40E-10	2.68E-10	4.28E-10	4.55E-10	1.58E-09	1.43E-09	2.79E-09	1.36E-09	1.06E-09	2.98E-09
U235	2.57E-10	6.47E-11	3.12E-11	7.08E-11	4.40E-11	1.46E-10	3.20E-10	6.26E-10	3.10E-10	2.38E-10	4.68E-10
Th231	2.57E-10	6.47E-11	3.12E-11	7.08E-11	4.40E-11	1.46E-10	3.20E-10	6.26E-10	3.10E-10	2.38E-10	4.68E-10
Pa231	2.57E-10	6.47E-11	3.12E-11	7.08E-11	4.40E-11	1.46E-10	3.20E-10	6.26E-10	3.10E-10	2.38E-10	4.68E-10
Ac227	2.57E-10	6.47E-11	3.12E-11	7.08E-11	4.40E-11	1.46E-10	3.20E-10	6.26E-10	3.10E-10	2.38E-10	4.68E-10
Th227	2.53E-10	6.38E-11	3.07E-11	6.98E-11	4.34E-11	1.44E-10	3.16E-10	6.17E-10	3.06E-10	2.35E-10	4.61E-10
Fr-223	3.55E-12	8.92E-13	4.30E-13	9.77E-13	6.08E-13	2.02E-12	4.42E-12	8.64E-12	4.28E-12	3.29E-12	6.45E-12
Ra223	2.57E-10	6.47E-11	3.12E-11	7.08E-11	4.40E-11	1.46E-10	3.20E-10	6.26E-10	3.10E-10	2.38E-10	4.68E-10
Po215	2.57E-10	6.47E-11	3.12E-11	7.08E-11	4.40E-11	1.46E-10	3.20E-10	6.26E-10	3.10E-10	2.38E-10	4.68E-10
Pb211	2.57E-10	6.47E-11	3.12E-11	7.08E-11	4.40E-11	1.46E-10	3.20E-10	6.26E-10	3.10E-10	2.38E-10	4.68E-10
Bi211	2.57E-10	6.47E-11	3.12E-11	7.08E-11	4.40E-11	1.46E-10	3.20E-10	6.26E-10	3.10E-10	2.38E-10	4.68E-10
Po211	7.02E-13	1.77E-13	8.51E-14	1.93E-13	1.20E-13	3.99E-13	8.74E-13	1.71E-12	8.46E-13	6.50E-13	1.28E-12
Tl207	2.56E-10	6.45E-11	3.11E-11	7.06E-11	4.39E-11	1.46E-10	3.19E-10	6.24E-10	3.09E-10	2.38E-10	4.66E-10
Th232	4.15E-09	1.43E-09	1.08E-09	2.83E-09	1.69E-09	8.57E-09	9.40E-09	1.88E-08	8.00E-09	6.46E-09	1.12E-08
Ra228	4.15E-09	1.43E-09	1.08E-09	2.83E-09	1.69E-09	8.57E-09	9.40E-09	1.88E-08	8.00E-09	6.46E-09	1.12E-08
Ac228	4.15E-09	1.43E-09	1.08E-09	2.83E-09	1.69E-09	8.57E-09	9.40E-09	1.88E-08	8.00E-09	6.46E-09	1.12E-08
Th228	4.15E-09	1.43E-09	1.08E-09	2.83E-09	1.69E-09	8.57E-09	9.40E-09	1.88E-08	8.00E-09	6.46E-09	1.12E-08
Ra224	4.15E-09	1.43E-09	1.08E-09	2.83E-09	1.69E-09	8.57E-09	9.40E-09	1.88E-08	8.00E-09	6.46E-09	1.12E-08
Po216	4.15E-09	1.43E-09	1.08E-09	2.83E-09	1.69E-09	8.57E-09	9.40E-09	1.88E-08	8.00E-09	6.46E-09	1.12E-08
Pb212	4.15E-09	1.43E-09	1.08E-09	2.83E-09	1.69E-09	8.57E-09	9.40E-09	1.88E-08	8.00E-09	6.46E-09	1.12E-08
Bi212	4.15E-09	1.43E-09	1.08E-09	2.83E-09	1.69E-09	8.57E-09	9.40E-09	1.88E-08	8.00E-09	6.46E-09	1.12E-08
Po212	2.66E-09	9.15E-10	6.89E-10	1.81E-09	1.08E-09	5.49E-09	6.02E-09	1.21E-08	5.12E-09	4.14E-09	7.16E-09
Tl208	1.49E-09	5.13E-10	3.86E-10	1.02E-09	6.08E-10	3.08E-09	3.38E-09	6.76E-09	2.87E-09	2.32E-09	4.01E-09

CLUSTER NO. 2d EXCAVATION EMISSIONS

EQUATION: E = k(0.0032)(U/5)^1.3/(M/2)^1.4 (AP-42, Chapter 13.2.4, "Aggregate Handling and Storage Piles", 01/95)

INPUT PARAMETERS:		Cluster No. 2d TSP	Cluster No. 2d PM-10
Particle Size Multiplier (k)		0.74	0.35
Mean Wind Speed - U (mph)	(Teterboro, LCD)	7.4	7.4
Material Moisture Content - M (%)		12.0	12.0
Tons of Material Dropped		1798	1798

EMISSION FACTOR -E (lb/ton):	Cluster No. 2d
E (TSP) =	3.21E-04
E (PM-10) =	1.52E-04
CONTROL EFFICIENCY (%)-	0
ANNUAL EMISSIONS (grams/year):	
E (TSP) =	261.7
E (PM-10) =	123.8

RADIONUCLIDE SOURCE CONCENTRATIONS AVERAGE DETECTED ACTIVITY (MEASURED)

INPUT PARAMETERS:	U238	U234	U235	Ra226	Th232
Activity Concentration (S) - pCi/g	7.85	N/A	N/A	1.64	9.96
Isotope Contribution to Total Uranium (P) - %	47.249	50.539	2.212	N/A	N/A

ANNUAL RADIOACTIVITY EMISSION RATES (Ci/yr)

	Cluster No. 2d
U238	9.72E-10
Th234	9.72E-10
Pa234m	9.72E-10
Pa234	1.26E-12
U234	1.04E-09
Th230	1.04E-09
Ra226	2.03E-10
Po218	2.03E-10
Pb214	2.03E-10
Bi214	2.03E-10
Po214	2.03E-10
Pb210	2.03E-10
Bi210	2.03E-10
Po210	2.03E-10
U235	4.55E-11
Th231	4.55E-11
Pa231	4.55E-11
Ac227	4.55E-11
Th227	4.49E-11
Fr-223	6.28E-13
Ra223	4.55E-11
Po215	4.55E-11
Pb211	4.55E-11
Bi211	4.55E-11
Po211	1.24E-13
Tl207	4.54E-11
Th232	1.23E-09

Ra228	1.23E-09
Ac228	1.23E-09
Th228	1.23E-09
Ra224	1.23E-09
Po216	1.23E-09
Pb212	1.23E-09
Bi212	1.23E-09
Po212	7.90E-10
Tl208	4.43E-10

CLUSTER NO. 4 EXCAVATION EMISSIONS

EQUATION: E = k(0.0032)(U/5)^1.3/(M/2)^1.4 (AP-42, Chapter 13.2.4, "Aggregate Handling and Storage Piles", 01/95)

INPUT PARAMETERS:		Cluster No. 4 TSP	Cluster No. 4 PM-10
Particle Size Multiplier (k)		0.74	0.35
Mean Wind Speed - U (mph)	(Teterboro, LCD)	7.4	7.4
Material Moisture Content - M (%)		12.0	12.0
Tons of Material Dropped		4108	4108

EMISSION FACTOR -E (lb/ton): Cluster No. 4a

E (TSP) = 3.21E-04

E (PM-10) = 1.52E-04

CONTROL EFFICIENCY (%)- 0

ANNUAL EMISSIONS (grams/year):

E (TSP) = 597.9

E (PM-10) = 282.8

RADIONUCLIDE SOURCE CONCENTRATIONS

AVERAGE DETECTED ACTIVITY (MEASURED)

INPUT PARAMETERS:	U238	U234	U235	Ra226	Th232
Activity Concentration (S) - pCi/g	2.79	N/A	N/A	0.77	2.39
Isotope Contribution to Total Uranium (P) - %	47.249	50.539	2.212	N/A	N/A

ANNUAL RADIOACTIVITY EMISSION RATES (Ci/yr)

	Cluster No. 4
U238	7.89E-10
Th234	7.89E-10
Pa234m	7.89E-10
Pa234	1.03E-12
U234	8.44E-10
Th230	8.44E-10
Ra226	2.18E-10
Po218	2.18E-10

Pb214	2.18E-10
Bi214	2.18E-10
Po214	2.18E-10
Pb210	2.18E-10
Bi210	2.18E-10
Po210	2.18E-10
U235	3.69E-11
Th231	3.69E-11
Pa231	3.69E-11
Ac227	3.69E-11
Th227	3.64E-11
Fr-223	5.10E-13
Ra223	3.69E-11
Po215	3.69E-11
Pb211	3.69E-11
Bi211	3.69E-11
Po211	1.01E-13
Tl207	3.68E-11
Th232	6.76E-10
Ra228	6.76E-10
Ac228	6.76E-10
Th228	6.76E-10
Ra224	6.76E-10
Po216	6.76E-10
Pb212	6.76E-10
Bi212	6.76E-10
Po212	4.33E-10
Tl208	2.43E-10

CLUSTER NO. 5b/5c EXCAVATION EMISSIONS

EQUATION: E = k(0.0032)(U/5)^1.3/(M/2)^1.4 (AP-42, Chapter 13.2.4, "Aggregate Handling and Storage Piles", 01/95)

INPUT PARAMETERS:		Cluster No. 5b TSP	Cluster No. 5b PM-10	Cluster No. 5c TSP	Cluster No. 5c PM-10
Particle Size Multiplier (k)		0.74	0.35	0.74	0.35
Mean Wind Speed - U (mph)	(Teterboro, LCD)	7.4	7.4	7.4	7.4
Material Moisture Content - M (%)		12.0	12.0	12.0	12.0
Tons of Material Dropped	(Assumption)	5867	5867	6043	6043

EMISSION FACTOR -E (lb/ton):	Cluster No. 5b	Cluster No. 5c
E (TSP) =	3.21E-04	3.21E-04
E (PM-10) =	1.52E-04	1.52E-04
CONTROL EFFICIENCY (%)-	0	0

ANNUAL EMISSIONS (grams/year):

	Cluster No. 5b	Cluster No. 5c
E (TSP) =	853.9	879.5

E (PM-10) = 403.9 416.0

RADIONUCLIDE SOURCE CONCENTRATIONS

AVERAGE DETECTED ACTIVITY (MEASURED)

INPUT PARAMETERS:		U238	U234	U235	Ra226	Th232
Activity Concentration (S) - pCi/g	(Cluster 5b)	2.62	N/A	N/A	0.86	3.66
Activity Concentration (S) - pCi/g	(Cluster 5c)	7.01	N/A	N/A	1.66	10.38
Isotope Contribution to Total Uranium (P) - %		47.249	50.539	2.212	N/A	N/A

ANNUAL RADIOACTIVITY EMISSION RATES (Ci/yr)	Cluster No. 5b	Cluster No. 5c	Total
U238	1.06E-09	2.92E-09	3.97E-09
Th234	1.06E-09	2.92E-09	3.97E-09
Pa234m	1.06E-09	2.92E-09	3.97E-09
Pa234	1.38E-12	3.79E-12	5.17E-12
U234	1.13E-09	3.12E-09	4.25E-09
Th230	1.13E-09	3.12E-09	4.25E-09
Ra226	3.47E-10	6.91E-10	1.04E-09
Po218	3.47E-10	6.91E-10	1.04E-09
Pb214	3.47E-10	6.90E-10	1.04E-09
Bi214	3.47E-10	6.91E-10	1.04E-09
Po214	3.47E-10	6.90E-10	1.04E-09
Pb210	3.47E-10	6.91E-10	1.04E-09
Bi210	3.47E-10	6.91E-10	1.04E-09
Po210	3.47E-10	6.91E-10	1.04E-09
U235	4.95E-11	1.37E-10	1.86E-10
Th231	4.95E-11	1.37E-10	1.86E-10
Pa231	4.95E-11	1.37E-10	1.86E-10
Ac227	4.95E-11	1.37E-10	1.86E-10
Th227	4.89E-11	1.35E-10	1.83E-10
Fr-223	6.84E-13	1.88E-12	2.57E-12
Ra223	4.95E-11	1.37E-10	1.86E-10
Po215	4.95E-11	1.37E-10	1.86E-10
Pb211	4.95E-11	1.37E-10	1.86E-10
Bi211	4.95E-11	1.37E-10	1.86E-10
Po211	1.35E-13	3.73E-13	5.08E-13
Tl207	4.94E-11	1.36E-10	1.86E-10
Th232	1.48E-09	4.32E-09	5.80E-09
Ra228	1.48E-09	4.32E-09	5.80E-09
Ac228	1.48E-09	4.32E-09	5.80E-09
Th228	1.48E-09	4.32E-09	5.80E-09
Ra224	1.48E-09	4.32E-09	5.80E-09
Po216	1.48E-09	4.32E-09	5.80E-09
Pb212	1.48E-09	4.32E-09	5.80E-09
Bi212	1.48E-09	4.32E-09	5.80E-09
Po212	9.47E-10	2.77E-09	3.71E-09
Tl208	5.31E-10	1.55E-09	2.08E-09

CLUSTER NO. 6c EXCAVATION EMISSIONS

EQUATION: $E = k(0.0032)(U/5)^{1.3}/(M/2)^{1.4}$ (AP-42, Chapter 13.2.4, "Aggregate Handling and Storage Piles", 01/95)

INPUT PARAMETERS:		Cluster No. 6c TSP	Cluster No. 6c PM-10
Particle Size Multiplier (k)		0.74	0.35
Mean Wind Speed - U (mph)	(Teterboro, LCD)	7.4	7.4
Material Moisture Content - M (%)		12.0	12.0
Tons of Material Dropped		8231	8231

EMISSION FACTOR -E (lb/ton):	Cluster No. 6c
E (TSP) =	3.21E-04
E (PM-10) =	1.52E-04

CONTROL EFFICIENCY (%)- 0

ANNUAL EMISSIONS (grams/year):	
E (TSP) =	1197.9
E (PM-10) =	566.6

RADIONUCLIDE SOURCE CONCENTRATIONS

AVERAGE DETECTED ACTIVITY (MEASURED)

INPUT PARAMETERS:	U238	U234	U235	Ra226	Th232
Activity Concentration (S) - pCi/g	8.29	N/A	N/A	1.73	11.01
Isotope Contribution to Total Uranium (P) - %	47.249	50.539	2.212	N/A	N/A

ANNUAL RADIOACTIVITY EMISSION RATES (Ci/yr)

	Cluster No. 6c
U238	4.70E-09
Th234	4.70E-09
Pa234m	4.70E-09
Pa234	6.11E-12
U234	5.02E-09
Th230	5.02E-09
Ra226	9.80E-10
Po218	9.80E-10
Pb214	9.80E-10
Bi214	9.80E-10
Po214	9.80E-10
Pb210	9.80E-10
Bi210	9.80E-10
Po210	9.80E-10
U235	2.20E-10
Th231	2.20E-10
Pa231	2.20E-10

Ac227	2.20E-10
Th227	2.17E-10
Fr-223	3.03E-12
Ra223	2.20E-10
Po215	2.20E-10
Pb211	2.20E-10
Bi211	2.20E-10
Po211	6.00E-13
Tl207	2.19E-10
Th232	6.24E-09
Ra228	6.24E-09
Ac228	6.24E-09
Th228	6.24E-09
Ra224	6.24E-09
Po216	6.24E-09
Pb212	6.24E-09
Bi212	6.24E-09
Po212	4.00E-09
Tl208	2.24E-09

CLUSTER NO. 9a EXCAVATION EMISSIONS

EQUATION: E = k(0.0032)(U/5)^1.3/(M/2)^1.4 (AP-42, Chapter 13.2.4, "Aggregate Handling and Storage Piles", 01/95)

INPUT PARAMETERS:

		Cluster No. 9a	
		TSP	PM-10
Particle Size Multiplier (k)		0.74	0.35
Mean Wind Speed - U (mph)	(Teterboro, LCD)	7.4	7.4
Material Moisture Content - M (%)		12.0	12.0
Tons of Material Dropped		1731	1731

EMISSION FACTOR -E (lb/ton):	Cluster No. 9a
E (TSP) =	3.21E-04
E (PM-10) =	1.52E-04

CONTROL EFFICIENCY (%)- 0

ANNUAL EMISSIONS (grams/year):

E (TSP) =	251.9
E (PM-10) =	119.2

RADIONUCLIDE SOURCE CONCENTRATIONS

AVERAGE DETECTED ACTIVITY (MEASURED)

INPUT PARAMETERS:

	U238	U234	U235	Ra226	Th232
Activity Concentration (S) - pCi/g	2.43	N/A	N/A	1.21	5.65
Isotope Contribution to Total Uranium (P) - %	47.249	50.539	2.212	N/A	N/A

ANNUAL RADIOACTIVITY EMISSION RATES (Ci/yr)	Cluster No. 9a
U238	2.90E-10
Th234	2.90E-10
Pa234m	2.90E-10
Pa234	3.76E-13
U234	3.10E-10
Th230	3.10E-10
Ra226	1.44E-10
Po218	1.44E-10
Pb214	1.44E-10
Bi214	1.44E-10
Po214	1.44E-10
Pb210	1.44E-10
Bi210	1.44E-10
Po210	1.44E-10
U235	1.36E-11
Th231	1.36E-11
Pa231	1.36E-11
Ac227	1.36E-11
Th227	1.34E-11
Fr-223	1.87E-13
Ra223	1.36E-11
Po215	1.36E-11
Pb211	1.36E-11
Bi211	1.36E-11
Po211	3.70E-14
Tl207	1.35E-11
Th232	6.73E-10
Ra228	6.73E-10
Ac228	6.73E-10
Th228	6.73E-10
Ra224	6.73E-10
Po216	6.73E-10
Pb212	6.73E-10
Bi212	6.73E-10
Po212	4.31E-10
Tl208	2.42E-10

APPENDIX F
GAMMA RADIATION CALCULATION DOSE FOR THE YEAR 2003

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Shaw™ Stone & Webster, Inc.

CALCULATION SHEET

			CALC. NO.	610041-0107-005	REV. 0
ORIGINATOR	Maurice Hanashy	DATE 3/1/04	CHECKED		DATE
PROJECT	FUSRAP Maywood Superfund Site		JOB NO.	6100410107	SHEET 1 of 3
SUBJECT	MISS 2003 Hypothetical Maximum Gamma Radiation Dose				

PURPOSE

This calculation estimates the dose to the hypothetical maximally exposed individual (resident and worker) from direct gamma radiation at the Maywood Interim Storage Site (MISS) in 2003.

SCOPE

This calculation models the site fence line as a line source to determine the dose to a hypothetical individual at a postulated distance from the fence line.

REFERENCE

Bechtel National, Inc. (BNI), 1991. " Evaluation of the Need for TETLD Face Calculation, " 14501-191-CV-011 rev 0, Oak Ridge, TN.

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Cember, H., 1989. Introduction to Health Physics, Pergamon Press, Elmford, NY.

ASSUMPTION

The dose rate to a given distance from the site fence line can be approximated by a dose rate at a distance from a line source. The line source dose rate is represented by the average of the Tissue Equivalent Thermoluminescent Dosimeter (TETLD) results from locations on the fence line facing the individual. The length of the line source is represented by the length of the fence line facing the individual. The dose rate calculation for gamma radiation is based on the assumption that a resident with 100% occupancy and a worker with 23% occupancy are located 50 feet from the maximum measured source (location 21). This is a conservative approach since the nearest receptor is located over 200 feet from location 21.

TETLD results are corrected for time, fade, housing attenuation, and background. The exposure time starts with the date of installation at the site and ends with the date of removal from the site. The fade factor is approximately one (BNI 1991) indicating that fade is not a major factor for the radiation levels measured on FUSRAP. The housing attenuation factor is estimated to be 1.075 (BNI 1992). Background is estimated as the average of the offsite TETLD results.

CALCULATIONS

The TETLD results (BNI 1998) shown in the attached table are converted to gamma radiation dose rates (d) using the following equation:

$$d = (mrem / yr) = \left(TETLD\,result \bullet \frac{number\ of\ days\ per\ year}{number\ of\ days\ \exp osed} \bullet\ fade \bullet attenuation \right) - background$$

The average of the dose rates at the TETLD location on the west side of the site as shown in the attached figures (i.e., location 21) is:

$$d_1 = \frac{644.0 + 628.0 + 620.8 + 604.0}{4} mrem/yr = 624.20 mrem/yr$$

The dose rate at any distance from a line source (Cember 1989) is:

$$\frac{d_2}{d_1} = \frac{h_1}{h_2} \frac{\tan^{-1}\frac{l}{h_2}}{\tan^{-1}\frac{l}{h_1}}$$

Where:

h_1	=	distance of the TETLDs from the fence line (3 ft)
h_2	=	distance of the individual from the fence line (50 ft)
l	=	half the length of the line source (133 ft)
d_1	=	dose rate at the TELTDs location (624.20 mrem/yr.)
d_2	=	dose rate at the individual's location

Substituting known values into the equation and solving for the dose rate at the resident's location (d_2) assuming 100% occupancy is:

$$d_2 = 624.20 mrem/yr \frac{3}{50} \frac{\tan^{-1}\frac{133}{50}}{\tan^{-1}\frac{133}{3}} = 29.30 mrem/yr$$

Multiplying the dose rate by the time the worker occupied the location during 2003, the dose (D) is:

$$D_{worke} = 29.30 mrem/yr \bullet 23\% \bullet 1 yr = 6.74 mrem$$

SUMMARY OF RESULTS
The calculated doses to the hypothetical maximally exposed resident and worker from direct gamma radiation at MISS in 2003 are 23.9 mrem/yr and 6.74 mrem/yr, respectively.

TABLE 2
2003 External Gamma Radiation Dose Rates
Maywood Interim Storage Site - 2003

2/3/2003 to 8/05/2003 TETLD[a]			2/5/2003 to 2/2/04 TETLD[a]		
Monitoring Location[b]	**Readings** (mrem)	**Corrected**[c] (mrem/yr)	**Monitoring Location**[b]	**Readings** (mrem)	**Corrected**[c] (mrem/yr)
MISS Perimeter					
4	77.0	76.1	4	165.0	104.9
	93.0	110.4		146.0	84.4
5	80.0	82.5	5	149.0	87.4
	75.0	78.3		149.0	86.8
10	119.0	166.2	10	222.0	166.1
	116.0	159.7		217.0	160.3
12	65.0	50.4	12	119.0	55.3
	66.0	52.5		121.0	57.0
20	52.0	22.5	20	92.0	25.8
	49.0	*		84.0	17.6
21	330.0	618.6	21	644.0	620.8
	324.0	605.7		628.0	604.0
22	82.0	86.8	22	155.0	93.2
	81.0	84.7		156.0	94.8
23	87.0	97.6	23	149.0	87.4
	80.0	82.5		153.0	91.1
24	174.0	284.1	24	333.0	285.3
	169.0	273.4		327.0	279.1
25	324.0	605.7	25	609.0	583.3
	307.0	569.3		561.0	531.8
30	64.0	48.2	30	115.0	51.0
	66.0	52.5		109.0	43.9
31	84.0	91.1	31	150.0	88.1
	82.0	86.8		150.0	88.1
32	37.0	0.0	32	63.0	0.0
	41.0	0.0		61.0	0.0
33	45.0	7.5	33	68.0	0.0
	43.0	3.2		68.0	0.0
Background	40.0	Avg. bkg		71.0	Avg. bkg
19	43.0	89.0	19	65.0	73.4

[a] TETLD = Tissue-equivalent thermoluminescent dosimeter. There are two TETLDs per station.
[b] Monitoring locations are shown on Figure D-2.
[c] All TETLD readings are corrected for shelter/absorption factor (s/a = 1.075) and are normalized to exactly one year's exposure. The average corrected background is then subtracted from all other corrected readings.
* TETLD was lost or damaged in processing. Unable to report a reading.

APPENDIX G
QUALITY CONTROL SUMMARY REPORT

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QUALITY CONTROL SUMMARY REPORT FOR THE ANNUAL ENVIRONMENTAL MONITORING REPORT FOR THE YEAR 2003

FUSRAP MAYWOOD SUPERFUND SITE
MAYWOOD, NEW JERSEY

SITE-SPECIFIC ENVIRONMENTAL RESTORATION
CONTRACT NO. DACW41-99-D-9001

TASK ORDER 0002
WAD 01, WBS 07

Submitted to:

Department of the Army
U.S. Army Engineer District, New York
Corps of Engineers
FUSRAP Project Office
26 Federal Plaza
New York, New York 10278

Department of the Army
U.S. Army Engineer District, Kansas City
Corps of Engineers
700 Federal Building
Kansas City, Missouri 64106

Submitted by:

Shaw Environmental, Inc.
100 West Hunter Avenue
Maywood, New Jersey 07607

July 2004
Revision 0

Issued to: ____________________ Date: ____________________

Copy No. __________ ☐ Controlled ☐ Uncontrolled

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QUALITY CONTROL SUMMARY REPORT FOR THE ANNUAL ENVIRONMENTAL MONITORING REPORT FOR THE YEAR 2003

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Corps of Engineers
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Kansas City, Missouri 64106

Submitted by:

Shaw Environmental, Inc.
100 West Hunter Avenue
Maywood, New Jersey 07607

July 2004
Revision 0

Prepared by: ______________________________ Date: ______________

Dr. Brian Tucker
Project Chemist

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ATTACHMENTS

ABBREVIATIONS AND ACRONYMS

aq	aqueous
CDQMP	Chemical Data Quality Management Plan
CLP	Contract Laboratory Program
COC	chain-of-custody
CT	Connecticut
%D	percent difference
DOE	U.S. Department of Energy
DUP	duplicate
EPA	U.S. Environmental Protection Agency
FMSS	FUSRAP Maywood Superfund Site
FUSRAP	Formerly Utilized Sites Remedial Action Program
ICP	inductively-coupled plasma
ICSAB	Interference check standard containing both interfering elements (Al, Ca, Mg, and Fe) and target elements
ID	identification
IDL	instrument detection limit
ISB	ICP interference check standard containing the noninterfering elements at concentrations typically between 0.1-1.0 mg/L
J	estimated value
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDA	minimum detectable activity
MDC	minimum detectable concentration
MISS	Maywood Interim Storage Site
MS	matrix spike
MSD	matrix spike duplicate
NAD	normalized absolute difference
NAS	National Academy of Sciences
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QCSR	Quality Control Summary Report
R	rejected data
%R	percent recovery
Ra-226	radium-226
Ra-228	radium-228
ROC	radionuclide of concern
RPD	relative percent difference
RRF	relative response factor
%RSD	percent relative standard deviation
SDG	sample delivery group
SEC	Safety and Ecology Corporation
Shaw Environmental, Inc.	Shaw
STL	Severn Trent Laboratories, Inc.

TAL	target analyte list
TDS	total dissolved solids
Th-228	thorium-228
Th-230	thorium-230
Th-232	thorium-232
TIC	tentatively identified compound
U	undetected
U-234	uranium-234
U-235	uranium-235
U-238	uranium-238
UJ	estimated non-detect
USACE	U.S. Army Corps of Engineers
VOA	volatile organics analysis
VOC	volatile organic compound

1.0 INTRODUCTION

Shaw Environmental, Inc. (formerly Stone & Webster, Inc., A Shaw Group Company) conducted environmental monitoring for year 2003 during the summer of 2003.

This *Quality Control Summary Report (QCSR) for the Annual Environmental Monitoring Report for the Year 2003* addresses data collected from analysis of groundwater, surface water, and sediment samples collected between June 6 and July 26, 2003. These samples were tested for radium-226 (Ra-226), radium-228 (Ra-228), thorium-228 (Th-228), thorium-230 (Th-230), thorium-232 (Th-232), uranium-234 (U-234), uranium-235 (U-235) and uranium-238 (U-238), gross alpha, gross beta, target analyte list (TAL) metals, boron, lithium, and thallium, and volatile organic compounds (VOCs). This QCSR will only discuss deviations in quality control (QC) criteria for these Formerly Utilized Sites Remedial Action Program (FUSRAP) Maywood Superfund Site (FMSS) parameters. A project QCSR will be prepared at the conclusion of the project. The Environmental Monitoring 2003 QCSR will support preparation of the project QCSR.

The Environmental Monitoring 2003 QCSR is organized into seven sections as follows.

- Section 1.0, Introduction
- Section 2.0, Data Collection
- Section 3.0, Data Analysis and Validation
- Section 4.0, Data Summaries
- Section 5.0, System Audits
- Section 6.0, Analytical and Quality Assurance / Quality Control (QA/QC) Problems Encountered
- Section 7.0, References

2.0 DATA COLLECTION

Environmental monitoring data collection procedures were evaluated for any deviations or modifications that may have occurred in the areas of sample handling and custody, equipment calibration and maintenance, and analytical methods. Within this report, the terms batch, package, and Sample Delivery Group (SDG) are synonymous. A SDG is a data report that contains the various test results of one or more sample batches plus associated QC data such as calibrations, blank and matrix spike results, blanks, etc.

2.1 SAMPLE HANDLING AND CUSTODY

There were no sample handling discrepancies noted by the off-site laboratory. All chains of custodies (COCs) received by the off-site laboratory were properly signed and dated. The following concerns are noted for the radiological packages.

- In package F3F270122, shipping signatures were not included on the custody documents.
- Custody seals were not present on the sample coolers for several packages. Custody seals were not attached to coolers if the coolers were being picked up by the courier from Severn Trent Laboratories of Shelton, Connecticut (STL-CT) as opposed to being shipped. Custody seals were not present on individual sample containers.
- In packages F3G010111, F3G080109, F3G150143, F3G160143, F3G170122, F3G100133, and F3G150143, the laboratory analyzed a rinseate blank sample as the gross alpha and gross beta matrix spike sample and as the gross alpha and gross beta, and/or uranium and thorium isotope laboratory duplicate sample. In all cases except packages F3G150143, F3G160143, and F3G150143, the COC did not note that the sample was a rinsate blank sample.
- In package F3G030175, a matrix spike / matrix spike duplicate (MS/MSD) sample was specified, however no MS/MSD was analyzed for radium isotopes and a non-Maywood sample was analyzed for gross alpha and gross beta analyses.
- For package F3G090126, sample 12b-024800, the laboratory noted that samplers provided insufficient sample volume for all requested radiochemical analyses. Maurice Hanashy, at Shaw Environmental, Inc. (Shaw), was contacted and requested that the laboratory complete only the gross alpha and gross beta analyses. Uranium isotope, thorium isotope and radium isotope analyses were cancelled for rinsate blank sample 12b-024800.

For chemical packages, all samples were received at a temperature less than 6°C. Custody seals were present on all sample coolers except for samples in batch F3G010111, F3G150143, F3F280186, F3G140105 (all for thallium and lithium), and were not present on any sample containers. Internal custody documents were submitted with all data packages. The following concerns are noted.

- Prior to the start of the Environmental Monitoring 2003 sampling program, the offsite laboratory was asked to maximize the batch size and work with the Maywood Sampling Coordinator to ensure that every batch would have a Maywood MS or MS/MSD sample, such that batch precision could be evaluated without inflicting excessive burden on the sampling team. This does not apply to radiological since there is always adequate sample to perform matrix spikes when required. Only 5 of the 13 thallium / lithium data packages had MS/MSD results from Maywood samples associated with those five batches. For the other eight, either non-Maywood MS/MSD or Maywood MS/MSD results from another batch were used.

- The COC for package F3G170122 did not indicate sample 12b-024823 as an aqueous equipment rinseate blank.
- Sample 22a-024760 was crossed out on the COC, but was received by the laboratory. The laboratory analyzed and reported results for sample 22a-024760. The laboratory labeled 22a-024760 as 22a-024760 DUP (i.e., duplicate).
- For SDG F3G030175, the condition upon receipt form indicates that sample 12b-024740 was to be analyzed as a MS/MSD pair. The laboratory did not perform these analyses. A non-Maywood sample was analyzed as the matrix duplicate/matrix spike pair.
- For packages 204150 and 204085, all samples were received in good condition except for trip blanks collected on 7/7, 7/9, 7/15 and 7/16/03. Headspace was present in these trip blanks. No data were qualified due to headspace.
- For package 204049, for volatiles, the sample receipt checklists indicate that no volatile organica analysis (VOA) vials were received for sample 22a-024812, although the COC indicated that VOA vials were included. Sample 12b-024817(TB) was incorrectly identified in the data package as 12a-024817. The data evaluation memo references are consistent with the COC identification of 12b-024817. Laboratory sample receipt forms indicate that trip blank sample 12b-024792 had headspace at sample receipt. No data were qualified due to headspace.

2.2 EQUIPMENT CALIBRATION AND MAINTENANCE

2.2.1 Field Instrument Measurement and Calibration

There were no discrepancies observed in the area of field equipment calibration and maintenance for the environmental monitoring 2003 program.

2.2.2 Off-Site Laboratories

2.2.2.1 Radiological Analysis

For radiological analyses, all criteria were met for initial and continuing instrument calibrations.

2.2.2.2 Chemical Analysis

For chemical analysis, only data packages for which quality control problems were identified are discussed below.

Chemical Analysis in Data Package 204007

The relative response factor (RRF) for acetone was 0.044 in the 7/2/03 initial calibration, and 0.035 in all three continuing calibrations. The minimum criterion is 0.05. Normally, this exceedance triggers rejection of non-detect results. Since the laboratory control sample (LCS) and MS/MSD were within acceptance criteria for acetone, all acetone results are qualified UJ for estimated non-detects and J for positive values.

The initial calibration failed to meet the 15.0 percent maximum relative standard deviation (%RSD) acceptance criterion for vinyl chloride, bromomethane, chloroethane, acetone, carbon disulfide, methylene chloride and 2-butanone. Results for bromomethane, vinyl chloride, chloroethane, acetone, carbon disulfide, methylene chloride, and 2-butanone were qualified as estimated J or non-detected estimated UJ in all samples.

Continuing calibrations were analyzed on 7/2, 7/32, and 7/7/03. The following analytes failed to meet the 20.0 percent difference (%D) criterion in one or more of the continuing calibrations: acetone, methylene chloride, 2-butanone, chloromethane, and bromomethane. No additional qualifications of acetone, bromomethane, methylene chloride, and 2-butanone were required. Based upon the 7/3 and 7/7 continuing calibrations, results for chloromethane were qualified as estimated (J positives, UJ non-detects) in samples 12b-024783, 12b-024785, 12b-024784, 12b-024726, and 12b-024727.

Chemical Analysis in Data Package 204049

For the VOA, the RRF for acetone was 0.044 in the 7/2/03 initial calibration, and less than 0.05 in all five (7/8, 7/9, 7/14, 7/15, and 7/16/03) continuing calibrations. The minimum criterion is 0.05. Normally, this exceedance triggers rejection of non-detect results. Since the LCS and MS/MSD associated with all of the samples in this SDG (except for those noted in the following Sentence) were within acceptance criteria for acetone, all acetone results for those samples are qualified UJ for non-detects and J for positive values. The acetone results for the LCS / laboratory control sample duplicate (LCSD) associated with samples 12b-024816(RB), 12b-024741, 12b-024817(TB), 12b-024819(TB), and 12b-024742 are reported as rejected due to low RRFs and relative percent differences (RPD) between LCS and LCSD acetone recoveries that were outside acceptance criteria.

The volatiles initial calibration failed to meet the 15.0 %RSD acceptance criterion for vinyl chloride, bromomethane, chloroethane, acetone, carbon disulfide, methylene chloride and 2-butanone. Results for bromomethane, vinyl chloride, chloroethane, acetone, carbon disulfide, methylene chloride, and 2-butanone were qualified as estimated J or non-detected estimated UJ in all samples.

In the volatiles 7/15 continuing calibration, the bromomethane and 2-butanone RRF are below acceptance criteria. Since the %D between LCS and LCSD 2-butanone recoveries were also outside acceptance criteria, and no corrective actions were taken, and since bromomethane was not reported in the LCS/LCSD, the 2-butanone and bromomethane results are rejected for samples 12b-024817, 12b-024819, and 12b-024742. In the volatiles 7/16 continuing calibration, the bromomethane and 2-butanone RRF are also below the acceptance criterion of 0.05. The 2-butanone results were acceptable in the LCS/LCSD and since bromomethane was not reported in the LCS/LCSD, the 2-butanone and bromomethane results are estimated (qualified UJ for non-detects and J for positive values) and rejected, respectively, in associated samples 19a-024734, 19a-024735, and 12b-024818. Based upon exceedance of the 20% acceptance criterion for the continuing calibration %D, the following sample parameters were qualified estimated (UJ for non-detects and J for positive values).

Table G2-1
Data Package 204049 Sample Parameters Qualified Estimated

Parameter	Samples
Bromomethane	12b-024787, 12b-024736, 12b-024792, 12b-024791, 12b-024740, 12b-024793, 12b-024730, 12b-024786, 20a-024737, 12b-024816, 20a-024741, 12b-024819, 12b-024742
Methylene chloride	12b-024787, 12b-024736, 12b-024792, 12b-024791, 12b-024740, 12b-024793, 12b-024730, 12b-024786, 20a-024737, 12b-024816, 20a-024741, 12b-024817, 12b-024819, 12b-024742, 19a-024734, 19a-024735, 12b-024818

Chloromethane	12b-024786, 20a-024737, 12b-024817, 12b-024819, 12b-024742
Dibromochloromethane	12b-024786, 20a-024737
Bromoform	12b-024786, 20a-024737, 12b-024817, 12b-024819, 12b-024742
2-butanone	12b-024816, 20a-024741

Chemical Analysis in Data Package 204085

For the volatile organic analysis, the RRF for acetone was 0.044 in the 7/2/03 initial calibration, and less than 0.05 in all three (7/9, 7/14, and 7/15) continuing calibrations. The minimum criterion is 0.05. Normally, this exceedance triggers rejection of non-detect results. Since the LCS and MS/MSD associated with some of the samples in this SDG were within acceptance criteria, all acetone results except samples 12b-024811(TB), 12b-024809(RB), 12b-024724 and 12b-024725 are reported as estimated (J positives, UJ non-detects) due to RRF and LCS/LCSD results. The acetone results for samples 12b-024811(TB), 12b-024809(RB), 12b-024724, and 12b-024725 are R rejected due to RRF and LCS/LCD. No corrective action was taken by the laboratory due to RPDs between LCS and LCSD recoveries that were greater than 20%.

The initial calibration failed to meet the 15.0 %RSD acceptance criterion for vinyl chloride, bromomethane, chloroethane, acetone, carbon disulfide, methylene chloride and 2-butanone. Results for bromomethane, vinyl chloride, chloroethane, acetone, carbon disulfide, methylene chloride, and 2-butanone were qualified as estimated J or non-detected estimated UJ in all samples.

For the 7/15 continuing calibrations results, the bromomethane and 2-butanone RRF are below acceptance criteria. Since the %D between LCS and LCSD 2-butanone recoveries were also outside acceptance criteria, and no corrective actions were taken, and since bromomethane was not reported in the LCS/LCSD, the 2-butanone and bromomethane results are rejected for sample 12b-024725. The following sample parameters were qualified estimated (J positives, UJ non-detects) due to exceedance of the 20% criterion for %D.

Table G2-2
Data Package 204085 Sample Parameters Qualified Estimated

Parameter	Samples
Bromomethane	12b-024798, 12b-024796, 12b-024744, 12b-024743, 12b-024797, 12b-024811, 12b-024809, and 12b-024724
Methylene chloride	12b-024798, 12b-024796, 12b-024744, 12b-024743, 12b-024797, 12b-024811, 12b-024809, 12b-024724, and 12b-024725
Chloromethane	12b-024798, 12b-024796, 12b-024744, 12b-024743, 12b-024797, and 12b-024725
Dibromochloromethane	12b-024798, 12b-024796, 12b-024744, 12b-024743, 12b-024797
Bromoform	12b-024798, 12b-024796, 12b-024744, 12b-024743, 12b-024797, and 12b-024725
2-butanone	12b-024811, 12b-024809, and 12b-024724

Chemical Analysis in Data Package 204150

For the volatile organic analysis, the RRF for acetone was 0.044 in the 7/2/03 initial calibration, and less than 0.05 in two of the three (7/17 and 7/18) continuing calibrations. The minimum criterion is 0.05. This exceedance triggered rejection of all acetone results except for 12b-024827, 12b-024823, and

12b-024729 because the acetone also failed to meet acceptance criteria for MS/MSD and LCS/LCSD %RPDs and the laboratory failed to take corrective action. Since the LCS and MS/MSD associated with 12b-024827, 12b-024823, and 12b-024729 had acetone results that were within acceptance criteria, the acetone results for these samples are reported as estimated (J positives, UJ non-detects).

The initial calibration failed to meet the 15.0 %RSD acceptance criterion for vinyl chloride, bromomethane, chloroethane, acetone, carbon disulfide, methylene chloride and 2-butanone. Results for bromomethane, vinyl chloride, chloroethane, acetone, carbon disulfide, methylene chloride, and 2-butanone were qualified as estimated J or non-detected estimated UJ in all samples. It is noted that the 2-butanone results for samples 12b-024820, 12b-024732, 12b-024728, 12b-024824, 12b-024821, 12b-024745 and 12b-024746 were subsequently rejected due to LCS/LCSD RPDs.

Due to continuing calibration low RRFs and high %D values for bromomethane, the bromomethane results for samples 12b-024822, 12b-024825 are rejected. Sample parameters qualified estimated (J positives, UJ non-detects) due to exceedance of the %D criterion of 20% are as follows.

Table G2-3
Data Package 204150 Sample Parameters Qualified Estimated

Parameter	Samples
Bromomethane	12b-024820, 12b-024732, 12b-024728, 12b-024824, 12b-024821, 12b-024745, 12b-024746, 12b-024827, 12b-024823, and 12b-024729
Chloromethane	12b-024820, 12b-024732, 12b-024728, 12b-024824, 12b-024821, 12b-024745, 12b-024746, 12b-024827, 12b-024823, and 12b-024729
Methylene chloride	12b-024825, 12b-024822

2.2.2.3 Lithium and Thallium Analyses

All initial and continuing calibration acceptance criteria were met for the thallium and lithium analyses.

2.3 ANALYTICAL METHODS

A total of three laboratories were employed, two for radiological analysis and one for chemical analysis.

For radiological analysis, the Maywood Interim Storage Site (MISS) on-site laboratory operated by Safety and Ecology Corporation (SEC), a Subcontractor to Shaw, analyzed routine air filter samples for the radionuclides of concern (ROCs) using a Protean liquid scintillation counter.

The off-site radiological laboratory, Severn Trent Laboratory (STL) in Earth City, Missouri, analyzed all environmental monitoring samples for radiological parameters. STL analyzed the aqueous samples using U.S. Environmental Protection Agency (EPA) Methods 903.0 modified for Ra-226, EPA Method 904.0 modified for Ra-228, National Academy of Sciences / Department of Energy (NAS/DOE) method Thorium-3004/RP for thorium isotopes, NAS/DOE method uranium-3050/RP for uranium isotopes, and EPA Method 9310 modified for gross alpha and gross beta analyses (EPA 1980, EPA 1997). Sediment samples were analyzed for Ra-226 and Ra-228 by employing SW-846 EPA methods 9315 modified and 9320 modified respectively; for thorium and uranium isotopes in accordance with NAS/DOE method Thorium-3004/RP and NAS/DOE method Uranium-3050/RP; and for gross alpha and gross beta in accordance with US EPA Method 9310. STL-St. Louis also analyzed lithium and thallium samples using EPA SW-846 methods 6010B and 6020, respectively.

For the remaining chemical analyses, STL-CT analyzed samples for volatile organics and metals. STL-CT analyzed the samples using EPA Methods 8260B for volatiles and 6010B for metals (7470A/7471A for mercury) from SW-846 (EPA, 1997).

There were no deviations / modifications in analytical methods from those specified in the *Annual Environmental Monitoring Report, 2002* (U.S. Army Corps of Engineers [USACE], 2003a).

2.4 MODIFICATIONS TO THE WORK PLAN

There were no modifications to the radiation measurement techniques described in the *Annual Environmental Monitoring Report, 2002* (USACE, 2003a).

3.0 DATA ANALYSIS AND VALIDATION

Kestrel Environmental Technologies, Inc. performed data evaluation of chemical and radiological data. They evaluated 100% of the off-site laboratory sample results. Data was evaluated using the USACE's *Kansas City and St. Louis District Radionuclide Data Evaluation Guidance for Alpha and Gamma Spectroscopy* and *CENWK-EC-EF Data Quality Evaluation Guidance*, as presented in Appendix F of the *Chemical Data Quality Management Plan* (CDQMP) *Quality Assurance Project Plan* (QAPP) (USACE 2001, USACE 1999, USACE 2003b). Treatment of outliers was performed in accordance with Section 3.1.3 of the CDQMP QAPP.

4.0 DATA SUMMARIES

Data summaries for the off-site laboratories' radiological and chemical data can be found in several tables within the *Annual Environmental Monitoring Report for the Year 2003* (USACE 2004 - expected).

5.0 SYSTEM AUDITS

Shaw audited one of the off-site laboratories utilized for testing of samples, STL-St. Louis, in December 2001, and the MISS onsite laboratory in June 2000 and December 2002. The MISS on-site laboratory audit findings, and the STL-St. Louis audit findings can be found within *Maywood Project Laboratories Audit Reports* (USACE 2003c - expected).

6.0 ANALYTICAL AND QUALITY ASSURANCE / QUALITY CONTROL (QA/QC) PROBLEMS ENCOUNTERED AT OFF-SITE LABORATORIES

The off-site laboratories analyzed all of the water, soil and sediment field samples. Field measurements were made for dissolved oxygen, Eh, turbidity, temperature, specific conductivity, and pH in the 31 groundwater and 18 surface water samples. Included in these totals were two split samples each for groundwater and surface water, and three groundwater and two surface water field duplicates. In addition, 21 sediment samples, including two split samples and two field duplicates, were collected. Sixteen rinseate blanks and twelve trip blanks were also collected. Radiological testing for isotopic uranium, thorium, and radium, and gross alpha and gross beta were made on 32 groundwater, 20 surface water and 20 sediment samples, including field duplicate and USACE QC split samples. In addition, there were 17 rinseate blanks collected for radiological analyses. Chemical testing of groundwater consisted of measurements for TAL metals, lithium, thallium and VOCs, while chemical tests for surface water and sediment consisted only of TAL metals. Laboratories report results between the MDL and PQL (organics) or instrument detection limit (IDL) and 2 X IDL (inorganics) as estimated J. Such results are qualified due to uncertainty at these low concentration levels, and not because of QC exceedances. Therefore, qualifications of this type are not specifically mentioned within this document. All samples were analyzed for radiological parameters. The radiological samples were analyzed for Ra-226, Ra-228, Th-228, Th-230, and Th-232, U-234, U-235 and U-238, and gross alpha and gross beta. Since the radioisotopes of concern in aqueous matrices at the FMSS are Ra-226, Ra-228, total uranium (all uranium isotopes), and gross alpha and gross beta, this report focuses only on the quality concerns associated with these radiological parameters in groundwater and surface water. This report will also only focus on the quality concerns associated with Ra-226, Th-232, and U-238 for sediment results. All of the results from testing of these samples were validated. The validator noted the following general findings.

6.1 BLANK ANALYSES

6.1.1 Radiological Testing

Low-level activities of some or all ROCs were reported for laboratory preparation blanks in most SDGs. In accordance with USACE Radiological Data Evaluation Guidance, the Normalized Absolute Difference (NAD) was calculated for every sample relative to the blank level. Using this Guidance, several sample results were qualified estimated J because the NADs between a preparation blank result and an equipment rinseate or field sample result, or between an equipment rinseate result and a field sample result, were less than 2.58. Seven Ra-228 and eight U-238 results in three radiological data packages were qualified estimated J due to method blank contamination (see Attachment C table, Reason 4 column).

6.1.2 Chemical Testing – Organics

For VOCs in data package 204007, methylene chloride was detected in all three laboratory method blanks associated with sample analyses, causing results below the action levels to be reported as non-detected U at the reported concentration for field samples 20a-024780 (0.7 ug/L), 12b-024778 (0.8 ug/L), 12b-024779 (1.0 ug/L), 12b-024782(RB) (0.8 ug/L), 12b-024783(TB) (0.8 ug/L), 12b-024785(TB) (0.8 ug/L), and 12b-024784(RB) (0.9 ug/L). Tetrachloroethene was detected in one of the laboratory blanks, but no action was required because tetrachloroethene was non-detect in all associated samples. Acetone was detected in two of the trip blanks associated with the samples in this package. The acetone result for samples 20a-024738 (1.0 ug/L), 20a-024739 (5.0 ug/L), 20a-024781(12.0 ug/L), and 20a-024727 (4.0

ug/L) were qualified as non-detected (U) at the reported concentration due to contamination in the associated trip blank (these acetone results were later qualified as UJ due to calibration QC exceedances.

For VOCs in data package 204049, there was methylene chloride reported in all five method blanks. The methylene chloride results for samples 12b-024787(TB)(0.8 ug/L), 12b-024786(RB)(1.0 ug/L), 20a-024737 (4.0 ug/L), 12b-024792(TB) (0.8 ug/L), 12b-024791(RB) (0.7 ug/L), 12b-024817(TB) (0.6 ug/L), 12b-024816(RB) (0.6 ug/L), 19a-024734 (2 ug/L), 19a-024735 (9 ug/L), 12b-024819(TB) (0.7 ug/L), and 12b-024818(RB) (0.9 ug/L), were qualified as non-detected (U) at the reported concentration due to contamination in the associated method blank. There was acetone reported in trip blanks 12b-024817(TB) and 12b-024819(TB). The acetone result for sample 12b-024742 (2 ug/L) was qualified as non-detected (U) at the reported concentration due to contamination in the associated trip blank. The acetone result for sample 12b-024742 was ultimately R rejected due to LCS/LCSD results. Toluene and tetrachloroethene were detected in equipment rinseate and/or trip blanks, however all results for these parameters in associated samples were non-detect and no further qualification is required.

For VOCs in data package 204085, there was methylene chloride reported in all 3 method blanks. The methylene chloride results for samples 12b-024798(TB)(0.7 ug/L), 12b-024796(RB)(0.5 ug/L), 12b-024797(RB)(1.0 ug/L), 12b-024811(TB) (0.7 ug/L), 12b-024809(RB) (0.5 ug/L), and 12b-024725 (0.8 ug/L) were qualified as non-detected (U) at the reported concentration due to contamination in the associated method blank. There was acetone reported in two of the three equipment rinsate blanks. No field sample data was qualified due to these contaminants, because all associated results were reported by the laboratory as non-detected (U).

For VOCs in package 204150, methylene chloride was detected in all 3 method blanks. The methylene chloride results for samples 12b-024822(TB)(0.7 ug/L), 12b-024824(TB)(0.7 ug/L), 12b-024821(RB)(0.8 ug/L), 12b-024827(TB) (0.8 ug/L) and 12b-024823(RB) were qualified as non-detected (U) at the reported concentration due to contamination in the associated method blank. The toluene results for samples 12b-024746 and 12b-024825 are reported as non-detected (U) at the reported concentration due to contamination in one of the rinseate blanks. Chloroform and xylenes (total) were detected in two rinseate blanks, however, chloroform and xylenes (total) results in all associated samples were reported by the laboratory as non-detected (U).

6.1.3 Chemical Testing - Metals

Table G6-1
No. of Samples Qualified Non-Detect due to Contamination in Laboratory & Field Blanks

Metal	Pkg. No.	No. of Samples	Pkg. No.	No. of Samples	Pkg. No.	No. of Samples
Ba	204007	1	204085	2		
Ni	204007	2	204049	1	204085	2
Sb	204049*	4	204150*	3		
Pb	204049	2				
V	204049	3				
Cr	204085	1				
Cu	204085	1				
Li	F3F080109	4	F3G010111	1	F3F280186	3
Tl	F3F280186	2	F3G110144	1	F3G090126	6

* In packages 204049 and 204150, the antimony (Sb) preparation blank results were negative. A negative bias is possible and associated samples were qualified UJ estimated non-detect.

It is also noted that in several instances, the thallium method blank was analyzed after the thallium LCS run. The thallium LCS concentration is 500 ug/L. The low levels of 1-3 ug/L of thallium detected in the method blanks are believed to be caused by carryover from the LCS.

Lithium was also qualified non-detect in rinseate blank sample 12b-024786 (SDG F3G020135), field samples 22a-024812 and 19a-024735 (SDG F3G110144), samples 12b-024809 and 12b-024810 (SDG F3H260254), samples 22a-024756, 22a-024758, 22a-024803, 22a-024752, 22a-024774, 22a-024760, 22a-024766, 22a-024768, 22a-024770, and 22a-024772 (SDG F3G090126), rinseate blank sample 12b-024818 (SDG F3G140105), and rinseate blank 12b-024791 (SDG F3G030175) due to method, calibration or field blank contamination.

6.2 SAMPLE SPECIFIC CHEMICAL RECOVERIES (RADIOLOGICAL SAMPLES ONLY)

The laboratory did not tabulate the radioisotope quantities on a Form 3. The recoveries were presented on the data summary forms. The USACE acceptance criteria (USACE, 2001) for chemical tracers and gravimetric tracers are 40-110%. All radiotracer recoveries were within the USACE acceptance criteria in all packages with the following exceptions:

- In package F3G010111, the Th-229 tracer recovery for 12b-024726 was 36%. No corrective action was taken. The Th-232 result for sample 12b-024726 was qualified as rejected.
- In package F3G090126, the Th-229 tracer recoveries for samples 22a-024770, 22a-024756 and 22a-024776 were 39%, 30%, and 39%, respectively. Since the laboratory took no corrective actions, the Th-232 results for these samples are qualified as rejected.

6.3 MATRIX SPIKE (MS) AND MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

6.3.1 Radiological Data Packages

For radiological samples, matrix spikes were performed for gross alpha and gross beta samples in all batches, and in a few instances for other ROCs. For the ROCs in most batches, matrix problems were determined from tracer recoveries (see Section 6.2).

Due to the failure of the field sample collection team to identify the rinseate blank sample on the COC, many of the samples selected by the laboratory as the matrix spike sample for a given batch were rinseate blank samples. This is a poor practice and must be eliminated for future Maywood field sample collection efforts. As a result of this oversight, all gross alpha and gross beta data in SDGs F3G170122, F3G160143, F3G150143, F3G140105, F3G100133, F3G020135, F3G010111 were qualified estimated J for detected values and estimated non-detect UJ for non-detects."

Gross alpha and gross beta matrix spike recoveries were within laboratory acceptance criteria in all packages. In package F3G090126, the Ra-226 matrix spike recovery was 127%, outside of the USACE guidance limits of 75-125%. Therefore, results for samples 23a-024750, 23a-024752, 22a-024756, 22a-024803, 22a-024774 and 22a-024776 are reported as non-detected estimated (UJ) and the Ra-226 results for samples 23a-024801, 23a-024754 and 22a-024758 are reported as estimated (J).

6.3.2 Chemical Data Packages

For SDG 204007, volatiles, sample 20a-024738 was the MS/MSD pair reported in the original data package. Sample 20a-024739 was requested as the MS/MSD on the COC. The validator requested the MS/MSD data for sample 20a-024739 on 7/23/03. The laboratory responded "For the VOC analysis, an MS/MSD analysis was initially analyzed for sample 20a-024739. However, due to a high concentration of tentatively identified compounds (TICs) in the sample, the internal standard, surrogate standard as well as the matrix spike standard recoveries were all outside of the criteria for the MS and MSD analyses. Because of the severe effect the sample matrix had on the spike analysis, the analyst performed an MS/MSD analysis on another sample in the SDG (sample 20a-024738), and all of the QC results were acceptable for this analysis. During the final review of the data, only the MS/MSD results for the sample which had passing surrogate and internal standard recoveries were reported in the data package." The validator received the MS/MSD data for sample 20a-024739 on 7/28/03, but the requested TIC information was not received. No corrective action was taken. Sample 20a-024739 MS/MSD was not re-analyzed. All data for sample 20a-024739 were rejected due to non-compliant MS/MSD results.

For SDG 204049, sample 12b-024740 was the sample analyzed as the MS/MSD pair for volatile organics. All percent recoveries (%Rs) and RPDs were within acceptance criteria except the RPD for acetone, which was 46%. The acceptance criterion is 20%. The laboratory reanalyzed the MS/MSD, however, the RPD for acetone was still > 20%, and two other ketones, 2-butanone and 4-methyl-2-pentanone, had RPDs > 20%. Therefore, the acetone, 2-butanone and 4-methyl-2-pentanone results for 12b-024740 and its field duplicate 12b-024793 were qualified as non-detected estimated, UJ. For the elements matrix spike, all elements met the 75-125% recovery acceptance criteria except for potassium, which had a %R of 134%. The potassium post-digestion spike recovery was 119%. Potassium results for the three samples associated with this matrix spike, 12b-024740, 12b-024793 and 12b-024730 are reported as estimated J due to the high bias of the matrix spike.

For SDG 204085, the volatile organic matrix spike sample, 12b-024740, is the same as that used for 204049. The same qualifications described above for 204049 are applied. There were no results in data package 204085 qualified due to MS/MSD results.

For SDG 204100 elements, all MS recoveries were within acceptance criteria. For SDG 204101 elements, antimony (55.4%), cadmium (132%), and potassium (61%) MS recoveries exceeded acceptance criteria for sediment matrix spike sample 22a-024761. The post-digestion spike recoveries were acceptable, indicating that the inductively-coupled plasma (ICP) instrument performance was acceptable, and thus that the exceedances are due to sample preparation inaccuracies. The cadmium and antimony results for sediment samples 22a-024757, 22a-024759, 22a-024761, 22a-024804, 23a-024749 and 22a-024813 were reported as non-detected estimated, UJ. The potassium results for sediment samples 22a-024757, 22a-024759, 22a-024761, 22a-024804, 23a-024749 and 22a-024813 were reported as estimated, J. Soil sample 23a-024751 was also analyzed as an ICP and mercury matrix spike sample. Arsenic (51%), beryllium (154%), cadmium (134%), chromium (70%), cobalt (137%), nickel (359%) and potassium (56%) exceeded acceptance criteria. All post-digestion spike recoveries were acceptable. These elements were therefore reported as estimated J or non-detected estimated UJ for positive and non-detected results in soil samples 22a-024767, 22a-024771, 22a-024777, 23a-024802, 23a-024751 and 23a-024753. Poor MS recoveries may be at least partly due to poor sample homogeneity, as indicated by the high lab replicate results for 23a-024751.

For SDG 204150, sample 12b-024746 was the sample analyzed as the MS/MSD pair for volatile organics. All %Rs and RPDs were within acceptance criteria except the RPD for acetone, which was 38%

(acceptance criteria 20%). The LCS/LCSD RPD for acetone of 25% was also ouside acceptance limits as were the RSD and RRF values for acetone in the initial and continuing calibrations. Therefore, the acetone results for samples 12b-024820, 12b-024732, 12b-024728, 12b-024824, 12b-024821, 12b-024745, 12b-024746, 12b-024822, and 12b-024825 were reported as R rejected. There were 3 acetone sample results (12b-024827, 12b-024823, and 12b-024729) that were associated with acceptable initial calibration RRFs and LCS/LCSD results that were qualified UJ. For elemetns, sample 12b-024746 was analyzed as the MS sample. All recoveries were within limits except for selenium at 134%. The post-digestion spike recovery was acceptable. Selenium results, all of which were non-detect, are qualified estimated non-detect, UJ.

For the lithium and thallium packages, no results were qualified due to matrix spike recovery exceedance. The lithium acceptance criterion for ICP testing is 75-125%, and for thallium by ICP-MS, the acceptance criterion is 80-120%.

6.4 LABORATORY CONTROL SAMPLES

6.4.1 Radiological Data Packages

All LCS recoveries were within the laboratory's acceptance criteria except for the following:

Ra-228 in package F3G010111. The Ra-228 aqueous LCS recovery was 149% and the acceptance criteria are 60-140%. There was no additional qualification of the two non-detected and one non-detected estimated Ra-228 results for the three samples in this data package.

In package F3G090126, the aqueous Ra-226 LCS recovery was 142%(acceptance limits 62-130%) for batch 3196410. Positive Ra-226 results were qualified J and non-detect Ra-226 results UJ in samples 23a-024750, 23a-024801, 23a-024752, 23a-024754, 22a-024756, 22a-024758, 22a-024803, 22a-024774, and 22a-024776. For batch 3212323, the Ra-226 LCSD %R was 141%. The Ra-226 result for the one sample associated with this LCSD, 23a-024751, was reported estimated J.

In package F3G140105, the Ra-226 LCS recovery was 136% (acceptance criteria 62-130%). The Ra-226 result for the one sample associated with this LCS, 12b-024741, was reported estimated J.

In package F3G160143, the Ra-226 LCS recovery was 138% (acceptance criteria 62-130%). The positive Ra-226 results for the two samples associated with this LCS, 12b-024745 and 12b-024746 were qualified estimated J.

Because the U-235 spike concentration was always very near its minimum detectable concentration (MDC) (typically the spike concentration was two to three times the MDC), no U-235 results were reported in the LCS samples. Evaluation actions taken due to U-234 and U-238 results were applied to U-235 results.

For soil LCSs, Th-228 and Th-232 were not reported because Th-230 is the only certified isotope. This anomaly was discussed with USACE and they indicated that Th-230 LCS recoveries would provide an adequate indication of thorium isotope recoveries.

6.4.2 Chemical Data Packages

For VOCs, the short “Contract Laboratory Program (CLP) list” was spiked for the LCS. For lithium and thallium testing, all aqueous and soil LCS results were within acceptance criteria of 80-120%. For chemical analysis, only data packages for which quality control problems were identified are discussed below.

6.4.2.1 Package 204049

For VOCs, the RPD between the 2-butanone LCS and LCSD %Rs were > 20% for the LCS/LCSD pairs analyzed on 7/9 and 7/15/03. Similarly, the RPD between the acetone LCS and LCSD %Rs were > 20% for the LCS/LCSD pairs analyzed on 7/14 and 7/15/03. There was no corrective action taken by the laboratory. Therefore, the 2-butanone results in samples 12b-024786(RB) and 20a-024737 were R rejected; the acetone results in samples 12b-024816(RB) and 12b-024741 were R rejected; and the acetone and 2-butanone results in samples 12b-024817(TB), 12b-024819(TB), and 12b-024742 were R rejected.

6.4.2.2 Package 204085

For VOCs, the RPD between the 2-butanone LCS and LCSD %Rs were > 20% for the LCS/LCSD pairs analyzed on 7/9 and 7/15/03. Similarly, the RPD between the acetone LCS and LCSD %Rs were > 20% for the LCS/LCSD pairs analyzed on 7/14 and 7/15/03. There was no corrective action taken by the laboratory. Therefore, the 2-butanone results in samples 12b-024798(TB), 12b-024796(RB), 12b-024744, 12b-024743, and 12b-024797(RB) were R rejected; the acetone result in samples 12b-024811(TB), 12b-024809(RB), and 12b-024724 were R rejected; and the acetone and 2-butanone results in sample 12b-024725 were R rejected.

6.4.2.3 Package 204101

For elements, all LCS recoveries were within acceptance criteria except antimony. The antimony LCS recovery was 144% (acceptance criteria 60-140%). The antimony results for all soil and sediment sample results associated with this LCS were non-detect, and the antimony matrix spike soil recovery and post-digestion spike recoveries were acceptable. Therefore all antimony results for the samples in this data package were qualified estimated non-detect, UJ.

6.4.2.4 Package 204150

For VOCs, the RPD between the 2-butanone LCS and LCSD %Rs were > 20% for the LCS/LCSD pairs analyzed on 7/17/03. Similarly, the RPD between the acetone LCS and LCSD %Rs were > 20% for the LCS/LCSD pairs analyzed on 7/17 and 7/18/03. There was no corrective action taken by the laboratory. Therefore, the 2-butanone and acetone results for samples 12b-024820, 12b-024728, 12b-024732, 12b-024824, 12b-024821, 12b-024745 and 12b-024746 were R rejected; and the acetone results for samples 12b-024822, 12b-024825, were reported as R rejected.

6.5 FIELD REPLICATE

6.5.1 Radiological Data Packages

The following field replicate pairs were submitted.

Table G6-2
Field Replicate Pairs Submitted

20a-024739 / 20a-024781 aqueous (aq)	12b-024740 / 12b-024793 aq.	23a-024750 / 23a-024801 aq.	23a-024751 / 23a-024802 sed.
22a-024760 / 22a-024803 aq.	22a-024761 / 22a-024804 sed.	12b-024746 / 12b-024825 aq.	

All field replicate pair results were within USACE QC limits; i.e., within a factor of two for all aqueous replicate pairs and within a factor of four for all soil pairs (this applies to those pairs for which both results were positive, i.e., both greater than the minimum detectable activity (MDA) except for the following:

In package F3G030175, the gross alpha and gross beta aqueous field duplicate result pairs each differed by more than a factor of two. This fact, coupled with the fact that the MS and lab duplicate sample pair were non-Maywood samples justifies qualification of the gross beta and gross alpha results estimated J in samples 12b-024740, 12b-024793, and 12b-024730.

In package F3G090126, aqueous samples 23a-024760 and 23a-024803 were one of the field duplicate sample pairs. The Ra-228 results, 1.79 and 0.58, differ by more than a factor of 3. The Ra-228 result of 1.79 for 23a-024760 may be biased high and is already qualified estimated J due to method blank results. The 0.58 activity value is qualified J using the Radionuclide Quantitation and Detection Limit criterion. No further qualification is required.

In package F3F270122, consider the field replicate results for gross alpha in samples 20a-024739 (8.0 ± 6.5, MDC of 9.3) and 20a-024781 (14.3 ± 7.2, MDC of 8.4). Using the Radionuclide Quantitation and Detection Limit criterion, the gross alpha result for sample 20a-024739 is reported as non-detected estimated (UJ). Although the results are within a factor of two of each other, the gross alpha result for 20a-024781 is within a factor of two of its MDC. Therefore, using professional judgment, it is reported as estimated (J).

NADs were calculated for all pairs and were less than 1.96 in all cases.

6.5.2 Chemical Data Packages

The sample identification (ID) numbers for the chemical field duplicate pairs were the same as those for the radiological sample pairs. All field duplicate precision criteria were met for thallium and lithium analyses with the following exception: in package F3G030175, samples 12b-024740 and 12b-024793 were the field duplicate pair. The thallium results were 1.3 and 1.0 U ug/l, respectively. Thallium results for samples 12b-024740 and 12b-024793 were qualified estimated J and non-detect estimated UJ, respectively.

In package 204101 for elements, the nickel, manganese, copper, and lead results differ by more than a factor of two for the soil field duplicate pair 23a-024802 and 23a-024751. Similar variability was seen for 23a-024751 and its laboratory replicate, which were reanalyzed so that there were four analyses. Thus the nickel, manganese, copper, and lead results were qualified estimated J for all twelve soil samples in 204101.

6.6 LABORATORY REPLICATES

6.6.1 Radiological Data Packages

In many cases, the laboratory analyzed a rinseate blank as the matrix spike. This is poor laboratory practice and can be attributed to a failure to indicate which samples were rinseate blanks on the COC. In some cases, a non-Maywood sample was selected as the laboratory replicate. Qualifications to the laboratory replicate sample themselves were not discussed in this evaluation.

The NAD was calculated for each replicate pair. If the NAD was less than 1.96 no qualification was made. If the NAD is greater than 1.96, the RPD was then calculated. If the RPD is less than 35% for soils, or 25% for waters, there is no qualification. If the RPD is between 35 and 65% (soils) and 25 to 50% (waters), the results of all samples in the batch of the same matrix are qualified estimated J for that parameter. If the RPD is greater than 65% (soils) or 50% (waters), the results of all samples in the batch of the same matrix are qualified rejected R for that parameter. No evaluation is required if both values are less than the MDA.

Laboratory replicates or duplicates were performed on all sample batches for all isotopes reported. For all sample results, the laboratory replicate NADs were less than 1.96 or the RPDs were less than acceptance criteria. No data is qualified based upon laboratory replicate precision.

6.6.2 Chemical Data Packages (Metals Only)

The precision acceptance criteria (< 20%RPD) were met for all lithium and thallium laboratory replicate analyses. For elements in package 204101, soil sample 23a-024751 was analyzed as the method duplicate sample. The RPDs for 12 elements exceeded 35%. The laboratory re-prepped and reanalyzed the sample and the matrix duplicate resulting in four analyses for sample 23a-024751. Data were evaluated using the % RSDs for the four analyses. Results that exceed 35% RSD are summarized below.

Table G6-3
Results that Exceed 35% RSD

Element	23a-024751	23a-024751DUP	23a-024751RE	23a-024751D RE	% RSD
Aluminum	8004	3417	4672	4137	46.9
Barium	81.1	42.5	47.1	49.6	38.2
Calcium	6181	13690	5391	5592	59.4
Copper	104.9	55.4	40.1	65.1	51.0
Lead	95.1	90.7	43.3	39.9	42.7
Magnesium	4362	8083	4490	3296	41.8
Manganese	1331	392	545	512	72.5
Potassium	558	274	371	297	38.4
Sodium	737	235	366	295	63.8

These elements are reported as estimated (J) in soil samples 22a-024767, 22a-024771, 22a-024777, 23a-024802, 23a-024751 and 23a-024753. The laboratory may not be analyzing a representative or well homogenized sample.

6.7 SURROGATE RECOVERIES (ORGANIC CHEMICAL ONLY)

All surrogate recoveries were within acceptance criteria except for samples 20a-024739MS and 20a-024739MSD in package 204007. Results for sample 20a-024739 were already qualified rejected due to poor MS/MSD recoveries and RPDs. The lab did not perform corrective action.

6.8 INTERNAL STANDARD RECOVERIES (ORGANIC CHEMICAL ONLY)

All internal standard acceptance criteria were met for all samples except for samples 20a-024739MS and 20a-024739MSD in package 204007. Results for sample 20a-024739 were already qualified rejected due to poor MS/MSD recoveries and RPDs. The lab did not perform corrective action.

6.9 MISCELLANEOUS METALS CRITERIA

All ICP interference check sample criteria were met for all elements packages.

All ICP serial dilution results were within the acceptance criteria of <10% difference for all results >25X the MDL for all elements except for the following:

- Potassium result for sample 20a-024736 in package 204049. The serial dilution result was 20.4% lower than the sample result. The potassium result for sample 20a-024736 was reported as estimated (J). Serial dilution results indicate a possible high bias.
- Potassium (12.2% different) and sodium (10.2% different) sample and serial dilution results exceeded the 10% maximum difference criterion for sample 10a-024743 in package 204085. Thus, potassium and sodium results were qualified estimated J in sample 10a-024743.
- Potassium sample and serial dilution results were 20.4% different for sample 23a-024801 in package 204100. The serial dilution result was lower so the sample result is likely biased high. The potassium result for sample 23a-024801 is qualified estimated J.
- Sodium sample and serial dilution results were 10.6% different for sample 23a-024753 in package 204101. The serial dilution result was lower so the sample result is likely biased high. The sodium result for sample 23a-024753 was already qualified estimated J due to laboratory replicate precision. No additional qualification is required.
- In package 204150, the potassium and sodium sample and serial dilution result pairs were 12.8% and 13.5% different, respectively for sample 12b-024729. The potassium and sodium results for sample 12b-024729 were therefore qualified estimated J.

6.10 RADIONUCLIDE QUANTITATION AND IMPLIED DETECTION LIMITS (RADIOLOGICAL ONLY)

The laboratory reported the results with analytical uncertainties. The laboratory used for analysis of environmental monitoring samples for radiological analysis, STL-St. Louis, reported positive results that were greater than the MDA and less than the laboratory's reporting limit (approximately three times the MDA) the as estimated J. The validator retained this qualifier unless the data was qualified U, UJ or R for some other reason. Project guidance has changed since the 2003 environmental monitoring data packages were evaluated. Now offsite laboratory J qualifiers, applied because a result falls between its MDA and reporting limit, are removed by the validator.

The laboratory noted that the MDCs for the gross alpha and gross beta were elevated in some instances. This is due to the smaller sample aliquot that must be used for gross alpha when the total dissolved solids (TDS) level is elevated.

Sample results that were either less than the associated uncertainty or MDA were evaluated to determine if the MDA values were unrealistically low. If either of those two conditions existed, and the 2 sigma error multiplied by 1.65 was greater than the reported MDA, the isotope was qualified UJ to indicate that the MDA is estimated. The estimated MDA value should be considered as unrealistically low. One or more sample results (see Attachment C for the number of samples qualified for this reason (Reason 2 in Attachment C)) within all of the environmental monitoring 2003 radiological packages were qualified for this reason.

If a net negative result had a 2 sigma uncertainty smaller than the absolute value of the result, the result was qualified R rejected. None of the radiological data were qualified in this manner.

If a negative result had a 2 sigma uncertainty larger than the absolute value of the result, the result was qualified non-detect, U (unless the 2 sigma uncertainty times 1.65 was greater than the MDA, in which case the result was qualified UJ; see UJ table above). The following radiological packages had one or more results (see Attachment C, Reason 5) that were qualified in this manner.

Table G6-4
Packages with Results Qualified U

F3F270122	F3G010111	F3G080109	F3G110144	F3G150143
F3F280186	F3G030175	F3G090126	F3G140105	

Three SDGs had one or more samples qualified estimated J (or UJ if the result was non-detect) because the result exceeded the MDC and is less than its uncertainty

6.11 CHEMICAL SEPARATION SPECIFICITY (RADIONUCLIDES ONLY)

The energy of the radionuclide of interest must be within 40 keV of the theoretical energy for that radionuclide. Three SDGs, F3G030175, F3G090126, and F3G110144, had one or more samples qualified estimated J (or UJ if the result was non-detect) because chemical separation specificity criteria were not met.

6.12 TARGET RADIONUCLIDE LIST IDENTIFICATION (RADIONUCLIDES ONLY)

This criterion is applied to gamma spectroscopy test results only. All radiological environmental monitoring samples were analyzed by alpha spectroscopy.

6.13 HOLDING TIMES

All sample analyses holding time requirements were satisfied.

7.0 REFERENCES

EPA 1980. U.S. Environmental Protection Agency. *Prescribed Procedures for Measurement of Radioactivity in Drinking Water*. EPA/600/4-80/032. August 1980.

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USACE 2001. U.S. Army Corps of Engineers. USACE Kansas City and St. Louis District, *Radionuclide Data Quality Evaluation Guidance for Alpha and Gamma Spectroscopy*. June 2001.

USACE 2003a. U.S. Army Corps of Engineers. *Annual Environmental Monitoring Report, 2002* Prepared for U.S. Army Corps of Engineers-Kansas City District by Stone & Webster, Inc. April, 2003, Revision 0.

USACE 2003b. U.S. Army Corps of Engineers. *Chemical Data Quality Management Plan*. Prepared for U.S. Army Corps of Engineers-Kansas City District by Shaw Environmental, Inc. September 2003, Revision 1.

USACE 2003c. U.S. Army Corps of Engineers. *Maywood Project Laboratories Audit Reports*, Revision 0. Prepared for U.S. Army Corps of Engineers-Kansas City District by Shaw Environmental, Inc. Expected issuance date, December 2003.

USACE 2004. U.S. Army Corps of Engineers. *Annual Environmental Monitoring Report for the Year 2003*, Draft Revision 0. Prepared for the USACE by Shaw Environmental, Inc. Expected issuance date, January 2004.

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ATTACHMENT A
RADIOLOGICAL AND CHEMICAL DATA PACKAGES

Due to their size, the Data Packages are contained in subfolder
\Source Files\App_G\ATT_A of this CD-ROM

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ATTACHMENT B
RADIOLOGICAL AND CHEMICAL DATA VALIDATION REPORTS

Due to their size, the Data Packages are contained in subfolder
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ATTACHMENT C
RADIOLOGICAL DATA REASONS FOR QUALIFICATION

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ATTACHMENT C
ENVIRONMENTAL MONITORING 2003 QCSR
RADIOLOGICAL DATA REASONS FOR QUALIFICATION

Table C-1
Number of Samples within a Given SDG Qualified for the Reasons Noted

SDG Number	Analyte	Reasons for Qualification (See reason associated with each number designation below)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
F3F270122	GA		2						2						
	GB		1												
	Ra-228		1			1									
	Ra-226		2												
	Th-232		1			4									
	U-238		2												
F3F280186	GA														
	GB					1									
	Ra-228		1												
	Ra-226		2												
	Th-232		2			1									
	U-238														
F3G010111	GA					1									
	GB														
	Ra-228		1			2									
	Ra-226		1			1									
	Th-232		1			1						1			
	U-238														
F3G020135	GA		2												
	GB														
	Ra-228		1												
	Ra-226		1												
	Th-232														
	U-238														
F3G030175	GA								2						
	GB								2						
	Ra-228		1			1									
	Ra-226														
	Th-232		1			2									
	U-238										2				

SDG Number	Analyte	Reasons for Qualification (See reason associated with each number designation below)													
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
F3G080109	GA		1												
	GB		1			1									
	Ra-228		3												
	Ra-226		1												
	Th-232														
	U-238														
F3G090126	GA		6												
	GB		3												
	Ra-228		6		5										
	Ra-226		8							10					
	Th-232		2			3		3			10				
	U-238		3		8						9				
F3G100133	GA		2												
	GB														
	Ra-228		2		1										
	Ra-226														
	Th-232		1												
	U-238		1										1		
F3G110144	GA		2			1									
	GB		1												
	Ra-228		2			1									
	Ra-226		1			1									
	Th-232					1					1				
	U-238		1										3		
F3G140105	GA		1												
	GB														
	Ra-228				1										
	Ra-226					1				1					
	Th-232					1									
	U-238		2												
F3G150143	GA														
	GB														
	Ra-228		1												
	Ra-226		2												
	Th-232					1									
	U-238												1		

SDG Number	Analyte	Reasons for Qualification (See reason associated with each number designation below)													
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
F3G160143	GA		2												
	GB														
	Ra-228		1												
	Ra-226									2					
	Th-232		1												
	U-238		2												
F3G170122	GA														
	GB														
	Ra-228		1												
	Ra-226														
	Th-232														
	U-238		1												

Reasons for Qualification

1. Positive results are estimated J and non-detects UJ due to matrix density variability.
2. Result is qualified UJ because the reported activity is < MDA or < its uncertainty, and the 2 sigma error X 1.65 > MDA.
3. Result is qualified J because the reported activity is < MDA and the 2 sigma error X 1.65 < MDA.
4. Result is qualified J due to method blank or equipment blank results.
5. Result is qualified non-detect, U. The result is negative and the absolute value of the result is less than its 2 sigma error (and the 2 sigma error times 1.65 < MDA).
6. Result is qualified rejected, R. The result is negative and the absolute value of the result is greater than its 2 sigma error.
7. Reject result; the tracer recovery was less than 40% and no corrective action was taken.
8. Report positive results J and non-detects UJ due to field duplicate precision.
9. Results are estimated J for positive detects and non-detect estimated UJ for non-detects. The LCS recovery is outside of control limits but is > 50% or < 150%.
10. Result is estimated J; chemical separation specificity criteria were not met.
11. Reject Th-232 results; the Th-229 tracer recovery was 36% and no corrective action was taken.
12. Result is estimated J; result exceeds the MDC and is less than its uncertainty.