

**QUARTERLY GROUNDWATER TREATMENT PERFORMANCE
MONITORING REPORT
Q3 2002
MOSS-AMERICAN SITE
MILWAUKEE, WISCONSIN**

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SECTION 1

INTRODUCTION

In accordance with paragraph 4a of the Remedial Design/Remedial Action Statement of Work (RD/RA SOW), KMC is required to implement a groundwater-monitoring program capable of detecting changes in chemical concentrations in the groundwater. As previously agreed, the monitoring network currently includes 13 shallow groundwater-monitoring wells (MW-3S, MW-5S, MW-6S, MW-7S, MW-9S, MW-10S, MW-13S, MW-20S, MW-25S, MW-26S, MW-27S, MW-28S, and MW-29S) and four intermediate groundwater-monitoring wells (MW-3I, MW-7I, MW-9I, and MW-20I). The locations of all existing groundwater-monitoring wells included in the sampling program are indicated on Figure 1-1. Some wells that were previously a part of the groundwater-monitoring network have been removed to facilitate soil remediation activities. TW-09, MW-8S, and MW-8I were removed during excavation activities and installation of the funnel and gate groundwater treatment system in 1999. Wells MW-4S and MW-4I were removed during early Q3 2001 and well TW-05 was removed during early Q4 2001. The shallow groundwater monitoring wells are sampled on a quarterly basis, and the intermediate groundwater monitoring wells are sampled on a semiannual basis, corresponding with the Q1 and Q3 sampling events. Additionally, the quarterly groundwater-monitoring program includes sampling of the eight containment performance-monitoring wells (MW-30S, MW-31S, MW-32S, MW-33S, MW-34S, MW-35S, MW-36S and MW-37S), which are screened in the shallow groundwater-bearing unit underlying the site.

The Quality Assurance Project Plan for Installation of Groundwater Remedial System (QAPP) (WESTON, October 1999) requires KMC to implement a groundwater-monitoring program capable of indicating groundwater chemistry before, during, and after treatment. Also, the hydraulic gradient is calculated at each treatment gate, and is used to estimate groundwater flow velocity through the treatment gate remediation system. The monitoring network includes six groundwater treatment gates (TG1 through TG6), with three treatment performance-monitoring wells located at each groundwater treatment gate. The treatment performance monitoring well locations are indicated on Figure 1-1. The treatment performance monitoring wells include TG1-

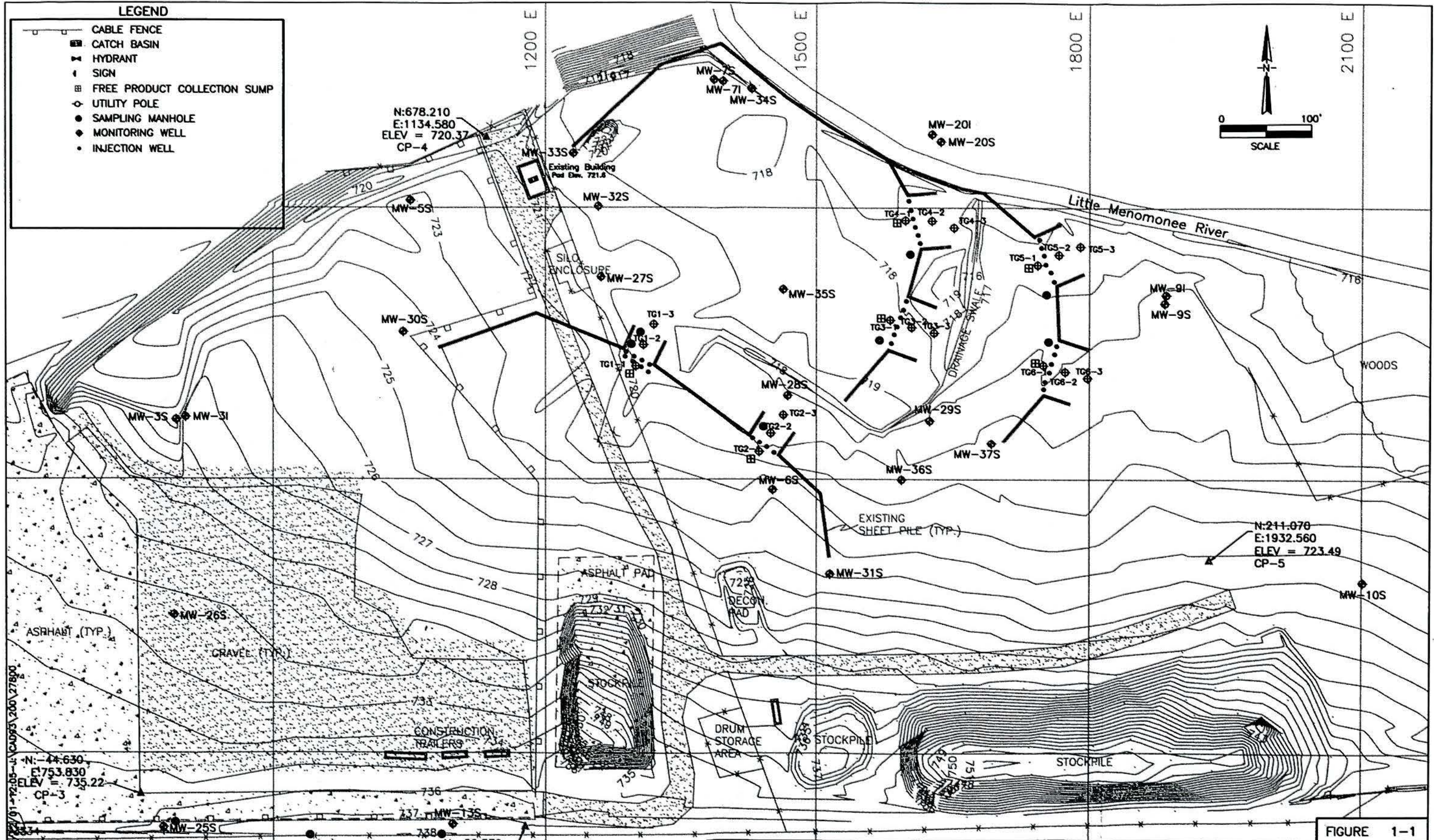
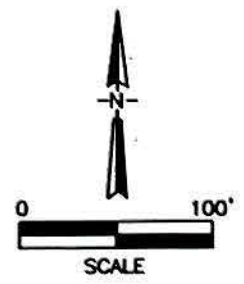
1, TG1-2, TG1-3, TG2-1, TG2-2, TG2-3, TG3-1, TG3-2, TG3-3, TG4-1, TG4-2, TG4-3, TG5-1, TG5-2, TG5-3, TG6-1, TG6-2, and TG6-3.

In accordance with paragraph 4a (i) of the RD/RA SOW, the quarterly field measurement and analysis of groundwater samples collected from the shallow, intermediate, and containment performance groundwater monitoring wells include groundwater elevation, pH, temperature, turbidity, specific conductance, oxidation-reduction (redox) potential, and dissolved oxygen (DO). Required laboratory analyses include benzene, toluene, ethylbenzene, and xylene (BTEX collectively) and the following polynuclear aromatic hydrocarbon (PAH) compounds: acenaphthylene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluorene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.

In accordance with Addendum No. 1 to the QAPP (WESTON, May 2001), the monthly field measurements for samples collected from the treatment performance monitoring wells include groundwater elevation, pH, temperature, specific conductance, redox potential, and DO. Monthly laboratory analyses required for the treatment performance wells include microbial enumeration, nitrate-nitrogen (NO₃-N), nitrite-nitrogen (NO₂-N), total Kjeldahl nitrogen (TKN), ammonia-nitrogen (NH₃-N), total phosphate-phosphorous (PO₄-P), and orthophosphate (ORP) on a monthly basis. Additionally, laboratory analyses include biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), BTEX, and the PAHs indicated in the above paragraph on a quarterly basis.

LEGEND

- CABLE FENCE
- CATCH BASIN
- ⊗ HYDRANT
- ⊙ SIGN
- ⊕ FREE PRODUCT COLLECTION SUMP
- ⊖ UTILITY POLE
- ⊙ SAMPLING MANHOLE
- ⊙ MONITORING WELL
- INJECTION WELL



N: 44.630
E: 753.830
ELEV = 735.22
CP-3

N: 678.210
E: 1134.580
ELEV = 720.37
CP-4

N: 211.070
E: 1932.560
ELEV = 723.49
CP-5

N: -80.570
E: 1177.070
ELEV = 737.17
CP-6

SOURCE: BERKLAU SURVEYING, N64 W24801 MAIN ST., SUITE 103, SUSSEX, WI 53089



750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061

MONITORING WELL LOCATIONS
KERR MCGEE CORPORATION
MOSS-AMERICAN SITE
Milwaukee, Wisconsin

FIGURE 1-1

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SECTION 2

GROUNDWATER MONITORING RESULTS

The Q3 2002 groundwater-monitoring event at the Moss-American site was completed between 23 to 26 September 2002. The Q3 2002 groundwater remedial system treatment performance monitoring sampling includes data obtained during 30 to 31 July 2002, 27 to 28 August 2002, and 23 to 26 September 2002. Tasks completed during the field effort for this event included the collection of groundwater elevation and dissolved oxygen data from the shallow groundwater monitoring, intermediate groundwater monitoring, containment performance monitoring, and treatment performance monitoring wells referenced in Section 1. Following groundwater elevation and DO measurements, groundwater samples were collected from all the shallow, intermediate, containment performance, and treatment performance groundwater monitoring wells. The results of the groundwater samples that were collected and analyzed from the shallow wells are described in the following subsections.

2.1 Groundwater Elevation Measurements

The depth to water was measured in each of the shallow groundwater monitoring, containment performance monitoring, and treatment performance monitoring wells on 23 September 2002, prior to the beginning of groundwater sampling. In addition, the depth to groundwater was measured on a monthly basis in each treatment performance monitoring well prior to sample collection. These measurements were used to determine the elevation of the potentiometric surface within the shallow groundwater-bearing zone underlying the site. The water level measurements for the shallow groundwater monitoring and containment performance monitoring wells and resulting elevations are presented in Table 2-1. The groundwater level measurements and corresponding groundwater elevations, calculated hydraulic gradients across the treatment gates, and estimated groundwater flow velocities through the treatment gates are presented in Table 2-2. The July and August 2002 groundwater elevation data for the treatment performance monitoring wells is available upon request. Figure 2-1 presents a groundwater elevation contour map that shows the potentiometric surface within the shallow groundwater-bearing zone based on the 23 September 2002 data. Figure 2-2 indicates the potentiometric surface during Q2 2002.

An evaluation of the Q3 2002 potentiometric surface map is presented below.

As shown in Figure 2-1, the groundwater within the shallow groundwater-bearing zone generally flows northeastward toward the Little Menomonee River (LMR). In the topographically higher (western) portion of the site, the horizontal hydraulic gradient is relatively steep, at approximately 0.0248 feet per foot (ft/ft) to the northeast. The topography of the site levels out near the river. However, the horizontal hydraulic gradient is a little steeper than what has been found in the past. The area around Gate 5 has an eastward hydraulic gradient of approximately 0.0424 ft/ft. In the past it had been ranging from 0.001 to 0.01 ft/ft. This could be due to river influences on the hydrogeological system in this area near the river. The estimated hydraulic gradients within the treatment gates ranged from -0.0052 to 0.0424 ft/ft (Table 2-2). The hydraulic gradient is relatively flat within the treatment gate area, with an overall hydraulic gradient from TG1 to TG6 of approximately 0.0009 ft/ft, in an easterly direction. It should also be noted that due to the low hydraulic gradient in the vicinity of the treatment gates, the calculated hydraulic gradients through TG1 and TG3 are westward, contrary to the overall groundwater flow direction at the site.

The average velocity of groundwater flow within the shallow water-bearing zone can be calculated using the following equation:

$$v = Ki/e$$

where:

v = groundwater velocity

K = hydraulic conductivity (also referred to as the coefficient of permeability)

i = hydraulic gradient

e = porosity

Based on slug tests performed on wells installed during the Remedial Investigation (RI), the hydraulic conductivity of the deposits located on the topographically higher, western portion of the site were in the range of 1×10^{-5} to 1×10^{-6} centimeters per second (cm/s) (0.03 to 0.003 feet per day [ft/day]). Based on laboratory-performed hydraulic conductivity analyses conducted on

material used to backfill areas of the site located along the LMR, the hydraulic conductivity of soils located in the topographically lower portion of the site within the funnel-and-gate remedial system is approximately 1×10^{-3} cm/s (2.8 ft/day). Using a hydraulic gradient of 0.0248 ft/ft, an assumed effective porosity of 0.3, and a hydraulic conductivity of 0.03 ft/day, the groundwater flow velocity in the western portion of the site is calculated to be approximately 0.0002 ft/day. Near the river, using a hydraulic gradient of 0.0424 ft/ft, a porosity of 0.3, and a hydraulic conductivity of 2.8 ft/day, the velocity of groundwater flow is calculated to be approximately 0.0356 ft/day. The groundwater flow velocities within the treatment gates are estimated to range from 0.0113 ft/day to 0.4006 ft/day (excluding the data for TG1 and TG3). The groundwater flow velocity through each treatment gate is presented in Table 2-2.

2.2 Groundwater Sample Analytical Results

Groundwater samples were collected from a total of 39 shallow monitoring wells screened within the shallow groundwater-bearing unit. The shallow wells sampled include: 13 shallow groundwater monitoring wells remaining from the original quarterly groundwater monitoring program (MW-3S, MW-5S, MW-6S, MW-7S, MW-9S, MW-10S, MW-13S, MW-20S, MW-25S, MW-26S, MW-27S, MW-28S, and MW-29S); eight containment performance monitoring wells (MW-30S, MW-31S, MW-32S, MW-33S, MW-34S, MW-35S, MW-36S and MW-37S); and 18 treatment performance monitoring wells (TG1-1, TG1-2, TG1-3, TG2-1, TG2-2, TG2-3, TG3-1, TG3-2, TG3-3, TG4-1, TG4-2, TG4-3, TG5-1, TG5-2, TG5-3, TG6-1, TG6-2, and TG6-3). The intermediate groundwater monitoring wells sampled include MW-3I, MW-7I, MW-9I, and MW-20I.

In addition to the investigative groundwater samples collected, five sample duplicate, three matrix spike/matrix spike duplicate (MS/MSD), and five field blank (identified by a FB prefix) samples were collected for quality assurance/quality control (QA/QC) purposes. Trip blanks accompanied each cooler of sample containers from the laboratory to the site and were shipped back to the laboratory within each cooler containing VOC samples.

All groundwater samples were field screened and laboratory analyzed for the parameters indicated in Section 1.

2.2.1 Field-Measured Parameters

The groundwater samples were measured in the field for pH, specific conductance, temperature, redox potential, dissolved oxygen, and turbidity. The field parameters were collected using a YSI 556 portable water quality meter and a turbidimeter. Due to the presence of free product, groundwater quality parameters were not measured in well MW-34S. The results of the monthly field-measured parameters for the treatment performance monitoring wells, which vary only slightly from the quarterly measurements, are presented in Appendix B. The groundwater pH, redox potential, specific conductance, and temperature are monitored during well purging prior to sampling, and the final (stabilized) values for these measurements prior to sample collection are presented in Table 2-3 and Appendix B.

2.2.1.1 pH

The pH of the groundwater samples collected during Q3 2002 ranged from 6.17 to 8.20 pH standard units (S.U.). The pH measurements indicate relatively neutral (7.0 S.U.) conditions. pH is an important factor in determining the feasibility of bioremediation of contaminants in the site groundwater since biological systems typically function only in narrow pH ranges (typically 6.5 to 8.5 S.U.) and microbial growth rates are pH dependant.

2.2.1.2 Redox Potential

The redox potentials of the groundwater samples collected at the site during Q3 2002 ranged from -96.4 to 148.7 millivolts (mV). The field readings showed that readings for redox potential in the treatment gate areas were predominantly negative, while readings for surrounding shallow and containment performance-monitoring wells were predominantly positive. Redox potential indicates the capability of the groundwater to promote chemical oxidation-reduction processes that consume organic matter and ultimately oxidize organic compounds. Microorganisms typically act as catalysts in oxidation reactions, and as such, the redox potential indicates the potential for the groundwater to oxidize the contaminants present. Since environmental systems are typically not in equilibrium, the redox potential is used as a gross indicator of the state of oxidation-reduction in the system. Oxidation-reduction rates in the system are greater as the

redox potential increases in magnitude. A positive redox potential typically indicates conditions where oxidized ionic species (i.e., NO_3^- , SO_4^- , and Fe^{3+}) predominate in comparison to their reduced counterparts (NH_4^+ , S^{2-} , and Fe^{2+} , respectively). Once dissolved oxygen is removed from water (i.e., via biodegradation of organics), oxidized ionic species become electron acceptors in redox processes. As the processes continue under anaerobic conditions, the reduced ionic species concentration increases, resulting in an overall decrease of the water's redox potential.

2.2.1.3 Dissolved Oxygen

DO levels for the groundwater samples collected during Q3 2002 ranged from 0.03 to 3.95 milligrams per liter (mg/L). However, readings indicating DO levels greater than 1.0 mg/L were observed only intermittently in the Performance monitoring wells. Overall, the dissolved oxygen readings indicate the presence of low levels of oxygen in the water, and the system as a whole is considered to be under anaerobic conditions (<1 mg/L DO). DO promotes the growth of aerobic and facultative bacteria, production of readily assimilated nutrients, and provides oxygen, all of which are required to facilitate the oxidation reaction responsible for removal the contaminants from the groundwater under aerobic conditions. Figure 2-3 indicates the DO concentrations over time in the treatment performance monitoring wells.

2.2.1.4 Specific Conductance

The specific conductance, or conductivity, of the groundwater samples collected during Q3 2002 ranged from 0.141 to 1.267 millimhos per centimeter (mU/cm). Conductivity of water is a measure of the ability of the solution to carry an electrical current that is transported by ions in the solution; therefore, conductivity is used as an indicator of the total dissolved solids (TDS) present in a water sample. As the dissolved solids content of a solution increases, the capacity for the water to transmit electrical current increases. Although conductivity is a measure of the aggregate dissolved solids in the water, it may be correlated to the readily available nutrient levels in the water, since TDS include nitrate, nitrite, ammonium, and phosphate ions.

2.2.1.5 Temperature

Groundwater temperatures ranged from 11.50 to 19.82 °C during Q3 2002. Temperatures measured approximately 3-4 °C higher in Q3 2002 than that of Q2 2002, which ranged from 7.25 to 16.45 °C. Temperature is an extremely important factor in bioremediation since microbial growth rates are greatly dependent upon temperature.

2.2.1.6 Turbidity

Turbidity ranged from 0.41 to 724 nephelometric turbidity units (NTU) during Q3 2002; however, turbidity was only measured at levels >20 NTU in six wells during Q3 2002. Turbidity is a measure of the clarity of water, and is used as an indicator of the solids present in a water sample and overall water quality.

2.2.2 **Laboratory Analyses**

The results of the laboratory analyses performed on the groundwater samples collected during July, August, and September 2002 are provided in Appendices B, C, and D, respectively. A discussion of the results of the laboratory analyses performed on the groundwater samples are presented in the following subsections.

2.2.2.1 Laboratory Analyses for BTEX and PAH

Each groundwater sample collected during the September 2002 sampling event was analyzed for BTEX and PAH compounds. The results of these analyses are presented and compared to WDNR PALs and ESs in Table 2-4. Table 2-4 also indicates those parameters that were detected at concentrations exceeding their respective PALs (shown as shaded values). Parameters with concentrations exceeding both PALs and ESs are presented as shaded and bold values in Table 2-4. Exceedences are summarized in the following paragraphs. The laboratory reports that included results of the BTEX and PAH analyses are provided as Appendix D.

Groundwater Sample Results

As shown in Table 2-4, benzene, naphthalene, fluoranthene, fluorene, pyrene, benzo(b)fluoranthene, benzo(a)pyrene, and chrysene were detected at concentrations exceeding their respective PALs and/or ESs in the groundwater samples collected from the shallow monitoring well network. The results are as follows:

PAL Exceedances:

- Benzene was detected at a concentration exceeding the WDNR PAL of 0.5 µg/L in the groundwater sample collected from well TG1-1.
- Naphthalene was detected at concentrations exceeding the WDNR PAL of 8 µg/L in the groundwater samples collected from wells MW-7S, MW-33S, MW-34S, TG1-1, and TG1-2.
- Chrysene was detected at concentrations exceeding the WDNR PAL of 0.02 µg/L in the groundwater samples collected from wells TG1-1 and TG1-2. A field blank, FB-05, also exceeded the PAL.
- Benzo(b)fluoranthene was detected at concentrations exceeding the WDNR PAL of 0.02 µg/L in the groundwater samples collected from wells MW-34S and TG1-1. Field blank FB-05 also exceeded the PAL for this constituent.
- Benzo(a)pyrene was detected at concentrations exceeding the WDNR PAL of 0.02 µg/L in the groundwater samples collected from wells MW-34S and TG1-1. A field blank, FB-05, also had a concentration that exceeded the PAL.
- Fluorene was detected at concentrations exceeding the WDNR PAL of 80 µg/L in the groundwater samples collected from wells MW-34S and TG1-1.
- Fluoranthene was detected at a concentration that exceeded the WDNR PAL of 80 µg/L in the groundwater sample collected from well TG1-1.
- Pyrene was detected at a concentration exceeding the WDNR PAL of 50 µg/L in the groundwater sample collected from well TG1-1.

ES Exceedences:

- Naphthalene was detected at concentrations exceeding the WDNR ES of 40 µg/L in the groundwater samples collected from wells MW-7S, MW-33S, MW-34S, and TG1-1.
- Chrysene was detected at a concentration exceeding the WDNR ES of 0.2 µg/L in the groundwater sample collected from well TG1-1.
- Benzo(b)fluoranthene was detected at concentrations exceeding the WDNR ES of 0.2 µg/L in the groundwater samples collected from wells MW-34S and TG1-1.
- Benzo(a)pyrene was detected at concentrations exceeding the WDNR ES of 0.2 µg/L in the groundwater samples collected from wells MW-34S and TG1-1. Field blank FB-05 also exceeded the ES for this constituent.
- Pyrene was detected at a concentration exceeding the WDNR ES of 250 µg/L in the groundwater sample collected from well TG1-1.

The detected plume boundary is primarily in an area encompassing five shallow monitoring wells (MW-7S, MW-33S, MW-34S, TG1-1, and TG1-2). The majority of PAL and ES exceedences are associated with wells MW-34S and TG1-1, which contained 2 and 4 inches of free product, respectively, in the quarterly investigation. In general, PAH concentrations measured in groundwater samples collected from the rest of the site were at relatively low levels with a few PAL/ES exceedences. Based on these detected concentrations, the contaminant plume generally indicates a northeasterly trend, as indicated in Figure 2 -1, as well as the previous 17 quarterly groundwater-sampling events.

Overall, the lateral extent of the groundwater contaminant plume is considerably smaller than in past quarters of groundwater sampling. It was also noted that no change in the contaminant plume size was observed in the past two quarters.

A summary of the concentration of contaminants at wells that have regularly exceeded PALs and/or ESs during the last 12 quarters (3 years) is presented in Table 2-5. Levels of benzene, naphthalene, fluorene, and benzo(a)pyrene fluctuate over wide ranges in these wells without a common pattern; however, these constituents have shown an overall decreasing trend in

monitoring wells MW-32S and MW-35S. These constituents had also shown an overall decreasing trend in well MW-4S prior to its removal in Q2 2001. Well MW-7S has shown a decreasing trend for benzene and benzo(a)pyrene. MW-7S has also shown fluctuating trends for fluorene and naphthalene, with both constituents showing a recent, slight increasing trend. Although benzene and benzo(a)pyrene concentrations in MW-33S have been consistently below detection limits, an increasing trend is evident for fluorene, with naphthalene showing a recent decreasing trend. Well MW-34S showed an increasing trend in the concentrations of naphthalene and fluorene, with benzene fluctuating towards an increasing trend, while benzo(a)pyrene showed a decreasing trend. Well MW-34S contained two inches of free product during Q3 2002, with varying levels of varying free product being found in the well in the recent past. This correlates with the elevated levels of constituents found in MW-34S. Well TG1-1 has shown fluctuating benzene, naphthalene, fluorene, and benzo(a)pyrene concentrations since it was first sampled in Q3 2000; however, TG1-1 showed an overall decreasing trend in benzene and naphthalene concentrations, while fluorene and benzo(a)pyrene show a fluctuation towards an increasing trend.

2.2.2.2 Laboratory Analyses for Treatment Performance Monitoring

The groundwater samples collected from the treatment performance monitoring wells were analyzed for microbial enumeration, NO₃-N, NO₂-N, TKN, NH₃-N, PO₄-P, and ORP on a monthly basis, and analyzed for BOD, COD, TOC, BTEX, and PAHs on a quarterly basis. The analytical results for microbial enumeration, NO₃-N, NO₂-N, TKN, NH₃-N, PO₄-P, ORP, BOD, COD, and TOC are presented in Table 2-6. The analytical results for the treatment performance monitoring groundwater samples are summarized below.

Nitrogen and Phosphorous Compounds

NO₃-N was at levels below method detection limits (nondetect) in all treatment performance-monitoring wells. NO₂-N was detected at levels ranging from nondetect to 0.021 mg/L. TKN was detected at concentrations ranging from 0.33 to 6.5 mg/L. NH₃-N was detected at levels ranging from nondetect to 2.0 mg/L. Temporal changes of NO₃-N, NO₂-N, and NH₃-N concentrations in the treatment performance monitoring wells with respect to treatment gate are

presented in Figures 2-4, 2-5, and 2-6, respectively. Overall, nitrogen compound concentrations are at relatively low levels; however, NH₃-N is typically an order of magnitude greater than NO₃-N and NO₂-N concentrations. NH₃-N is slightly higher in the TG3 wells. NO₃-N levels were non-detect in all the wells for Q3 2002. NO₂-N levels were relatively non-detect in the performance monitoring wells during the second quarter, except for some minor detection in well TG3-3 during July 2002, in well TG5-2 during August 2002, and wells TG1-2, TG2-3, TG3-1, TG3-2, and TG3-3 during September 2002.

PO₄-P was detected at concentrations ranging from nondetect to 0.54 mg/L. ORP was detected at concentrations ranging from nondetect to 0.093 mg/L. The temporal changes of PO₄-P and ORP concentrations in the treatment performance monitoring wells with respect to treatment gate are presented in Figures 2-7 and 2-8, respectively. A relatively good level of PO₄-P was found throughout the treatment gates for Q3 2002. However, ORP levels were minimal in the gates for Q3 2002, with levels being about half as much as they were in Q2 2002.

BOD, COD, and TOC

BOD concentrations for the samples collected throughout the treatment system range from non-detect to 10.1 mg/L. COD concentrations for the samples collected throughout the treatment system range from 8.4 to 47.4 mg/L. TOC concentrations for the samples collected throughout the treatment system range from 3.1 to 14.4 mg/L. As expected, the treatment gate wells indicate less BOD compared to COD. COD indicates presence of constituents that exert an oxygen demand, including carbon compounds such as the site contaminants in the groundwater, as well as other constituents such as ammonia, sulfurous compounds, and biological material such humic acids and detritus. A significant portion of oxygen demand that is exerted by the constituents measured in the COD test may not be readily biodegradable, and would typically exert the oxygen demand over an extended time period. The oxygen demand exerted by the constituents detected by the COD analysis is catalyzed chemically and thermally. The low BOD indicates low concentrations of material that is readily biodegradable and/or quickly oxidized. In support of this, only four wells (TG1-1, TG3-2, TG3-3, and TG6-1) had detection for BOD during Q3 2002. Also, all the detections were during September 2002. The rest of the treatment performance wells were non-detect for BOD.

Microbial Enumeration

The monthly mean of the total microbe populations for TG1 and TG2 ranged from 3.50×10^2 to 1.59×10^5 colony forming units per milliliter (CFU/mL) during third quarter 2002. The monthly mean of the total microbe populations for TG3 and TG4 ranged from 3.30×10^2 to 1.03×10^6 CFU/mL during third quarter 2002. The monthly of the total microbe populations for TG5 and TG6 ranged from 9.00×10^1 to 7.10×10^4 CFU/mL during third quarter 2002. The temporal changes in total microbial populations are presented in Figure 2-9.

The monthly mean of the degrader microbe populations for TG1 and TG2 ranged from 2.00×10^1 to 7.00×10^3 CFU/mL during third quarter 2002. The monthly mean of the microbe populations for TG3 and TG4 ranged from 1.00×10^1 to 9.00×10^3 CFU/mL during third quarter 2002. The monthly mean of the microbe populations for TG5 and TG6 ranged from 2.00×10^1 to 4.00×10^3 CFU/mL during third quarter 2002. The temporal changes in degrader microbial populations are presented in Figure 2-10.

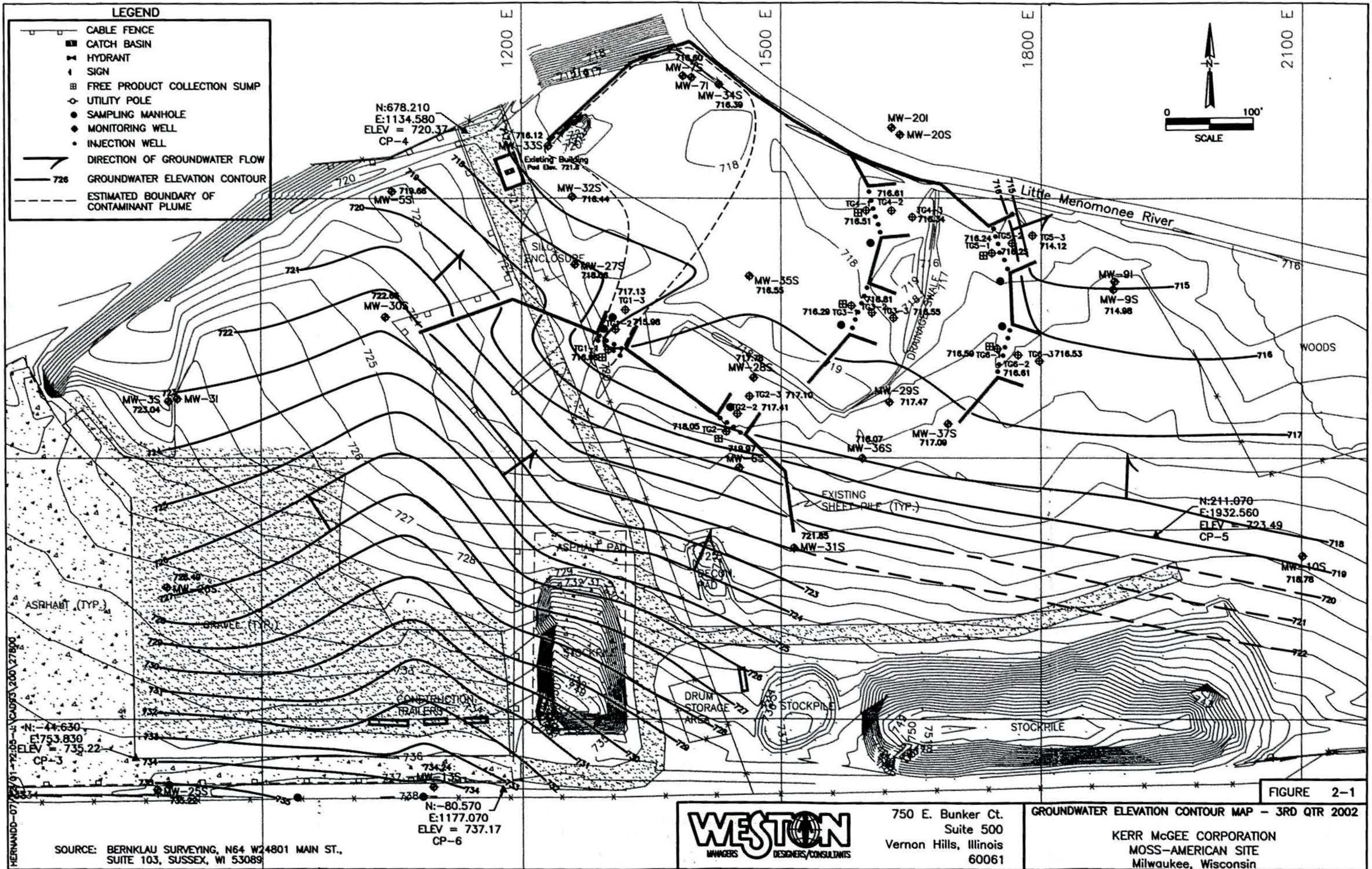


FIGURE 2-1

SOURCE: BERNKLAU SURVEYING, N64 W24801 MAIN ST., SUITE 103, SUSSEX, WI 53089



750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061

GROUNDWATER ELEVATION CONTOUR MAP - 3RD QTR 2002

KERR MCGEE CORPORATION
MOSS-AMERICAN SITE
Milwaukee, Wisconsin

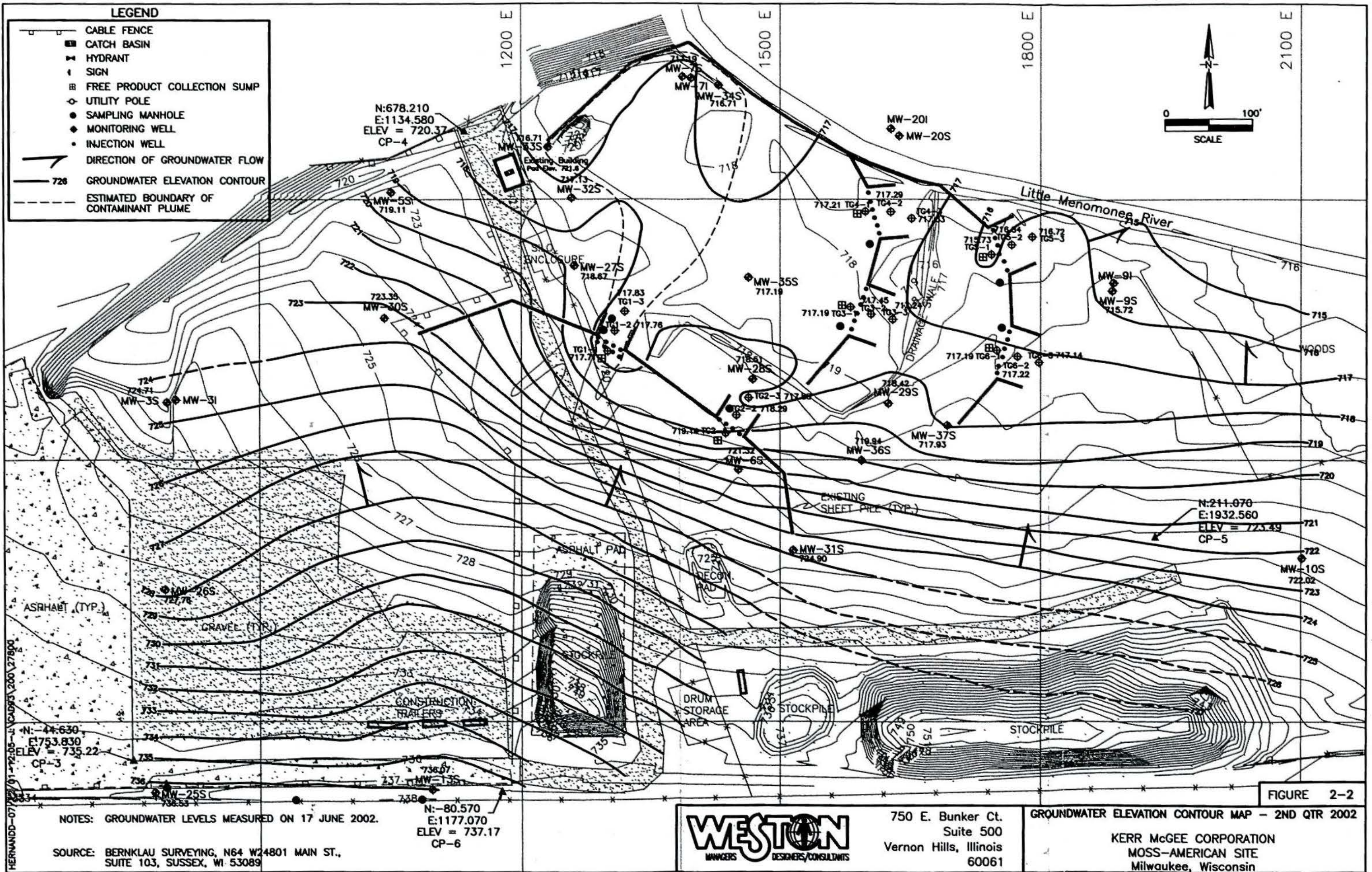


Figure 2-3

Treatment Performance Monitoring Wells
 Third Quarter 2002
 Moss-American Site
 Milwaukee, Wisconsin

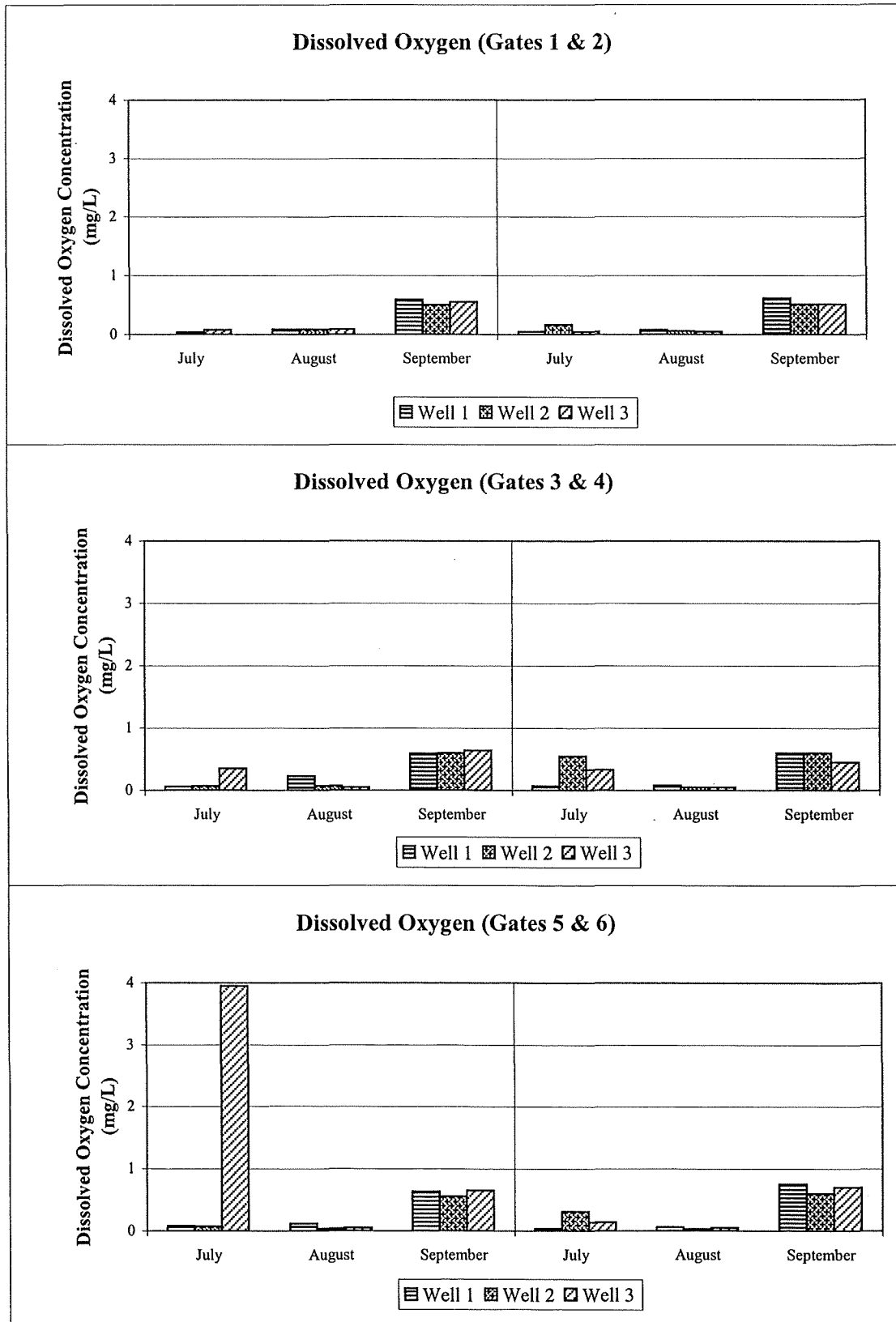


Figure 2-4

Treatment Performance Monitoring Wells
Third Quarter 2002
Moss-American Site
Milwaukee, Wisconsin

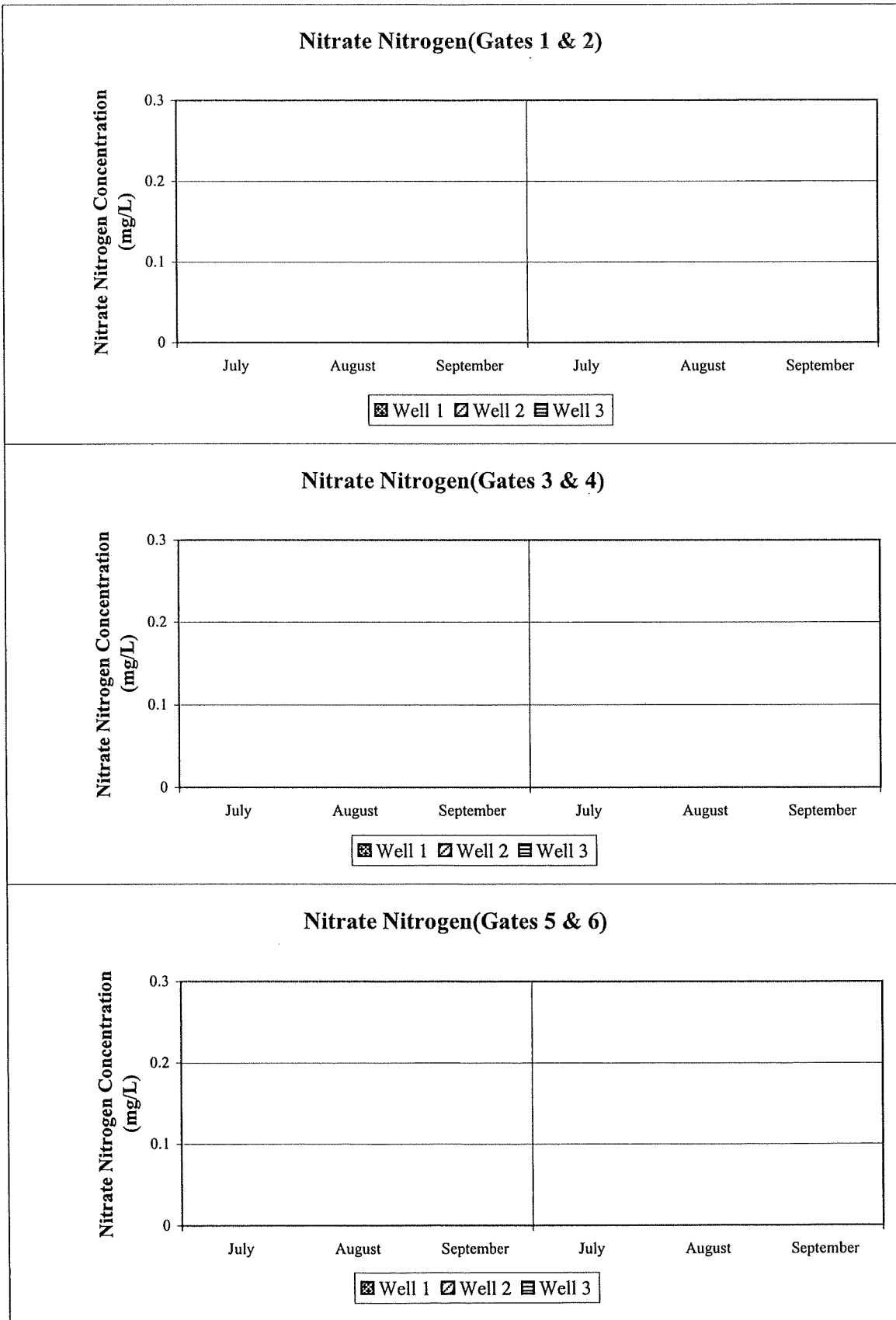


Figure 2-5

Treatment Performance Monitoring Wells
 Third Quarter 2002
 Moss-American Site
 Milwaukee, Wisconsin

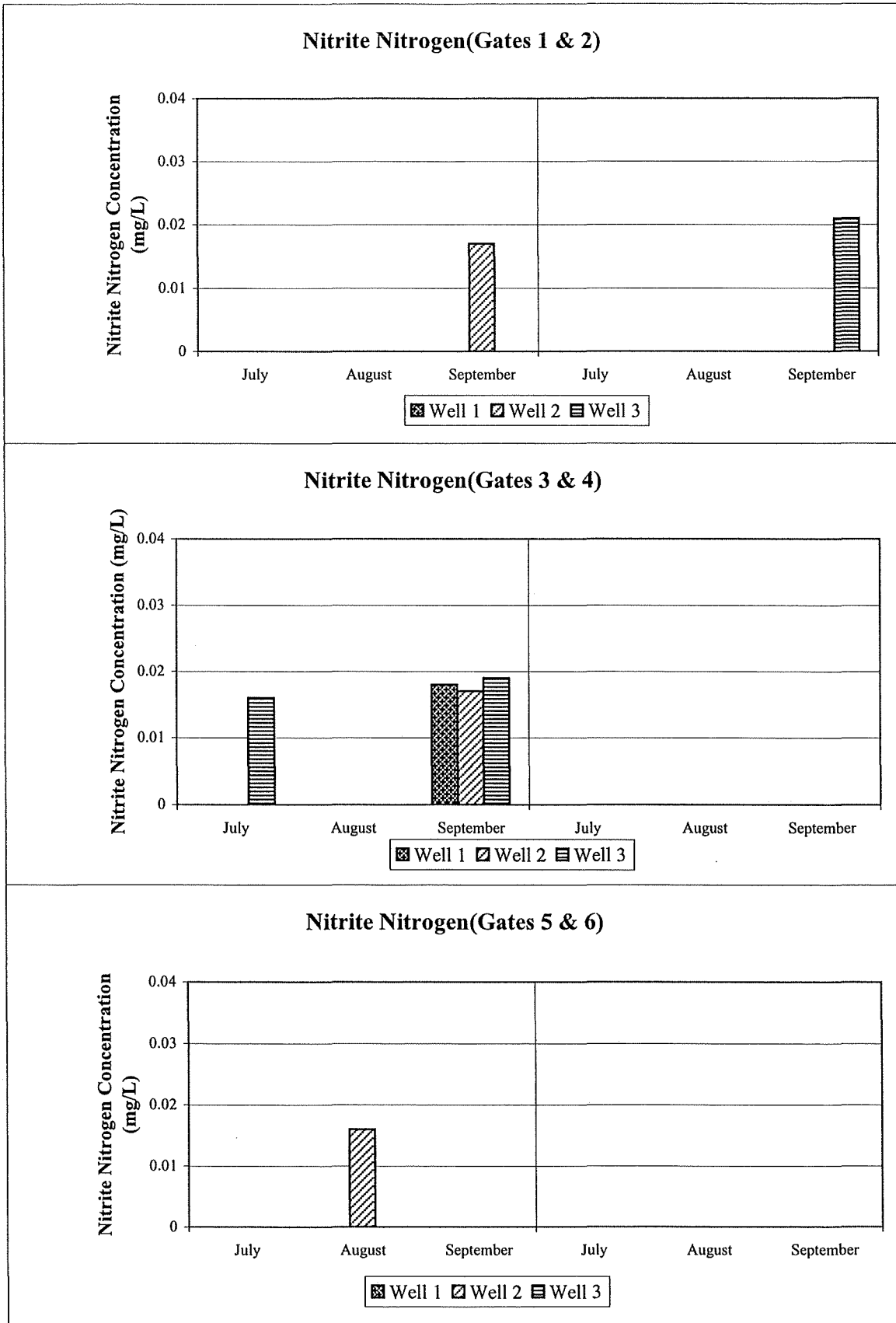


Figure 2-6

Treatment Performance Monitoring Wells
 Third Quarter 2002
 Moss-American Site
 Milwaukee, Wisconsin

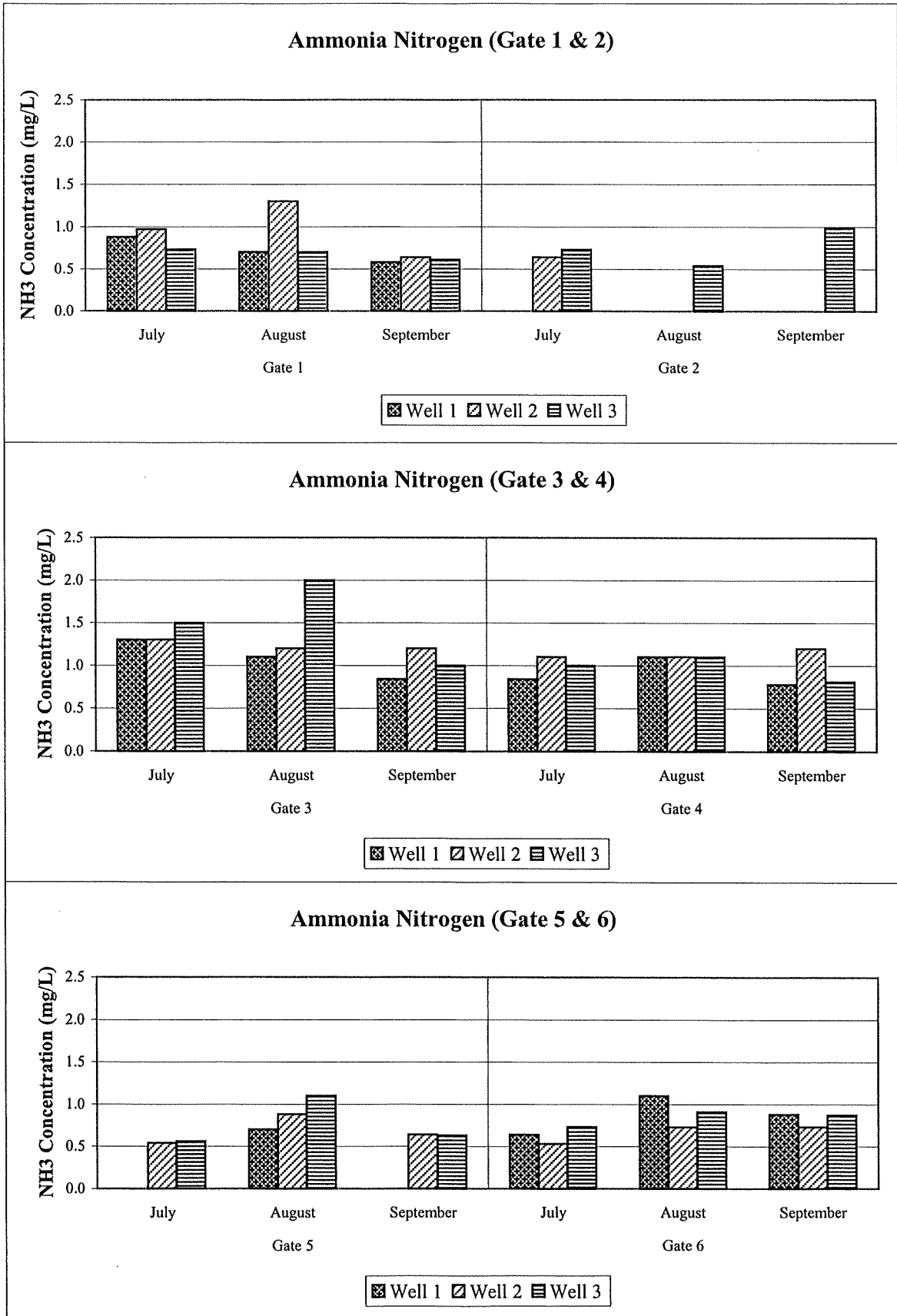


Figure 2-7

Treatment Performance Monitoring Wells
 Third Quarter 2002
 Moss-American Site
 Milwaukee, Wisconsin

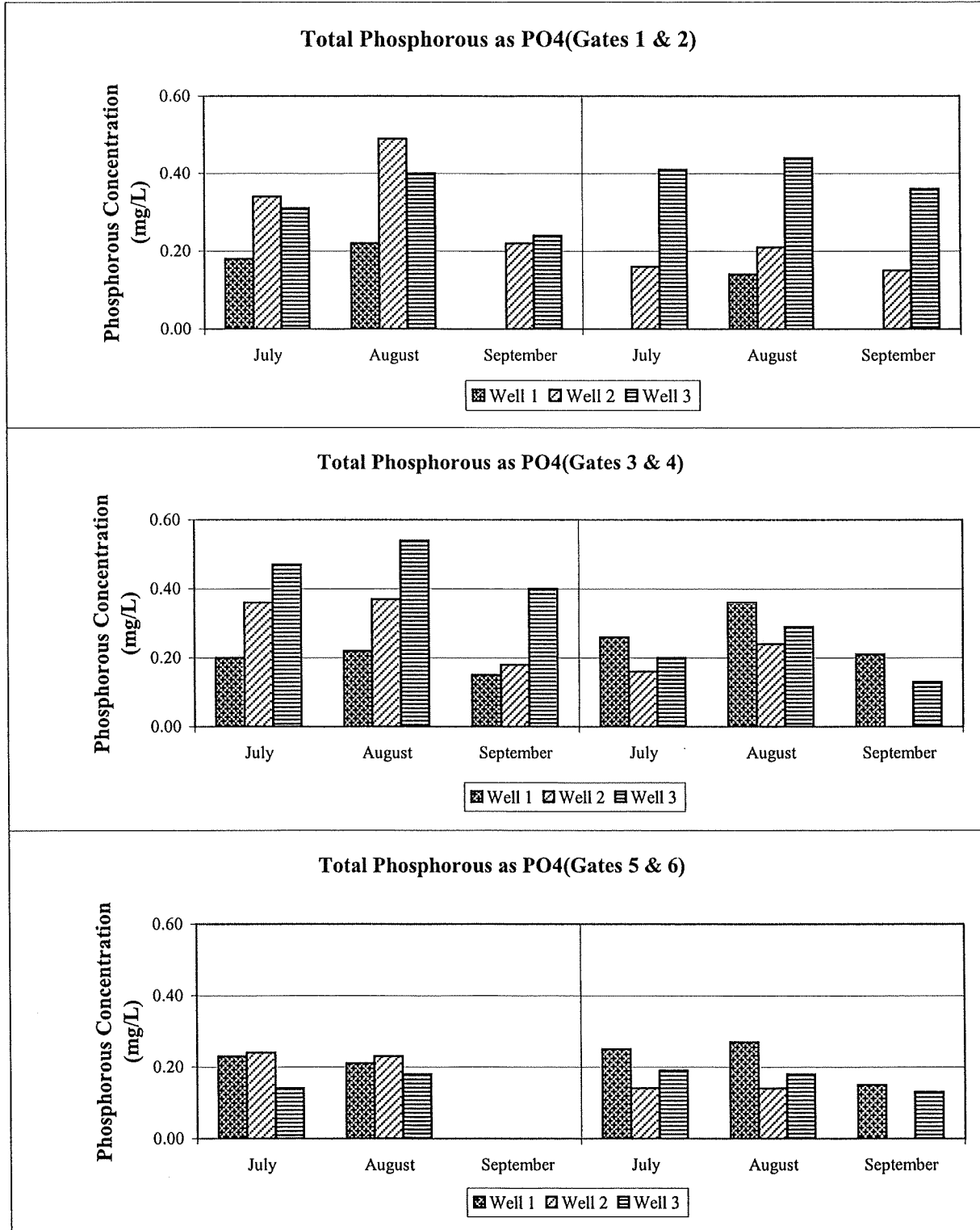


Figure 2-8

Treatment Performance Monitoring Wells
 Third Quarter 2002
 Moss-American Site
 Milwaukee, Wisconsin

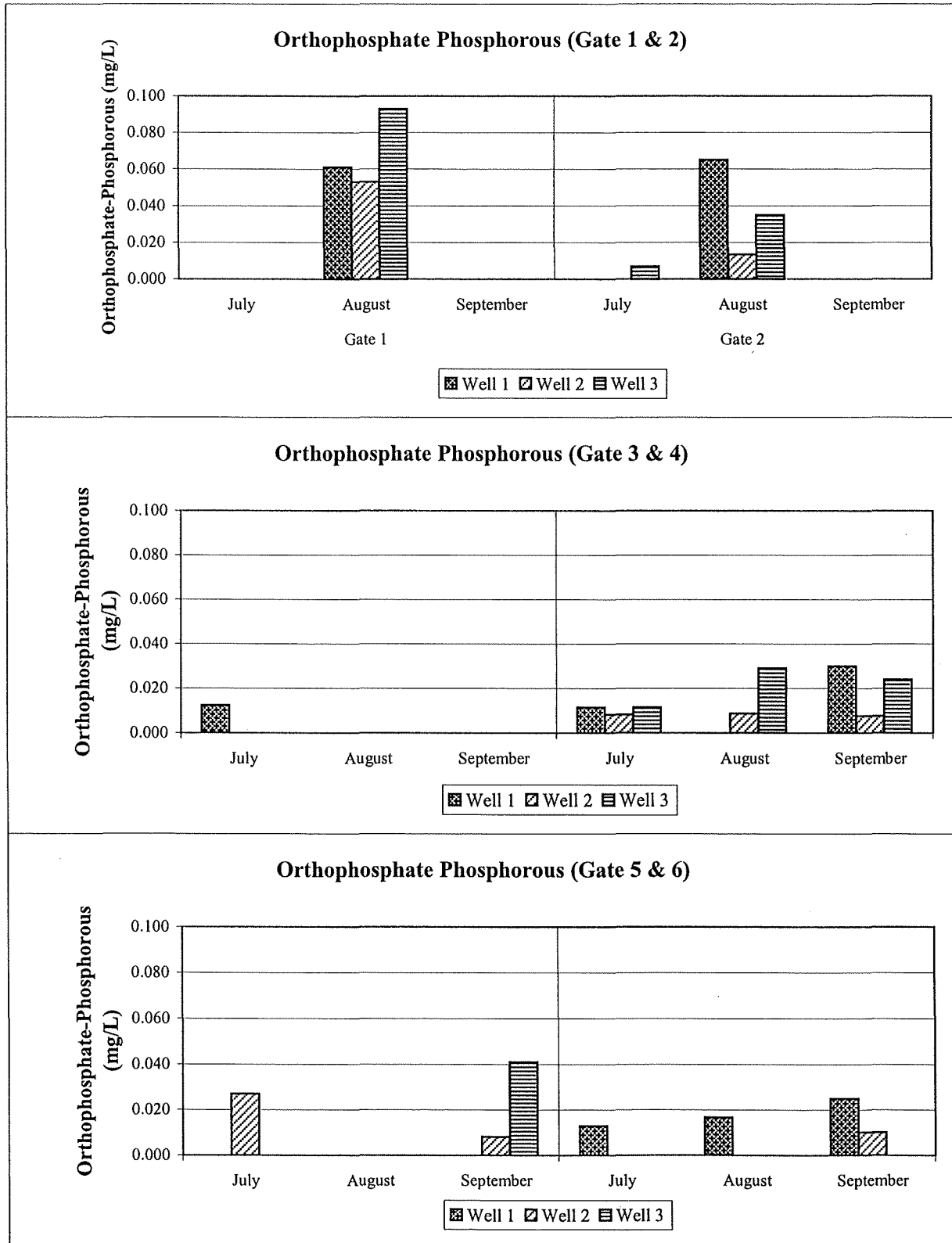


Figure 2-9

Treatment Performance Monitoring Wells
 Third Quarter 2002
 Moss-American Site
 Milwaukee, Wisconsin

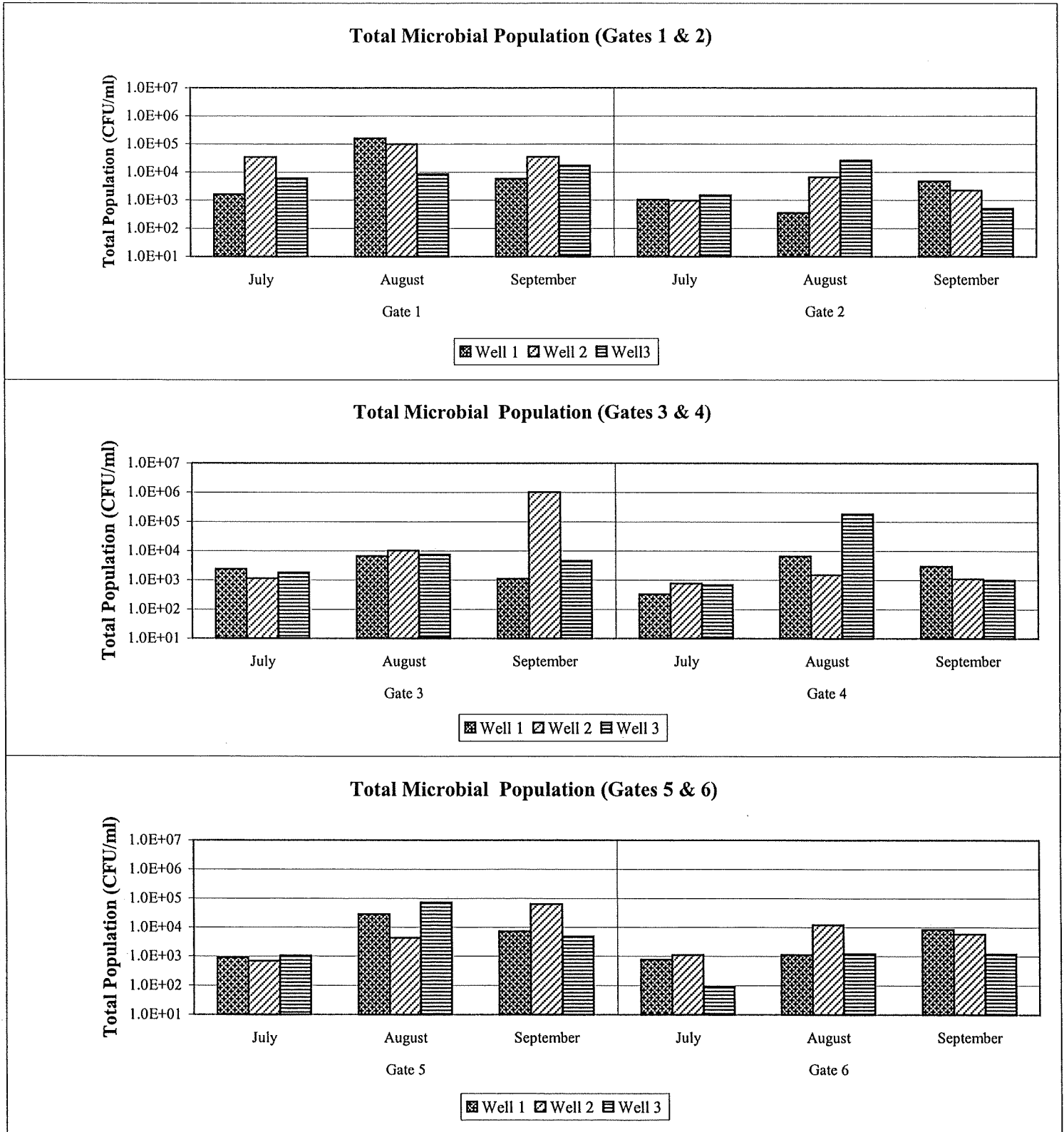


Figure 2-10

Treatment Performance Monitoring Wells
 Third Quarter 2002
 Moss-American Site
 Milwaukee, Wisconsin

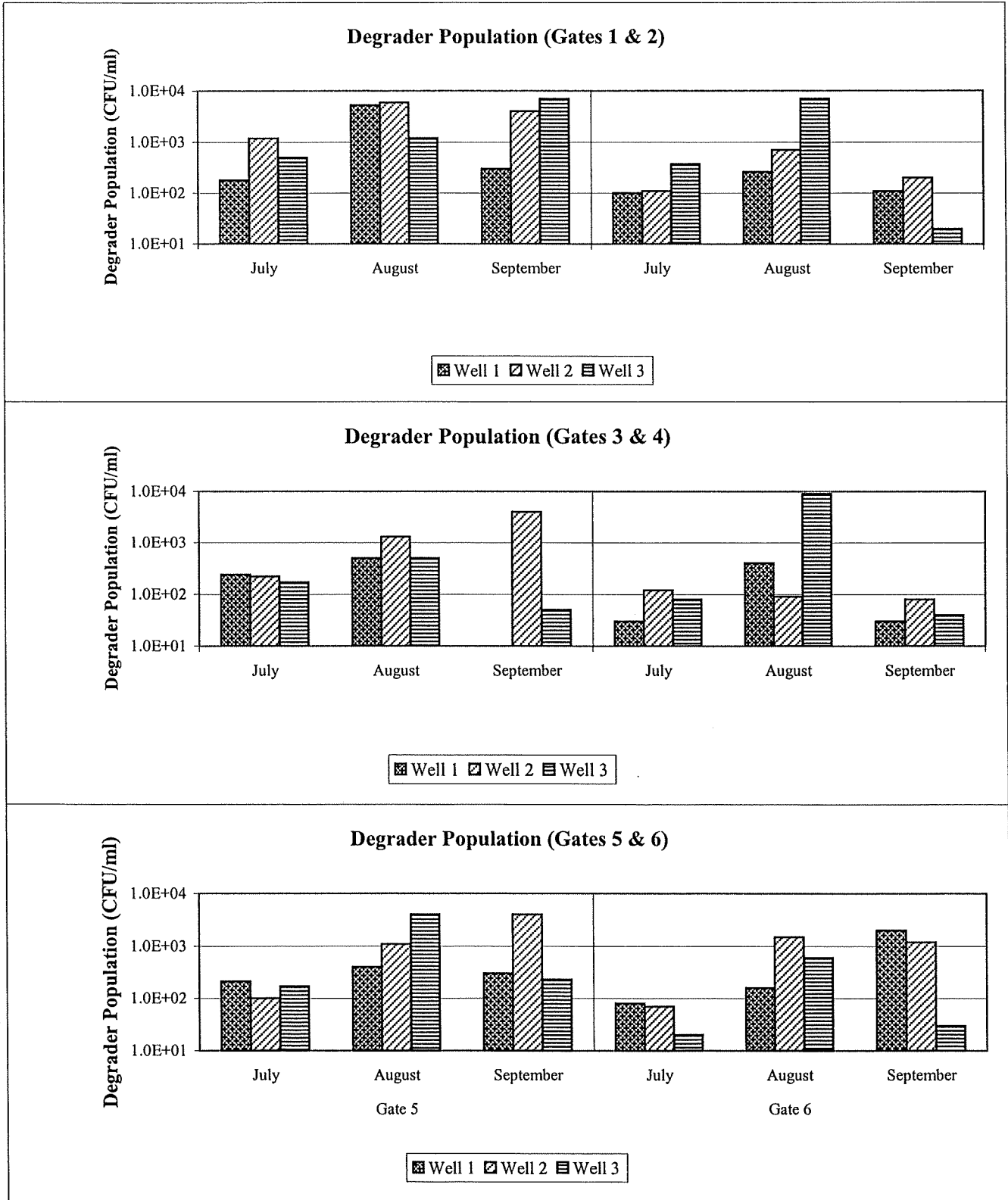


Table 2-1

Groundwater Elevation Measurements
Shallow Monitoring and Containment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002

Well ID	Ground Elevation	TOC Elevation	Depth to Water	GW Elevation	Product Thickness
MW-3S	729.00	731.50	8.46	723.04	ND
MW-5S	723.00	724.70	5.04	719.66	ND
MW-6S	727.00	724.28	4.31	719.97	ND
MW-7S	720.00	721.70	5.10	716.60	ND
MW-9S	720.00	721.71	6.73	714.98	ND
MW-10S	723.00	726.58	7.80	718.78	ND
MW-13S	737.00	738.68	4.44	734.24	ND
MW-25S	736.83	739.24	4.02	735.22	ND
MW-26S	732.31	731.66	5.17	726.49	ND
MW-27S	720.59	723.15	5.09	718.06	ND
MW-28S	720.04	722.65	4.87	717.78	ND
MW-29S	720.01	722.39	4.92	717.47	ND
MW-30S	724.50	727.19	4.54	722.65	ND
MW-31S	723.80	726.35	4.50	721.85	ND
MW-32S	719.60	722.62	6.18	716.44	ND
MW-33S	719.10	721.69	5.57	716.12	ND
MW-34S	718.60	721.42	5.03	716.39	2 "
MW-35S	718.90	721.54	4.99	716.55	ND
MW-36S	720.20	723.09	5.02	718.07	ND
MW-37S	720.50	723.13	6.04	717.09	ND

Notes: All values in feet.

All elevation measurements are with respect to Mean Sea Level (MSL).

TOC = Top of well casing.

GW = Groundwater.

ND = Not detected.

Depth to groundwater was measured on 23 September 2002.

Table 2-2

**Groundwater Elevation Measurements
Treatment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002**

Well ID	Ground Elevation	TOC Elevation	Depth to Water	GW Elevation	Hydraulic Gradient (ft/ft)	Groundwater Velocity (ft/day)	Product Thickness
TG1-1	720.05	723.18	6.22	716.96	-0.0034	-0.0321	4 "
TG1-2	719.80	722.60	6.62	715.98			ND
TG1-3	719.30	722.35	5.22	717.13			ND
TG2-1	720.50	723.60	5.55	718.05	0.0190	0.1795	ND
TG2-2	719.90	722.86	5.45	717.41			ND
TG2-3	719.90	722.35	5.25	717.10			ND
TG3-1	718.40	720.95	4.66	716.29	-0.0052	-0.0491	ND
TG3-2	718.20	720.75	3.94	716.81			ND
TG3-3	717.80	720.30	3.75	716.55			ND
TG4-1	717.60	720.79	4.28	716.51	0.0034	0.0321	ND
TG4-2	717.90	720.51	3.90	716.61			ND
TG4-3	717.40	719.93	3.59	716.34			ND
TG5-1	717.60	720.56	4.32	716.24	0.0424	0.4006	ND
TG5-2	717.30	720.24	3.99	716.25			ND
TG5-3	717.00	719.73	5.61	714.12			ND
TG6-1	719.20	721.73	5.14	716.59	0.0012	0.0113	ND
TG6-2	719.20	721.90	5.29	716.61			ND
TG6-3	719.40	722.32	5.79	716.53			ND

Notes: All values in feet.

All elevation measurements are with respect to Mean Sea Level (MSL).

Porosity of soil is assumed to be 0.3.

Hydraulic conductivity of treatment gate material is assumed to be 1E-3 cm/s = 2.8 ft/day.

TOC = Top of the casing.

GW = Groundwater.

ft/day = feet per day.

ND= Not detected.

A negative value in the groundwater velocity column indicates that the groundwater flow was opposite to the general direction of groundwater flow at the site.

Depth to groundwater was measured on 23 September 2002.

Table 2-3

**Field-Measured Parameters
Shallow Groundwater and Containment Performance
Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002**

Well Number	pH (Standard Units)	Specific Conductance (mmho/cm)	Temperature (°C)	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW-3I	8.20	0.390	13.44	28.4	0.64	2.12
MW-3S	7.05	1.052	14.87	27.3	0.79	38.5
MW-5S	6.95	0.956	14.19	0.6	0.84	14.8
MW-6S	7.05	0.520	15.60	8	0.74	64.3
MW-7I	7.22	0.273	11.50	22	0.86	724
MW-7S	6.64	0.675	12.60	-29	0.39	1.05
MW-9I	6.51	0.141	12.70	0.34	0.58	1.15
MW-9S	6.25	0.660	13.90	8	0.45	10.19
MW-10S	6.72	0.647	18.20	52	1.15	0.68
MW-13S	6.87	1.010	18.57	140.5	0.67	6.50
MW-20I	7.38	0.227	12.50	32	0.56	4.40
MW-20S	7.05	0.808	13.70	40	NM	145
MW-25S	6.83	0.931	17.13	148.7	0.74	1.21
MW-26S	7.05	0.838	16.36	-7.9	0.75	1.50
MW-27S	6.59	0.689	15.40	-58	0.77	1.67
MW-28S	6.22	1.148	17.60	43	0.75	2.21
MW-29S	6.92	0.633	15.90	20	0.74	7.02
MW-30S	6.75	1.161	16.46	46.9	0.69	0.52
MW-31S	7.00	0.564	16.60	48	0.55	256
MW-32S	6.57	0.701	17.40	-54	0.51	0.93
MW-33S	6.21	0.727	14.30	-28	0.90	0.74
MW-35S	6.64	0.837	17.20	29	0.46	0.90
MW-36S	7.15	0.234	15.50	36	0.69	18.61
MW-37S	6.60	0.324	16.80	22	0.69	2.75

Table 2-3 (continued)

**Field-Measured Parameters
Treatment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002**

Well Number	pH (Standard Units)	Specific Conductance (mmho/cm)	Temperature (oC)	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
TG1-1	NM	NM	NM	NM	0.59	NM
TG1-2	6.88	1.085	17.12	-86.8	0.50	6.07
TG1-3	6.98	1.103	17.45	-58.4	0.55	9.69
TG2-1	6.87	0.814	15.99	15.6	0.61	2.96
TG2-2	7.04	0.779	15.73	-85.2	0.51	2.31
TG2-3	6.63	1.267	17.63	-53.6	0.51	1.19
TG3-1	6.71	1.256	18.08	-38.2	0.59	7.83
TG3-2	6.94	1.066	17.63	-90.5	0.60	4.15
TG3-3	6.72	1.212	17.67	-70.6	0.64	4.12
TG4-1	6.66	0.973	17.78	-30.0	0.60	1.45
TG4-2	6.26	0.913	17.60	-37.4	0.60	0.79
TG4-3	6.75	0.909	17.34	-36.7	0.45	0.54
TG5-1	6.97	0.894	16.65	-34.1	0.63	0.41
TG5-2	7.12	0.905	14.47	-75.7	0.55	1.21
TG5-3	7.34	0.842	15.31	25.6	0.65	15.0
TG6-1	6.92	1.210	17.23	-70.7	0.75	46.3
TG6-2	6.62	1.267	16.73	35.0	0.60	4.33
TG6-3	6.58	1.205	16.91	-29.3	0.70	0.87

Notes:

S- Shallow Well.

TG- Treatment gate performance monitoring well.

NM- Not measured.

mmho/cm- millimho per centimeter.

oC- Degrees Celcius.

mV- millivolt.

mg/L- milligrams per liter.

NTU- Nephelometric turbidity units.

Table 2-4

Groundwater Sample Analytical Results
Shallow Groundwater Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002

Sample ID:	MW-3S	MW5S	MW-6S	MW-7S	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/25/2002	9/26/2002	9/24/2002	9/24/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L		
Parameters						
VOCS						
Benzene	0.2 u	0.2 u	0.2 u	5 u	0.5	5
Toluene	0.2 u	0.2 u	0.2 u	5 u	68.6	343
Ethylbenzene	0.2 u	0.2 u	0.2 u	13 J	140	700
Total Xylenes	0.6 u	0.6 u	0.6 u	35 J	124	650
PAHs						
Acenaphthene	0.8 u	0.8 u	0.8 u	66 v	NA	NA
Acenaphthylene	0.8 u	0.8 u	0.8 u	51 v	NA	NA
Anthracene	0.04 u	0.04 u	0.04 u	0.04 u	600	3000
Benzo(a)anthracene	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Benzo(a)pyrene	0.02 u	0.02 u	0.02 u	0.02 u	0.02	0.2
Benzo(b)fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	0.02	0.2
Benzo(g,h,i)perylene	0.1 u	0.1 u	0.1 u	0.1 u	NA	NA
Benzo(k)fluoranthene	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Chrysene	0.08 u	0.08 u	0.08 u	0.08 u	0.02	0.2
Dibenz(a,h)anthracene	0.04 u	0.04 u	0.04 u	0.04 u	NA	NA
Fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	80	400
Fluorene	0.2 u	0.2 u	0.2 u	11 v	80	400
Indeno(1,2,3-cd)pyrene	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Naphthalene	1 u	1 u	1 u	4000 v	8	40
Phenanthrene	0.08 u	0.08 u	0.08 u	0.15 J	NA	NA
Pyrene	0.2 u	0.2 u	0.2 u	0.2 u	50	250

Table 2-4 (continued)

Groundwater Sample Analytical Results
Shallow Groundwater Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002

Sample ID:	MW-9S	MW-10S	MW-13S	MW-20S	MW25S	MW-26S	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/23/2002	9/24/2002	9/26/2002	9/24/2002	9/26/2002	9/25/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
Parameters								
VOCS								
Benzene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.5	5
Toluene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	68.6	343
Ethylbenzene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	140	700
Total Xylenes	0.6 u	0.6 u	0.6 u	0.6 u	0.6 u	0.6 u	124	650
PAHs								
Acenaphthene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	NA	NA
Acenaphthylene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	NA	NA
Anthracene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	600	3000
Benzo(a)anthracene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Benzo(a)pyrene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02	0.2
Benzo(b)fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.02	0.2
Benzo(g,h,i)perylene	0.1 u	0.1 u	0.1 u	0.1 u	0.1 u	0.1 u	NA	NA
Benzo(k)fluoranthene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Chrysene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.02	0.2
Dibenz(a,h)anthracene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	NA	NA
Fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	80	400
Fluorene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	80	400
Indeno(1,2,3-cd)pyrene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Naphthalene	1 u	1 u	1 u	1 u	1 u	1 u	8	40
Phenanthrene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Pyrene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	50	250

Table 2-4 (continued)

**Groundwater Sample Analytical Results
Shallow Groundwater Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002**

Sample ID:	MW-27S	MW-28S	MW-29S	MW-30S	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/24/2002	9/24/2002	9/23/2002	9/26/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L		
Parameters						
VOCS						
Benzene	0.2 u	0.2 u	0.2 u	0.2 u	0.5	5
Toluene	0.2 u	0.2 u	0.2 u	0.2 u	68.6	343
Ethylbenzene	0.2 u	0.2 u	0.2 u	0.2 u	140	700
Total Xylenes	0.6 u	0.6 u	0.6 u	0.6 u	124	650
PAHs						
Acenaphthene	0.8 u	0.8 u	0.8 u	0.8 u	NA	NA
Acenaphthylene	0.8 u	0.8 u	0.8 u	0.8 u	NA	NA
Anthracene	0.04 u	0.04 u	0.04 u	0.04 u	600	3000
Benzo(a)anthracene	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Benzo(a)pyrene	0.02 u	0.02 u	0.02 u	0.02 u	0.02	0.2
Benzo(b)fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	0.02	0.2
Benzo(g,h,i)perylene	0.1 u	0.1 u	0.09 u	0.1 u	NA	NA
Benzo(k)fluoranthene	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Chrysene	0.08 u	0.08 u	0.08 u	0.08 u	0.02	0.2
Dibenz(a,h)anthracene	0.04 u	0.04 u	0.04 u	0.04 u	NA	NA
Fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	80	400
Fluorene	0.2 u	0.2 u	0.2 u	0.2 u	80	400
Indeno(1,2,3-cd)pyrene	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Naphthalene	1 u	1 u	0.9 u	1 u	8	40
Phenanthrene	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Pyrene	0.2 u	0.2 u	0.2 u	0.2 u	50	250

Table 2-4 (continued)

Groundwater Sample Analytical Results
Containment Performance Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002

Sample ID:	MW-31S	MW-32S	MW-33S	MW-34S	MW-35S	MW-36S	MW-37S	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/24/2002	9/24/2002	9/24/2002	9/24/2002	9/24/2002	9/23/2002	9/23/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
Parameters									
VOCS									
Benzene	0.2 u	0.2 u	4 UJ	10 UJ	0.2 u	0.2 u	0.2 u	0.5	5
Toluene	0.2 u	0.2 u	4 UJ	10 UJ	0.2 u	0.2 u	0.2 u	68.6	343
Ethylbenzene	0.2 u	0.2 u	8.6 J	21 J	0.2 u	0.2 u	0.2 u	140	700
Total Xylenes	0.6 u	0.6 u	22 J	50 J	0.6 u	0.6 u	0.6 u	124	650
PAHs									
Acenaphthene	0.8 u	0.8 u	180 v	250 v	0.82 J	1 u	0.8 u	NA	NA
Acenaphthylene	0.8 u	0.8 u	59 v	92 v	0.8 u	1 u	0.8 u	NA	NA
Anthracene	0.04 u	0.04 u	0.16 J	14 v	0.23 v	0.05 u	0.04 u	600	3000
Benzo(a)anthracene	0.02 u	0.02 u	0.02 u	2.2 v	0.024 J	0.02 u	0.02 u	NA	NA
Benzo(a)pyrene	0.02 u	0.02 u	0.02 u	0.78 v	0.02 u	0.02 u	0.02 u	0.02	0.2
Benzo(b)fluoranthene	0.04 u	0.04 u	0.04 u	0.71 v	0.04 u	0.05 u	0.04 u	0.02	0.2
Benzo(g,h,i)perylene	0.1 u	0.1 u	0.1 u	0.09 u	0.1 u	0.1 u	0.1 u	NA	NA
Benzo(k)fluoranthene	0.02 u	0.02 u	0.02 u	0.4 v	0.02 u	0.02 u	0.02 u	NA	NA
Chrysene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.1 u	0.08 u	0.02	0.2
Dibenz(a,h)anthracene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.05 u	0.04 u	NA	NA
Fluoranthene	0.04 u	0.04 u	0.04 u	25 v	0.83 v	0.05 u	0.04 u	80	400
Fluorene	0.2 u	0.2 u	60 v	130 v	0.2 u	0.2 u	0.2 u	80	400
Indeno(1,2,3-cd)pyrene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.1 u	0.08 u	NA	NA
Naphthalene	1 u	1 u	2700 v	7000 v	1 u	1 u	1 u	8	40
Phenanthrene	0.08 u	0.08 u	6.3 v	160 v	0.14 J	0.1 u	0.08 u	NA	NA
Pyrene	0.2 u	0.2 u	0.2 u	17 v	0.49 J	0.2 u	0.2 u	50	250

Table 2-4 (continued)

Groundwater Sample Analytical Results
Treatment Performance Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002

Sample ID:	TG1-1	TG1-2	TG1-3	TG2-1	TG2-2	TG2-3	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/26/2002	9/26/2002	9/26/2002	9/26/2002	9/26/2002	9/26/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
Parameters								
VOCS								
Benzene	1.3 v	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.5	5
Toluene	13 v	0.69 J	0.2 u	0.2 u	0.2 u	0.2 u	68.6	343
Ethylbenzene	0.33 J	0.22 J	0.2 u	0.2 u	0.2 u	0.2 u	140	700
Total Xylenes	17 v	0.61 J	0.6 u	0.6 u	0.6 u	0.6 u	124	650
PAHs								
Acenaphthene	490 v	30 v	0.8 u	0.8 u	0.8 u	0.8 u	NA	NA
Acenaphthylene	45 J	1.8 J	0.8 u	0.8 u	0.8 u	0.8 u	NA	NA
Anthracene	82 v	1.8 v	0.049 J	0.04 u	0.04 u	0.04 u	600	3000
Benzo(a)anthracene	54 v	0.1 v	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Benzo(a)pyrene	25 v	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02	0.2
Benzo(b)fluoranthene	23 v	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.02	0.2
Benzo(g,h,i)perylene	7.1 v	0.1 u	0.1 u	0.1 u	0.1 u	0.1 u	NA	NA
Benzo(k)fluoranthene	13 v	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Chrysene	34 v	0.083 J	0.08 u	0.08 u	0.08 u	0.08 u	0.02	0.2
Dibenz(a,h)anthracene	5 u	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	NA	NA
Fluoranthene	310 v	2.9 v	0.079 J	0.04 u	0.045 J	0.04 u	80	400
Fluorene	330 v	13 v	0.2 u	0.2 u	0.2 u	0.2 u	80	400
Indeno(1,2,3-cd)pyrene	10 v	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Naphthalene	1200 v	27 v	1 u	1 u	1 u	1 u	8	40
Phenanthrene	670 v	12 v	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Pyrene	310 v	2 v	0.2 u	0.2 u	0.2 u	0.2 u	50	250

Table 2-4 (continued)

**Groundwater Sample Analytical Results
Treatment Performance Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002**

Sample ID:	TG3-1	TG3-2	TG3-3	TG4-1	TG4-2	TG4-3	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/25/2002	9/25/2002	9/25/2002	9/25/2002	9/25/2002	9/25/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
Parameters								
VOCS								
Benzene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.5	5
Toluene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	68.6	343
Ethylbenzene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	140	700
Total Xylenes	0.6 u	0.6 u	0.6 u	0.6 u	0.6 u	0.6 u	124	650
PAHs								
Acenaphthene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	NA	NA
Acenaphthylene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	NA	NA
Anthracene	0.072 J	0.04 u	0.04 u	0.04 u	0.12 J	0.04 u	600	3000
Benzo(a)anthracene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Benzo(a)pyrene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02	0.2
Benzo(b)fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.02	0.2
Benzo(g,h,i)perylene	0.1 u	0.1 u	0.1 u	0.1 u	0.1 u	0.1 u	NA	NA
Benzo(k)fluoranthene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Chrysene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.02	0.2
Dibenz(a,h)anthracene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	NA	NA
Fluoranthene	0.076 J	0.063 J	0.076 J	0.04 u	0.27 v	0.04 u	80	400
Fluorene	0.25 J	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	80	400
Indeno(1,2,3-cd)pyrene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Naphthalene	1 u	1 u	1 u	1 u	1 u	1 u	8	40
Phenanthrene	0.08 u	0.08 u	0.11 J	0.08 u	0.08 u	0.08 u	NA	NA
Pyrene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	50	250

Table 2-4 (continued)

Groundwater Sample Analytical Results
Treatment Performance Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002

Sample ID:	TG5-1	TG5-2	TG5-3	TG6-1	TG6-2	TG6-3	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/25/2002	9/25/2002	9/25/2002	9/25/2002	9/25/2002	9/25/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
Parameters								
VOCS								
Benzene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.5	5
Toluene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	68.6	343
Ethylbenzene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	140	700
Total Xylenes	0.6 u	0.6 u	0.6 u	0.6 u	0.6 u	0.6 u	124	650
PAHs								
Acenaphthene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	NA	NA
Acenaphthylene	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	0.8 u	NA	NA
Anthracene	0.04 u	0.054 J	0.04 u	0.04 u	0.04 u	0.049 J	600	3000
Benzo(a)anthracene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Benzo(a)pyrene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02	0.2
Benzo(b)fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.02	0.2
Benzo(g,h,i)perylene	0.1 u	0.1 u	0.1 u	0.1 u	0.1 u	0.09 u	NA	NA
Benzo(k)fluoranthene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Chrysene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.02	0.2
Dibenz(a,h)anthracene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	NA	NA
Fluoranthene	0.04 u	0.062 J	0.041 J	0.04 u	0.12 J	0.075 J	80	400
Fluorene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	80	400
Indeno(1,2,3-cd)pyrene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Naphthalene	1 u	1 u	1 u	1 u	1 u	0.9 u	8	40
Phenanthrene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Pyrene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	50	250

Table 2-4 (continued)

Groundwater Sample Analytical Results
Intermediate Groundwater Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002

Sample ID:	MW-3I	MW-7I	MW-9I	MW-20I	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/25/2002	9/24/2002	9/23/2002	9/24/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L		
Parameters						
VOCS						
Benzene	0.2 u	0.2 u	0.2 u	0.2 u	0.5	5
Toluene	0.2 u	0.2 u	0.2 u	0.2 u	68.6	343
Ethylbenzene	0.2 u	0.2 u	0.2 u	0.2 u	140	700
Total Xylenes	0.6 u	0.6 u	0.6 u	0.6 u	124	650
PAHs						
Acenaphthene	0.8 u	0.8 u	0.8 u	0.9 u	NA	NA
Acenaphthylene	0.8 u	0.8 u	0.8 u	0.9 u	NA	NA
Anthracene	0.04 u	0.04 u	0.04 u	0.04 u	600	3000
Benzo(a)anthracene	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Benzo(a)pyrene	0.02 u	0.02 u	0.02 u	0.02 u	0.02	0.2
Benzo(b)fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	0.02	0.2
Benzo(g,h,i)perylene	0.1 u	0.1 u	0.1 u	0.1 u	NA	NA
Benzo(k)fluoranthene	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Chrysene	0.08 u	0.08 u	0.08 u	0.09 u	0.02	0.2
Dibenz(a,h)anthracene	0.04 u	0.04 u	0.04 u	0.04 u	NA	NA
Fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	80	400
Fluorene	0.2 u	0.2 u	0.2 u	0.2 u	80	400
Indeno(1,2,3-cd)pyrene	0.08 u	0.08 u	0.08 u	0.09 u	NA	NA
Naphthalene	1 u	1 u	1 u	1 u	8	40
Phenanthrene	0.08 u	0.08 u	0.08 u	0.09 u	NA	NA
Pyrene	0.2 u	0.2 u	0.2 u	0.2 u	50	250

Table 2-4 (continued)

**Groundwater Sample Analytical Results
Field Duplicate Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002**

Sample ID:	MW-3S-DUP	MW-10S-DUP	MW-13S-DUP	MW-33S-DUP	TG1-2-DUP	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/25/2002	9/24/2002	9/26/2002	9/24/2002	9/26/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L	ug/L		
Parameters							
VOCS							
Benzene	0.2 u	0.2 u	0.2 u	4 UJ	0.2 u	0.5	5
Toluene	0.2 u	0.2 u	0.2 u	4 UJ	0.53 J	68.6	343
Ethylbenzene	0.2 u	0.2 u	0.2 u	8.2 J	0.21 J	140	700
Total Xylenes	0.6 u	0.6 u	0.6 u	22 J	0.6 u	124	650
PAHs							
Acenaphthene	0.8 u	0.8 u	0.8 u	180 v	33 v	NA	NA
Acenaphthylene	0.8 u	0.8 u	0.8 u	60 v	2.2 J	NA	NA
Anthracene	0.04 u	0.04 u	0.04 u	0.16 J	2 v	600	3000
Benzo(a)anthracene	0.02 u	0.02 u	0.02 u	0.02 u	0.092 J	NA	NA
Benzo(a)pyrene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02	0.2
Benzo(b)fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	0.02	0.2
Benzo(g,h,i)perylene	0.1 u	0.1 u	0.09 u	0.1 u	0.1 u	NA	NA
Benzo(k)fluoranthene	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NA	NA
Chrysene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	0.02	0.2
Dibenz(a,h)anthracene	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	NA	NA
Fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	2.9 v	80	400
Fluorene	0.2 u	0.2 u	0.2 u	60 v	15 v	80	400
Indeno(1,2,3-cd)pyrene	0.08 u	0.08 u	0.08 u	0.08 u	0.08 u	NA	NA
Naphthalene	1 u	1 u	0.9 u	2900 v	33 v	8	40
Phenanthrene	0.08 u	0.08 u	0.08 u	6.3 v	14 v	NA	NA
Pyrene	0.2 u	0.2 u	0.2 u	0.2 u	1.9 v	50	250

Table 2-4 (continued)

Groundwater Sample Analytical Results
Matrix Spike/Matrix Spike Duplicate Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002

Sample ID:	MWSS-MS	MWSS-MSD	TG2-1-MS	TG2-1-MSD	TG6-2-MS	TG6-2-MSD	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/26/2002	9/26/2002	9/26/2002	9/26/2002	9/25/2002	9/25/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
Parameters								
VOCS								
Benzene	19 v	19 v	20 v	20 v	19 v	19 v	0.5	5
Toluene	20 v	20 v	21 v	21 v	20 v	20 v	68.6	343
Ethylbenzene	21 v	20 v	21 v	21 v	20 v	20 v	140	700
Total Xylenes	62 v	61 v	64 v	63 v	61 v	61 v	124	650
PAHs								
Acenaphthene	160 v	170 v	160 v	160 v	170 v	170 v	NA	NA
Acenaphthylene	150 v	170 v	150 v	150 v	160 v	170 v	NA	NA
Anthracene	2.8 v	2.8 v	2.6 v	2.7 v	2.7 v	2.6 v	600	3000
Benzo(a)anthracene	1.6 v	1.4 v	1.4 v	1.4 v	1.4 v	1.3 v	NA	NA
Benzo(a)pyrene	1.6 v	1.5 v	1.5 v	1.5 v	1.5 v	1.4 v	0.02	0.2
Benzo(b)fluoranthene	1.3 v	1.2 v	1.2 v	1.2 v	1.1 v	1.1 v	0.02	0.2
Benzo(g,h,i)perylene	12 v	11 v	11 v	12 v	11 v	10 v	NA	NA
Benzo(k)fluoranthene	1.3 v	1.2 v	1.2 v	1.2 v	1.1 v	1.1 v	NA	NA
Chrysene	6.3 v	5.7 v	5.7 v	5.7 v	5.5 v	5.3 v	0.02	0.2
Dibenz(a,h)anthracene	3.3 v	2.9 v	3.1 v	3.1 v	3 v	2.8 v	NA	NA
Fluoranthene	3.3 v	3 v	3 v	3 v	3 v	3 v	80	400
Fluorene	16 v	17 v	16 v	16 v	17 v	17 v	80	400
Indeno(1,2,3-cd)pyrene	6.6 v	5.9 v	6 v	6.1 v	5.7 v	5.5 v	NA	NA
Naphthalene	140 v	160 v	140 v	150 v	160 v	170 v	8	40
Phenanthrene	5.3 v	5.4 v	4.9 v	5.1 v	5.1 v	5 v	NA	NA
Pyrene	20 v	18 v	18 v	18 v	18 v	17 v	50	250

Table 2-4 (continued)

Groundwater Sample Analytical Results
Field Blank Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002

Sample ID:	FB-01	FB-02	FB-03	FB-04	FB-05	WDNR PAL, ug/L	WDNR ES, ug/L
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/24/2002	9/24/2002	9/25/2002	9/26/2002	9/26/2002		
Units of Measure:	ug/L	ug/L	ug/L	ug/L	ug/L		
Parameters							
VOCS							
Benzene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.5	5
Toluene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	68.6	343
Ethylbenzene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	140	700
Total Xylenes	0.6 u	0.6 u	0.6 u	0.6 u	0.6 u	124	650
PAHs							
Acenaphthene	0.8 u	0.8 u	0.8 u	0.9 u	0.8 u	NA	NA
Acenaphthylene	0.8 u	0.8 u	0.8 u	0.9 u	0.8 u	NA	NA
Anthracene	0.04 u	0.04 u	0.04 u	0.04 u	0.046 J	600	3000
Benzo(a)anthracene	0.02 u	0.02 u	0.02 u	0.02 u	0.067 J	NA	NA
Benzo(a)pyrene	0.02 u	0.02 u	0.02 u	0.02 u	0.22 v	0.02	0.2
Benzo(b)fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	0.073 J	0.02	0.2
Benzo(g,h,i)perylene	0.1 u	0.1 u	0.1 u	0.1 u	0.1 u	NA	NA
Benzo(k)fluoranthene	0.02 u	0.02 u	0.02 u	0.02 u	0.078 J	NA	NA
Chrysene	0.08 u	0.08 u	0.08 u	0.09 u	0.08 u	0.02	0.2
Dibenz(a,h)anthracene	0.04 u	0.04 u	0.04 u	0.04 u	0.087 J	NA	NA
Fluoranthene	0.04 u	0.04 u	0.04 u	0.04 u	0.06 J	80	400
Fluorene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	80	400
Indeno(1,2,3-cd)pyrene	0.08 u	0.08 u	0.08 u	0.09 u	0.084 J	NA	NA
Naphthalene	1 u	1 u	1 u	1 u	1 u	8	40
Phenanthrene	0.08 u	0.08 u	0.08 u	0.09 u	0.08 u	NA	NA
Pyrene	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	50	250

Table 2-4 (continued)

Groundwater Sample Analytical Results

Table Notes

**Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002**

U - Constituent not detected. Detection limit indicated.

J - Estimated concentration.

V - Valid data.

VOC - Volatile Organic Compound.

PAH - Polynuclear Aromatic Hydrocarbon.

PAL - Wisconsin Department of Natural Resources (WDNR) Preventive Action Limit.

ES - Enforcement Standard (WDNR).

NA - Not Applicable. PAL or ES not available for this parameter.

NM - Not measured.

Shaded values indicate concentration exceeding PAL.

Shaded & bolded values indicate concentration exceeding PAL and ES.

Table 2-5

**Concentration Trends in Groundwater Monitoring Wells
Fourth Quarter 1999 through Third Quarter 2002
Moss-American Site
Milwaukee, Wisconsin**

	MW-4S ¹	MW-7S	TW-05 ³	MW-32S ²	MW-33S ²	MW-34S ²	MW-35S ²	TG1-1 ²
Benzene (ug/L)								
Fourth Quarter (December '99)	2.80	7.10	0.20 U	---	---	---	---	---
First Quarter (March '00)	4.00	5.20	0.20 U	---	---	---	---	---
Second Quarter (June '00)	3.40	4.00 J	0.20 U	0.20 U	1.00 U	9.50 J	0.20 U	---
Third Quarter (September '00)	25.0	4.00 U	0.20 U	0.20 U	1.00 U	8.10 J	0.20 U	2.80
Fourth Quarter (December '00)	2.60	3.40 J	0.20 U	0.20 U	8.30 J	2.00 U	0.20 U	7.00
First Quarter (March '01)	5.10 J	5.50 J	0.20 U	0.20 U	4.00 U	9.80 J	0.20 U	2.80
Second Quarter (June '01)	---	2.90 J	0.20 U	0.20 U	1.00 U	6.80 J	0.20 U	5.00
Third Quarter (September '01)	---	3.70 J	0.20 U	0.20 U	1.00 U	9.00 J	0.20 U	3.10
Fourth Quarter (December '01)	---	7.70 J	---	0.20 U	1.00 U	6.10 J	0.20 U	5.70
First Quarter (March '02)	---	3.6 J	---	0.20 U	1.00 U	8.9 J	0.20 U	4.3 J
Second Quarter (June '02)	---	0.43 J	---	0.20 U	2 J	12.00	0.20 U	3.2 J
Third Quarter (September '02)	---	5 U	---	0.20 U	4 UJ	10 UJ	0.20 U	1.30
Naphthalene (ug/L)								
Fourth Quarter (December '99)	790	4,740	9.00 J	---	---	---	---	---
First Quarter (March '00)	1,020	3,950	9.80 J	---	---	---	---	---
Second Quarter (June '00)	364 J	4,260	6.96 J	40.70	1,920	5,980	42.70	---
Third Quarter (September '00)	810	3,960	15.30 J	59.30	2,220	5,720	0.78 U	475
Fourth Quarter (December '00)	720	3,470	10.00 J	1.25 J	1,760	5,050	0.94 J	3,300
First Quarter (March '01)	830	3,800	8.60 J	0.78 U	2,900	5,900	2.36 J	1,890
Second Quarter (June '01)	---	3,200	8.00 J	0.80 U	2,900	5,700	1.00 J	2,200
Third Quarter (September '01)	---	3,700	22.00	1.00 U	2,600	6,200	1.00 J	2,400
Fourth Quarter (December '01)	---	3,300	---	1.00 U	2,100	6,700	1.00 U	2,600
First Quarter (March '02)	---	2,100	---	1.00 U	2,200	5,400	1.00 U	2,400
Second Quarter (June '02)	---	3,000	---	1.00 U	2,900	6,100	0.90 U	1,500
Third Quarter (September '02)	---	4,000	---	1.00 U	2,700	7,000	1.00 U	1,200

Table 2-5 (continued)

**Concentration Trends in Groundwater Monitoring Wells
Fourth Quarter 1999 through Third Quarter 2002
Moss-American Site
Milwaukee, Wisconsin**

	MW-4S ¹	MW-7S	TW-05 ³	MW-32S ²	MW-33S ²	MW-34S ²	MW-35S ²	TG1-1 ²
Fluorene (ug/L)								
Fourth Quarter (December '99)	333	24.4	66.6	---	---	---	---	---
First Quarter (March '00)	281	15.8	55.5	---	---	---	---	---
Second Quarter (June '00)	223	12.8	53.2	0.17 U	1.41	89.0	4.92	---
Third Quarter (September '00)	103	14.2	74.6	0.19	5.86	73.0 J	0.17 U	16.2
Fourth Quarter (December '00)	217	12.7	40.1	0.82 U	15.0	74.0	0.23 J	69.2
First Quarter (March '01)	210	10.0	43.0	0.17 U	19.0	83.0	0.31 J	72.0
Second Quarter (June '01)	---	8.5	56.0	0.20 U	27.0	80.0	0.20 U	59.0
Third Quarter (September '01)	---	11.0	60.0	0.20 U	34.0	120.0	0.20 U	410
Fourth Quarter (December '01)	---	11.0	---	0.20 U	32.0	320.0	0.20 U	80
First Quarter (March '02)	---	8.0	---	0.20 U	37.0	80.0	0.20 U	270
Second Quarter (June '02)	---	7.0	---	0.20 U	50.0	120.0	0.20 U	70
Third Quarter (September '02)	---	11.0	---	0.20 U	60.0	130.0	0.20 U	330
Benzo(a) pyrene (ug/L)								
Fourth Quarter (December '99)	9.70	0.21 U	1.490	---	---	---	---	---
First Quarter (March '00)	8.40	0.21 U	1.440	---	---	---	---	---
Second Quarter (June '00)	1.70 J	0.021 U	0.361	0.02 U	0.02 U	2.00 U	0.162	---
Third Quarter (September '00)	6.70 J	0.019 U	0.890	0.02 U	0.02 U	0.10	0.153	0.052
Fourth Quarter (December '00)	0.051 J	0.02 U	0.096 U	0.021 U	0.02 U	0.031 J	0.138	0.19 U
First Quarter (March '01)	1.00 U	0.19 U	0.110 U	0.019 U	0.20 U	0.23 U	0.023 U	0.39U
Second Quarter (June '01)	---	0.02 U	0.020 U	0.02	0.02 U	0.030 J	0.020 U	0.05 J
Third Quarter (September '01)	---	0.02 U	0.020 J	0.02 U	0.02 U	3.00	0.020 J	33.0
Fourth Quarter (December '01)	---	0.02 U	---	0.02 U	0.02 U	19.00	0.030 J	0.050 J
First Quarter (March '02)	---	0.02 U	---	0.02 U	0.02 U	0.20	0.020 U	23
Second Quarter (June '02)	---	0.02 J	---	0.02 U	0.02 U	4.00	0.02 U	0.05 J
Third Quarter (September '02)	---	0.02 U	---	0.02 U	0.02 U	0.78	0.02 U	25

--- - No data available.

U - Constituent not detected; method detection limit (MDL) of the analysis reported.

J - Estimated concentration.

ug/L - Micrograms per liter.

1 - MW-4S was removed during Q2 2001 to prepare for excavation of soils surrounding the well.

2 - Additional wells (MW-32S, MW-33S, MW-34S, MW-35S, and TG1-1) installed after March 2000.

3 - TW-05 was removed during Q4 2001 to prepare for excavation of soils surrounding the well.

Table 2-6

Groundwater Sample Analytical Results
Treatment Performance Monitoring Wells - Nutrient and Biological Parameters
Moss American Site
Milwaukee, Wisconsin
Third Quarter 2002

Parameter (mg/L)	Sample Identification								
	TG1-1			TG1-2			TG1-3		
	July	August	September	July	August	September	July	August	September
Kjeldahl Nitrogen	1.0	1.2	1.1	1.5	1.6	1.5	0.97 J	1.4	1.2
Nitrite Nitrogen	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.017 J	0.015 U	0.015 U	0.015 U
Nitrate Nitrogen	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	0.88 J	0.70 J	0.58 J	0.97 J	1.3	0.64 J	0.73 J	0.70 J	0.61 J
Ortho-Phosphate as P	0.0066 U	0.061	0.0066 U	0.0066 U	0.053	0.0066 U	0.0066 U	0.093	0.0066 U
Biochemical Oxygen Demand (BOD)	NA	NA	6.5	NA	NA	4.7 U	NA	NA	4.7 U
Total Organic Carbon (non-purgable)	NA	NA	8.1	NA	NA	11.5	NA	NA	7.4
Total Phosphorous as PO4	0.18 J	0.22	0.12 U	0.34	0.49	0.22	0.31	0.40	0.24
Chemical Oxygen Demand (COD)	NA	NA	39.6	NA	NA	33.1	NA	NA	23.6
Total Microbial Population (mean)	1.60E+03	1.59E+05	5.80E+03	3.40E+04	9.70E+04	3.50E+04	6.00E+03	8.30E+03	1.70E+04
Degrader Microbial Population (mean)	1.80E+02	5.30E+03	3.00E+02	1.19E+03	6.00E+03	4.00E+03	5.00E+02	1.20E+03	7.00E+03
	TG2-1			TG2-2			TG2-3		
	July	August	September	July	August	September	July	August	September
Kjeldahl Nitrogen	0.33 J	0.33 J	0.41 J	0.65 J	0.65 J	0.79 J	1.0	1.5	1.5
Nitrite Nitrogen	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.021 J
Nitrate Nitrogen	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	0.46 U	0.46 U	0.46 U	0.64 J	0.46 U	0.46 U	0.73 J	0.54 J	0.99 J
Ortho-Phosphate as P	0.0066 U	0.065	0.0066 U	0.0066 U	0.0134 J	0.0066 U	0.0068 J	0.035	0.0066 U
Biochemical Oxygen Demand (BOD)	NA	NA	1.8 U	NA	NA	2.8 U	NA	NA	4.8 U
Total Organic Carbon (non-purgable)	NA	NA	3.1	NA	NA	3.3	NA	NA	9.8
Total Phosphorous as PO4	0.12 U	0.14 J	0.12 U	0.16 J	0.21	0.15 J	0.41	0.44	0.36
Chemical Oxygen Demand (COD)	NA	NA	8.4	NA	NA	12.4	NA	NA	32.4
Total Microbial Population (mean)	1.05E+03	3.50E+02	4.70E+03	9.60E+02	6.50E+03	2.20E+03	1.49E+03	2.60E+04	5.00E+02
Degrader Microbial Population (mean)	1.00E+02	2.60E+02	1.10E+02	1.10E+02	7.00E+02	2.00E+02	3.70E+02	7.00E+03	2.00E+01

Table 2-6 (continued)

Groundwater Sample Analytical Results
Treatment Performance Monitoring Wells - Nutrient and Biological Parameters
Moss American Site
Milwaukee, Wisconsin
Third Quarter 2002

Parameter (mg/L)	Sample Identification								
	TG3-1			TG3-2			TG3-3		
	July	August	September	July	August	September	July	August	September
Kjeldahl Nitrogen	1.7	1.5	1.6	1.3	1.6	6.5	1.7	1.9	2.0
Nitrite Nitrogen	0.015 U	0.015 U	0.018 J	0.015 U	0.015 U	0.017 J	0.016 J	0.015 U	0.019 J
Nitrate Nitrogen	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	1.3	1.1	0.84 J	1.3	1.2	1.2	1.5	2.0	1.0
Ortho-Phosphate as P	0.0124 J	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U
Biochemical Oxygen Demand (BOD)	NA	NA	3.5 U	NA	NA	6.2	NA	NA	10.1
Total Organic Carbon (non-purgable)	NA	NA	11.5	NA	NA	9.7	NA	NA	14.4
Total Phosphorous as PO4	0.20	0.22	0.15 J	0.36	0.37	0.18 J	0.47	0.54	0.40
Chemical Oxygen Demand (COD)	NA	NA	26.5	NA	NA	26.8	NA	NA	40.1
Total Microbial Population (mean)	2.39E+03	6.60E+03	1.12E+03	1.15E+03	1.02E+04	1.03E+06	1.78E+03	7.50E+03	4.60E+03
Degrader Microbial Population (mean)	2.40E+02	5.00E+02	1.00E+01	2.20E+02	1.30E+03	4.00E+03	1.70E+02	5.00E+02	5.00E+01
Parameter (mg/L)	TG4-1			TG4-2			TG4-3		
	July	August	September	July	August	September	July	August	September
	July	August	September	July	August	September	July	August	September
Kjeldahl Nitrogen	1.3	1.2	1.9	1.4	1.4	2.0	1.4	1.4	1.5
Nitrite Nitrogen	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Nitrate Nitrogen	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	0.84 J	1.1	0.78 J	1.1	1.1	1.2	1.0	1.1	0.81 J
Ortho-Phosphate as P	0.0115 J	0.0066 U	0.030	0.0082 J	0.0087 J	0.0077 J	0.0115 J	0.029	0.024
Biochemical Oxygen Demand (BOD)	NA	NA	2.5 U	NA	NA	3.5 U	NA	NA	2.7 U
Total Organic Carbon (non-purgable)	NA	NA	9.0	NA	NA	11.2	NA	NA	9.5
Total Phosphorous as PO4	0.26	0.36	0.21	0.16 J	0.24	0.12 U	0.20	0.29	0.13 J
Chemical Oxygen Demand (COD)	NA	NA	25.0	NA	NA	36.4	NA	NA	47.4
Total Microbial Population (mean)	3.30E+02	6.60E+03	3.00E+03	7.70E+02	1.49E+03	1.10E+03	6.90E+02	1.83E+05	1.01E+03
Degrader Microbial Population (mean)	3.00E+01	4.00E+02	3.00E+01	1.20E+02	9.00E+01	8.00E+01	8.00E+01	9.00E+03	4.00E+01

Table 2-6 (continued)

Groundwater Sample Analytical Results
Treatment Performance Monitoring Wells - Nutrient and Biological Parameters
Moss American Site
Milwaukee, Wisconsin
Third Quarter 2002

Parameter (mg/L)	Sample Identification								
	TG5-1			TG5-2			TG5-3		
	July	August	September	July	August	September	July	August	September
Kjeldahl Nitrogen	0.80 J	0.68 J	0.96 J	0.93 J	0.84 J	1.3	0.87 J	0.84 J	0.99 J
Nitrite Nitrogen	0.015 U	0.015 U	0.015 U	0.015 U	0.016 J	0.015 U	0.015 U	0.015 U	0.015 U
Nitrate Nitrogen	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	0.46 U	0.70 J	0.46 U	0.54 J	0.88 J	0.64 J	0.56 J	1.1	0.63 J
Ortho-Phosphate as P	0.0066 U	0.0066 U	0.0066 U	0.027	0.0066 U	0.0082 J	0.0066 U	0.0066 U	0.041
Biochemical Oxygen Demand (BOD)	NA	NA	2.0 U	NA	NA	3.8 U	NA	NA	3.1 U
Total Organic Carbon (non-purgable)	NA	NA	5.9	NA	NA	8.0	NA	NA	5.6
Total Phosphorous as PO4	0.23	0.21	0.12 U	0.24	0.23	0.12 U	0.14 J	0.18 J	0.12 U
Chemical Oxygen Demand (COD)	NA	NA	14.7	NA	NA	21.0	NA	NA	16.2
Total Microbial Population (mean)	9.00E+02	2.83E+04	7.20E+03	6.80E+02	4.30E+03	6.30E+04	1.04E+03	7.10E+04	4.80E+03
Degrader Microbial Population (mean)	2.10E+02	4.00E+02	3.00E+02	1.00E+02	1.10E+03	4.00E+03	1.70E+02	4.00E+03	2.30E+02
Parameter (mg/L)	TG6-1			TG6-2			TG6-3		
	July	August	September	July	August	September	July	August	September
	July	August	September	July	August	September	July	August	September
Kjeldahl Nitrogen	1.4	1.3	1.4	1.1	1.1	1.3	1.4	1.2	1.5
Nitrite Nitrogen	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Nitrate Nitrogen	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	0.64 J	1.1	0.88 J	0.53 J	0.73 J	0.73 J	0.73 J	0.91 J	0.87 J
Ortho-Phosphate as P	0.0129 J	0.0167 J	0.025	0.0066 U	0.0066 U	0.0102 J	0.0066 U	0.0066 U	0.0066 U
Biochemical Oxygen Demand (BOD)	NA	NA	4.7	NA	NA	2.7 U	NA	NA	2.8 U
Total Organic Carbon (non-purgable)	NA	NA	7.1	NA	NA	9.1	NA	NA	8.3
Total Phosphorous as PO4	0.25	0.27	0.15 J	0.14 J	0.14 J	0.12 U	0.19 J	0.18 J	0.13 J
Chemical Oxygen Demand (COD)	NA	NA	19.5	NA	NA	23.5	NA	NA	20.6
Total Microbial Population (mean)	7.60E+02	1.13E+03	8.30E+03	1.10E+03	1.19E+04	5.80E+03	9.00E+01	1.20E+03	1.20E+03
Degrader Microbial Population (mean)	8.00E+01	1.60E+02	2.00E+03	7.00E+01	1.50E+03	1.20E+03	2.00E+01	6.00E+02	3.00E+01

U - Compound not detected. Detection limit indicated.

J - Estimated value.

NA - Not analyzed.

NS - Well not measured due to freezing conditions.

SECTION 3

EVALUATION OF PILOT SCALE OPERATIONS

Augmentation of the groundwater treatment system was initiated in October 2000 by injecting air at the treatment gates. In late June 2001, nutrient addition was initiated at TG1 using a solution containing potassium nitrate (KNO_3) and potassium phosphate (KHPO_4). Based on the hydraulic gradient, effects of nutrient addition and air injection would be observed in treatment performance monitoring wells TG1-2 and TG1-3, which are immediately downgradient of the injection wells. Discussions regarding the effects of the site augmentation activities and are discussed below.

3.1 Dissolved Oxygen

Dissolved oxygen concentrations remained very low in all gates during Q3 2002. The only exception was found in well TG5-3, where a moderate concentration of DO (3.95 mg/L) was measured during July 2002. During the months of August and September 2002, however, TG5-3 had low levels of DO. The cause for the DO anomaly is uncertain, but could be due to the packer that was installed in the well. Although the DO concentration in this well indicates that oxidizing conditions might exist, the redox potential measured in TG5-3 during July 2002 was -62.0 mV, indicating a reducing environment. Furthermore, the ratio of $\text{NO}_3\text{-N}$ to $\text{NH}_3\text{-N}$ was approximately 1:14 during July 2002, indicating that nitrogen is primarily present in its reduced state, further signifying that a reducing environment exists in the well.

Well packers were installed in the TG5 injection wells in June 2000; however, no discernable change in the DO levels had been observed in the TG5 wells, until this quarter. But, due to the discussion presented above, this reading could be an anomaly. KMC/WESTON attempted to install inflatable bladder packers in TG1 and TG2 injection wells in August 2001; however, KMC/WESTON was unable to properly install the packers due to the injection well configuration. KMC/WESTON will continue to evaluate alternatives for air introduction into the treatment gates.

3.2 Nutrients and pH

Recommended guidelines for bioremediation of contaminants in site groundwater include a pH range of 5.5 to 8.5 S.U., and a minimum carbon-nitrogen-phosphorous (C:N:P) ratio of 100:14:1. The range of pH values measured in the treatment performance monitoring wells (6.17 to 7.34 S.U.) is sufficient to facilitate biological activity. Table 3-1 contains calculated C:N:P ratios for each of the treatment performance monitoring wells. No wells exhibited the desired C:N:P ratio; however, on a sitewide basis the C:N:P ratio is 100:7.1:0.1, which is somewhat close to the desired ratio. Nitrogen and phosphorus are the limiting nutrients at the site.

NO₃-N was not detected in any of the TG1 wells during Q3 2002. Gate TG1 had fluctuating levels of PO₄-P during Q3 2002, with other wells even having higher levels of PO₄-P at the site. Orthophosphate in TG1 was low during Q3 2002, with many of the other gates having higher levels of orthophosphate than gate 1. However, well TG1-3 had the highest level of ORP (0.093 ug/L) during August 2002. This reading could be anomalous, however, because no ORP was detected in the well during July and September 2002.

3.3 Effects on Bacterial Populations

There was a slight increase of total bacteria counts in TG1 during Q3 2002. Overall, the bacteria levels in TG1 were also slightly higher than those observed in the other treatment gates. Figure 3-1 compares the degrader populations in TG1 and TG2 since Q1 2001. As indicated in Figure 3-1, there has been a trend of general decrease in the total bacteria levels in TG1 and TG2 since Q1 2001. It was noticed, however, that bacterial populations had increased somewhat since the last few rounds of sampling. It is not known what is the cause of this bacterial decrease at the site. Since air injection began in October 2000, degrader populations in TG1 have typically been higher than in TG2; however, it is uncertain if this trend is due to air/nutrient injection, presence of higher levels of substrate (contaminants), or a combination of these and/or other factors.

2001 monitoring report. This concern is primarily based on the premise that low flow conditions may cause anoxic conditions and may inhibit KMC/WESTON's ability to introduce nutrients and other additives at an optimum level due to poor dispersion from the injection point. Low flow conditions are apparent based on the hydraulic gradient and flow velocities derived. A low flow velocity may be indirectly beneficial as a longer residence time in the treatment gate may allow for more effective biodegradation.

However, it was observed, from looking at the hydrogeological data for the Q3 2002 report, that a slightly higher hydraulic gradient and groundwater flow velocity was present across the Gate 5 area. Gate 5 had a hydraulic gradient of 0.0424 ft/ft and a groundwater flow velocity of 0.4006 ft/day. In the past, the hydraulic gradient of Gate 5 ranged from 0.001 to 0.01 ft/ft. This data could be due to error in measuring groundwater elevations or it could be factual data. From looking at the groundwater elevation contour map produced for the site, the elevation of TG5-3 was about 714 ft, whereas TG5-1 and TG5-2 were about 716 ft. MW-9S was also about 714 ft. The elevation change seems to occur near the Little Menomonee River, at the end of the sheet piling. So, the increased hydraulic gradient and flow velocity could be due to river influences on the hydrogeologic system.

3.5 Site Modifications

Per the Q2 2002 Monitoring Report recommendations, modifications have been made to the system at the site. Beginning on December 2002, the performance monitoring well sampling frequency and scope reductions went into effect. Groundwater sampling went to a quarterly sampling regime instead of a monthly sampling regime. Also, shallow monitoring wells MW-3S, MW-10S, MW-13S, MW-25S, MW-26S, and MW-20S, as well as intermediate wells MW-3I, MW-7I, MW-9I, and MW-20I, were removed from the groundwater-monitoring program. However, these wells were not abandoned, per WDNR request. Water levels will be gathered from these wells on a quarterly basis, therefore, to assist with the production of the groundwater elevation contour map. Nutrient injection at gate TG1 was also discontinued.

The hydrogeologic investigation proposed in the Q2 2002 Monitoring Report was also initiated at the site in December 2002. This work included the installation of ten piezometers (PZ-01 thru

The hydrogeologic investigation proposed in the Q2 2002 Monitoring Report was also initiated at the site in December 2002. This work included the installation of ten piezometers (PZ-01 thru PZ-10), as well as a staff gauge (SG-1). PZ-08 was unable to be installed, however, due to muddy site conditions. Hydraulic conductivity tests were also performed on these newly installed piezometers. This additional work and data will be reviewed and analyzed, with groundwater modeling to be performed in January/February 2003.

Figure 3-1

Comparison of Degradar Populations in Treatment Gates 1 and 2 since Q1 2001
Moss-American Site
Milwaukee, Wisconsin

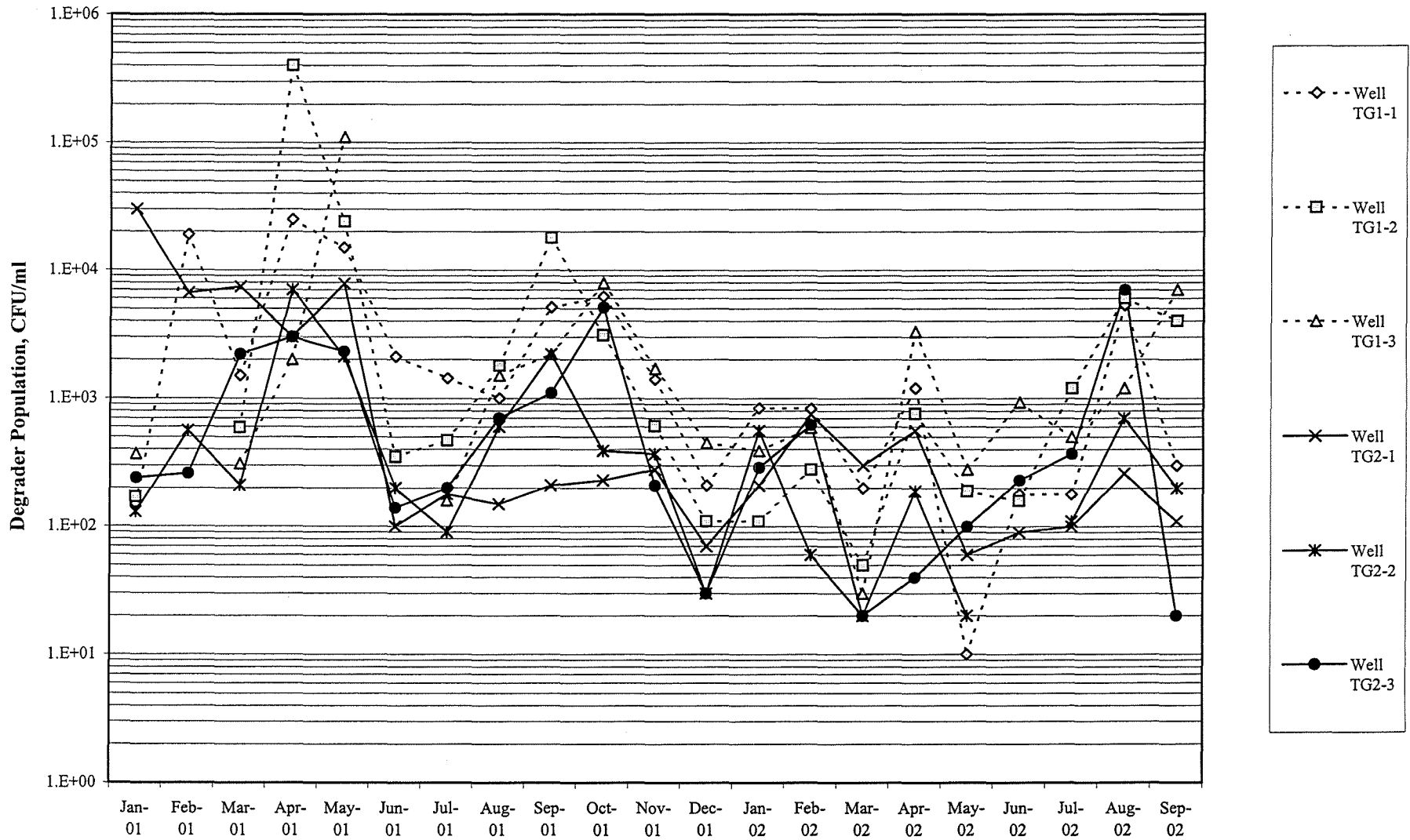


Figure 3-2
Naphthalene Concentrations in Treatment Gate 1
Moss-American Site
Milwaukee, Wisconsin

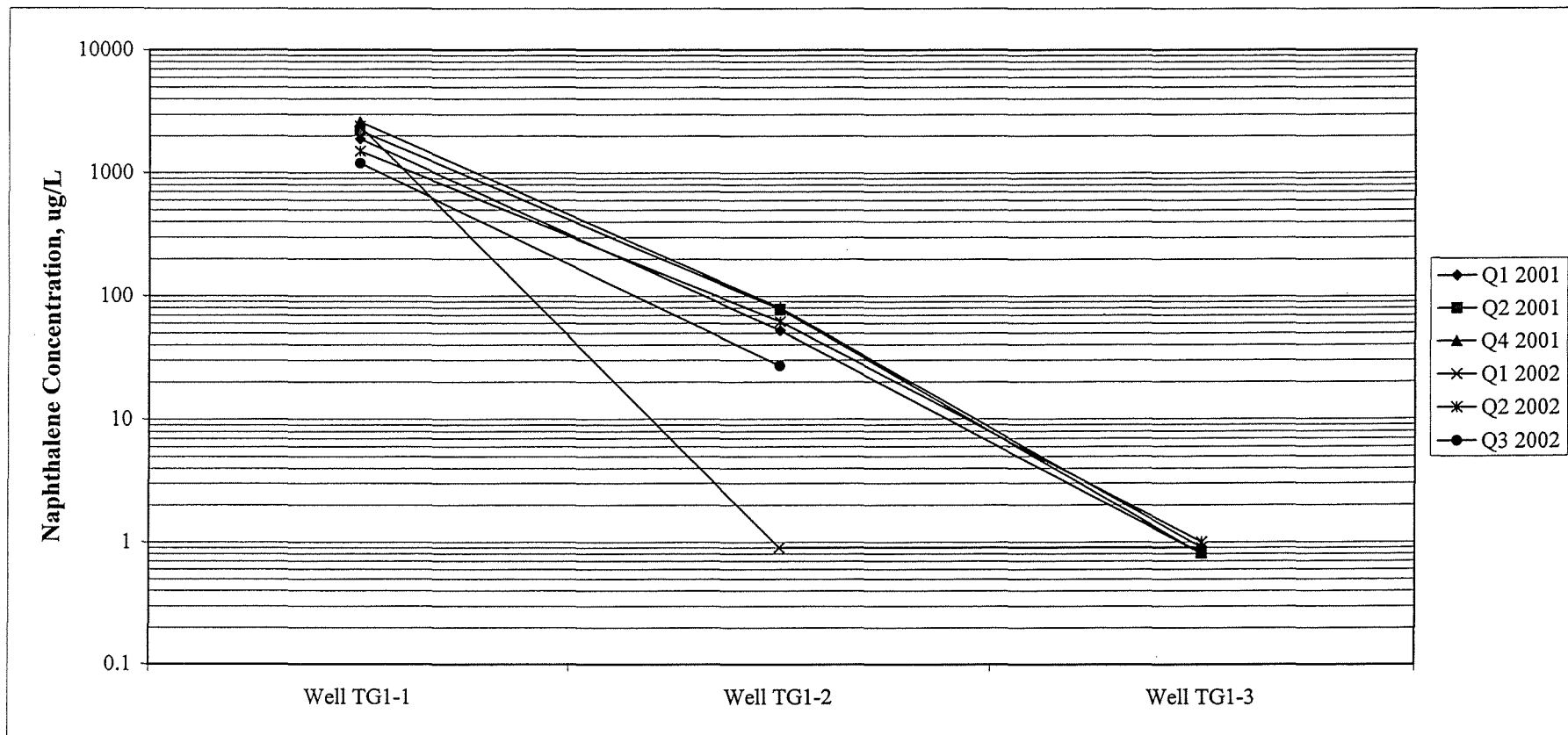


Table 3-1

**Calculation of Carbon:Nitrogen:Phosphorous Ratios
Treatment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2002**

Well	Carbon ¹ , mg/L	Total Nitrogen ² , mg/L	Phosphorous ³ , mg/L	C-N-P Ratio (100-14-1 desired)		
TG1-1	8.10	0.58	ND	100	- 7.2	- 0.0
TG1-2	11.50	0.66	ND	100	- 5.7	- 0.0
TG1-3	7.40	0.61	ND	100	- 8.2	- 0.0
TG2-1	3.10	ND	ND	100	- 0.0	- 0.0
TG2-2	3.30	ND	ND	100	- 0.0	- 0.0
TG2-3	9.80	1.01	ND	100	- 10.3	- 0.0
TG3-1	11.50	0.86	ND	100	- 7.5	- 0.0
TG3-2	9.70	1.22	ND	100	- 13	- 0.0
TG3-3	14.40	1.02	ND	100	- 7.1	- 0.0
TG4-1	9.00	0.78	0.03	100	- 8.7	- 0.3
TG4-2	11.20	1.20	0.01	100	- 10.7	- 0.1
TG4-3	9.50	0.81	0.02	100	- 8.5	- 0.3
TG5-1	5.90	ND	ND	100	- 0.0	- 0.0
TG5-2	8.00	0.64	0.01	100	- 8.0	- 0.0
TG5-3	5.60	0.63	0.04	100	- 11.3	- 0.7
TG6-1	7.10	0.88	0.03	100	- 12	- 0.4
TG6-2	9.10	0.73	0.01	100	- 0.0	- 0.1
TG6-3	8.30	0.87	ND	100	- 10.5	- 0.0
Site Average	8.47	0.69	0.01	100	- 7.1	- 0.1

1- Carbon measured as Total Organic Carbon (non-purgable).

2- Total Nitrogen measured as NH₃-N, NO₂-N, and NO₃-N.

3- Phosphorous measured as Orthophosphate (PO₄-P).

ND- Constituents not detected.

Shaded values indicate values less than desired ratio.

APPENDIX A

**MONTHLY FIELD-MEASURED PARAMETERS
FOR TREATMENT PERFORMANCE MONITORING WELLS**

Appendix A

Monthly Field-Measured Parameters
for Treatment Performance Monitoring Wells

Well Number	Date	Temperature (°C)	pH (Standard Units)	Specific Conductance (mmhos/cm)	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
TG1-1	July-02	NM	NM	NM	NM	NM	NM
	August-02	18.76	6.83	0.938	-83.1	0.09	NM
	September-02	NM	NM	NM	NM	0.59	NM
TG1-2	July-02	16.96	6.58	0.873	-78.8	0.04	NM
	August-02	17.67	6.68	0.927	-85.0	0.09	NM
	September-02	17.12	6.88	1.085	-86.8	0.50	6.07
TG1-3	July-02	17.50	6.76	0.872	-79.0	0.08	NM
	August-02	18.02	6.78	0.969	-79.4	0.09	NM
	September-02	17.45	6.98	1.103	-58.4	0.55	9.69
TG2-1	July-02	16.43	6.63	0.670	-49.2	0.05	NM
	August-02	17.15	6.63	0.704	-9.2	0.08	NM
	September-02	15.99	6.87	0.814	15.6	0.61	2.96
TG2-2	July-02	16.27	6.71	0.644	-76.4	0.17	NM
	August-02	16.50	6.62	0.673	-63.1	0.06	NM
	September-02	15.73	7.04	0.779	-85.2	0.51	2.31
TG2-3	July-02	17.57	6.54	0.894	-48.4	0.05	NM
	August-02	18.62	6.55	1.062	-62.1	0.05	NM
	September-02	17.63	6.63	1.267	-53.6	0.51	1.19
TG3-1	July-02	17.77	6.34	0.906	-63.3	0.06	NM
	August-02	17.79	6.43	1.021	-42.8	0.23	NM
	September-02	18.08	6.71	1.256	-38.2	0.59	7.83
TG3-2	July-02	17.78	6.45	0.819	-96.4	0.07	NM
	August-02	17.95	6.39	0.829	-69.9	0.07	NM
	September-02	17.63	6.94	1.066	-90.5	0.60	4.15
TG3-3	July-02	18.07	6.33	0.911	-88.0	0.35	NM
	August-02	17.82	6.17	1.024	-63.3	0.05	NM
	September-02	17.67	6.72	1.212	-70.6	0.64	4.12
TG4-1	July-02	18.84	6.76	0.750	-93.5	0.07	NM
	August-02	18.62	6.85	0.765	-71.6	0.08	NM
	September-02	17.78	6.66	0.973	-30.0	0.60	1.45
TG4-2	July-02	18.10	6.70	0.721	-91.1	0.55	NM
	August-02	18.13	6.90	0.759	-70.0	0.05	NM
	September-02	17.60	6.26	0.913	-37.4	0.60	0.79
TG4-3	July-02	19.17	6.78	0.746	-83.8	0.33	NM
	August-02	18.21	6.85	0.767	-72.4	0.05	NM
	September-02	17.34	6.75	0.909	-36.7	0.45	0.54
TG5-1	July-02	18.76	6.84	0.678	-68.2	0.08	NM
	August-02	19.82	6.94	0.700	-36.6	0.12	NM
	September-02	16.65	6.97	0.894	-34.1	0.63	0.41
TG5-2	July-02	18.26	6.72	0.691	-96.1	0.07	NM
	August-02	19.17	7.02	0.656	-67.3	0.04	NM
	September-02	14.47	7.12	0.905	-75.7	0.55	1.21
TG5-3	July-02	18.17	6.89	0.680	-62.0	3.95	NM
	August-02	17.38	7.14	0.704	-40.7	0.05	NM
	September-02	15.31	7.34	0.842	25.6	0.65	15.0
TG6-1	July-02	16.67	6.67	0.821	-95.2	0.04	NM
	August-02	18.55	6.66	1.048	-29.4	0.06	NM
	September-02	17.23	6.92	1.210	-70.7	0.75	46.3
TG6-2	July-02	16.93	6.35	0.919	-48.1	0.31	NM
	August-02	17.44	6.59	1.080	-17.8	0.03	NM
	September-02	16.73	6.62	1.267	35.0	0.60	4.33
TG6-3	July-02	18.52	6.40	0.915	-70.0	0.14	NM
	August-02	17.77	6.53	1.053	-23.0	0.05	NM
	September-02	16.91	6.58	1.205	-29.3	0.70	0.87

NM- Not measured.

APPENDIX B

JULY 2002 GROUNDWATER SAMPLE ANALYTICAL RESULTS



ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

405-270-2602

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 817056. Samples arrived at the laboratory on Wednesday, July 31, 2002.

Client Description

Lancaster Labs Number

MA3-TG5-1-300702-01 Grab Water Sample	3868133
MA3-TG5-2-300702-02 Grab Water Sample	3868134
MA3-TG5-3-300702-03 Grab Water Sample	3868135
MA3-TG6-1-300702-04 Grab Water Sample	3868136
MA3-TG6-2-300702-05 Grab Water Sample	3868137
MA3-TG6-3-300702-06 Grab Water Sample	3868138
MA3-TG4-1-300702-07 Grab Water Sample	3868139
MA3-TG4-2-300702-08 Grab Water Sample	3868140
MA3-TG4-3-300702-09 Grab Water Sample	3868141

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Kerr-McGee Corporation
1 COPY TO Roy F. Weston
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeier
Attn: Mr. Tom Graan



Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,



Erik J. Frederiksen
Group Leader



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Lancaster Laboratories Sample No. WW 3868133

Collected: 07/30/2002 13:45 by BS

Account Number: 07802

Submitted: 07/31/2002 09:10

Reported: 08/14/2002 at 12:07

Discard: 09/14/2002

MA3-TG5-1-300702-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

35172 SDG#: KMA19-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	0.80 J		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.23		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 12:05	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 07:47	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/01/2002 16:12	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/08/2002 10:10	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 00:55	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:09	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	08/06/2002 09:05	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3868134

Collected: 07/30/2002 13:55 by BS

Account Number: 07802

Submitted: 07/31/2002 09:10

Reported: 08/14/2002 at 12:07

Discard: 09/14/2002

MA3-TG5-2-300702-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

35272 SDG#: KMA19-02

CAT No.	Analysis Name	CAS Number	As Received		As Received		Dilution Factor	
			Result		Method	Detection Limit		Units
00217	Kjeldahl Nitrogen	7727-37-9	0.93	J		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.			0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.			0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.54	J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.								
00226	Ortho-Phosphate as P	14265-44-2	0.027			0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.24			0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 12:11	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 07:48	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/01/2002 16:13	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/08/2002 10:10	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 00:55	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:13	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	08/06/2002 09:05	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3868135

Collected: 07/30/2002 14:05 by BS

Account Number: 07802

Submitted: 07/31/2002 09:10

Reported: 08/14/2002 at 12:07

Discard: 09/14/2002

MA3-TG5-3-300702-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

35372 SDG#: KMA19-03

CAT No.	Analysis Name	CAS Number	As Received		As Received		Dilution Factor
			Result	J	Method	Units	
00217	Kjeldahl Nitrogen	7727-37-9	0.87	J	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.56	J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.14	J	0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 12:12	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 07:50	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/01/2002 16:14	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/08/2002 10:10	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 00:55	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:14	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	08/06/2002 09:05	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3868136

Collected: 07/30/2002 14:50 by BS

Account Number: 07802

Submitted: 07/31/2002 09:10

Reported: 08/14/2002 at 12:08

Discard: 09/14/2002

MA3-TG6-1-300702-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

36172 SDG#: KMA19-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.4		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.64 J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	0.0129 J		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.25		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 12:14	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 07:51	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/01/2002 19:21	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/08/2002 10:10	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 00:55	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:15	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	08/06/2002 09:05	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3868137

Collected: 07/30/2002 15:00 by BS

Account Number: 07802

Submitted: 07/31/2002 09:10

Reported: 08/14/2002 at 12:08

Discard: 09/14/2002

Kerr-McGee Corporation

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Oklahoma City OK 73125

MA3-TG6-2-300702-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

36272 SDG#: KMA19-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.1		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.53 J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.14 J		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 12:15	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 07:52	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/01/2002 19:24	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/08/2002 10:10	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 00:55	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:16	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	08/06/2002 09:05	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3868138

Collected: 07/30/2002 15:10 by BS

Account Number: 07802

Submitted: 07/31/2002 09:10
 Reported: 08/14/2002 at 12:08
 Discard: 09/14/2002

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

MA3-TG6-3-300702-06 Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

36372 SDG#: KMA19-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.4		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.73 J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.19 J		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 12:16	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 07:53	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/01/2002 19:26	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/08/2002 10:10	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 00:55	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:17	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	08/06/2002 09:05	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3868139

Collected: 07/30/2002 16:30 by BS

Account Number: 07802

Submitted: 07/31/2002 09:10

Reported: 08/14/2002 at 12:08

Discard: 09/14/2002

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-TG4-1-300702-07 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

34172 SDG#: KMA19-07

CAT No.	Analysis Name	CAS. Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.3		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.84 J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	0.0115 J		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.26		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 12:17	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 07:55	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/01/2002 19:27	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/08/2002 10:10	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 00:55	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:18	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	08/06/2002 09:05	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3868140

Collected: 07/30/2002 16:40 by BS

Account Number: 07802

Submitted: 07/31/2002 09:10

Reported: 08/14/2002 at 12:08

Discard: 09/14/2002

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-TG4-2-300702-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

34272 SDG#: KMA19-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.4		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.1		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	0.0082 J		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.16 J		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 12:19	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 07:56	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/01/2002 19:28	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/08/2002 10:10	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 00:55	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:19	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	08/06/2002 09:05	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3868141

Collected: 07/30/2002 16:50 by BS

Account Number: 07802

Submitted: 07/31/2002 09:10

Kerr-McGee Corporation

Reported: 08/14/2002 at 12:08

P.O. Box 25861

Discard: 09/14/2002

Oklahoma City OK 73125

MA3-TG4-3-300702-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

34372 SDG#: KMA19-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.4		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.0		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	0.0115 J		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.20		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 12:20	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 07:57	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/01/2002 19:29	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/12/2002 07:15	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 00:55	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:20	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	08/06/2002 09:05	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



For Lancaster Laboratories use only
 Acct. # 7802 Sample # 3868133-41

817056

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>Weston / Ken McGee</u> Acct. #: _____ Project Name/#: <u>Moss American</u> PWSID #: _____ Project Manager: <u>Tom Graan</u> P.O.# _____ Sampler: <u>B. Schaefer A. Grubb</u> Quote #: _____ Name of state where samples were collected: <u>WI</u>		Matrix 4 <input type="checkbox"/> Potable (check applicable) <input type="checkbox"/> Water (NPDES applicable) <input type="checkbox"/> Other		Analyses Requested 5 NO ₃ NO ₂ TKN TP-PO ₄ O-PO ₄ NH ₃						For lab use only FSC: _____ SCR #: _____ RECEIVED AUG 22 2002 83 Temperature of samples upon receipt (if requested) 6							
Sample Identification 2		Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	Remarks							
<u>MA3-TG5-1-300702-01</u>		<u>7/30/02</u>	<u>1345</u>	<u>X</u>			<u>X</u>		<u>5</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>		
<u>MA3-TG5-2-300702-02</u>		<u>↓</u>	<u>1355</u>	<u>X</u>			<u>X</u>		<u>5</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>		
<u>MA3-TG5-3-300702-03</u>		<u>↓</u>	<u>1405</u>	<u>X</u>			<u>X</u>		<u>5</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>		

7 Turnaround Time Requested (TAT) (please circle): Normal <input type="radio"/> Rush <input type="radio"/> (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: <u>STD TAT</u> Rush results requested by (please circle): Phone <input type="radio"/> Fax <input type="radio"/> Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4035</u>	Relinquished by: <u>Bruce Day</u>	Date: <u>7-30-02</u>	Time: <u>1745</u>	Received by:	Date:	Time:		
	Relinquished by:	Date:	Time:	Received by:	Date:	Time:		
	Relinquished by:	Date:	Time:	Received by:	Date:	Time:		
	Relinquished by:	Date:	Time:	Received by:	Date:	Time:		
8 Data Package Options (please circle if requested) QC Summary Type VI (Raw Data) <u>PER QUOTE</u> SDG Complete? Yes <input type="radio"/> No <input checked="" type="radio"/> Type I (Tier I) GLP Type II (Tier II) Other Type III (NJ Red. Del.) Type IV (CLP)	Site-specific QC required? Yes <input type="radio"/> No <input type="radio"/> (If yes, indicate QC sample and submit triplicate volume.)	Internal Chain of Custody required? Yes <input type="radio"/> No <input type="radio"/>		Relinquished by:	Date:	Time:		
			Relinquished by:	Date:	Time:	Received by:	Date:	Time:
			Relinquished by:	Date:	Time:	Received by:	Date:	Time:
			Relinquished by:	Date:	Time:	Received by:	Date:	Time:

COOL #3



For Lancaster Laboratories use only
 Acct. # 7802 Sample # 3868133-41

817056

Please print. Instructions on reverse side correspond with circled numbers.

Client: Weston/Kerr McGee Acct. #: _____
 Project Name/ #: Moss American PWSID #: _____
 Project Manager: Tom Graan P.O.#: _____
 Sampler: B Schaefer, A. Grubb Quote #: _____
 Name of state where samples were collected: WI

Matrix **4**
 Potable (Check if applicable)
 Water
 NPDES
 Other
 Total # of Containers

Analyses Requested **5**
NO₃ NO₂ TKN TP-PO₄ O-PO₄ NH₃

For lab use only
 FSC: _____
 SCR #: _____

Temperature of samples upon receipt (if requested) **6**
p. 2 of 3

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	NO ₃	NO ₂	TKN	TP-PO ₄	O-PO ₄	NH ₃	Remarks
MAS-TG6-1-300702-04	7/30/06	1450	X			X		5	X	X	X	X	X	X	
MAS-TG6-2-300702-05	↓	1500	X			X		5	X	X	X	X	X	X	
MAS-TG6-3-300702-06	↓	1510	X			X		5	X	X	X	X	X	X	

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax
 Phone #: 847-918-4060 Fax #: 847-918-4055

8 Data Package Options (please circle if requested)

QC Summary	Type VI (Raw Data) <u>PER QUOTE</u>	SDG Complete? Yes <input checked="" type="radio"/> No <input type="radio"/>
Type I (Tier I)	GLP	Site-specific QC required? Yes <input type="radio"/> No <input type="radio"/> (If yes, indicate QC sample and submit triplicate volume.)
Type II (Tier II)	Other	
Type III (NJ Red. Del.)		
Type IV (CLP)		
Internal Chain of Custody required? Yes <input type="radio"/> No <input type="radio"/>		

Relinquished by: [Signature] Date: 7/30/06 Time: 1745 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: Laura Gordon Date: 7/3/06 Time: 0910

Cooler #2



For Lancaster Laboratories use only
 Acct. # 7802 Sample # 38108133-41

817056

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Winston/Ken McGee Acct. #: _____
 Project Name/#: Moss American PWSID #: _____
 Project Manager: Tom Graan P.O.# _____
 Sampler: B. Schaefer, A. Grubb Quote #: _____
 Name of state where samples were collected: WI

Matrix 4
 Soil
 Potable Water (check if PPD/ES approved)
 Other

5 Analyses Requested
 NO₃ NO₂ TKN TP-PO₄ O-PO₄ NH₃

For lab use only
 FSC: _____
 SCR #: 1168140

6 Temperature of samples upon receipt (if requested)

Sample Identification	Date Collected	Time Collected	3		Soil	Water	Other	Total # of Containers	5						Remarks	6
			Grab	Composite					NO ₃	NO ₂	TKN	TP-PO ₄	O-PO ₄	NH ₃		
MA3-TG4-1-300702-07	7/20/02	1630	X		X			5	X	X	X	X	X	X		
MA3-TG4-2-300702-08	↓	1640	X		X			5	X	X	X	X	X	X		
MA3-TG4-3-300702-09	↓	1650	X		X			5	X	X	X	X	X	X		

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax
 Phone #: 847-918-4000 Fax #: 847-918-4055

Relinquished by: <u>K. Maut</u>	Date: <u>7-25-02</u>	Time: <u>1530</u>	Received by: _____	Date: _____	Time: _____
Relinquished by: <u>B. Schaefer</u>	Date: <u>7-30-02</u>	Time: <u>1745</u>	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____

8 Data Package Options (please circle if requested)

QC Summary Type VI (Raw Data) <u>PER QUOTE</u>	SDG Complete? Yes <input type="radio"/> No <input checked="" type="radio"/>
Type I (Tier I) GLP	Site-specific QC required? Yes No (if yes, indicate QC sample and submit triplicate volume.) Internal Chain of Custody required? Yes No
Type II (Tier II) Other	
Type III (NJ Red. Del.)	
Type IV (CLP)	

Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: <u>Laura Gordon</u>	Date: <u>7/31/02</u>	Time: <u>0910</u>

Handwritten note: p.m. #1



ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

405-270-2602

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 817263. Samples arrived at the laboratory on Thursday, August 01, 2002.

Client Description

Lancaster Labs Number

MA3-TG3-1-310702-01 Grab Water Sample	3869098
MA3-TG3-2-310702-02 Grab Water Sample	3869099
MA3-TG3-3-310702-03 Grab Water Sample	3869100
MA3-TG2-1-310702-04 Grab Water Sample	3869101
MA3-TG2-2-310702-05 Grab Water Sample	3869102
MA3-TG2-3-310702-06 Grab Water Sample	3869103
MA3-TG1-1-310702-07 Grab Water Sample	3869104
MA3-TG1-2-310702-08 Grab Water Sample	3869105
MA3-TG1-3-310702-09 Grab Water Sample	3869106

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Kerr-McGee Corporation
1 COPY TO Roy F. Weston
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer
Attn: Mr. Tom Graan



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 · Fax: 717-656-2681



Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Erik J. Frederiksen".

Erik J. Frederiksen
Group Leader



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3869098

Collected: 07/31/2002 08:50 by BS

Account Number: 07802

Submitted: 08/01/2002 09:25

Reported: 08/14/2002 at 12:17

Discard: 09/14/2002

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-TG3-1-310702-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3311- SDG#: KMA19-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Detection Limit	
00217	Kjeldahl Nitrogen	7727-37-9	1.7		0.30	mg/l 1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l 1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l 1
00221	Ammonia Nitrogen	7664-41-7	1.3		0.46	mg/l 1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00226	Ortho-Phosphate as P	14265-44-2	0.0124 J		0.0066	mg/l 1
00345	Total Phosphorus as PO4 water	14265-44-2	0.20		0.12	mg/l 1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 12:27	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 20:05	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/05/2002 14:38	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/12/2002 07:15	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 21:20	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:22	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/06/2002 09:05	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3869099

Collected: 07/31/2002 09:00 by BS

Account Number: 07802

Submitted: 08/01/2002 09:25

Reported: 08/14/2002 at 12:17

Discard: 09/14/2002

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-TG3-2-310702-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3322- SDG#: KMA19-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.3		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.3		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.36		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 11:40	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 20:06	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/05/2002 14:39	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/12/2002 07:15	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 21:20	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:24	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/05/2002 09:20	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1



Lancaster Laboratories Sample No. WW 3869100

Collected: 07/31/2002 09:10 by BS

Account Number: 07802

Submitted: 08/01/2002 09:25

Kerr-McGee Corporation

Reported: 08/14/2002 at 12:17

P.O. Box 25861

Discard: 09/14/2002

Oklahoma City OK 73125

MA3-TG3-3-310702-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3333- SDG#: KMA19-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.7		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	0.016 J		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.5		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.47		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 11:41	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 20:08	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/05/2002 14:40	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/12/2002 07:15	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 21:20	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:25	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/05/2002 09:20	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3869101

Collected: 07/31/2002 10:10 by BS

Account Number: 07802

Submitted: 08/01/2002 09:25

Reported: 08/14/2002 at 12:17

Discard: 09/14/2002

MA3-TG2-1-310702-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

3214- SDG#: KMA19-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	0.33 J		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 11:42	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 20:09	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/05/2002 14:42	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/12/2002 07:15	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 21:20	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:26	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/05/2002 09:20	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3869102

Collected: 07/31/2002 10:20 by BS

Account Number: 07802

Submitted: 08/01/2002 09:25

Kerr-McGee Corporation

Reported: 08/14/2002 at 12:17

P.O. Box 25861

Discard: 09/14/2002

Oklahoma City OK 73125

MA3-TG2-2-310702-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3225- SDG#: KMA19-14

CAT No.	Analysis Name	CAS Number	As Received		As Received		Dilution Factor
			Result	J	Method	Detection Limit	
00217	Kjeldahl Nitrogen	7727-37-9	0.65	J	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.64	J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.16	J	0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 11:44	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 20:10	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/05/2002 14:43	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/12/2002 07:15	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 21:20	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:27	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/05/2002 09:20	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3869103

Collected: 07/31/2002 10:30 by BS

Account Number: 07802

Submitted: 08/01/2002 09:25

Reported: 08/14/2002 at 12:17

Discard: 09/14/2002

MA3-TG2-3-310702-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

3236- SDG#: KMA19-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.0		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.73 J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	0.0068 J		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.41		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 11:45	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 20:11	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/05/2002 14:44	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/12/2002 07:15	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 21:20	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:28	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/05/2002 09:20	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3869104

Collected: 07/31/2002 11:30 by BS

Account Number: 07802

Submitted: 08/01/2002 09:25

Reported: 08/14/2002 at 12:17

Discard: 09/14/2002

MA3-TG1-1-310702-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

3117- SDG#: KMA19-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.0		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.88 J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.18 J		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 11:46	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 20:13	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/05/2002 14:45	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/12/2002 07:15	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 21:20	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:29	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/05/2002 09:20	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3869105

Collected: 07/31/2002 11:40 by BS

Account Number: 07802

Submitted: 08/01/2002 09:25

Reported: 08/14/2002 at 12:17

Discard: 09/14/2002

MA3-TG1-2-310702-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

3128- SDG#: KMA19-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.5		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.97 J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.34		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 11:47	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 20:16	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/05/2002 14:49	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/12/2002 07:15	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 21:20	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:30	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/05/2002 09:20	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3869106

Collected: 07/31/2002 11:50 by BS

Account Number: 07802

Submitted: 08/01/2002 09:25

Kerr-McGee Corporation

Reported: 08/14/2002 at 12:17

P.O. Box 25861

Discard: 09/14/2002

Oklahoma City OK 73125

MA3-TG1-3-310702-09 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

3139- SDG#: KMA19-18*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	0.97 J		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.73 J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.31		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/06/2002 11:54	Michelle A Bolton	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/01/2002 20:18	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/05/2002 14:50	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	08/12/2002 07:15	Michele L Graham	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/01/2002 21:20	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	08/06/2002 19:32	Venia B McFadden	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/05/2002 09:20	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/05/2002 15:20	Nancy J Shoop	1





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 Acct. # 7802 Sample # 3869098-106

817263
 p. 1063

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Weston / Kern McGee Acct. #: _____
 Project Name/#: Moss American PWSID #: _____
 Project Manager: Tom Graan P.O.#: _____
 Sampler: B. Schaefer, A. Grubb Quote #: _____
 Name of state where samples were collected: WI

Matrix 4
 Soil Potable (residual)
 Water NPDES (applicable)
 Other

5 Analyses Requested
 NO3 NO2 TKN TP-PO4 O-PO4 NH3

For lab use only
 FSC: _____
 SCR#: 1168160

6 RECEIVED
 AUG 22 2002
 Temperature of samples upon receipt (if requested)

2 Sample Identification	Date Collected	Time Collected	3 Grab	Composite	Soil	Potable (residual)	Water (NPDES applicable)	Other	Total # of Containers	Analyses Requested	Remarks	6
MA3-TG-3-1-310702-01	7/31/02	8:30	X			X			5	X X X X X X		
MA3-TG-3-2-310702-02	↓	8:50	X			X			5	X X X X X X		
MA3-TG-3-3-310702-03	↓	9:10	X			X			5	X X X X X X		

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax
 Phone #: 847-918-4000 Fax #: 847-918-4055

Relinquished by: <u>K. M. F.</u>	Date: <u>7-25-02</u>	Time: <u>1530</u>	Received by:	Date:	Time:
Relinquished by: <u>Bru Schaefer</u>	Date: <u>7-31-02</u>	Time: <u>1345</u>	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

8 Data Package Options (please circle if requested)

QC Summary	Type VI (Raw Data) <u>PER QUOTE</u>	SDG Complete? Yes <u>NO</u>
Type I (Tier I)	GLP	
Type II (Tier II)	Other	Site-specific QC required? Yes No
Type III (NJ Red. Del.)		(if yes, indicate QC sample and submit triplicate volume.)
Type IV (CLP)		Internal Chain of Custody required? Yes No

Relinquished by: _____ Date: _____ Time: _____ Received by: Kathy Binkley Date: 8-1-02 Time: 0925



For Lancaster Laboratories use only
 Acct. # 7802 Sample # 386 9098-106

817263

P.2 of 3

Please print. Instructions on reverse side correspond with circled numbers.

Client: Weston / Ken McGee Acct. #: _____
 Project Name/#: Moss American PWSID #: _____
 Project Manager: Tom Graan P.O.# _____
 Sampler: B. Schaefer, A. Grubb Quote #: _____
 Name of state where samples were collected: WI

Matrix **4**
 Potable (check if applicable)
 NPDES
 Other

Total # of Containers

Analyses Requested **5**
NO₃
NO₂
TKN
TP-P04
O-P04
NH₃

For lab use only
 FSC: _____
 SCR #: 1166894

Temperature of sample (upon receipt if requested) **6**

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	Analyses Requested	Remarks	Temperature of sample (upon receipt if requested)
MA3-TG-2-1-310702-04	7/31/02	1010	X			X		5	X X X X X Y		
MA3-TG-2-2-310702-05	↓	1020	X			X		5	X X X X X X		
MA3-TG-2-3-310702-06	↓	1030	X			X		5	X X X X X X		

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax
 Phone #: 847-918-4000 Fax #: 847-918-4055

8 Data Package Options (please circle if requested) SDG Complete? Yes No

QC Summary Type VI (Raw Data) PERQUOTE
 Type I (Tier I) GLP
 Type II (Tier II) Other
 Type III (NJ Red. Del.)
 Type IV (CLP)

Site-specific QC required? Yes No
 (If yes, indicate QC sample and submit triplicate volume.)
 Internal Chain of Custody required? Yes No

Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____
M. J. [Signature] 8-1-02 1620
B. Schaefer 8-1-02 1345
Kathy Binkley 8-1-02 0925



For Lancaster Laboratories use only
 Acct. # 7802 Sample # 3869098-106

817263
 p. 3 of 3

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Weston/Ken McGee Acct. #: _____
 Project Name/#: Moss American PWSID #: _____
 Project Manager: Tom Graan P.O.# _____
 Sampler: B. Schaefer, A. Grubb Quote #: _____
 Name of state where samples were collected: WI

Matrix 4
 Soil Potable (Copper/NPDES applicable) Water Other

5 Analyses Requested
NO3
NO2
TKN
TP-PO4
O-PO4
NH3

For lab use only
 FSC: _____
 SCR #: 1166894

6 Temperature of samples upon receipt (if requested)

2 Sample Identification	Date Collected	Time Collected	3 Grab	Composite	Soil	Potable (Copper/NPDES applicable)	Water	Other	Total # of Containers	Analyses Requested	Remarks
MA3-TG1-1-310702-07	7/31/02	1130	X		X				5	X X X X X X	*NOTE: creosote free product in sample
MA3-TG1-2-310702-08	↓	1140	X		X				5	X X X X X X	
MA3-TG1-3-310702-09	↓	1150	X		X				5	X X X X X X	

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax
 Phone #: 847-918-4000 Fax #: 847-918-4055

8 Data Package Options (please circle if requested) SDG Complete? Yes No
 QC Summary Type VI (Raw Data) PER QUOTE No
 Type I (Tier I) GLP
 Type II (Tier II) Other Site-specific QC required? Yes No
 (If yes, indicate QC sample and submit triplicate volume.)
 Type III (NJ Red. Del.)
 Type IV (CLP) Internal Chain of Custody required? Yes No

Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____
 Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____
 Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____
 Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____

Kathy Binkley 8-1-02 0925

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Hammond, IN 46324
(219) 932-1770

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CERTIFICATE OF ANALYSIS

Tom Graam
Roy F. Weston, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 8/26/02
P.O. Number: 0018581 MOSS AMERICA
Sample ID: 9944-00006
Date Received: 8/01/02
Time Received: 11:15

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
SUBJECT: MA3-TG3-1-310702-01, 7/31/02 @ 08:50 by BS & AG				
Total Aerobic Bacteria	2,390. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	240. cfu/ml	8/01/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG3-2-310702-02, 7/31/02 @ 09:00 by BS & AG				
Total Aerobic Bacteria	1,150. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	220. cfu/ml	8/01/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG3-3-310702-03, 7/31/02 @ 09:10 by BS & AG				
Total Aerobic Bacteria	1,780. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	170. cfu/ml	8/01/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG2-1-310702-04, 7/31/02 @ 10:10 by BS & AG				
Total Aerobic Bacteria	1,050. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	100. cfu/ml	8/01/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG2-2-310702-05, 7/31/02 @ 10:20 by BS & AG				
Total Aerobic Bacteria	960. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	110. cfu/ml	8/01/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG2-3-310702-06, 7/31/02 @ 10:30 by BS & AG				
Total Aerobic Bacteria	1,490. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	370. cfu/ml	8/01/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG1-1-310702-07, 7/31/02 @ 11:30 by BS & AG				
Total Aerobic Bacteria	1,600. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	180. cfu/ml	8/01/02	NMC	9215B MODIFIED

*** Certificate Continues On Next Page ***

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CERTIFICATE OF ANALYSIS

Tom Graam
Roy F. Weston, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 8/26/02
P.O. Number: 0018581 MOSS AMERICA
Sample ID: 9944-00006
Date Received: 8/01/02
Time Received: 11:15

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
SUBJECT: MA3-TG1-2-310702-08, 7/31/02 @ 11:40 by BS & AG				
Total Aerobic Bacteria	34,000. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	1,190. cfu/ml	8/01/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG1-3-310702-09, 7/31/02 @ 11:50 by BS & AG				
Total Aerobic Bacteria	6,000. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	500. cfu/ml	8/01/02	NMC	9215B MODIFIED

This document has been reviewed and is electronically signed by:

Karen A. Ziolkowski
Laboratory Director

Microbac

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Hammond, IN 46324
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INDIANA CERTIFICATION NUMBERS: M-45-8 C-45-02

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CERTIFICATE OF ANALYSIS

Tom Graam
Roy F. Weston, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 8/26/02
P.O. Number: 0018581 MOSS AMERICA
Sample ID: 9943-00497
Date Received: 7/31/02
Time Received: 08:30

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
SUBJECT: MA3-TG5-1-300702-01,7/30/02 @ 13:45 by Client				
Total Aerobic Bacteria	900. cfu/ml	8/01/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	210. cfu/ml	8/01/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG5-2-300702-02,7/30/02 @ 13:55 by Client				
Total Aerobic Bacteria	680. cfu/ml	8/01/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	100. cfu/ml	8/01/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG5-3-300702-03,7/30/02 @ 14:05 by Client				
Total Aerobic Bacteria	1,040. cfu/ml	8/01/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	170. cfu/ml	8/01/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG6-1-300702-04,7/30/02 @ 14:50 by Client				
Total Aerobic Bacteria	760. cfu/ml	8/01/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	80. cfu/ml	8/01/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG6-2-300702-05,7/30/02 @ 15:00 by Client				
Total Aerobic Bacteria	1,100. cfu/ml	8/01/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	70. cfu/ml	8/01/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG6-3-300702-06,7/30/02 @ 15:10 by Client				
Total Aerobic Bacteria	90. cfu/ml	8/01/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	20. cfu/ml	8/01/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG4-1-300702-07,7/30/02 @ 16:30 by Client				
Total Aerobic Bacteria	330. cfu/ml	8/01/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	30. cfu/ml	8/01/02	NHC	9215B MODIFIED

*** Certificate Continues On Next Page ***

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CERTIFICATE OF ANALYSIS

Tom Graam
Roy F. Weston, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 8/26/02
P.O. Number: 0018581 MOSS AMERICA
Sample ID: 9943-00497
Date Received: 7/31/02
Time Received: 08:30

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
SUBJECT: MA3-TG4-2-300702-08,7/30/02 @ 16:40 by Client				
Total Aerobic Bacteria	770. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	120. cfu/ml	8/01/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG4-3-300702-09,7/30/02 @ 16:50 by Client				
Total Aerobic Bacteria	690. cfu/ml	8/01/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	80. cfu/ml	8/01/02	NMC	9215B MODIFIED

This document has been reviewed and is electronically signed by:

Karen A. Ziolkowski
Laboratory Director

Project name Moss American Project # 0943-497
 Project location Milwaukee, WI (City) (state)

Received by lyse 2/2/2

Site contaminant * BTEX, PAH
 (Used in test for degrader microbial populations, give ratios if applicable, e.g. 50:50, gasoline:diesel)

* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free product included? yes No

Sample ID	Lab use only	Date	Time	✓		Sample depth	#			Additional comments	CEA* (soil/gw) see note <input type="checkbox"/> Aerobic, <input type="checkbox"/> Anaerobic, <input type="checkbox"/> Microaerophilic	Standard nutrient panel (soil/gw) * incl. TKN, ammonium nitrogen, available P, pH, total organic carbon, % moisture (s)	Particle size analysis (soil) <input type="checkbox"/> sieve and hydrometer, <input type="checkbox"/> sieve only	% air-filled pore space (soil) (includes bulk density)	Intact core		Soil moisture at field capacity	Bulk density (soil)	Microbial Enumeration
				Soil	GW		Jars	Vials	Core						Soil moisture at field capacity	Bulk density (soil)			
8 9 MA3-TG4-2 30502-08		7/30/02	1640		X	—	1												X
MA3-TG4-3 30502-09		7/30/02	1650		X	—	1												X
Relinquished by: <u>B. Schap</u>				Date/time: <u>7-30-02/1745</u>				Comments:				Sample condition upon arrival:							
Received by:				Date/time:												On ice? <input type="checkbox"/> Yes, <input type="checkbox"/> No			

Microbac Laboratories,
 HAMMOND DIVISION
 542-544 Conkey Street
 Hammond, Indiana 46324
 219-932-1770

Send results to:
 Name Tom Graan
 Company Weston
 Address 750 E. Bunker Court, Suite 500
 City Vernon Hills State IL Zip 60080
 Phone 847-918-4000 Fax 847-918-4055

Send invoice to: Same as results
 Name _____
 Company _____
 Address _____
 City _____ State _____ Zip _____
 Phone _____ Fax _____

*CEA : Comparative Enumeration Assay includes total heterotrophic and degrader populations

Project name Moss American Project #

Project location Milwaukee, WI (City) (state)

Site contaminant * BTEX PAH 094B-497

(Used in test for degrader microbial populations. give ratios if applicable, e.g. 50:50, gasoline:diesel)

* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free product included? yes No

Requested analyses (✓) #1 of 2

Sample ID	Lab use only	Date	Time	Soil (✓)		Sample depth	#			Additional comments	CEA* (soil/gw) see note <input type="checkbox"/> Aerobic, <input type="checkbox"/> Anaerobic, <input type="checkbox"/> Microaerophilic	Standard nutrient panel (soil/gw) - incl. TKN, ammonium nitrogen, available P, pH, total organic carbon, % moisture (s)	Particle size analysis (soil) <input type="checkbox"/> sieve and hydrometer, <input type="checkbox"/> sieve only	% air-filled pore space (soil) (includes bulk density)	Intact core		Soil moisture at field capacity	Bulk density (soil)	Microbial Enumeration
				Soil	GW		Jars	Vials	Core						Soil moisture at field capacity	Bulk density (soil)			
<u>MA3-TG5-1-300702-01</u>		<u>7/30/02</u>	<u>1345</u>		X			X											X
<u>MA3-TG5-2-300702-02</u>			<u>1355</u>		X			X											X
<u>MA3-TG5-3-300702-03</u>			<u>1405</u>		X			X											X
<u>MA3-TG6-1-300702-04</u>			<u>1450</u>		X														X
<u>MA3-TG6-2-300702-05</u>			<u>1500</u>		X														X
<u>MA3-TG6-3-300702-06</u>		↓	<u>1510</u>		X														X
<u>MA3-TG4-1-300702-07</u>		↓	<u>1630</u>		X														X

Relinquished by: <u>Bruce Selaf</u>	Date/time: <u>7-30-02/1745</u>	Comments:	Sample condition upon arrival:
Received by: <u>Carey Ann Oberase</u>	Date/time: <u>8:30 7/31/02</u>		

Microbac Laboratories,
HAMMOND DIVISION
542-544 Conkey Street
Hammond, Indiana 46324
219-932-1770

Send results to:
Name Tom Graan
Company Weston
Address 750 E. Bunker Court, Suite 500
City Vernon Hills State IL Zip 60179
Phone 847-918-4000 Fax 847-918-4055

Send invoice to: Same as results
Name _____
Company _____
Address _____
City _____ State _____ Zip _____
Phone _____ Fax _____

*CEA : Comparative Enumeration Assay includes total heterotrophic and degrader populations

Contact person Tom Gray Subject MOSS AMERICAN

Re: stec lyse # 1-02

Project name Moss American Project # _____

Project location Milwaukee, WI
(City) (state)

Site contaminant * BTEX, PAH

(Used in test for degrader microbial populations, give ratios if applicable, e.g. 50:50, gasoline:diesel)

* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free product included? yes No

Sample ID	Lab use only	Date	Time	Soil		Sample depth	Jars			Additional comments
				(✓)	GW		(#)	Vials	Core	
MA3-TG3-1 310702-01		7/31/02	0850		X	1	1			
MA3-TG3-2 310702-02			0900		X	1	1			
MA3-TG3-3 310702-03			0910		X	1	1			
MA3-TG2-1 310702-04			1010		X	1	1			
MA3-TG2-2 310702-05			1020		X	1	1			
MA3-TG2-3 310702-06			1030		X	1	1			
MA3-TG1-1 310702-07			1130		X	1	1			
MA3-TG1-2 310702-08			1140		X	1	1			

CEA: (soil/gw) see note
 Aerobic, Anaerobic, Microaerophilic
 Standard nutrient panel (soil/gw)
 * incl. TKN, ammonium nitrogen, available P, pH, total organic carbon, % moisture (s)
 Particle size analysis (soil)
 sieve and hydrometer, sieve only
 % air-filled pore space (soil) (includes bulk density)
 Soil moisture at field capacity
 Bulk density (soil)
 Intact core
GI-NDA SHIP 05
 Microbial Enumeration

Relinquished by: Be S Day Date/time: 7-31-02/1345 Comments: Creosote free product in sample TG1-1 ★
 Received by: Carol Ann Overase Date/time: 8/1/02/11:15 Sample condition upon arrival:
 On ice? Yes, No

Microbac Laboratories,
 HAMMOND DIVISION
 542-544 Conkey Street
 Hammond, Indiana 46324
 219-932-1770

Send results to:
 Name Tom Gray
 Company Western
 Address 750 E. Bunker Court, Suite 500
 City Vernon Hills State IL Zip 60061
 Phone 847-918-4000 Fax 847-918-4055

Send Invoice to: Same as results
 Name _____
 Company _____
 Address _____
 City _____ State _____ Zip _____
 Phone _____ Fax _____

*CEA : Comparative Enumeration Assay includes total heterotrophic and degrader populations

9944-6

Contact person Tom Graan Sampler B. Schaefer, A. Grubb
 Project name Moss American Project # _____
 Project location Milwaukee, WI (City) (state)

Requested analyses (✓) # 2 of 2

Site contaminant * BTEX, PAH
 (Used in test for degrader microbial populations, give ratios if applicable, e.g. 50:50, gasoline:diesel)

* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free product included? yes No

CEA* (soil/gw) see note
 Aerobic, Anaerobic, Microaerophilic
 Standard nutrient panel (soil/gw)
 * Incl. TKN, ammonium nitrogen, available P, pH, total organic carbon, % moisture (s)
 Particle size analysis (soil)
 sieve and hydrometer, sieve only
 % air-filled pore space (soil) (includes bulk density)
 Soil moisture at field capacity
 Bulk density (soil)
 Intact core
 Microbial Enumeration

Sample ID	Lab use only	Date	Time	(✓)		Sample depth	(#)			Additional comments
				Soil	GW		Jars	Vials	Core	
<u>MA3-76(1)-31672-09</u>		<u>7/31/02</u>	<u>1150</u>		<u>X</u>	<u>—</u>	<u>1</u>			

Relinquished by: [Signature] Date/time: 731-02/1345 Comments: _____ Sample condition upon arrival: _____
 Received by: _____ Date/time: _____ On ice? Yes, No

**Microbac Laboratories,
 HAMMOND DIVISION
 542-544 Conkey Street
 Hammond, Indiana 46324
 219-932-1770**

Send results to:
 Name Tom Graan
 Company Weston
 Address 750 E. Banker Court, Suite 500
 City Wagon Hills State IL Zip 60097
 Phone 847-918-4000 Fax 847-918-4053

Send Invoice to: Same as results
 Name _____
 Company _____
 Address _____
 City _____ State _____ Zip _____
 Phone _____ Fax _____

*CEA : Comparative Enumeration Assay Includes total heterotrophic and degrader populations

0944.6

APPENDIX C

AUGUST 2002 GROUNDWATER SAMPLE ANALYTICAL RESULTS



ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

405-270-2602

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 820549. Samples arrived at the laboratory on Wednesday, August 28, 2002.

<u>Client Description</u>	<u>Lancaster Labs Number</u>
MA3-TG1-1-270802-01 Grab Water Sample	3886979
MA3-TG1-2-270802-02 Grab Water Sample	3886980
MA3-TG1-3-270802-03 Grab Water Sample	3886981
MA3-TG2-1-270802-04 Grab Water Sample	3886982
MA3-TG2-2-270802-05 Grab Water Sample	3886983
MA3-TG2-3-270802-06 Grab Water Sample	3886984

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Kerr-McGee Corporation
1 COPY TO Roy F. Weston
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer
Attn: Mr. Tom Graan

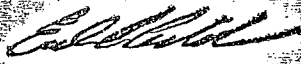


Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,



Erik J. Frederiksen
Group Leader



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



I Lancaster Laboratories Sample No. WW 3886979

Collected: 08/27/2002 15:00 by AS

Account Number: 07802

S Submitted: 08/28/2002 09:10

Kerr-McGee Corporation

F Reported: 09/13/2002 at 16:10

P.O. Box 25861

Discard: 10/14/2002

Oklahoma City OK 73125

r MA3-TG1-1-270802-01 Grab Water Sample

M Moss American Superfund Site - Milwaukee, WI

3TG11 SDG#: KMA20-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Detection Limit	
00217	Kjeldahl Nitrogen	7727-37-9	1.2		0.30	mg/l 1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l 1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l 1
00221	Ammonia Nitrogen	7664-41-7	0.70	J	0.46	mg/l 1
00226	Ortho-Phosphate as P	14265-44-2	0.061		0.0066	mg/l 1
00345	Total Phosphorus as PO4 water	14265-44-2	0.22		0.12	mg/l 1

Laboratory Chronicle

C N C C C O C	CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
				Trial#	Date and Time		
	00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:04	Nicole M Kepley	1
	00219	Nitrite Nitrogen	EPA 353.2	1	08/28/2002 17:42	Venia B McFadden	1
	00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 12:46	Timothy M Petree	1
	00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 15:30	Luz M Groff	1
	00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 04:00	Daniel S Smith	1
	00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 14:05	Nicole M Kepley	1
	01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/30/2002 09:50	James S Mathiot	1
	08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/29/2002 14:10	Nancy J Shoop	1



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3886982

Collected: 08/27/2002 16:45 by AS

Account Number: 07802

Submitted: 08/28/2002 09:10

Kerr-McGee Corporation

Reported: 09/13/2002 at 16:11

P.O. Box 25861

Discard: 10/14/2002

Oklahoma City OK 73125

MA3-TG2-1-270802-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3TG21 SDG#: KMA20-04

CAT No.	Analysis Name	CAS Number	As Received		As Received		Dilution Factor
			Result	J	Method	Units	
00217	Kjeldahl Nitrogen	7727-37-9	0.33	J	Detection Limit 0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.		0.46	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.065		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.14	J	0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:08	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/28/2002 17:46	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 12:53	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 15:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 04:00	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 14:12	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/30/2002 09:50	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/29/2002 14:10	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3886983

Collected: 08/27/2002 16:50 by AS

Account Number: 07802

Submitted: 08/28/2002 09:10

Kerr-McGee Corporation

Reported: 09/13/2002 at 16:11

P.O. Box 25861

Discard: 10/14/2002

Oklahoma City OK 73125

MA3-TG2-2-270802-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3TG22 SDG#: KMA20-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	0.65 J		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.		0.46	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.0134 J		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.21		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:09	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/28/2002 17:49	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 12:54	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 15:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 04:00	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 14:13	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/30/2002 09:50	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/29/2002 14:10	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3886984

Collected: 08/27/2002 16:55 by AS

Account Number: 07802

Submitted: 08/28/2002 09:10

Kerr-McGee Corporation

Reported: 09/13/2002 at 16:11

P.O. Box 25861

Discard: 10/14/2002

Oklahoma City OK 73125

MA3-TG2-3-270802-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3TG23 SDG#: KMA20-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Units	
00217	Kjeldahl Nitrogen	7727-37-9	1.5	Detection Limit	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.30	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.015	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.54 J	0.040	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.035	0.46	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.44	0.0066	mg/l	1
				0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:13	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/28/2002 17:50	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 12:55	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 15:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 04:00	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 14:14	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/30/2002 09:50	James S Mathiot	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/29/2002 14:10	Nancy J Shoop	1



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



For Lancaster Laboratories use only
 Acct. # 7802 Sample # 3886979-84
820549

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: WESTON SOLUTIONS / KERR-MCGEE Acct. #: _____
 Project Name/#: 7 TOM GRAN R PWSID #: _____
 Project Manager: MOSS AMERICA P.O.# _____
 Sampler: A. SLESERS, F. WAMBE Quote #: _____
 Name of state where samples were collected: WT

Matrix 4
 Potable (General)
 Water (NPDES applicable)
 Other

5 Analyses Requested
NO3
NO2
TKN
TP
PO4
O-PO4
NH3

For lab use only
 FSC: _____
 SCR #: 1168924

6 Temperature of samples upon receipt (if requested)

Sample Identification	Date Collected	Time Collected	3		Soil	Water	Other	Total # of Containers	5							Remarks
			Grab	Composite					NO3	NO2	TKN	TP	PO4	O-PO4	NH3	
MA3-TG1-1-270802-01	8/27/02	1500	X		X			5	X	X	X	X	X	X		
MA3-TG1-2-270802-02		1510	X		X			5	X	X	X	X	X	X		
MA3-TG1-3-270802-03		1515	X		X			5	X	X	X	X	X	X		
MA3-TG2-1-270802-04		1645	X		X			5	(AS)							
MA3-TG2-2-270802-05		1650	X		X			5	(AS)							
MA3-TG2-3-270802-06		1655	X		X			5	(AS)							

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: _____
 Rush results requested by (please circle): Phone Fax
 Phone #: _____ Fax #: _____

Relinquished by: [Signature] Date 8/21/02 Time 1515 Received by: [Signature] Date 8/26/02 Time 1900

Relinquished by: [Signature] Date 8/27/02 Time 1900 Received by: _____ Date _____ Time _____

8 Data Package Options (please circle if requested)

QC Summary	Type VI (Raw Data)	SDG Complete?
Type I (Tier I)	GLP	Yes No
Type II (Tier II)	Other	
Type III (NJ Red. Del.)	Site-specific QC required? Yes No (If yes, indicate QC sample and submit triplicate volume.)	
Type IV (CLP)	Internal Chain of Custody required? Yes No	

Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____

Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____

Kathy Benkley 828-020910



For Lancaster Laboratories use only
 Acct. # 7802 Sample # 3886979-84
 820519

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>WESTON SOLUTIONS/KERR-MCGEE</u> Acct. #: _____ Project Name/#: <u>MOSS AMERICA</u> PWSID #: _____ Project Manager: <u>TOM GRAN</u> P.O.#: _____ Sampler: <u>ALEXANDER F. WATSON</u> Quote #: _____ Name of state where samples were collected: <u>VT</u>				Matrix 4 <input type="checkbox"/> Soil <input checked="" type="checkbox"/> Potable (check if FNPDES applicable) <input type="checkbox"/> Water <input type="checkbox"/> Other		Analyses Requested 5 NO ₃ NO ₂ TKN TP PO ₄ O-PO ₄ NH ₃					For lab use only FSC: _____ SCR #: <u>1168424</u>		Temperature of samples upon receipt (if requested) 6						
Sample Identification 2		Date Collected	Time Collected	Grab 3 Composite	Soil Water Other	Total # of Containers	Remarks												
MA3-TG21-270802-04		08/29/02	1645	Y	X	5	X	X	X	X	X	X	X	X	X	X	X	X	X
MA3-TG2-2-270802-05		↓	1650	Y	X	5	X	X	X	X	X	X	X	X	X	X	X	X	X
MA3-TG2-3-270802-06		↓	1655	X	X	5	X	X	X	X	X	X	X	X	X	X	X	X	X

7 Turnaround Time Requested (TAT) (please circle): Normal - Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: _____
 Rush results requested by (please circle): Phone Fax
 Phone #: _____ Fax #: _____

Relinquished by: <u>[Signature]</u>	Date: <u>8/21/02</u>	Time: <u>1515</u>	Received by: <u>[Signature]</u>	Date: <u>8/26/02</u>	Time: <u>1900</u>
Relinquished by: <u>[Signature]</u>	Date: <u>8/27/02</u>	Time: <u>1900</u>	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: <u>Kathy Binkley</u>	Date: <u>8-28-02</u>	Time: <u>0910</u>

8 Data Package Options (please circle if requested)

QC Summary	Type VI (Raw Data)	SDG Complete? Yes No
Type I (Tier I)	GLP	
Type II (Tier II)	Other	Site-specific QC required? Yes No (If yes, indicate QC sample and submit triplicate volume.)
Type III (NJ Red. Del.)		Internal Chain of Custody required? Yes No
Type IV (CLP)		



ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

405-270-2602

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 820762. Samples arrived at the laboratory on Thursday, August 29, 2002.

Client Description

Lancaster Labs Number

MA3-TG3-1-280802-07 Grab Water Sample	3888050
MA3-TG3-2-280802-08 Grab Water Sample	3888051
MA3-TG3-3-280802-09 Grab Water Sample	3888052
MA3-TG4-1-280802-10 Grab Water Sample	3888053
MA3-TG4-2-280802-11 Grab Water Sample	3888054
MA3-TG4-3-280802-12 Grab Water Sample	3888055
MA3-TG6-1-280802-13 Grab Water Sample	3888056
MA3-TG6-2-280802-14 Grab Water Sample	3888057
MA3-TG6-3-280802-15 Grab Water Sample	3888058

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Kerr-McGee Corporation
1 COPY TO Roy F. Weston
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer
Attn: Mr. Tom Graan

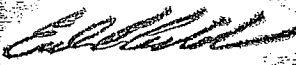


Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,



Erik J. Frederiksen
Group Leader



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3888050

Collected: 08/28/2002 09:00 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Reported: 09/13/2002 at 14:10

Discard: 10/14/2002

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-TG3-1-280802-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

G31-7 SDG#: KMA20-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Units	
00217	Kjeldahl Nitrogen	7727-37-9	1.5	Detection Limit 0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.1	0.46	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.22	0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:26	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002 08:27	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 16:44	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 15:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 22:15	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 16:48	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002 15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002 13:30	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3888051

Collected: 08/28/2002 09:05 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Kerr-McGee Corporation

Reported: 09/13/2002 at 14:10

P.O. Box 25861

Discard: 10/14/2002

Oklahoma City OK 73125

MA3-TG3-2-280802-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

G32-8 SDG#: KMA20-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.6	0.30		mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015		mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040		mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.2	0.46		mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.0066		mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.37	0.12		mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:29	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002 08:28	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 16:45	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 15:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 22:15	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 16:49	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002 15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002 13:30	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3888052

Collected: 08/28/2002 09:10 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Kerr-McGee Corporation

Reported: 09/13/2002 at 14:10

P.O. Box 25861

Discard: 10/14/2002

Oklahoma City OK 73125

MA3-TG3-3-280802-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

G33-9 SDG#: KMA20-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Units	
00217	Kjeldahl Nitrogen	7727-37-9	1.9	Detection Limit 0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	2.0	0.46	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.54	0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:33	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002 08:29	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 16:46	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 15:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 22:15	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 16:50	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002 15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002 13:30	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3888053

Collected: 08/28/2002 10:30 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Reported: 09/13/2002 at 14:10

Discard: 10/14/2002

MA3-TG4-1-280802-10 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

G4110 SDG#: KMA20-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.2	0.30		mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015		mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040		mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.1	0.46		mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.0066		mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.36	0.12		mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:34		Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002 08:31		Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 16:48		Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 21:30		Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 22:15		Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 16:51		Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002 15:15		Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002 13:30		Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3888054

Collected: 08/28/2002 10:40 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Reported: 09/13/2002 at 14:10

Discard: 10/14/2002

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MA3-TG4-2-280802-11 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

G4211 SDG#: KMA20-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.4		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.1		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	0.0087 J		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.24		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:36	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002 08:34	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 16:49	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 21:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 22:15	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 16:52	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002 15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002 13:30	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3888055

Collected: 08/28/2002 10:45 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Reported: 09/13/2002 at 14:11

Discard: 10/14/2002

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MA3-TG4-3-280802-12 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

G4312 SDG#: KMA20-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.4		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.1		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	0.029		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.29		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:37	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002 08:36	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 16:50	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 21:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 22:15	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 16:52	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002 15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002 13:30	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3888056

Collected: 08/28/2002 12:45 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Reported: 09/13/2002 at 14:11

Discard: 10/14/2002

Kerr-McGee Corporation

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Oklahoma City OK 73125

MA3-TG6-1-280802-13 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

G6113 SDG#: KMA20-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.3	0.30		mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015		mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040		mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.1	0.46		mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	0.0167 J	0.0066		mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.27	0.12		mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002	17:38	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002	08:37	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002	16:51	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002	21:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002	22:15	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002	17:26	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002	15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002	13:30	Nancy J Shoop	1





Lancaster Laboratories Sample No. WW 3888057

Collected: 08/28/2002 12:50 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Kerr-McGee Corporation

Reported: 09/13/2002 at 14:11

P.O. Box 25861

Discard: 10/14/2002

Oklahoma City OK 73125

MA3-TG6-2-280802-14 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

G6214 SDG#: KMA20-14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.1		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.73 J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.14 J		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002	17:39	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002	08:38	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002	16:53	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002	21:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002	22:15	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002	17:27	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002	15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002	13:30	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3888058

Collected: 08/28/2002 12:55 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15
 Reported: 09/13/2002 at 14:11
 Discard: 10/14/2002

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

MA3-TG6-3-280802-15 Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

G6315 SDG#: KMA20-15

CAT No.	Analysis Name	CAS Number	As Received		Units	Dilution Factor
			Result	Method		
00217	Kjeldahl Nitrogen	7727-37-9	1.2	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.91 J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.18 J	0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:41	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002 08:39	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 16:56	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 21:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 22:15	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 17:28	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002 15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002 13:30	Nancy J Shoop	1



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For Lancaster Laboratories use only

Acct. # 7802 Sample # 3888050-58

820762

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>WESTON SOLUTIONS/KERMAGEE</u> Acct. #: _____ Project Name/#: <u>MOSS AMERICA</u> PWSID #: _____ Project Manager: <u>TOM GRAAN</u> P.O.#: _____ Sampler: <u>A. SLESERS/T. BORMAN</u> Quote #: _____ Name of state where samples were collected: <u>WI</u>					Matrix 4 <input type="checkbox"/> Potable (check if applicable) <input type="checkbox"/> Water <input type="checkbox"/> NPDES <input type="checkbox"/> Other		Analyses Requested 5 <div style="display: flex; justify-content: space-around; align-items: center; height: 100px;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NO₃</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NO₂</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TKN</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TP PO₄</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">O-PO₄</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NH₃</div> </div>						For lab use only FSC: _____ SCR #: _____							
Sample Identification 2			Date Collected	Time Collected	Grab 3	Composite	Soil	Water	Other	Total # of Containers	Remarks			Temperature of samples upon receipt (if requested) 6						
MA3-TG3-1-280802-07			08/28/02	0900	X		X			5	X	X	X	X	X					
MA3-TG3-2-280802-08			↓	0905	X		X			5	X	X	X	X	X					
MA3-TG3-3-280802-09			↓	0910	X		X			5	X	X	X	X	X					
SEP 20 2002																				
7 Turnaround Time Requested (TAT) (please circle): Normal Rush (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: _____ Rush results requested by (please circle): Phone Fax Phone #: _____ Fax #: _____					Relinquished by: Date: <u>8/28/02</u> Time: <u>1800</u>			Received by: _____ Date: _____ Time: _____												
8 Data Package Options (please circle if requested)					SDG Complete? Yes No			Relinquished by: _____ Date: _____ Time: _____			Received by: _____ Date: _____ Time: _____									
QC Summary Type VI (Raw Data)		Type I (Tier I) GLP		Type II (Tier II) Other		Type III (NJ Red. Del.)		Type IV (CLP)		Site-specific QC required? Yes No (if yes, indicate QC sample and submit triplicate volume.)			Internal Chain of Custody required? Yes No			Relinquished by: _____ Date: _____ Time: _____			Received by: <u>Kathy Binkley</u> Date: <u>8-29-02</u> Time: <u>0915</u>	



For Lancaster Laboratories use only
 Acct. # 7802 Sample # 3888050-58
820762

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: WESTON SOLUTIONS/KERR MCGEE Acct. #: _____
 Project Name#: MOSS AMERICA PWSID #: _____
 Project Manager: DOM GRAM P.O.# _____
 Sampler: A. SLESERS/T. BORHAN Quote #: _____
 Name of state where samples were collected: WI

Matrix 4
 Potable (check if applicable)
 Water
 NIPDES
 Other

5 Analyses Requested
NO₃
NO₂
TKN
TP
PO₄
O-PO₄
NH₃

For lab use only
 FSC: _____
 SCR #: _____
P.263
 Temperature of samples upon receipt (if requested)

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	NO ₃	NO ₂	TKN	TP	PO ₄	O-PO ₄	NH ₃	Remarks
<u>MA3-TG4-1-280802-10</u>	<u>08/28/02</u>	<u>1030</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>5</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>MA3-TG4-2-280802-11</u>	<u>↓</u>	<u>1040</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>5</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>MA3-TG4-3-280802-12</u>	<u>↓</u>	<u>1045</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>5</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: _____
 Rush results requested by (please circle): Phone Fax
 Phone #: _____ Fax #: _____

Relinquished by: <u>[Signature]</u>	Date: <u>8/28/02</u>	Time: <u>1800</u>	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

8 Data Package Options (please circle if requested)

QC Summary	Type VI (Raw Data)	SDG Complete? Yes No
Type I (Tier I)	GLP	
Type II (Tier II)	Other	Site-specific QC required? Yes No (If yes, indicate QC sample and submit triplicate volume.)
Type III (NJ Red. Del.)		Internal Chain of Custody required? Yes No
Type IV (CLP)		

Kathy Binkley 02-09-15



For Lancaster Laboratories use only
 Acct. # 7802 Sample # 3888050-58
 820762

Please print: Instructions on reverse side correspond with circled numbers.

1 Client: WESTON SOLUTIONS/KERR MCGEE Acct. #: _____
 Project Name/#: MOSS AMERICA PWSID #: _____
 Project Manager: TOM GRAAN P.O.# _____
 Sampler: A. SLEERS/T. BORMAN Quote #: _____
 Name of state where samples were collected: WI

Matrix 4
 Potable (Check if applicable)
 Water
 NPDES
 Other

5 Analyses Requested
NO₃
NO₂
TKN
TP PO₄
O-PO₄
NH₃

For lab use only
 FSC: _____
 SCR #: _____

Temperature of samples upon receipt (if requested)

2 Sample Identification	Date Collected	Time Collected	3 Grab	Composite	Soil	Water	Other	Total # of Containers	5 Analyses Requested						Remarks	Temperature of samples upon receipt (if requested)
MA3-TG6-1-280802-13	08/28/02	1245	X			X		5	X	X	X	X	X	X		
MA3-TG6-2-280802-14	↓	1250	X			X		5	X	X	X	X	X	X		
MA3-TG6-3-280802-15	↓	1255	X			X		5	X	X	X	X	X	X		

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: _____
 Rush results requested by (please circle): Phone Fax
 Phone #: _____ Fax #: _____

Relinquished by: _____ Date: 8/28/02 Time: 1800 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

8 Data Package Options (please circle if requested) SDG Complete? Yes No

QC Summary Type VI (Raw Data) Yes No
 Type I (Tier I) GLP
 Type II (Tier II) Other
 Type III (NJ Red. Del.)
 Type IV (CLP)

Site-specific QC required? Yes No
 (If yes, indicate QC sample and submit triplicate volume.)
 Internal Chain of Custody required? Yes No

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Kathy Binkley 8-29-02 0915



ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

405-270-2602

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 820781. Samples arrived at the laboratory on Thursday, August 29, 2002.

Client Description

MA3-TG5-1-280802-16 Grab Water Sample
MA3-TG5-2-280802-17 Grab Water Sample
MA3-TG5-3-280802-18 Grab Water Sample

Lancaster Labs Number

3888156
3888157
3888158

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Kerr-McGee Corporation
1 COPY TO Roy F. Weston
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer
Attn: Mr. Tom Graan



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,



Erik J. Frederiksen
Group Leader



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3888156

Collected: 08/28/2002 14:25 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Kerr-McGee Corporation

Reported: 09/13/2002 at 14:29

P.O. Box 25861

Discard: 10/14/2002

Oklahoma City OK 73125

MA3-TG5-1-280802-16 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

G5116 SDG#: KMA20-16

CAT No.	Analysis Name	CAS Number	As Received		As Received		Dilution Factor
			Result		Method	Units	
00217	Kjeldahl Nitrogen	7727-37-9	0.68	J	Detection Limit 0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.70	J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.21		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:42	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002 08:41	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 16:58	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 21:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 22:15	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 17:31	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002 15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002 13:30	Nancy J Shoop	1



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3888157

Collected: 08/28/2002 14:30 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Kerr-McGee Corporation

Reported: 09/13/2002 at 14:29

P.O. Box 25861

Discard: 10/14/2002

Oklahoma City OK 73125

MA3-TG5-2-280802-17 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

G5217 SDG#: KMA20-17

CAT No.	Analysis Name	CAS Number	As Received		As Received Method		Dilution Factor
			Result		Detection Limit	Units	
00217	Kjeldahl Nitrogen	7727-37-9	0.84	J	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	0.016	J	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.88	J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.23		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:43	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002 08:42	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 16:59	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/03/2002 21:30	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 22:15	Daniel S. Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 17:32	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002 15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002 13:30	Nancy J Shoop	1



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3888158

Collected: 08/28/2002 14:35 by AS

Account Number: 07802

Submitted: 08/29/2002 09:15

Reported: 09/13/2002 at 14:29

Discard: 10/14/2002

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-TG5-3-280802-18 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

G5318 SDG#: KMA20-18

CAT No.	Analysis Name	CAS Number	As Received		As Received		Dilution Factor	
			Result		Method	Detection Limit		Units
00217	Kjeldahl Nitrogen	7727-37-9	0.84	J		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.			0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.			0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.1			0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.								
00226	Ortho-Phosphate as P	14265-44-2	N.D.			0.0066	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.18	J		0.12	mg/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis			Dilution Factor
			Trial#	Date and Time	Analyst	
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/09/2002 17:44	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/30/2002 08:43	Michelle A Bolton	1
00220	Nitrate Nitrogen	EPA 353.2	1	09/10/2002 17:00	Timothy M Petree	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/04/2002 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	08/29/2002 22:15	Daniel S Smith	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	09/04/2002 17:33	Nicole M Kepley	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/04/2002 15:15	Nancy J Shoop	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	08/30/2002 13:30	Nancy J Shoop	1



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



For Lancaster Laboratories use only
 Acct. # 7802 Sample # 3888156-58

820781

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>WESTON SOLUTIONS/KERR MCGEE</u> Acct. #: _____ Project Name/#: <u>MOSS AMERICA</u> PWSID #: _____ Project Manager: <u>TOM GRAAN</u> P.O.# _____ Sampler: <u>A. SLESERS/T. BORMAN</u> Quote #: _____ Name of state where samples were collected: <u>WI</u>				Matrix 4 <input type="checkbox"/> Potable (Check if applicable) <input type="checkbox"/> Water <input type="checkbox"/> NIPDES <input type="checkbox"/> Other Total # of Containers		Analyses Requested 5 <div style="display: flex; justify-content: space-around; font-size: 2em; font-weight: bold;"> NO₃ NO₂ TKN TP PO₄ O-PO₄ NH₃ </div>						For lab use only FSC: _____ SCR #: _____ Temperature of samples upon receipt (if requested)					
Sample Identification		Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	NO ₃	NO ₂	TKN	TP	PO ₄	O-PO ₄	NH ₃	Remarks
<u>MA3-TG5-1-280802-16</u>		<u>08/28/02</u>	<u>1425</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>5</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		SEP 20 2002
<u>MA3-TG5-2-280802-17</u>		↓	<u>1430</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>5</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<u>MA3-TG5-3-280802-18</u>		↓	<u>1435</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>5</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

7 Turnaround Time Requested (TAT) (please circle): Normal <input type="checkbox"/> Rush <input type="checkbox"/> (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: _____ Rush results requested by (please circle): Phone <input type="checkbox"/> Fax <input type="checkbox"/> Phone #: _____ Fax #: _____				Relinquished by:		Date: <u>8/28/02</u>	Time: <u>1800</u>	Received by: _____	Date: _____	Time: _____																								
8 Data Package Options (please circle if requested) <table style="width: 100%; border: none;"> <tr> <td>QC Summary</td> <td>Type VI (Raw Data)</td> <td>SDG Complete?</td> <td>Yes</td> <td>No</td> </tr> <tr> <td>Type I (Tier I)</td> <td>GLP</td> <td rowspan="2">Site-specific QC required? Yes No (if yes, indicate QC sample and submit triplicate volume.)</td> <td></td> <td></td> </tr> <tr> <td>Type II (Tier II)</td> <td>Other</td> <td></td> <td></td> </tr> <tr> <td>Type III (NJ Red. Del.)</td> <td></td> <td>Internal Chain of Custody required? Yes No</td> <td></td> <td></td> </tr> <tr> <td>Type IV (CLP)</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				QC Summary	Type VI (Raw Data)	SDG Complete?	Yes	No	Type I (Tier I)	GLP	Site-specific QC required? Yes No (if yes, indicate QC sample and submit triplicate volume.)			Type II (Tier II)	Other			Type III (NJ Red. Del.)		Internal Chain of Custody required? Yes No			Type IV (CLP)					Relinquished by: _____		Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
				QC Summary	Type VI (Raw Data)	SDG Complete?	Yes	No																										
				Type I (Tier I)	GLP	Site-specific QC required? Yes No (if yes, indicate QC sample and submit triplicate volume.)																												
				Type II (Tier II)	Other																													
Type III (NJ Red. Del.)		Internal Chain of Custody required? Yes No																																
Type IV (CLP)																																		
Relinquished by: _____		Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____																												
Relinquished by: _____		Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____																												

Date: 8/29/02 Time: 0915

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CERTIFICATE OF ANALYSIS

Tom Gran
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 9/23/02
P.O. Number: 0018581
Sample ID: 9944-00449
Date Received: 8/28/02
Time Received: 10:30

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
SUBJECT: MA3-TG1-1-270802-01, 08/27/02 @ 15:00 by AS				
Total Aerobic Bacteria	159,000. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	5,300. cfu/ml	8/30/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG1-2-270802-02, 08/27/02 @ 15:10 by AS				
Total Aerobic Bacteria	97,000. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	6,000. cfu/ml	8/30/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG1-3-270802-03, 08/27/02 @ 15:15 by AS				
Total Aerobic Bacteria	8,300. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	1,200. cfu/ml	8/30/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG2-1-270802-04, 08/27/02 @ 16:45 by AS				
Total Aerobic Bacteria	350. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	260. cfu/ml	8/30/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG2-2-270802-05, 08/27/02 @ 16:50 by AS				
Total Aerobic Bacteria	6,500. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	700. cfu/ml	8/30/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG2-3-270802-06, 08/27/02 @ 16:55 BY AS				
Total Aerobic Bacteria	26,000. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	7,000. cfu/ml	8/30/02	NMC	9215B MODIFIED

*** Certificate Continues On Next Page ***

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CERTIFICATE OF ANALYSIS

Tom Gran
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 9/23/02
P.O. Number: 0018581
Sample ID: 9944-00449
Date Received: 8/28/02
Time Received: 10:30

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
------------	---------	------	------	--------

This document has been reviewed and is electronically signed by:

Karen A. Ziolkowski
Laboratory Director

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CERTIFICATE OF ANALYSIS

Tom Graam
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 9/23/02
P.O. Number: 0018581
Sample ID: 9944-00472
Date Received: 8/29/02
Time Received: 08:30

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
SUBJECT: MA3-TG6-2-280802-14, 8/28/02 @ 12:50 by AS/TB				
Total Aerobic Bacteria	11,900. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	1,500. cfu/ml	8/30/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG6-3-280802-15, 8/28/02 @ 12:55 by AS/TB				
Total Aerobic Bacteria	1,200. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	600. cfu/ml	8/30/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG5-1-280802-16, 8/28/02 @ 14:25 by AS/TB				
Total Aerobic Bacteria	28,300. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	400. cfu/ml	8/30/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG5-2-280802-17, 8/28/02 @ 14:30 by AS/TB				
Total Aerobic Bacteria	4,300. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	1,100. cfu/ml	8/30/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG5-3-280802-18, 8/28/02 @ 14:35 by AS/TB				
Total Aerobic Bacteria	71,000. cfu/ml	8/30/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	4,000. cfu/ml	8/30/02	NMC	9215B MODIFIED

*** Certificate Continues On Next Page ***

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WATER • AIR • WASTES • FOOD • PHARMACEUTICALS • NUTRACEUTICALS

CERTIFICATE OF ANALYSIS

Tom Graam
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 9/23/02
P.O. Number: 0018581
Sample ID: 9944-00472
Date Received: 8/29/02
Time Received: 08:30

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
------------	---------	------	------	--------

This document has been reviewed and is electronically signed by:

Karen A. Ziolkowski
Laboratory Director

The data and other information contained on this, and other accompanying documents, represent only the sample(s) analyzed and is rendered upon the condition that it is not to be reproduced wholly or in part for advertising or other purposes without written approval from the laboratory.

USDA-EPA-NIOSH Testing Food Sanitation Consulting Chemical and Microbiological Analyses and Research

MEMBER
ACIL

Microbac

® Microbac Laboratories, Inc.

Hammond Division
544 Conkey Street
Hammond, IN 46324
(219) 932-1770

INDIANA CERTIFICATION NUMBERS: M-45-8 C-45-02

<http://www.microbac.com>

SEP 25 2002

CHEMISTRY • MICROBIOLOGY • FOOD SAFETY • CONSUMER PRODUCTS
WATER • AIR • WASTES • FOOD • PHARMACEUTICALS • NUTRACEUTICALS

CERTIFICATE OF ANALYSIS

Tom Graam
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 9/23/02
P.O. Number: 0018581
Sample ID: 9944-00472
Date Received: 8/29/02
Time Received: 08:30

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
SUBJECT: MA3-TG3-1-280802-07, 8/28/02 @ 09:00 by AS/TB				
Total Aerobic Bacteria	6,600. cfu/ml	8/30/02	NHC	9215B MODIFIED
T.Aerobic Degradable Bacteria	500. cfu/ml	8/30/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG3-2-280802-08, 8/28/02 @ 09:05 by AS/TB				
Total Aerobic Bacteria	10,200. cfu/ml	8/30/02	NHC	9215B MODIFIED
T.Aerobic Degradable Bacteria	1,300. cfu/ml	8/30/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG3-3-280802-09, 8/28/02 @ 09:10 by AS/TB				
Total Aerobic Bacteria	7,500. cfu/ml	8/30/02	NHC	9215B MODIFIED
T.Aerobic Degradable Bacteria	500. cfu/ml	8/30/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG4-1-280802-10, 8/28/02 @ 10:30 by AS/TB				
Total Aerobic Bacteria	6,600. cfu/ml	8/30/02	NHC	9215B MODIFIED
T.Aerobic Degradable Bacteria	400. cfu/ml	8/30/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG4-2-280802-11, 8/28/02 @ 10:40 by AS/TB				
Total Aerobic Bacteria	1,490. cfu/ml	8/30/02	NHC	9215B MODIFIED
T.Aerobic Degradable Bacteria	90. cfu/ml	8/30/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG4-3-280802-12, 8/28/02 @ 10:45 by AS/TB				
Total Aerobic Bacteria	183,000. cfu/ml	8/30/02	NHC	9215B MODIFIED
T.Aerobic Degradable Bacteria	9,000. cfu/ml	8/30/02	NHC	9215B MODIFIED
SUBJECT: MA3-TG6-1-280802-13, 8/28/02 @ 12:45 by AS/TB				
Total Aerobic Bacteria	1,130. cfu/ml	8/30/02	NHC	9215B MODIFIED
T.Aerobic Degradable Bacteria	160. cfu/ml	8/30/02	NHC	9215B MODIFIED

*** Certificate Continues On Next Page ***

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USDA-EPA-NIOSH Testing Food Sanitation Consulting Chemical and Microbiological Analyses and Research

MEMBER
ACIL

Contact person TOM GRAN Sampler A. SLESERS
 Project name KERR MCGEE Project # (ROSS AMERICA)
 Project location MILWAUKEE, WI (City) (state)

Site contaminant * BTEX & PAH RO17
 (Used in test for degrader microbial populations, give ratios if applicable, e.g. 50:50, gasoline:diesel)

* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free product included? yes No

Requested analyses (✓)

CEA* (soil/gw) see note <input checked="" type="checkbox"/> Aerobic, <input checked="" type="checkbox"/> Anaerobic, <input checked="" type="checkbox"/> Microaerophilic Per Tom Gran	Standard nutrient panel (soil/gw) - incl. TKN, ammonium nitrogen, available P, pH, total organic carbon, % moisture (s)	Particle size analysis (soil) <input type="checkbox"/> sieve and hydrometer, <input type="checkbox"/> sieve only	% air-filled pore space (soil) (includes bulk density)	Intact core	
				Soil moisture at field capacity	Bulk density (soil)

Sample ID	Lab use only	Date	Time	✓		Sample depth	#			Additional comments
				Soil	GW		Jars	Vials	Core	
MA3-TG1-1- 270802-01		8/27/02	1400		X		1			X
MA3-TG1-2- 270802-02			1510		X		1			X
MA3-TG1-3- 270802-03			1515		X		1			X
MA3-TG2-1- 270802-04			1645		X		1			X
MA3-TG2-2- 270802-05			1650		X		1			X
MA3-TG2-3- 270802-06		✓	1655		X		1			X

Relinquished by: Audis Slesers Date/time: 08/27/02 19:00 Comments: PLEASE FAX COPY OF THIS COC TO TOM GRAN (847) 918-4055 (fax #). Sample condition upon arrival: _____
 Received by: _____ Date/time: _____ On ice? Yes, No

**Microbac Laboratories,
 HAMMOND DIVISION
 542-544 Conkey Street
 Hammond, Indiana 46324
 219-932-1770**

Send results to:
 Name Tom Gran
 Company _____
 Address _____
 City _____ State _____ Zip _____
 Phone 847-918-4000 Fax 847-918-4055

Send invoice to: Same as results
 Name _____
 Company _____
 Address _____
 City _____ State _____ Zip _____
 Phone _____ Fax _____

*CEA : Comparative Enumeration Assay Includes total heterotrophic and degrader populations

8-28-02 W McDonald 10:30

9944-449



9944-472

For Lancaster Laboratories use only

Acct. # _____ Sample # _____

Please print. Instructions on reverse side correspond with circled numbers.

Client: WESTON SOLUTIONS/KERR MCGEE Acct. #: _____

Project Name/#: MOSS AMERICA PWSID #: _____

Project Manager: TOM GRAM P.O.# _____

Sampler: A. SLESERS/T. BOHMAN Quote #: _____

Name of state where samples were collected: (MILWAUKEE), WI

Matrix (4): Potable (check if applicable) Water NPDES Other

Total # of Containers: _____

Analyses Requested (5): MICROSOIL ENHANCED - AEROBIC

For lab use only: FSC: _____ SCR #: _____

Temperature of samples upon receipt (if requested): _____

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix (4)			Total # of Containers	Analyses Requested (5)	Remarks	Temperature of samples upon receipt (if requested)
					Soil	Water	Other				
1 MA3-TG3-1-280802-07	8/28/02	0900	X		X			1	X	pg 1/2	
2 MA3-TG3-2-280802-08		0905	X		X			1	X		
3 MA3-TG3-3-280802-09		0910	X		X			1	X		
4 MA3-TG4-1-280802-10		1030	X		X			1	X		
5 MA3-TG4-2-280802-11		1040	X		X			1	X		
6 MA3-TG4-3-280802-12		1045	X		X			1	X		
7 MA3-TG6-1-280802-13		1245	X		X			1	X		
8 MA3-TG6-2-280802-14		1250	X		X			1	X		
9 MA3-TG6-3-280802-15	Y	1255	X		X			1	X		

7 Turnaround Time Requested (TAT) (please circle): Normal Rush

(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed: _____

Rush results requested by (please circle): Phone _____ Fax _____

Phone #: _____ Fax #: _____

8 Data Package Options (please circle if requested)

QC Summary Type VI (Raw Data) Yes No

Type I (Tier I) GLP

Type II (Tier II) Other

Type III (NJ Red. Del.)

Type IV (CLP)

Site-specific QC required? Yes No (if yes, indicate QC sample and submit triplicate volume.)

Internal Chain of Custody required? Yes No

Relinquished by: _____ Date: 8/28/02 Time: 800 Received by: Michael Sedra Date: 8/29/02 Time: 0830

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____



9944-472

For Lancaster Laboratories use only

Acct. # _____ Sample # _____

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: <u>WESTON SOLUTIONS/KARA MCGEE</u> Acct. #: _____ Project Name#: <u>MOSS AMERICA</u> PWSID #: _____ Project Manager: <u>DOM GRANN</u> P.O.# _____ Sampler: <u>A. SLESERS/T. BORHAN</u> Quote #: _____ Name of state where samples were collected: <u>(MILWAUKEE) WI</u>		Matrix 4 <input type="checkbox"/> Potable (check applicable) <input type="checkbox"/> Water (NPDES applicable) <input type="checkbox"/> Soil <input type="checkbox"/> Other		5 Analyses Requested MICROBIAL ENRICHMENT - Aerobic					For lab use only FSC: _____ SCR #: _____								
2 Sample Identification		Date Collected	Time Collected	3 Grab	Composite	Soil	Water	Other	Total # of Containers	Remarks					6 Temperature of samples upon receipt (if requested)		
MA3-TG5-1-280802-16		8/28/02	1425	X			X		1	X	B 2/2						
MA3-TG5-2-280802-17		↓	1430	X			X		1	X							
MA3-TG5-3-280802-18		↓	1435	X			X		1	X							
7 Turnaround Time Requested (TAT) (please circle): <u>Normal</u> Rush (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: _____ Rush results requested by (please circle): Phone Fax Phone #: _____ Fax #: _____		Relinquished by: <u>[Signature]</u> Date: <u>8/28/02</u> Time: <u>1800</u> Received by: <u>[Signature]</u> Date: <u>8/29/02</u> Time: <u>0830</u>			Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____		Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____		Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____		Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____		Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____		Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____		
8 Data Package Options (please circle if requested)				SDG Complete? Yes No		Site-specific QC required? Yes No (If yes, indicate QC sample and submit triplicate volume.) Internal Chain of Custody required? Yes No											
QC Summary Type VI (Raw Data)		Type I (Tier I) GLP		Type II (Tier II) Other		Type III (NJ Red. Del.)		Type IV (CLP)									

APPENDIX D

SEPTEMBER 2002 GROUNDWATER SAMPLE ANALYTICAL RESULTS

I have reviewed the analytical data provided by Lancaster Laboratories for the Moss American Site in Milwaukee, Wisconsin upon the information that was provided by the laboratory. The water samples were analyzed for Polynuclear Aromatic Hydrocarbons PAHs, and Petroleum analyses (BETX).

A summary of the data validation is provided below for samples delivery group SDG# KMA22 for PAH, and BETX.

Polynuclear Aromatic Hydrocarbons (PAHs by HPLC, U.S. EPA Method 8310)

Moss American Site

SDG # KMA22

1. Samples:

<u>Client Code</u>	<u>Lab Sample Number</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Extracted</u>	<u>Date Analyzed</u>
MA3-MW-9S-230902-01	3905059	Water	09/23/02	09/27/02	09/30/02
MA3-MW-9I-230902-04	3905060	Water	09/23/02	09/27/02	09/30/02
MA3-MW-37S-230902-02	3905061	Water	09/23/02	09/27/02	09/30/02
MA3-MW-29S-230902-03	3905062	Water	09/23/02	09/27/02	09/30/02
MA3-MW-36S-230902-05	3905063	Water	09/23/02	09/27/02	09/30/02
MA3-MW5S-260902-10	3908074	Water	09/26/02	10/03/02	10/06/02
MA3-MW5S-260902-10-MS	3908075	Water	09/26/02	10/03/02	10/06/02
MA3-MW5S-260902-10-MSD	3908076	Water	09/26/02	10/03/02	10/06/02

2. Holding Times:

All samples were extracted and analyzed within the required holding times.

3. Method Blank:

Two method blanks were associated with this SDG. SBLKWF269 was extracted on 09/27/02 and analyzed on 09/30/02 with samples (3905059 thru 3905063). SBLKWA276 was extracted on 10/03/02 and analyzed on 10/06/02 with samples (3908074, and MS/MSD). SBLKWF269, and SBLKWA276 results were free of contamination.

4. Surrogate:

All method blanks and the investigated samples had surrogate recoveries within the required quality control limits. All the surrogate recoveries were reported from UV detector. The surrogate recovery for nitrobenzene on fluorescence detector was outside the required quality control limit.

5. Matrix Spike/Matrix Spike Duplicate Recovery:

Sufficient sample volume was not available to perform MS/MSD for this analysis. However, the laboratory analyzed LCS/LCSD.

The MS/MSD was performed on sample (MA3-MW5S-260902-10/3908074) from different SDG and applies to sample (3908074). The MS/MSD recoveries were all within the acceptance quality control limits. Also, the RPD% values were acceptable.

6. Laboratory Control Sample:

The laboratory control samples/laboratory control sample duplicate that were associated with samples (3905059 thru 3905063) recoveries were all within the acceptance quality control limits. Also, the RPD% values were acceptable.

The laboratory control sample that was associated with (3908074, and MS/MSD) and the recoveries were within the acceptance quality control limits.

7. Retention Time:

All the retention time results were acceptable.

8. Initial and Continuing Calibration:

The initial calibration, and continuing calibration verification were all acceptable.

However, the retention time, initial and continuing calibration results were used in the calculation from two detectors. Naphthalene, acenaphthylene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, fluorene, phenanthrene, and anthracene were taken from ultraviolet detector, and fluoranthene, pyrene, benzo (a) anthracene, chrysene, benzo (b) fluoranthene, benzo (k) fluoranthene, benzo (a) pyrene, dibenzo (a, h) anthracene, benzo (g, h, i) perylene, and indeno (1, 2, 3-cd) pyrene were taken from fluorescence detector.

VOLATILE-BETX by GC/MS (U.S. EPA Method 8021B)

Moss American Site

SDG # KMA22

1. Samples:

<u>Client Code</u>	<u>Lab Sample Number</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>
MA3-MW-9S-230902-01	3905059	Water	09/23/02	09/26/02	09/26/02
MA3-MW-9I-230902-04	3905060	Water	09/23/02	09/26/02	09/26/02
MA3-MW-37S-230902-02	3905061	Water	09/23/02	09/26/02	09/26/02
MA3-MW-29S-230902-03	3905062	Water	09/23/02	09/26/02	09/26/02
MA3-MW-36S-230902-05	3905063	Water	09/23/02	09/26/02	09/26/02
TB-01	3905064	Water	09/23/02	09/25/02	09/25/02
MA3-MW5S-260902-10	3908074	Water	09/26/02	10/01/02	10/01/02
MA3-MW5S-260902-10-MS	3908075	Water	09/26/02	10/01/02	10/01/02
MA3-MW5S-260902-10-MSD	3908076	Water	09/26/02	10/01/02	10/01/02

2. Holding Times:

All samples were analyzed within the required holding times.

3. Method Blank:

Two method blanks BLK0102, and BLK0110 were associated with the SDG. BLK0102 was analyzed on 09/25/02 with (3905059 thru 3905064). BLK0110 was analyzed on 10/01/02 with (3908074, and MS/MSD). Both method blanks BLK0102, and BLK0110 result were free of contamination.

4. Matrix Spike/Matrix Spike Duplicate Recovery:

Sufficient sample volume was not available to perform MS/MSD for this analysis. Therefore, the MS/MSD was performed on sample (MA3-MW5S-260902-10/3908074) from differnt SDG. The MS/MSD recovery applies to the following samples (3905059 thru 3905064, and 3908074), and the recoveries were all within the acceptance quality control limits. Also, the RPD% values were acceptable.

5. Laboratory Control Sample Recovery:

Both laboratories control sample/laboratories control sample duplicates on 09/25/02 and 10/01/02 recoveries were within the quality control limits. Also, the RPD% values were acceptable.

6. Surrogate:

All method blanks and the investigated samples had surrogate recoveries within the required quality control limits (71-130%).

7. Initial, Continuing Calibration, and Internal Standards:

The initial calibration, continuing calibration verification and the internal standards results were all acceptable.

Data Reviewed By: Tania Balikji-Shammo

Date: 11/05/02



ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

405-270-2602

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 824024. Samples arrived at the laboratory on Tuesday, September 24, 2002.

Client Description

MA3-MW-9S-230902-01 Grab Water Sample
MA3-MW-9I-230902-04 Grab Water Sample
MA3-MW-37S-230902-02 Grab Water Sample
MA3-MW-29S-230902-03 Grab Water Sample
MA3-MW-36S-230902-05 Grab Water Sample
TB-01 Water Sample

Lancaster Labs Number

3905059
3905060
3905061
3905062
3905063
3905064

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Kerr-McGee Corporation
1 COPY TO Weston Solutions, Inc.
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer
Attn: Mr. Tom Graan



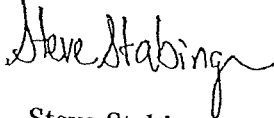
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

5
6
1
3



Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,



Steve Stabinger
Group Leader



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

44-1-0510



Lancaster Laboratories Sample No. WW 3905059

Collected: 09/23/2002 15:30 by BS

Account Number: 07802

Submitted: 09/24/2002 09:25

Reported: 10/06/2002 at 19:45

Discard: 11/06/2002

MA3-MW-9S-230902-01 Grab Water Sample
Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

9S-23 SDG#: KMA22-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Diluti Factor
08213	BTEX (8021)	SW-846 8021B	1	09/26/2002 00:42	Steven J Stabinger	1
00774	PAH's in Water by HPLC	SW-846 8310	1	09/30/2002 09:40	Mark A Clark	1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3905059

Collected: 09/23/2002 15:30 by BS

Account Number: 07802

Submitted: 09/24/2002 09:25

Reported: 10/06/2002 at 19:45

Discard: 11/06/2002

MA3-MW-9S-230902-01 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

9S-23	SDG#: KMA22-01					
01146	GC VOA Water Prep	SW-846 5030B	1	09/26/2002 00:42	Steven J Stabinger	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 07:30	Felix C Arroyo	1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

0108



Lancaster Laboratories Sample No. WW 3905060

Collected: 09/23/2002 18:20 by BS

Account Number: 07802

Submitted: 09/24/2002 09:25

Reported: 10/06/2002 at 19:45

Discard: 11/06/2002

MA3-MW-9I-230902-04 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

9I-23 SDG#: KMA22-02

CAT No.	Analysis Name	CAS Number	As Received	As Received	Units	Dilution Factor
			Result	Method		
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/26/2002 01:25	Steven J Stabinger	1
00774	PAH's in Water by HPLC	SW-846 8310	1	09/30/2002 10:18	Mark A Clark	1



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Lancaster Laboratories Sample No. WW 3905060

Collected: 09/23/2002 18:20 by BS

Account Number: 07802

Submitted: 09/24/2002 09:25

Reported: 10/06/2002 at 19:45

Discard: 11/06/2002

MA3-MW-9I-230902-04 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

9I-23	SDG#: KMA22-02					
01146	GC VOA Water Prep	SW-846 5030B	1	09/26/2002 01:25	Steven J Stabinger	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 07:30	Felix C Arroyo	1



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00110503



Lancaster Laboratories Sample No. WW 3905061

Collected: 09/23/2002 17:00 by BS

Account Number: 07802

Submitted: 09/24/2002 09:25
 Reported: 10/06/2002 at 19:46
 Discard: 11/06/2002
 MA3-MW-37S-230902-02 Grab Water Sample
 Moss American Site - WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

37S23 SDG#: KMA22-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/26/2002 02:08	Steven J Stabinger	1
00774	PAH's in Water by HPLC	SW-846 8310	1	09/30/2002 10:57	Mark A Clark	1



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Lancaster Laboratories Sample No. WW 3905061

Collected: 09/23/2002 17:00 by BS

Account Number: 07802

Submitted: 09/24/2002 09:25

Reported: 10/06/2002 at 19:46

Discard: 11/06/2002

MA3-MW-37S-230902-02 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

37S23	SDG#: KMA22-03					
01146	GC VOA Water Prep	SW-846 5030B	1	09/26/2002 02:08	Steven J Stabinger	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 07:30	Felix C Arroyo	1



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Lancaster Laboratories Sample No. WW 3905062

Collected: 09/23/2002 17:40 by BS

Account Number: 07802

Submitted: 09/24/2002 09:25

Reported: 10/06/2002 at 19:46

Discard: 11/06/2002

MA3-MW-29S-230902-03 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

29S23 SDG#: KMA22-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

00774 PAH's in Water by HPLC

00775	Naphthalene	91-20-3	N.D.	0.90	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.090	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/26/2002 02:51	Steven J Stabinger	1
00774	PAH's in Water by HPLC	SW-846 8310	1	09/30/2002 11:36	Mark A Clark	1



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Lancaster Laboratories Sample No. WW 3905062

Collected: 09/23/2002 17:40 by BS

Account Number: 07802

Submitted: 09/24/2002 09:25

Reported: 10/06/2002 at 19:46

Discard: 11/06/2002

MA3-MW-29S-230902-03 Grab Water Sample
Moss American Site - WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

29S23 SDG#: KMA22-04

01146 GC VOA Water Prep

03337 PAH Water Extraction

SW-846 5030B

SW-846 3510C

1 09/26/2002 02:51

Steven J Stabinger

n.a.

1 09/27/2002 07:30

Felix C Arroyo

1

0022



Lancaster Laboratories, Inc.
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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories Sample No. WW 3905063

Collected: 09/23/2002 18:40 by BS

Account Number: 07802

Submitted: 09/24/2002 09:25
 Reported: 10/06/2002 at 19:46
 Discard: 11/06/2002
 MA3-MW-36S-230902-05 Grab Water Sample
 Moss American Site - WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

36S23 SDG#: KMA22-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.0	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.0	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.10	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.050	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.050	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.050	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.050	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.10	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.10	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.



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36S23



Lancaster Laboratories Sample No. WW 3905063

Collected: 09/23/2002 18:40 by BS

Account Number: 07802

Submitted: 09/24/2002 09:25

Reported: 10/06/2002 at 19:46

Discard: 11/06/2002

MA3-MW-36S-230902-05 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

36S23 SDG#: KMA22-05

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/26/2002 03:33	Steven J Stabinger	1
00774	PAH's in Water by HPLC	SW-846 8310	1	09/30/2002 12:14	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/26/2002 03:33	Steven J Stabinger	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 07:30	Felix C Arroyo	1



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09/24/02



Lancaster Laboratories Sample No. WW 3905064

Collected: 09/23/2002 19:00

Account Number: 07802

Submitted: 09/24/2002 09:25

Reported: 10/06/2002 at 19:46

Kerr-McGee Corporation

P.O. Box 25861

Discard: 11/06/2002

TB-01 Water Sample

Oklahoma City OK 73125

Moss American Site - WI

TB123 SDG#: KMA22-06TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.	0.20		ug/l	1
00777	Toluene	108-88-3	N.D.	0.20		ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20		ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60		ug/l	1

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/25/2002 14:43	Steven J Stabinger	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/25/2002 14:43	Steven J Stabinger	n.a.



Lancaster Laboratories, Inc.
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ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

405-270-2602

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 824618. Samples arrived at the laboratory on Friday, September 27, 2002.

Client Description

MA3-MW5S-260902-10 Unspiked Grab Water Sample
MA3-MW5S-260902-10-MS Matrix Spike Grab
MA3-MW5S-260902-10-MSD Matrix Spike Dup. Grab

Lancaster Labs Number

3908074
3908075
3908076

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Kerr-McGee Corporation
1 COPY TO Weston Solutions, Inc.
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer
Attn: Mr. Tom Graan



Lancaster Laboratories, Inc.
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0026



Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

A handwritten signature in black ink that reads 'Steve Stabinger'.

Steve Stabinger
Group Leader



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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3908074

Collected: 09/26/2002 14:00 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Reported: 10/14/2002 at 18:34

Discard: 11/14/2002

MA3-MW5S-260902-10 Unspiked Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

5S210 SDG#: KMA22-07BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Units	
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	10/01/2002 11:55	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 14:23	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2002 11:55	Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/03/2002 09:45	Felix C Arroyo	1

5S210



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Lancaster Laboratories Sample No. WW 3908075

Collected: 09/26/2002 14:00 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Reported: 10/14/2002 at 18:34

Discard: 11/14/2002

MA3-MW5S-260902-10-MS Matrix Spike Grab

Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

5S210 SDG#: KMA22-07MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
08213	BTEX (8021)						
00776	Benzene	71-43-2	19.	0.20		ug/l	1
00777	Toluene	108-88-3	20.	0.20		ug/l	1
00778	Ethylbenzene	100-41-4	21.	0.20		ug/l	1
00779	Total Xylenes	1330-20-7	62.	0.60		ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	140.	1.0		ug/l	1
00782	Acenaphthylene	208-96-8	150.	0.80		ug/l	1
00783	Acenaphthene	83-32-9	160.	0.80		ug/l	1
00784	Fluorene	86-73-7	16.	0.20		ug/l	1
00785	Phenanthrene	85-01-8	5.3	0.080		ug/l	1
00789	Anthracene	120-12-7	2.8	0.040		ug/l	1
00807	Fluoranthene	206-44-0	3.3	0.040		ug/l	1
00811	Pyrene	129-00-0	20.	0.20		ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.6	0.020		ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.3	0.040		ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.6	0.020		ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	3.3	0.040		ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	6.6	0.080		ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	12.	0.10		ug/l	1
07409	Chrysene	218-01-9	6.3	0.080		ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.3	0.020		ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	10/01/2002 12:38	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 15:02	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2002 12:38	Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/03/2002 09:45	Felix C Arroyo	1



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Lancaster Laboratories Sample No. WW 3908076

Collected: 09/26/2002 14:00 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15
 Reported: 10/14/2002 at 18:34
 Discard: 11/14/2002

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

MA3-MW5S-260902-10-MSD Matrix Spike Dup. Grab
 Water Sample
 Moss American Superfund Site - Milwaukee, WI

5S210 SDG#: KMA22-07MSD*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
08213	BTEX (8021)						
00776	Benzene	71-43-2	19.		0.20	ug/l	1
00777	Toluene	108-88-3	20.		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	20.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	61.		0.60	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	160.		1.0	ug/l	1
00782	Acenaphthylene	208-96-8	170.		0.80	ug/l	1
00783	Acenaphthene	83-32-9	170.		0.80	ug/l	1
00784	Fluorene	86-73-7	17.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	5.4		0.080	ug/l	1
00789	Anthracene	120-12-7	2.8		0.040	ug/l	1
00807	Fluoranthene	206-44-0	3.0		0.040	ug/l	1
00811	Pyrene	129-00-0	18.		0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.4		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.2		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.5		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.9		0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	5.9		0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	11.		0.10	ug/l	1
07409	Chrysene	218-01-9	5.7		0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.2		0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	10/01/2002 13:21	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 15:40	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2002 13:21	Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/03/2002 09:45	Felix C Arroyo	1



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681

Analysis Request / Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 7802 Group# 824024 Sample # 3905059-64 **COC # 0002692**

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>Wegman</u> Acct. #: _____ Project Name/ #: <u>Moss American</u> PWSID #: _____ Project Manager: <u>Tom Groen</u> P.O.#: _____ Sampler: <u>B. Schaefer, T. Hanzely, F. Wanki</u> Quote #: _____ Name of state where samples were collected: <u>WI</u>		Matrix 4 <input type="checkbox"/> Potable <input type="checkbox"/> Check if Applicable <input type="checkbox"/> NPDES <input type="checkbox"/> Other		5 Analyses Requested BTEX PAH					For Lab Use Only FSC: _____ SCR #: <u>1169707</u>											
2 Sample Identification		Date Collected	Time Collected	3 Grab	Composite	Soil	Water	Other	4 Total # of Containers	Remarks					6 Temperature of samples upon receipt (if requested)					
<u>MA3-MW-95-230902-01</u>		<u>9/23/02</u>	<u>1530</u>	X			X		5							X	X			
<u>MA3-MW-91-230902-04</u>			<u>1820</u>	X			X		5							X	X			
<u>MA3-MW-375-230902-0702</u>			<u>1700</u>	X			X		5							X	X			
<u>MA3-MW-295-230902-0403</u>			<u>1740</u>	X			X		5							X	X			
<u>MA3-MW-365-230902-05</u>			<u>1840</u>	X			X		5							X	X			
<u>TB-01</u>			<u>1900</u>	X			X		2							X	X			
7 Turnaround Time Requested (TAT) (please circle): Normal Rush (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: <u>STD TAT</u> Rush results requested by (please circle): Phone Fax E-mail Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4095</u> E-mail address: _____				Relinquished by: <u>A. J. [Signature]</u> Date: <u>9-20-02</u> Time: <u>1000</u>		Received by: _____ Date: _____ Time: _____		9												
8 Data Package Options (please circle if required)				Relinquished by: <u>Bre [Signature]</u> Date: <u>9-23-02</u> Time: <u>1930</u>		Received by: _____ Date: _____ Time: _____		Relinquished by: _____ Date: _____ Time: _____		Received by: _____ Date: _____ Time: _____		Relinquished by: _____ Date: _____ Time: _____		Received by: <u>Kathy Binkley</u> Date: <u>9-24-02</u> Time: <u>0925</u>						
QC Summary Type VI (Raw Data) <u>PER QUOTE</u> Yes <u>NO</u>		SDG Complete? Yes <u>NO</u>		Type I (Tier I) GLP State-specific QC required? Yes <u>No</u>		Type II (Tier II) Other (If yes, indicate QC sample and submit triplicate volume.)		Type III (NJ Red. Del.) Internal Chain of Custody required? Yes <u>No</u>		Type IV (CLP)		Relinquished by: _____ Date: _____ Time: _____		Received by: _____ Date: _____ Time: _____						

GIP # 824612

3908074-76 GIP # 824618

Please print. Instructions on reverse side correspond with circled numbers.

Client: Weston Acct. #: _____
 Project Name #: Mass American PWSID #: _____
 Project Manager: Tom Graan P.O.# _____
 Sampler: B. Schaefer, T. Hanzely, F. Wambi Quote #: _____
 Name of state where samples were collected: WI

Matrix (4): Potable (Check if applicable)
 Water NPDES
 Other

Total # of Containers: _____

Analyses Requested (5): PAH
CPAHBS

For lab use only
 FSC: _____
 SCR #: _____

Temperature of samples upon receipt (if requested) (6): _____

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	Remarks	Temperature of samples upon receipt (if requested)
<u>FB-05</u>	<u>9/26/02</u>	<u>1245</u>	<u>X</u>			<u>X</u>		<u>2</u>	<u>X</u>	
<u>MA3-MW-305-260902-09</u>	<u> </u>	<u>1350</u>	<u>X</u>			<u>X</u>		<u>2</u>	<u>X</u>	
<u>MA3-MW-55-260902-10</u>	<u> </u>	<u>1400</u>	<u>X</u>			<u>X</u>		<u>2</u>	<u>X</u>	
<u>MA3-MW-55-260902-10-MS</u>	<u> </u>	<u>1400</u>	<u>X</u>			<u>X</u>		<u>2</u>	<u>X</u>	
<u>MA3-MW-55-260902-10-MSD</u>	<u>✓</u>	<u>1400</u>	<u>X</u>			<u>X</u>		<u>2</u>	<u>X</u>	

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax
 Phone #: 847-918-4000 Fax #: 847-918-4055

Relinquished by: Are 8 day Date: 9-26-02 Time: 1700 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

8 Data Package Options (please circle if requested)

QC Summary Type VI (Raw Data) PERQUOTE SDG Complete? Yes ~~No~~ SS
 Type I (Tier I) GLP
 Type II (Tier II) Other
 Type III (NJ Red. Del.)
 Type IV (CLP)

Site-specific QC required? Yes No
 (If yes, indicate QC sample and submit triplicate volume.)
 Internal Chain of Custody required? Yes No

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

CASE NARRATIVE

Client: Kerr-McGee Corporation
SDG #: KMA22

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBER(S) :

<u>LL #'s</u>	<u>Sample Code</u>	<u>Matrix</u>		<u>Comments</u>
		<u>Water</u>		
3905059	9S-23	X		
3905060	9I-23	X		
3905061	37S23	X		
3905062	29S23	X		
3905063	36S23	X		
3908074	5S210	X		Unspiked
3908075	5S210MS	X		Matrix Spike
3908076	5S210MSD	X		Matrix Spike Dup

LABORATORY SUBMITTED QC:

<u>LL #'s</u>	<u>Sample Code</u>	<u>Water</u>	<u>Comments</u>
SBLKWF269	SBLKWF2691	X	Method Blank
SBLKWA276	SBLKWA2761	X	Method Blank
269WFLCS	269WFLCS1	X	Lab Control Sample
269WFLCSD	269WFLCSD1	X	Lab Control Sample
276WALCS	276WALCS1	X	Lab Control Sample

SAMPLE PREPARATION:

Due to insufficient sample, reduced volumes were used in the extraction of the following samples.

<u>Sample Code</u>	<u>Volume</u>
9I-23	965 mls
36S23	833 mls

No other problems were encountered during the extraction of these samples.

Case Narrative
SDG#: KMA22 continued

ANALYSIS:

The method used for analysis was SW-846 8310.

All samples were analyzed for polynuclear aromatic hydrocarbons by HPLC.

Sufficient sample volume was not available to perform a MS/MSD for the analysis of 9S-23, 9I-23, 37S23, 29S23 and 36S23. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

No other problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC was within specifications.

DATA INTERPRETATION:

Only non-conformances for client requested compounds are addressed in this case narrative.

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Christine M. Ratchiff for CJN Date: 10-21-02
Charles J. Neslund
Group Leader, GC/MS Semivolatiles

44100

I have reviewed the analytical data provided by Lancaster Laboratories for the Moss American Site in Milwaukee, Wisconsin upon the information that was provided by the laboratory. The water samples were analyzed for Polynuclear Aromatic Hydrocarbons PAHs, and Petroleum analyses (BETX).

A summary of the data validation is provided below for samples delivery group SDG# KMA23 for PAH, and BETX.

Polynuclear Aromatic Hydrocarbons (PAHs by HPLC, U.S. EPA Method 8310)

Moss American Site

SDG # KMA23

1. Samples:

<u>Client Code</u>	<u>Lab Sample Number</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Extracted</u>	<u>Date Analyzed</u>
MA3-MW-20S-240902-12	3906110	Water	09/24/02	09/27/02	10/01/02
MA3-MW-20I-240902-13	3906111	Water	09/24/02	09/27/02	10/01/02
MA3-MW-6S-240902-07	3906112	Water	09/24/02	09/27/02	10/01/02
MA3-MW-7I-240902-05	3906113	Water	09/24/02	09/27/02	10/01/02
MA3-MW-7S-240902-03	3906114	Water	09/24/02	09/27/02	10/01/02
MA3-MW-7S-240902-03-RR	3906114	Water	09/24/02	09/27/02	10/01/02
MA3-MW-10S-240902-11	3906115	Water	09/24/02	09/27/02	10/01/02
MA3-MW-10S-240902-11DUP	3906116	Water	09/24/02	09/27/02	10/01/02
MA3-MW-27S-240902-06	3906117	Water	09/24/02	09/27/02	10/01/02
MA3-MW-28S-240902-09	3906118	Water	09/24/02	09/27/02	10/01/02
MA3-MW-31S-240902-10	3906119	Water	09/24/02	09/27/02	10/01/02
MA3-MW-32S-240902-02	3906120	Water	09/24/02	09/27/02	10/01/02
MA3-MW-33S-240902-01	3906121	Water	09/24/02	09/27/02	10/01/02
MA3-MW-33S-240902-01-RR	3906121	Water	09/24/02	09/27/02	10/04/02
MA3-MW-33S-240902-01DUP	3906122	Water	09/24/02	09/27/02	10/01/02
MA3-MW-33S-240902-01DUP-RR	3906122	Water	09/24/02	09/27/02	10/04/02
MA3-MW-34S-240902-04	3906123	Water	09/24/02	09/27/02	10/01/02
MA3-MW-34S-240902-04-RR	3906123	Water	09/24/02	09/27/02	10/04/02
MA3-MW-35S-240902-08	3906124	Water	09/24/02	09/27/02	10/01/02
FB-02	3906125	Water	09/24/02	09/27/02	10/01/02
FB-01	3906126	Water	09/24/02	09/27/02	10/01/02

2. Holding Times:

All samples were extracted and analyzed within the required holding times. Samples 3906114, 3906121, 3906122, and 3906123 were reanalyzed on 10/04/02 with a 20X dilution.

3. Method Blank:

The method blank SBLKWH269 was associated with this SDG. SBLKWH269 was extracted on 09/27/02 and analyzed on 09/30/02 with samples (3906110 thru 3906126). SBLKWH269 results were free of contamination.

4. Surrogate:

The method blank and the investigated samples had surrogate recoveries within the required quality control limits, except in sample 3906123 due to matrix interference. No action was taken. The surrogate recoveries were reported from UV detector.

5. Matrix Spike/Matrix Spike Duplicate Recovery:

Sufficient sample volume was not available to perform MS/MSD for this analysis. However, the laboratory analyzed LCS/LCSD.

6. Laboratory Control Sample:

The laboratory control samples/laboratory control sample duplicate recoveries were all within the acceptance quality control limits. Also, the RPD% values were acceptable.

7. Retention Time:

All the retention time results were acceptable.

8. Initial and Continuing Calibration:

The initial calibration, and continuing calibration verification were all acceptable.

However, the retention time, initial and continuing calibration results were used in the calculation from two detectors. Naphthalene, acenaphthylene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, fluorene, phenanthrene, and anthracene were taken from ultraviolet detector, and fluoranthene, pyrene, benzo (a) anthracene, chrysene, benzo (b) fluoranthene, benzo (k) fluoranthene, benzo (a) pyrene, dibenzo (a, h) anthracene, benzo (g, h, i) perylene, and indeno (1, 2, 3-cd) pyrene were taken from fluorescence detector.

VOLATILE-BETX by GC/MS (U.S. EPA Method 8021B)

Moss American Site

SDG # KMA23

1. Samples:

<u>Client Code</u>	<u>Lab Sample Number</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>
MA3-MW-20S-240902-12	3906110	Water	09/24/02	09/27/02	09/27/02
MA3-MW-20I-240902-13	3906111	Water	09/24/02	09/27/02	09/27/02
MA3-MW-6S-240902-07	3906112	Water	09/24/02	09/27/02	09/27/02
MA3-MW-7I-240902-05	3906113	Water	09/24/02	09/27/02	09/27/02
MA3-MW-7S-240902-03	3906114	Water	09/24/02	09/27/02	09/27/02
MA3-MW-10S-240902-11	3906115	Water	09/24/02	09/27/02	09/27/02
MA3-MW-10S-240902-11DUP	3906116	Water	09/24/02	09/27/02	09/27/02
MA3-MW-27S-240902-06	3906117	Water	09/24/02	09/27/02	09/27/02
MA3-MW-28S-240902-09	3906118	Water	09/24/02	09/27/02	09/27/02
MA3-MW-31S-240902-10	3906119	Water	09/24/02	09/27/02	09/27/02
MA3-MW-32S-240902-02	3906120	Water	09/24/02	09/27/02	09/27/02
MA3-MW-33S-240902-01	3906121	Water	09/24/02	09/27/02	09/27/02
MA3-MW-33S-240902-01DUP	3906122	Water	09/24/02	09/27/02	09/27/02
MA3-MW-34S-240902-04	3906123	Water	09/24/02	09/27/02	09/27/02
MA3-MW-35S-240902-08	3906124	Water	09/24/02	09/27/02	09/27/02
FB-02	3906125	Water	09/24/02	09/27/02	09/27/02
FB-01	3906126	Water	09/24/02	09/27/02	09/27/02
TB-02	3906127	Water	09/24/02	09/27/02	09/27/02

2. Holding Times:

All samples were analyzed within the required holding times. Samples 3906121, 3906122, and 3906123 were reanalyzed on 09/27/02 with DF 20.

3. Method Blank:

Two method blanks BLK0104, and BLK0105 were associated with the SDG. BLK0104 was analyzed on 09/26/02 with (3906110 thru 3906120, and 3906124 thru 3906127). BLK0105 was analyzed on 09/27/02 with (3906121, 3906122, 3906123, and 3906110MS). Both method blanks BLK0104, and BLK0105 result were free of contamination.

4. Matrix Spike/Matrix Spike Duplicate Recovery:

Sufficient sample volume was not available to perform MS/MSD for this analysis. Therefore, only MS was performed on sample (MA3-MW20S-240902-12/3906110). The MS recovery applies to all the samples (3906110 thru 3906127), and the recoveries were all within the acceptance quality control limits.

5. Laboratory Control Sample Recovery:

The laboratories control sample/laboratories control sample duplicates recoveries were within the quality control limits. Also, the RPD% values were acceptable.

6. Surrogate:

All method blanks and the investigated samples had surrogate recoveries within the required quality control limits (71-130%).

7. Initial, Continuing Calibration, and Internal Standards:

The initial calibration, continuing calibration verification and the internal standards results were all acceptable, except the continuing calibration data file 01269B.28R which was associated with samples (390121, 390122, and 390123). Therefore, qualify the results as (J/UJ).

Data Reviewed By: Tania Balikji-Shammo

Date: 11/05/02



ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

405-270-2602

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 824266. Samples arrived at the laboratory on Wednesday, September 25, 2002.

Client Description

Lancaster Labs Number

MA3-MW-20S-240902-12 Grab Water Sample	3906110
MA3-MW-20I-240902-13 Grab Water Sample	3906111
MA3-MW-6S-240902-07 Grab Water Sample	3906112
MA3-MW-7I-240902-05 Grab Water Sample	3906113
MA3-MW-7S-240902-03 Grab Water Sample	3906114
MA3-MW-10S-240902-11 Grab Water Sample	3906115
MA3-MW-10S-240902-11-DUP Grab Water Sample	3906116
MA3-MW-27S-240902-06 Grab Water Sample	3906117
MA3-MW-28S-240902-09 Grab Water Sample	3906118
MA3-MW-31S-240902-10 Grab Water Sample	3906119
MA3-MW-32S-240902-02 Grab Water Sample	3906120
MA3-MW-33S-240902-01 Grab Water Sample	3906121
MA3-MW-33S-240902-01-DUP Grab Water Sample	3906122
MA3-MW-34S-240902-04 Grab Water Sample	3906123
MA3-MW-35S-240902-08 Grab Water Sample	3906124
FB-02 Grab Water Sample	3906125
FB-01 Grab Water Sample	3906126
TB-02 Water Sample	3906127

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO
1 COPY TO

Kerr-McGee Corporation
Weston Solutions, Inc.

Attn: Dr. Jeff Ostmeyer
Attn: Mr. Tom Graan



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

Rachel R. Cochis
Rachel R. Cochis
Sr. Chemist/Coordinator



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906110

Collected: 09/24/2002 16:45 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:29

Discard: 11/08/2002

MA3-MW-20S-240902-12 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

W20S- SDG#: KMA23-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

00774 PAH's in Water by HPLC

00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 03:42	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 01:45	Mark A Clark	1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906110

Collected: 09/24/2002 16:45 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:29

Discard: 11/08/2002

MA3-MW-20S-240902-12 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

W20S- SDG#: KMA23-01

01146 GC VOA Water Prep

SW-846 5030B

1 09/27/2002 03:42

K. Robert James

n.a.

03337 PAH Water Extraction

SW-846 3510C

1 09/27/2002 16:30

Elia R Botrous

1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

0011



Lancaster Laboratories Sample No. WW 3906111

Collected: 09/24/2002 17:00 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-20I-240902-13 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

M20I2 SDG#: KMA23-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.90	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.90	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.090	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.090	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.090	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

0012



Lancaster Laboratories Sample No. WW 3906111

Collected: 09/24/2002 17:00 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-20I-240902-13 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

M20I2 SDG#: KMA23-02

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 04:25	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 02:24	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 04:25	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



Lancaster Laboratories, Inc.
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Lancaster Laboratories Sample No. WW 3906112

Collected: 09/24/2002 13:30 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20
Reported: 10/08/2002 at 16:30
Discard: 11/08/2002
MA3-MW-6S-240902-07 Grab Water Sample
Moss American Site - WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

6S240 SDG#: KMA23-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.



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0014



Lancaster Laboratories Sample No. WW 3906112

Collected: 09/24/2002 13:30 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-6S-240902-07 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

6S240 SDG#: KMA23-03

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 07:17	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 03:02	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 07:17	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



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Lancaster Laboratories Sample No. WW 3906113

Collected: 09/24/2002 10:10 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-7I-240902-05 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

7I240 SDG#: KMA23-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

00774 PAH's in Water by HPLC

00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 08:00	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 03:41	Mark A Clark	1



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Lancaster Laboratories Sample No. WW 3906113

Collected: 09/24/2002 10:10 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-7I-240902-05 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

7I240	SDG#: KMA23-04					
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 08:00	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



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0017



Lancaster Laboratories Sample No. WW 3906114

Collected: 09/24/2002 09:40 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-7S-240902-03 Grab Water Sample
Moss American Site - WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

7S240 SDG#: KMA23-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		5.0	ug/l	25
00777	Toluene	108-88-3	N.D.		5.0	ug/l	25
00778	Ethylbenzene	100-41-4	13. J		5.0	ug/l	25
00779	Total Xylenes	1330-20-7	35. J		15.	ug/l	25

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Due to dilution of the sample made necessary by the high level of non-target compounds, normal reporting limits were not attained.

00774 PAH's in Water by HPLC

00775	Naphthalene	91-20-3	4,000.		20.	ug/l	20
00782	Acenaphthylene	208-96-8	51.		0.80	ug/l	1
00783	Acenaphthene	83-32-9	66.		0.80	ug/l	1
00784	Fluorene	86-73-7	11.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	0.15 J		0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

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Lancaster Laboratories Sample No. WW 3906114

Collected: 09/24/2002 09:40 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-7S-240902-03 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

7S240 SDG#: KMA23-05

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 13:43	K. Robert James	25
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 04:58	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/04/2002 01:04	Mark A Clark	20
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 13:43	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906115

Collected: 09/24/2002 15:35 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20
 Reported: 10/08/2002 at 16:30
 Discard: 11/08/2002
 MA3-MW-10S-240902-11 Grab Water Sample
 Moss American Site - WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

10S24 SDG#: KMA23-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 08:43	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 05:36	Mark A. Clark	1



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Lancaster Laboratories Sample No. WW 3906115

Collected: 09/24/2002 15:35 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-10S-240902-11 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

10S24 SDG#: KMA23-06

01146 GC VOA Water Prep

SW-846 5030B

1 09/27/2002 08:43

K. Robert James

n.a.

03337 PAH Water Extraction

SW-846 3510C

1 09/27/2002 16:30

Elia R Botrous

1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

0021



Lancaster Laboratories Sample No. WW 3906116

Collected: 09/24/2002 15:35 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-10S-240902-11-DUP Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

10SDU SDG#: KMA23-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 09:25	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 06:15	Mark A Clark	1



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 Lancaster, PA 17605-2425
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Lancaster Laboratories Sample No. WW 3906116

Collected: 09/24/2002 15:35 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-10S-240902-11-DUP Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

10SDU SDG#: KMA23-07

01146 GC VOA Water Prep

SW-846 5030B

1 09/27/2002 09:25

K. Robert James

n.a.

03337 PAH Water Extraction

SW-846 3510C

1 09/27/2002 16:30

Elia R Botrous

1



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Lancaster, PA 17605-2425
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Lancaster Laboratories Sample No. WW 3906117

Collected: 09/24/2002 11:20 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:30

Discard: 11/08/2002

MA3-MW-27S-240902-06 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

27S24 SDG#: KMA23-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

00774 PAH's in Water by HPLC

00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 10:08	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 06:53	Mark A Clark	1



Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
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Lancaster Laboratories Sample No. WW 3906117

Collected: 09/24/2002 11:20 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20
Reported: 10/08/2002 at 16:30
Discard: 11/08/2002
MA3-MW-27S-240902-06 Grab Water Sample
Moss American Site - WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

27S24	SDG#: KMA23-08					
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 10:08	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



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0025



Lancaster Laboratories Sample No. WW 3906118

Collected: 09/24/2002 14:00 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20
 Reported: 10/08/2002 at 16:31
 Discard: 11/08/2002
 MA3-MW-28S-240902-09 Grab Water Sample
 Moss American Site - WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

28S24 SDG#: KMA23-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 10:51	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 07:32	Mark A Clark	1



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Lancaster Laboratories Sample No. WW 3906118

Collected: 09/24/2002 14:00 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:31

Discard: 11/08/2002

MA3-MW-28S-240902-09 Grab Water Sample
Moss American Site - WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

28S24	SDG#: KMA23-09					
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 10:51	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



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7
2
2
7



Lancaster Laboratories Sample No. WW 3906119

Collected: 09/24/2002 14:45 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:31

Discard: 11/08/2002

MA3-MW-31S-240902-10 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

31S24 SDG#: KMA23-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 11:34	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 08:10	Mark A Clark	1



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Lancaster Laboratories Sample No. WW 3906119

Collected: 09/24/2002 14:45 by BS

Submitted: 09/25/2002 09:20
Reported: 10/08/2002 at 16:31
Discard: 11/08/2002
MA3-MW-31S-240902-10 Grab Water Sample
Moss American Site - WI

Account Number: 07802

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

31S24	SDG#: KMA23-10					
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 11:34	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



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Lancaster Laboratories Sample No. WW 3906120

Collected: 09/24/2002 09:15 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:31

Discard: 11/08/2002

MA3-MW-32S-240902-02 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

32S24 SDG#: KMA23-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Detection Limit	
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 12:17	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 08:49	Mark A Clark	1



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Lancaster Laboratories Sample No. WW 3906120

Collected: 09/24/2002 09:15 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:31

Discard: 11/08/2002

MA3-MW-32S-240902-02 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

32S24	SDG#: KMA23-11					
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 12:17	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



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Lancaster Laboratories Sample No. WW 3906121

Collected: 09/24/2002 09:10 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:31

Discard: 11/08/2002

MA3-MW-33S-240902-01 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

33S24 SDG#: KMA23-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D. UJ	4.0	ug/l	20
00777	Toluene	108-88-3	N.D. UJ	4.0	ug/l	20
00778	Ethylbenzene	100-41-4	8.6 J	4.0	ug/l	20
00779	Total Xylenes	1330-20-7	22. J	12.	ug/l	20

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

TBS
11/5/02

Due to dilution of the sample made necessary by the high level of non-target compounds, normal reporting limits were not attained.

00774 PAH's in Water by HPLC

00775	Naphthalene	91-20-3	2,700.	20.	ug/l	20
00782	Acenaphthylene	208-96-8	59.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	180.	0.80	ug/l	1
00784	Fluorene	86-73-7	60.	4.0	ug/l	20
00785	Phenanthrene	85-01-8	6.3	0.080	ug/l	1
00789	Anthracene	120-12-7	0.16 J	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

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Lancaster, PA 17605-2425
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Lancaster Laboratories Sample No. WW 3906121

Collected: 09/24/2002 09:10 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:31

Discard: 11/08/2002

MA3-MW-33S-240902-01 Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

33S24 SDG#: KMA23-12

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 17:18		K. Robert James	20
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 09:27		Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/04/2002 01:46		Mark A Clark	20
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 17:18		K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30		Elia R Botrous	1



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Lancaster, PA 17605-2425
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Lancaster Laboratories Sample No. WW 3906122

Collected: 09/24/2002 09:10 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20
 Reported: 10/08/2002 at 16:31
 Discard: 11/08/2002
 MA3-MW-33S-240902-01-DUP Grab Water Sample
 Moss American Site - WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

33SDU SDG#: KMA23-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Units	
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D. <i>VJ</i>	4.0	ug/l	20
00777	Toluene	108-88-3	N.D. <i>VJ</i>	4.0	ug/l	20
00778	Ethylbenzene	100-41-4	8.2 <i>J</i>	4.0	ug/l	20
00779	Total Xylenes	1330-20-7	22. <i>J</i>	12.	ug/l	20

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Due to dilution of the sample made necessary by the high level of non-target compounds, normal reporting limits were not attained.

TBS 11/05/02

00774 PAH's in Water by HPLC

00775	Naphthalene	91-20-3	2,800.	19.	ug/l	20
00782	Acenaphthylene	208-96-8	60.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	180.	0.80	ug/l	1
00784	Fluorene	86-73-7	60.	3.0	ug/l	20
00785	Phenanthrene	85-01-8	6.3	0.080	ug/l	1
00789	Anthracene	120-12-7	0.16 <i>J</i>	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

4-01-05-05



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 Lancaster, PA 17605-2425
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Lancaster Laboratories Sample No. WW 3906122

Collected: 09/24/2002 09:10 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:31

Discard: 11/08/2002

MA3-MW-33S-240902-01-DUP Grab Water Sample

Moss American Site - WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

33SDU SDG#: KMA23-13

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 18:01	K. Robert James	20
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 10:06	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/04/2002 02:28	Mark A Clark	20
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 18:01	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906123

Collected: 09/24/2002 10:00 by BS Account Number: 07802

Submitted: 09/25/2002 09:20
 Reported: 10/08/2002 at 16:31
 Discard: 11/08/2002
 MA3-MW-34S-240902-04 Grab Water Sample
 Moss American Site - WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

34S24 SDG#: KMA23-14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D. UJ	10.	ug/l	50
00777	Toluene	108-88-3	N.D. UJ	10.	ug/l	50
00778	Ethylbenzene	100-41-4	21. J	10.	ug/l	50
00779	Total Xylenes	1330-20-7	50. J	30.	ug/l	50

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

JBS
11/05/02

Due to dilution of the sample made necessary by the high level of non-target compounds, normal reporting limits were not attained.

00774 PAH's in Water by HPLC

00775	Naphthalene	91-20-3	7,000.	19.	ug/l	20
00782	Acenaphthylene	208-96-8	92.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	250.	0.80	ug/l	1
00784	Fluorene	86-73-7	130.	3.0	ug/l	20
00785	Phenanthrene	85-01-8	160.	2.0	ug/l	20
00789	Anthracene	120-12-7	14.	0.80	ug/l	20
00807	Fluoranthene	206-44-0	25.	0.80	ug/l	20
00811	Pyrene	129-00-0	17.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	2.2	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	0.71	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	0.78	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.090	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	0.40	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample extraction.



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906123

Collected: 09/24/2002 10:00 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20

Kerr-McGee Corporation

Reported: 10/08/2002 at 16:31

P.O. Box 25861

Discard: 11/08/2002

Oklahoma City OK 73125

MA3-MW-34S-240902-04 Grab Water Sample

Moss American Site - WI

34S24 SDG#: KMA23-14

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 18:44	K. Robert James	50
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 10:44	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/04/2002 03:10	Mark A Clark	20
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 18:44	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906124

Collected: 09/24/2002 13:45 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20
 Reported: 10/08/2002 at 16:31
 Discard: 11/08/2002
 MA3-MW-35S-240902-08 Grab Water Sample
 Moss American Site - WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

35S24 SDG#: KMA23-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	0.82 J	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	0.14 J	0.080	ug/l	1
00789	Anthracene	120-12-7	0.23	0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.83	0.040	ug/l	1
00811	Pyrene	129-00-0	0.49 J	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	0.024 J	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 13:00	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 12:01	Mark A Clark	1



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906124

Collected: 09/24/2002 13:45 by BS

Submitted: 09/25/2002 09:20

Reported: 10/08/2002 at 16:31

Discard: 11/08/2002

MA3-MW-35S-240902-08 Grab Water Sample

Moss American Site - WI

Account Number: 07802

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

35S24	SDG#: KMA23-15					
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 13:00	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R. Botrous	1



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Lancaster Laboratories Sample No. WW 3906125

Collected: 09/24/2002 17:45 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20
 Reported: 10/08/2002 at 16:31
 Discard: 11/08/2002
 FB-02 Grab Water Sample
 Moss American Site - WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

FB02G SDG#: KMA23-16FB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 01:05	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 12:40	Mark A Clark	1



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Lancaster Laboratories Sample No. WW 3906125

Collected: 09/24/2002 17:45 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20
Reported: 10/08/2002 at 16:31
Discard: 11/08/2002
FB-02 Grab Water Sample
Moss American Site - WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

FB02G	SDG#: KMA23-16FB					
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 01:05	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

0041



Lancaster Laboratories Sample No. WW 3906126

Collected: 09/24/2002 14:20 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20
 Reported: 10/08/2002 at 16:32
 Discard: 11/08/2002
 FB-01 Grab Water Sample
 Moss American Site - WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

FB01G SDG#: KMA23-17FB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 02:59	K. Robert James	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 13:18	Mark A Clark	1



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906126

Collected: 09/24/2002 14:20 by BS

Account Number: 07802

Submitted: 09/25/2002 09:20
Reported: 10/08/2002 at 16:32
Discard: 11/08/2002
FB-01 Grab Water Sample
Moss American Site - WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

FB01G	SDG#: KMA23-17FB					
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 02:59	K. Robert James	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/27/2002 16:30	Elia R Botrous	1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

00434



Lancaster Laboratories Sample No. WW 3906127

Collected: 09/24/2002 17:50

Account Number: 07802

Submitted: 09/25/2002 09:20
Reported: 10/08/2002 at 16:32
Discard: 11/08/2002
TB-02 Water Sample
Moss American Site - WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

TBGRA SDG#: KMA23-18TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/27/2002 00:22	K. Robert James	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/27/2002 00:22	K. Robert James	n.a.



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



For Lancaster Laboratories use only
 Acct. # 1802 Group# 824266 Sample # 3906110-27

COC # 0002694

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: WPSon Acct. #: _____
 Project Name#: Moss American PWSID #: _____
 Project Manager: Tom Graun P.O.#: _____
 Sampler: B. Sharte, T. Hanzely, F. Womb. Quote #: _____
 Name of state where samples were collected: WI

Matrix 4
 Potable Check if NPDES Applicable
 Water Other

5 Analyses Requested
PAH
BTEX

For Lab Use Only
 FSC: _____
 SCR #: _____

6 Temperature of samples upon receipt (if requested)

2 Sample Identification	Date Collected	Time Collected	3 Grab	Composite	Soil	Water	Other	4 Total # of Containers	5	Remarks
MA3-MW-205-240902-12	9/24/02	1645	X			X		5	X X	
MA3-MW-201-240902-13		1700	X			X		5	X X	
MA3-MW-65-240902-07		1330	X			X		3	X	
MA3-MW-71-240902-05		1010	X			X		3	X	
MA3-MW-75-240902-03		0940	X			X		3	X	
MA3-MW-105-240902-11		1535	X			X		3	X	
MA3-MW-105-240902-11-DUP		1535	X			X		3	X	
MA3-MW-205-12		1645	X			X		3	X BS	
MA3-MW-275-240902-06		1120	X			X		3	X	
MA3-MW-285-240902-09	✓	1400	X			X		3	X	

7 Turnaround Time Requested (TAT) (please circle): Normal Rush (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT

Rush results requested by (please circle): Phone Fax E-mail
 Phone #: 847-918-4000 Fax #: 847-918-4055
 E-mail address: _____

8 Data Package Options (please circle if required) SDG Complete? Yes No

QC Summary Type VI (Raw Data) PERQVSTE Yes No
 Type I (Tier I) GLP State-specific QC required? Yes No
 Type II (Tier II) Other (If yes, indicate QC sample and submit triplicate volume.)
 Type III (NJ Red. Del.) Internal Chain of Custody required? Yes No
 Type IV (CLP)

9 Relinquished by: Bruce Selby Date: 9-24-02 Time: 1950 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: Kathleen Binkley Date: 9-25-02 Time: 0920

Analysis Request / Environmental Services / Chain of Custody



824266
For Lancaster Laboratories use only

Acct. # 7802 Group # 3406H Sample # 2906110-27
 @ HZC 9/25/02

COC # 0002695

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>Weston</u> Project Name/#: <u>Moss American</u> Project Manager: <u>Tom Graan</u> Sampler: <u>B. Schaefer, T. Hanzely, F. Wambi</u> Name of state where samples were collected: _____	Acct. #: _____ PWSID #: _____ P.O.#: _____ Quote #: _____	Matrix: _____ Potable: <input type="checkbox"/> Check if Applicable NPDES: <input type="checkbox"/> Other: _____	Total # of Containers: <u>4</u>	Analyses Requested: <u>BTEX</u>	For Lab Use Only FSC: _____ SCR #: _____
--	--	---	---------------------------------	---------------------------------	--

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	Remarks	Temperature of samples upon receipt (if requested)
MA3-MW-315-240902-10	9/24/02	1445	X			X		3	X	
MA3-MW-323-240902-02		0915	X			X		3	X	
MA3-MW-335-240902-01		0910	X			X		3	X	
MA3-MW-335-240902-01-DUP		0910	X			X		3	X	
MA3-MW-343-240902-04		1000	X			X		3	X	
MA3-MW-354-240902-08		1345	X			X		3	X	
TB-02		1750	X			X		2	X	
FB-02		1745	X			X		3	X	
FB-01	✓	1420	X			X		3	X	

Turnaround Time Requested (TAT) (please circle): Normal <u> </u> Rush <u> </u> (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: <u>STD TAT</u> Rush results requested by (please circle): Phone <u> </u> Fax <u> </u> E-mail <u> </u> Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4055</u> E-mail address: _____	Relinquished by: <u>[Signature]</u> Date <u>9-24-02</u> Time <u>1900</u> Relinquished by: _____ Date _____ Time _____ Relinquished by: _____ Date _____ Time _____ Relinquished by: _____ Date _____ Time _____ Relinquished by: _____ Date _____ Time _____
Data Package Options (please circle if required) QC Summary: Type VI (Raw Data) <u>PERMISTE</u> Type I (Tier I): GLP Type II (Tier II): Other Type III (NJ Red. Del.) Type IV (CLP)	SDG Complete? Yes <u> </u> No <u> </u> State-specific QC required? Yes <u> </u> No <u> </u> Internal Chain of Custody required? Yes <u> </u> No <u> </u>

Analysis Request / Environmental Services Chain of Custody



For Lancaster Laboratories use only
 Acct. # 7802 Group# 824266 Sample # 3906110-27

COC # 0002693

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Wpston Acct. #: _____
 Project Name#: Mds American PWSID #: _____
 Project Manager: Tom Graan P.O.#: _____
 Sampler: B. Schaefer, T. Hanzely, F. Hambli Quote #: _____
 Name of state where samples were collected: WI

Matrix 4
 Potable Check if NPDES Applicable
 Soil Water Other
 Total # of Containers 5

Analyses Requested: BTEXes PAH

For Lab Use Only
 FSC: _____
 SCR #: _____

6 Temperature of samples upon receipt (if requested)

2 Sample Identification	Date Collected	Time Collected	3 Grab	Composite	Soil	Water	Other	Total # of Containers	5	Remarks	6
<u>MA3-MW-65-240902-07</u>	<u>9/24/02</u>	<u>1330</u>	<u>X</u>			<u>X</u>		<u>2</u>	<u>X</u>		
<u>MA3-MW-75-240902-05</u>		<u>1010</u>	<u>X</u>			<u>X</u>		<u>2</u>	<u>X</u>		
<u>MA3-MW-75-240902-03</u>		<u>0940</u>	<u>X</u>			<u>X</u>		<u>2</u>	<u>X</u>		
<u>MA3-MW-105-240902-11</u>		<u>1335</u>	<u>X</u>			<u>X</u>		<u>2</u>	<u>X</u>		
<u>MA3-MW-103-240902-11-DUP</u>		<u>1335</u>	<u>X</u>			<u>X</u>		<u>2</u>	<u>X</u>		

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax E-mail
 Phone #: 847-9184000 Fax #: 847-918-4055
 E-mail address: _____

8 Data Package Options (please circle if required) SDG Complete? Yes No
 QC Summary Type VI (Raw Data) PER QUOTE Yes No
 Type I (Tier I) GLP State-specific QC required? Yes No
 Type II (Tier II) Other (If yes, indicate QC sample and submit triplicate volume.)
 Type III (NJ Red. Del.) Internal Chain of Custody required? Yes No
 Type IV (CLP)

Relinquished by: B. Schaefer Date: 9-24-02 Time: 1900
 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____
 Received by: Kathy Binkley Date: 9-25-02 Time: 0920

Analysis Request / Environmental Service / Chain of Custody



For Lancaster Laboratories use only
 Acct. # 7802 Group# 824866 Sample # 3906110-27

COC # 0002696

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Wpston Acct. #: _____
 Project Name/ #: Moss American PWSID #: _____
 Project Manager: Tom Groman P.O. #: _____
 Sampler: B. Schaefer, T. Hanzely, P. Wambi Quote #: _____
 Name of state where samples were collected: WI

For Lab Use Only
 FSC: _____
 SCR #: _____

2 Sample Identification	Date Collected	Time Collected	3 Composite			4 Matrix	Total # of Containers	5 Analyses Requested										6 Temperature of samples upon receipt (if requested)						
			Grab	Soil	Water			Other	/															
MA3-MW-275-240902-06	9/24/02	1120	X		X		2	X																
MA3-MW-285-240902-09		1400	X		X		2	X																
MA3-MW-315-240902-10		1445	X		X		2	X																
MA3-MW-325-240902-02		0915	X		X		2	X																
MA3-MW-345-240902-04	✓	1000	X		X		2	X																

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax E-mail
 Phone #: 847-918-4000 Fax #: 847-918-4055
 E-mail address: _____

Relinquished by:	Date	Time	Received by:	Date	Time
<u>[Signature]</u>	9-24-02	1900			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

8 Data Package Options (please circle if required)

QC Summary	Type VI (Raw Data) <input checked="" type="checkbox"/> Q60TE	SDG Complete? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type I (Tier I)	GLP	State-specific QC required? Yes <input type="checkbox"/> No <input type="checkbox"/>
Type II (Tier II)	Other	(If yes, indicate QC sample and submit triplicate volume.)
Type III (NJ Red. Del.)		Internal Chain of Custody required? Yes <input type="checkbox"/> No <input type="checkbox"/>
Type IV (CLP)		

Analysis Request / Environmental Services Chain of Custody



For Lancaster Laboratories use only 3906110-27
 Acct. # 1802 Group # 824266 Sample # 396610-27
 @# 9/25/02

COC # 0002697

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>Weston</u> Acct. #: _____ Project Name/#: <u>Moss American</u> PWSID #: _____ Project Manager: <u>Tom Graun</u> P.O.#: _____ Sampler: <u>B. Schaefer, T. Hanzely, F. Vambi</u> Quote #: _____ Name of state where samples were collected: <u>WI</u>		Matrix 4 Total # of Containers	5 Analyses Requested <u>BTX</u> <u>PAH</u>	For Lab Use Only FSC: _____ SCR #: _____	6 Temperature of samples upon receipt (if requested)				
Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	Remarks
<u>MA3-MW-335-240902-01</u>	<u>9/24/02</u>	<u>0910</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>2</u>	<input checked="" type="checkbox"/>
<u>MA3-MW-335-240902-01-DUP</u>		<u>0910</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>2</u>	<input checked="" type="checkbox"/>
<u>MA3-MW-335-240902-08</u>		<u>1345</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>2</u>	<input checked="" type="checkbox"/>
<u>MA3-MW-FB-02</u>		<u>1745</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>2</u>	<input checked="" type="checkbox"/>
<u>FB-01</u>	↓	<u>1420</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<u>2</u>	<input checked="" type="checkbox"/>

7 Turnaround Time Requested (TAT) (please circle): Normal <input type="checkbox"/> Rush <input type="checkbox"/> (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: <u>STD TAT</u> Rush results requested by (please circle): Phone <input type="checkbox"/> Fax <input type="checkbox"/> E-mail <input type="checkbox"/> Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4055</u> E-mail address: _____	Relinquished by: <u>[Signature]</u> Date: <u>9-24-02</u> Time: <u>1900</u> Received by: _____ Date: _____ Time: _____ Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____ Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____ Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____
--	--

8 Data Package Options (please circle if required) QC Summary Type VI (Raw Data) <u>PER QUOTE</u> Type I (Tier I) GLP Type II (Tier II) Other Type III (NJ Red. Del.) Type IV (CLP)	SDG Complete? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> State-specific QC required? Yes <input type="checkbox"/> No <input type="checkbox"/> Internal Chain of Custody required? Yes <input type="checkbox"/> No <input type="checkbox"/>	Relinquished by: _____ Date: _____ Time: _____ Received by: <u>Kathy Benkley</u> Date: <u>9-25-02</u> Time: <u>020920</u>
--	---	--

CASE NARRATIVE

Client: Kerr-McGee Corporation
SDG #: KMA23

LANCASTER LABORATORIES
PAH BY HPLC

SAMPLE NUMBER(S) :

<u>LL #'s</u>	<u>Sample Code</u>	<u>Matrix</u> <u>Water</u>	<u>Comments</u>
3906110	W20S-	X	
3906111	M2O12	X	
3906112	6S240	X	
3906113	7I240	X	
3906114	7S240	X	
3906114DL	7S240DL	X	20X Dilution
3906115	10S24	X	
3906116	10SDU	X	
3906117	27S24	X	
3906118	28S24	X	
3906119	31S24	X	
3906120	32S24	X	
3906121	33S24	X	
3906121DL	33S24DL	X	20X Dilution
3906122	33SDU	X	
3906122DL	33SDUDL	X	20X Dilution
3906123	34S24	X	
3906123DL	34S24DL	X	20X Dilution
3906124	35S24	X	
3906125	FB02G	X	Client Blank
3906126	FB01G	X	Client Blank

LABORATORY SUBMITTED QC:

SBLKWH269	SBLKWH2691	X	Method Blank
269WHLCS	269WHLCS1	X	Lab Control Sample
269WHLCS D	269WHLCS D1	X	Lab Control Sample Dup

717-656-2300

Case Narrative
SDG#: KMA23 continued

SAMPLE PREPARATION:

Due to insufficient sample, reduced volumes were used in the extraction of the following samples.

<u>Sample Code</u>	<u>Volume</u>
W20S-	972 mls
M2OI2	906 mls
6S240	941 mls
27S24	986 mls

No other problems were encountered during the extraction of these samples.

ANALYSIS:

The method used for analysis was SW-846 8310.

All samples were analyzed for polynuclear aromatic hydrocarbons by HPLC.

Sufficient sample volume was not available to perform a MS/MSD for the analysis of these samples. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

The following samples were analyzed at further dilutions due to target recoveries above calibration range.

<u>Sample Code</u>	<u>Dilution</u>	<u>Compounds</u>
7S240	20X	naphthalene
33S24	20X	naphthalene, fluorene
33SDU	20X	naphthalene, fluorene
34S24	20X	various compounds

No other problems were encountered during the analysis of these samples.

Case Narrative
SDG#: KMA23 continued

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The surrogate recovery of triphenylene was outside QC limits in 34S24 due to unresolvable matrix problems evident in the extraction.

All other QC was within specifications.

DATA INTERPRETATION:

Only non-conformances for client requested compounds are addressed in this case narrative.

Manual integration was required for triphenylene in 34S24DL because the peak was missed during the initial processing of the sample.

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Christine M. Ratcheff for CJN

Date: 10-16-02

Charles J. Neslund

Group Leader, GC/MS Semivolatiles

I have reviewed the analytical data provided by Lancaster Laboratories for the Moss American Site in Milwaukee, Wisconsin upon the information that was provided by the laboratory. The water samples were analyzed for Polynuclear Aromatic Hydrocarbons PAHs, and Petroleum analyses (BETX).

A summary of the data validation is provided below for samples delivery group SDG# KMA24 for PAH, and BETX.

Polynuclear Aromatic Hydrocarbons (PAHs by HPLC, U.S. EPA Method 8310)

Moss American Site

SDG # KMA24

1. Samples:

<u>Client Code</u>	<u>Lab Sample Number</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Extracted</u>	<u>Date Analyzed</u>
MA3-MW-TG5-1-250902-01	3906861	Water	09/25/02	09/30/02	10/01/02
MA3-MW-TG5-2-250902-02	3906862	Water	09/25/02	09/30/02	10/01/02
MA3-MW-TG5-3-250902-03	3906863	Water	09/25/02	09/30/02	10/01/02
MA3-MW-TG6-1-250902-04	3906864	Water	09/25/02	09/30/02	10/02/02
MA3-MW-TG5-2-250902-05	3906865	Water	09/25/02	09/30/02	10/01/02
MA3-MW-TG5-2-250902-05MS	3906866	Water	09/25/02	09/30/02	10/01/02
MA3-MW-TG5-2-250902-05MSD	3906867	Water	09/25/02	09/30/02	10/01/02
MA3-MW-TG6-3-250902-06	3906868	Water	09/25/02	09/30/02	10/02/02
MA3-MW-TG4-1-250902-07	3906869	Water	09/25/02	09/30/02	10/02/02
MA3-MW-TG4-2-250902-08	3906870	Water	09/25/02	09/30/02	10/02/02
MA3-MW-TG4-3-250902-09	3906871	Water	09/25/02	09/30/02	10/02/02
MA3-MW-TG3-1-250902-10	3906872	Water	09/25/02	09/30/02	10/02/02
MA3-MW-TG3-2-250902-11	3906873	Water	09/25/02	09/30/02	10/03/02
MA3-MW-TG3-3-250902-12	3906874	Water	09/25/02	09/30/02	10/03/02
MA3-MW-3S-250902-13	3906875	Water	09/25/02	09/30/02	10/03/02
MA3-MW-3S-250902-13-DUP	3906876	Water	09/25/02	09/30/02	10/03/02
MA3-MW-26S-250902-14	3906877	Water	09/25/02	09/30/02	10/03/02
MA3-MW-3I-250902-15	3906878	Water	09/25/02	09/30/02	10/03/02
FB-03	3906879	Water	09/25/02	09/30/02	10/03/02

2. Holding Times:

All samples were extracted and analyzed within the required holding times.

3. Method Blank:

The method blank SBLKWA273 was associated with this SDG. SBLKWA273 was extracted on 09/30/02 and analyzed on 10/01/02 with samples (3906861 thru 3906879). SBLKWA273 results were free of contamination.

4. Surrogate:

The method blank and the investigated samples had surrogate recoveries within the required quality control limits. The surrogate recoveries were reported from UV detector.

5. Matrix Spike/Matrix Spike Duplicate Recovery:

The matrix spike/matrix spike duplicate was performed on sample 3906865. The MS/MSD recoveries were all within the acceptance quality control limits. Also, the RPD% values were acceptable.

6. Laboratory Control Sample:

The laboratory control sample recoveries were all within the acceptance quality control limits.

7. Retention Time:

All the retention time results were acceptable.

8. Initial and Continuing Calibration:

The initial calibration, and continuing calibration verification were all acceptable.

However, the retention time, initial and continuing calibration results were used in the calculation from two detectors. Naphthalene, acenaphthylene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, fluorene, phenanthrene, and anthracene were taken from ultraviolet detector, and fluoranthene, pyrene, benzo (a) anthracene, chrysene, benzo (b) fluoranthene, benzo (k) fluoranthene, benzo (a) pyrene, dibenzo (a, h) anthracene, benzo (g, h, i) perylene, and indeno (1, 2, 3-cd) pyrene were taken from fluorescence detector.

VOLATILE-BETX by GC/MS (U.S. EPA Method 8021B)

Moss American Site

SDG # KMA24

1. Samples:

<u>Client Code</u>	<u>Lab Sample Number</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>
MA3-MW-TG5-1-250902-01	3906861	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG5-2-250902-02	3906862	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG5-3-250902-03	3906863	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG6-1-250902-04	3906864	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG5-2-250902-05	3906865	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG5-2-250902-05MS	3906866	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG5-2-250902-05MSD	3906867	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG6-3-250902-06	3906868	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG4-1-250902-07	3906869	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG4-2-250902-08	3906870	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG4-3-250902-09	3906871	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG3-1-250902-10	3906872	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG3-2-250902-11	3906873	Water	09/25/02	09/28/02	09/28/02
MA3-MW-TG3-3-250902-12	3906874	Water	09/25/02	09/28/02	09/28/02
MA3-MW-3S-250902-13	3906875	Water	09/25/02	09/28/02	09/28/02
MA3-MW-3S-250902-13-DUP	3906876	Water	09/25/02	09/28/02	09/28/02
MA3-MW-26S-250902-14	3906877	Water	09/25/02	09/28/02	09/28/02
MA3-MW-3I-250902-15	3906878	Water	09/25/02	09/28/02	09/28/02
FB-03	3906879	Water	09/25/02	09/28/02	09/28/02
TB-03	3906880	Water	09/25/02	09/28/02	09/28/02

2. Holding Times:

All samples were analyzed within the required holding times.

3. Method Blank:

Two method blanks BLK0106, and BLK0107 were associated with the SDG. BLK0106 was analyzed on 09/28/02 with (3906861 thru 3906876, 3906879, 3906880, and MS/MSD). BLK0107 was analyzed on 09/28/02 with (3906877, and 3906878). Both method blanks BLK0106, and BLK0107 result were free of contamination.

4. Matrix Spike/Matrix Spike Duplicate Recovery:

The matrix spike/matrix spike duplicate was performed on sample (3906865). The MS/MSD recoveries were all within the acceptance quality control limits. Also, the RPD% values were acceptable.

5. Laboratory Control Sample Recovery:

The laboratories control sample/laboratories control sample duplicates recoveries were within the quality control limits. Also, the RPD% values were acceptable.

6. Surrogate:

All method blanks and the investigated samples had surrogate recoveries within the required quality control limits (71-130%).

7. Initial, Continuing Calibration, and Internal Standards:

The initial calibration, continuing calibration verification and the internal standards results were all acceptable.

Data Reviewed By: Tania Balikji-Shammo

Date: 11/06/02



ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

405-270-2602

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 824405. Samples arrived at the laboratory on Thursday, September 26, 2002.

Client DescriptionLancaster Labs Number

MA3-MW-TG5-1-250902-01 Grab Water Sample	3906861
MA3-MW-TG5-2-250902-02 Grab Water Sample	3906862
MA3-MW-TG5-3-250902-03 Grab Water Sample	3906863
MA3-MW-TG6-1-250902-04 Grab Water Sample	3906864
MA3-MW-TG6-2-250902-05 Unspiked Grab Water Sample	3906865
MA3-MW-TG6-2-250902-05-MS Grab Water Sample	3906866
MA3-MW-TG6-2-250902-05-MSD Grab Water Sample	3906867
MA3-MW-TG6-3-250902-06 Grab Water Sample	3906868
MA3-MW-TG4-1-250902-07 Grab Water Sample	3906869
MA3-MW-TG4-2-250902-08 Grab Water Sample	3906870
MA3-MW-TG4-3-250902-09 Grab Water Sample	3906871
MA3-MW-TG3-1-250902-10 Grab Water Sample	3906872
MA3-MW-TG3-2-250902-11 Grab Water Sample	3906873
MA3-MW-TG3-3-250902-12 Grab Water Sample	3906874
MA3-MW-3S-250902-13 Grab Water Sample	3906875
MA3-MW-3S-250902-13-DUP Grab Water Sample	3906876
MA3-MW-26S-250902-14 Grab Water Sample	3906877
MA3-MW-3I-250902-15 Grab Water Sample	3906878
FB-03 Grab Water Sample	3906879
TB-03 Water Sample	3906880

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



1 COPY TO
1 COPY TO
1 COPY TO

Kerr-McGee Corporation
Weston Solutions, Inc.
Data Package Group

Attn: Dr. Jeff Ostmeyer
Attn: Mr. Tom Graan

Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

Rachel R. Cochis
Rachel R. Cochis
Sr. Chemist/Coordinator



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

09/27/00



Lancaster Laboratories Sample No. WW 3906861

Collected: 09/25/2002 09:30 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:31

Discard: 11/09/2002

MA3-MW-TG5-1-250902-01 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG5-1 SDG#: KMA24-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Units	
00217	Kjeldahl Nitrogen	7727-37-9	0.96 J	Detection Limit 0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	2.0	mg/l	1
00273	Total Organic Carbon	n.a.	5.9	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	14.7	1.7	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

000001



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906861

Collected: 09/25/2002 09:30 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Kerr-McGee Corporation

Reported: 10/09/2002 at 21:31

P.O. Box 25861

Discard: 11/09/2002

Oklahoma City OK 73125

MA3-MW-TG5-1-250902-01 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

TG5-1 SDG#: KMA24-01

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:30	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:06	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 00:02	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/27/2002 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 19:48	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 09:10	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:33	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 10:02	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 22:18	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 10:02	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3906862

Collected: 09/25/2002 09:35 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05
 Reported: 10/09/2002 at 21:31
 Discard: 11/09/2002

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

MA3-MW-TG5-2-250902-02 Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

TG5-2 SDG#: KMA24-02

CAT No.	Analysis Name	CAS Number	As Received		Units	Dilution Factor
			As Received Result	Method Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.3	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.64 J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00226	Ortho-Phosphate as P	14265-44-2	0.0082 J	0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	3.8	mg/l	1
00273	Total Organic Carbon	n.a.	8.0	0.50	mg/l	1
00345	Total Phosphorus: as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	21.0	1.7	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	0.054 J	0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.062 J	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a,h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1,2,3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g,h,i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

00223



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Collected: 09/25/2002 09:35 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:31

Discard: 11/09/2002

MA3-MW-TG5-2-250902-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG5-2 SDG#: KMA24-02

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:31	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:07	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 00:04	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/27/2002 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 19:48	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 09:19	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:34	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 10:45	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 22:56	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 10:45	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3906863

Collected: 09/25/2002 09:40 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:31

Discard: 11/09/2002

MA3-MW-TG5-3-250902-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG5-3 SDG#: KMA24-03

CAT No.	Analysis Name	CAS Number	As Received		As Received		Dilution Factor
			Result		Method	Units	
00217	Kjeldahl Nitrogen	7727-37-9	0.99	J	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.63	J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	0.041		0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		3.1	mg/l	1
00273	Total Organic Carbon	n.a.	5.6		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	16.2		1.7	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.20	ug/l	1
00777	Toluene	108-88-3	N.D.		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.60	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.041	J	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1

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Lancaster Laboratories Sample No. WW 3906863

Collected: 09/25/2002 09:40 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:31

Kerr-McGee Corporation

Discard: 11/09/2002

P.O. Box 25861

MA3-MW-TG5-3-250902-03 Grab Water Sample

Oklahoma City OK 73125

Moss American Superfund Site - Milwaukee, WI

TG5-3 SDG#: KMA24-03

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilutio Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:35	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:08	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 00:05	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/27/2002 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 19:48	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 09:27	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:35	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 11:27	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 23:35	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 11:27	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3906864

Collected: 09/25/2002 10:40 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

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Discard: 11/09/2002

MA3-MW-TG6-1-250902-04 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG6-1 SDG#: KMA24-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.4	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.88 J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00226	Ortho-Phosphate as P	14265-44-2	0.025	0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	4.7	0.80	mg/l	1
00273	Total Organic Carbon	n.a.	7.1	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.15 J	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	19.5	1.7	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

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Lancaster Laboratories Sample No. WW 3906864

Collected: 09/25/2002 10:40 by BS

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MA3-MW-TG6-1-250902-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

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TG6-1 SDG#: KMA24-04

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:36	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:10	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 00:09	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/27/2002 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 19:48	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 09:35	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:36	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 14:19	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2002 00:13	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 14:19	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3906865

Collected: 09/25/2002 10:45 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05
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 Discard: 11/09/2002

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MA3-MW-TG6-2-250902-05 Unspiked Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

TG6-2 SDG#: KMA24-05BKG

CAT No.	Analysis Name	CAS Number	As Received		Units	Dilution Factor
			Result	Method		
00217	Kjeldahl Nitrogen	7727-37-9	1.3	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.73 J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00226	Ortho-Phosphate as P	14265-44-2	0.0102 J	0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	2.7	mg/l	1
00273	Total Organic Carbon	n.a.	9.1	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	23.5	1.7	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.12 J	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
7409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1



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Lancaster Laboratories Sample No. WW 3906865

Collected: 09/25/2002 10:45 by BS

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Discard: 11/09/2002

Kerr-McGee Corporation

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MA3-MW-TG6-2-250902-05 Unspiked Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

TG6-2 SDG#: KMA24-05BKG

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:38	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:11	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/03/2002 23:59	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/27/2002 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 19:48	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 09:43	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:37	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 04:18	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 20:22	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 04:18	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J. Shoop	1



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Lancaster Laboratories Sample No. WW 3906866

Collected: 09/25/2002 10:45 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:32

Discard: 11/09/2002

MA3-MW-TG6-2-250902-05-MS Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG6-2 SDG#: KMA24-05MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	19.	0.20	ug/l	1
00777	Toluene	108-88-3	20.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	20.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	61.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	160.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	160.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	170.	0.80	ug/l	1
00784	Fluorene	86-73-7	17.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	5.1	0.080	ug/l	1
00789	Anthracene	120-12-7	2.7	0.040	ug/l	1
00807	Fluoranthene	206-44-0	3.0	0.040	ug/l	1
00811	Pyrene	129-00-0	18.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.4	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.1	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.5	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	3.0	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	5.7	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	11.	0.10	ug/l	1
07409	Chrysene	218-01-9	5.5	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.1	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 05:01	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 21:01	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 05:01	Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1

08213



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Lancaster Laboratories Sample No. WW 3906867

Collected: 09/25/2002 10:45 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:32

Discard: 11/09/2002

MA3-MW-TG6-2-250902-05-MSD Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG6-2 SDG#: KMA24-05MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	19.	0.20	ug/l	1
00777	Toluene	108-88-3	20.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	20.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	61.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	170.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	170.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	170.	0.80	ug/l	1
00784	Fluorene	86-73-7	17.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	5.0	0.080	ug/l	1
00789	Anthracene	120-12-7	2.6	0.040	ug/l	1
00807	Fluoranthene	206-44-0	3.0	0.040	ug/l	1
00811	Pyrene	129-00-0	17.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	1.3	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	1.1	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	1.4	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	2.8	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	5.5	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	10.	0.10	ug/l	1
07409	Chrysene	218-01-9	5.3	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	1.1	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 05:44	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/01/2002 21:39	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 05:44	Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1

0
0
3
3
2



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Lancaster Laboratories Sample No. WW 3906868

Collected: 09/25/2002 10:50 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:32

Discard: 11/09/2002

MA3-MW-TG6-3-250902-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG6-3 SDG#: KMA24-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.5		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.87 J		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		2.8	mg/l	1
00273	Total Organic Carbon	n.a.	8.3		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.13 J		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	20.6		1.7	mg/l	1
08213 BTEX (8021)							
00776	Benzene	71-43-2	N.D.		0.20	ug/l	1
00777	Toluene	108-88-3	N.D.		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.60	ug/l	1
00774 PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	N.D.		0.90	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.080	ug/l	1
00789	Anthracene	120-12-7	0.049 J		0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.075 J		0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.090	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1



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Collected: 09/25/2002 10:50 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:32

Discard: 11/09/2002

MA3-MW-TG6-3-250902-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG6-3 SDG#: KMA24-06

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:41	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:15	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 00:11	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/30/2002 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 19:48	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 10:07	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:42	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 15:02	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2002 00:52	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 15:02	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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4-04100-05



Lancaster Laboratories Sample No. WW 3906869

Collected: 09/25/2002 13:45 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:32

Discard: 11/09/2002

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P.O. Box 25861

Oklahoma City OK 73125

MA3-MW-TG4-1-250902-07 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

TG4-1 SDG#: KMA24-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.9	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.78 J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00226	Ortho-Phosphate as P	14265-44-2	0.030	0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	2.5	mg/l	1
00273	Total Organic Carbon	n.a.	9.0	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.21	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	25.0	1.7	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1



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Lancaster Laboratories Sample No. WW 3906869

Collected: 09/25/2002 13:45 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:32

Discard: 11/09/2002

MA3-MW-TG4-1-250902-07 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG4-1 SDG#: KMA24-07

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:43	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:16	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 00:10	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/30/2002 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 19:48	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 10:15	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:43	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 15:45	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2002 21:45	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 15:45	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3906870

Collected: 09/25/2002 13:50 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05
 Reported: 10/09/2002 at 21:32
 Discard: 11/09/2002

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MA3-MW-TG4-2-250902-08 Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

TG4-2 SDG#: KMA24-08

CAT No.	Analysis Name	CAS Number	As Received	As Received	Units	Dilution Factor
			Result	Method		
00217	Kjeldahl Nitrogen	7727-37-9	2.0	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.2	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00226	Ortho-Phosphate as P	14265-44-2	0.0077 J	0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	3.5	mg/l	1
00273	Total Organic Carbon	n.a.	11.2	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	36.4	1.7	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	0.12 J	0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.27	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1



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Lancaster Laboratories Sample No. WW 3906870

Collected: 09/25/2002 13:50 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:32

Discard: 11/09/2002

MA3-MW-TG4-2-250902-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG4-2 SDG#: KMA24-08

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:44	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:17	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 00:12	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/30/2002 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 19:48	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 10:23	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:44	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8921)	SW-846 8021B	1	09/28/2002 16:27	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2002 22:23	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 16:27	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3906871

Collected: 09/25/2002 13:55 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05
 Reported: 10/09/2002 at 21:33
 Discard: 11/09/2002

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

MA3-MW-TG4-3-250902-09 Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

TG4-3 SDG#: KMA24-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.5	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.81 J	0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00226	Ortho-Phosphate as P	14265-44-2	0.024	0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	2.7	mg/l	1
00273	Total Organic Carbon	n.a.	9.5	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.13 J	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	47.4	1.7	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1



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Lancaster Laboratories Sample No. WW 3906871

Collected: 09/25/2002 13:55 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:33

Discard: 11/09/2002

MA3-MW-TG4-3-250902-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG4-3 SDG#: KMA24-09

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:45	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:21	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 00:14	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/30/2002 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 19:48	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 10:47	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:44	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 17:10	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2002 23:02	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 17:10	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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Lancaster Laboratories Sample No. WW 3906872

Collected: 09/25/2002 14:30 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05
 Reported: 10/09/2002 at 21:33
 Discard: 11/09/2002

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 P.O. Box 25861
 Oklahoma City OK 73125

MA3-MW-TG3-1-250902-10 Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

TG3-1 SDG#: KMA24-10

CAT No.	Analysis Name	CAS Number	As Received		Units	Dilution Factor
			Result	Method		
00217	Kjeldahl Nitrogen	7727-37-9	1.6		mg/l	1
00219	Nitrite Nitrogen	14797-65-0	0.018	J	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.84	J	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.						
00226	Ortho-Phosphate as P	14265-44-2	N.D.		mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		mg/l	1
00273	Total Organic Carbon	n.a.	11.5		mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.15	J	mg/l	1
01553	Chemical Oxygen Demand	n.a.	26.5		mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.		ug/l	1
00777	Toluene	108-88-3	N.D.		ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.		ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		ug/l	1
00783	Acenaphthene	83-32-9	N.D.		ug/l	1
00784	Fluorene	86-73-7	0.25	J	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		ug/l	1
00789	Anthracene	120-12-7	0.072	J	ug/l	1
00807	Fluoranthene	206-44-0	0.076	J	ug/l	1
00811	Pyrene	129-00-0	N.D.		ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		ug/l	1
07409	Chrysene	218-01-9	N.D.		ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		ug/l	1



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Lancaster Laboratories Sample No. WW 3906872

Collected: 09/25/2002 14:30 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:33

Discard: 11/09/2002

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P.O. Box 25861

Oklahoma City OK 73125

MA3-MW-TG3-1-250902-10 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

TG3-1 SDG#: KMA24-10

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:46	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:22	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 00:15	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/30/2002 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 23:12	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 10:56	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:45	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 17:53	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2002 23:40	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 17:53	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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00442



Lancaster Laboratories Sample No. WW 3906873

Collected: 09/25/2002 14:35 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05
 Reported: 10/09/2002 at 21:33
 Discard: 11/09/2002

Kerr-McGee Corporation
 P.O. Box 25861
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MA3-MW-TG3-2-250902-11 Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

TG3-2 SDG#: KMA24-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	6.5		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	0.017	J	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.2		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	6.2		0.80	mg/l	1
00273	Total Organic Carbon	n.a.	9.7		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.18	J	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	26.8		1.7	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.20	ug/l	1
00777	Toluene	108-88-3	N.D.		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.60	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.063	J	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1

00433



Lancaster Laboratories Sample No. WW 3906873

Collected: 09/25/2002 14:35 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:33

Discard: 11/09/2002

MA3-MW-TG3-2-250902-11 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG3-2 SDG#: KMA24-11

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	09/27/2002 17:50	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:23	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 16:02	Nicole M Kepley	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/30/2002 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 23:12	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 11:04	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:46	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 18:36	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2002 00:19	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 18:36	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09/27/2002 10:12	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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0044



Lancaster Laboratories Sample No. WW 3906874

Collected: 09/25/2002 14:40 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:33

Discard: 11/09/2002

MA3-MW-TG3-3-250902-12 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

TG3-3 SDG#: KMA24-12

CAT No.	Analysis Name	CAS Number	As Received		As Received		Dilution Factor
			Result	Method	Detection Limit	Units	
00217	Kjeldahl Nitrogen	7727-37-9	2.0		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	0.019	J	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.0		0.46	mg/l	1
Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.							
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	10.1		0.80	mg/l	1
00273	Total Organic Carbon	n.a.	14.4		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.40		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	40.1		1.7	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.20	ug/l	1
00777	Toluene	108-88-3	N.D.		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.60	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	0.11	J	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.076	J	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.		0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.		0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.		0.020	ug/l	1

00400



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Lancaster Laboratories Sample No. WW 3906874

Collected: 09/25/2002 14:40 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:33

Discard: 11/09/2002

MA3-MW-TG3-3-250902-12 Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

TG3-3 SDG#: KMA24-12

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	2	10/01/2002 20:22	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/26/2002 14:25	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 16:03	Nicole M Kepley	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/30/2002 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/27/2002 03:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/26/2002 23:12	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 11:12	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 15:49	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/02/2002 06:11	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 19:19	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2002 00:57	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 19:19	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	09/30/2002 08:45	James S Mathiot	1
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/27/2002 16:35	Nancy J Shoop	1



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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906875

Collected: 09/25/2002 16:00 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:33

Discard: 11/09/2002

MA3-MW-3S-250902-13 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MW-3S SDG#: KMA24-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 20:02	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2002 01:36	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 20:02	Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1



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Lancaster Laboratories Sample No. WW 3906876

Collected: 09/25/2002 16:00 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Kerr-McGee Corporation

Reported: 10/09/2002 at 21:33

P.O. Box 25861

Discard: 11/09/2002

Oklahoma City OK 73125

MA3-MW-3S-250902-13-DUP Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

MW3SD SDG#: KMA24-14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 20:45	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2002 02:14	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 20:45	Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1



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Lancaster Laboratories Sample No. WW 3906877

Collected: 09/25/2002 16:10 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05
 Reported: 10/09/2002 at 21:33
 Discard: 11/09/2002

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

MA3-MW-26S-250902-14 Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

MW26S SDG#: KMA24-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Units	
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
08213	BTEX (8021)	SW-846 8021B	1	09/29/2002 00:19		Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2002 02:53		Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/29/2002 00:19		Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00		Joseph S Feister	1



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 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906878

Collected: 09/25/2002 16:20 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:34

Discard: 11/09/2002

MA3-MW-3I-250902-15 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MW3I- SDG#: KMA24-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/29/2002 01:02	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2002 03:36	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/29/2002 01:02	Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1



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 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906879

Collected: 09/25/2002 16:45 by BS

Account Number: 07802

Submitted: 09/26/2002 09:05

Reported: 10/09/2002 at 21:34

Discard: 11/09/2002

FB-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

FB-03 SDG#: KMA24-17FB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 09:19	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2002 22:56	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 09:19	Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	09/30/2002 08:00	Joseph S Feister	1

0031



Lancaster Laboratories, Inc.
 2425 North Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3906880.

Collected: 09/25/2002 17:50

Account Number: 07802

Submitted: 09/26/2002 09:05

Kerr-McGee Corporation

Reported: 10/09/2002 at 21:34

P.O. Box 25861

Discard: 11/09/2002

Oklahoma City OK 73125

TB-03 Water Sample

Moss American Superfund Site - Milwaukee, WI

TB-03 SDG#: KMA24-18TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.20	ug/l	1
00777	Toluene	108-88-3	N.D.		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.60	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/28/2002 08:36	Linda C Pape	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/28/2002 08:36	Linda C Pape	n.a.



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Lancaster, PA 17605-2425
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Analysis Request/Environmental Services Chain of Custody



For Lancaster Laboratories use only
 Acct. # 7802 Sample # _____

Please print. Instructions on reverse side correspond with circled numbers.

Client: W. Paxon Acct. #: _____
 Project Name#: Moss American PWSID #: _____
 Project Manager: Tom Green P.O.# _____
 Sampler: B. Schaefer, T. Hanzely, F. Lumbi Quote #: _____
 Name of state where samples were collected: WI

Sample Identification	Date Collected	Time Collected	Matrix	Container			Remarks
				Soil	Water	Other	
MA3-TG4-2-250902-08	9/25/02	1350	X	X	3	X	
MA3-TG5-1-250902-01		0930	X	X	3	X	
MA3-TG6-1-250902-04		1040	X	X	3	X	
MA3-TG6-3-250902-06		1050	X	X	3	X	
MA3-TG3-3-250902-12		1440	X	X	3	X	
MA3-TG3-1-250902-10		1430	X	X	3	X	
MA3-TG3-2-250902-11		1435	X	X	3	X	
MA3-MW-265-250902-14		1610	X	X	3	X	
MA3-MW-31-250902-15		1620	X	X	3	X	
TB-03		1750	X	X	2	X	

7. Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD. TAT
 Rush results requested by (please circle): Phone Fax
 Phone #: 847-918-4000 Fax #: 847-918-4055

8. Data Package Options (please circle if requested)

QC Summary: Type VI (Raw Data) <u>PER QUOTE</u> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	SDG Complete? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type I (Tier I) GLP	Site-specific QC required? Yes <input type="checkbox"/> No <input type="checkbox"/> (If yes, indicate QC sample and submit triplicate volume.)
Type II (Tier II) Other	
Type III (NJ Red. Del.)	Internal Chain of Custody required? Yes <input type="checkbox"/> No <input type="checkbox"/>
Type IV (CLP)	

Relinquished by: BK Schaefer Date: 9-25-02 Time: 1800
 Received by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____
 Received by: Kathy Binkley Date: 9-26-02 Time: 0905

Analysis Request / Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 7802 Group# _____ Sample # _____

COC # 0002699

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Wagon Acct. #: _____
 Project Name: Mozz American PWSID #: _____
 Project Manager: Tom Grass P.O.#: _____
 Sampler: B. Schaefer, T. Hanzely, F. Lambi Quote #: _____
 Name of state where samples were collected: VA

Sample Identification	Date Collected	Time Collected	Grab Composite	Matrix				Analyses Requested						Remarks
				Soil	Water	Sludge	Total Polys Contain	PAH	TRN	TP, PDH	COD	NH3	Red	
MA3-TG53-250902-12	9/25/02	1440	X		X		5	X	X	X	X	X	X	
MA3-TG53-250902-03		0945	X		X		1					X	X	
MA3-TG52-250902-02		0935	X		X		1					X	X	
MA3-TG63-250902-06		1050	X		X		4	X				X	X	X
MA3-TG81-250902-04		1040	X		X		1						X	

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax E-mail
 Phone # 847-918-4000 Fax # 847-918-4055
 E-mail address: _____

Relinquished by	Date	Time	Received by	Date	Time
<u>Mrs. Schaefer</u>	9-25-02	8:00			

8 Data Package Options (please circle if required) -SDG Complete?

QC Summary	Type VI (Raw Data) <u>PER QUOTE</u> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type I (Tier I)	GLP State-specific QC required? Yes <input type="checkbox"/> No <input type="checkbox"/>
Type II (Tier II)	Other (if yes, indicate QC sample and submit triplicate volume.)
Type III (NJ Red. Del.)	Internal Chain of Custody required? Yes <input type="checkbox"/> No <input type="checkbox"/>
Type IV (CLP)	

Analysis Request/Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 7802 Sample # _____

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Weston Acct. #: _____
 Project Name#: Moss American PWSID #: _____
 Project Manager: Tom Graan P.O.#: _____
 Sampler: B. Schaefer, T. Hanzely, F. Wombi Quote #: _____
 Name of state where samples were collected: WI

Sample Identification	Date Collected	Time Collected	3 Lab. Sample	4 Matrix				5 Analyses Requested				Remarks	6 For lab-use only FSC: _____ SCR #: _____
				Soil	Water	Sludge	Other	PAH	BTEX				
MA3-ML-35-250902-13	9/25/02	1600	X	X		5	X	X					
MA3-ML-35-250902-13-DUP		1600	X	X		5	X	X					
EB-03		1645	X	X				X					
MA3-TG6-2-250902-05-MSD		1045	X	X				X					
MA3-TG6-2-250902-05-M3		1045	X	X				X					
MA3-TG6-2-250902-05		1045	X	X				X					
MA3-TG5-3-250902-03		0940	X	X				X					
MA3-TG4-3-250902-09		1355	X	X				X					
MA3-TG5-2-250902-02		0935	X	X				X					
MA3-TG4-1-250902-07	✓	1345	X	X				X					

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by: (please circle): Phone Fax
 Phone #: 847-918-4000 Fax #: 847-918-4055

8 Data Package Options (please circle if requested)

QC Summary	Type VI (Raw Data) <u>PER QUOTE</u>	SDG Complete? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type I (Tier I)	GLP	Site-specific QC required? Yes No (If yes, indicate QC sample and submit triplicate volume.)
Type II (Tier II)	Other	
Type III (NJ-Reg. Del.)		
Type IV (CLP)		
Internal Chain of Custody required? Yes No		

Relinquished by: tre & dat Date: 9-25-02 Time: 1800
 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____
 Received by: Kathy Binkley Date: 9-26-02 Time: 0905

Analysis Request/Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 7802 Sample # _____

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>Wescom</u>		Acct. #: _____		Matrix 4 Soil Water Sludge Other Type of Container		Analytes Requested 5 N ₂ NO ₃						For lab use only	
Project Name/#: <u>Moss American</u>		PWSID #: _____										FSC: _____	
Project Manager: <u>John Green</u>		P.O.#: _____										SCR #: _____	
Sampler: <u>B. Schaeffgen, T. Hanzely, F. Wambi</u>		Quote #: _____										Lab Use Only 6	
Name of state where samples were collected: <u>VT</u>													

Sample Identification	Date Collected	Time Collected	State	Composites	Soil	Water	Sludge	Other	Type of Container	Analytes Requested	Remarks
MA3-TG3-1-250902-10	9/25/02	1430	X		X				2	X X	
MA3-TG3-2-250902-11		1435	X		X				2	X X	
MA3-TG6-1-250902-04		1040	X		X				2	X X	
MA3-TG4-1-250902-07		1345	X		X				2	X X	
MA3-TG4-2-250902-08		1350	X		X				2	X X	
MA3-TG4-3-250902-09		1355	X		X				2	X X	
MA3-TG5-2-250902-02		0935	X		X				2	X X	
MA3-TG3-3-250902-12		1440	X		X				2	X X	
MA3-TG6-3-250902-06		1050	X		X				2	X X	
MA3-TG5-1-250902-01	✓	0930	X		X				2	X X	

<p>7 Turnaround Time Requested (TAT) (please circle): Normal <input type="checkbox"/> Rush <input type="checkbox"/></p> <p>(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)</p> <p>Date results are needed: <u>STD TAT</u></p> <p>Rush results requested by (please circle): Phone <input type="checkbox"/> Fax <input type="checkbox"/></p> <p>Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4055</u></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Relinquished by: <u>Ben D. Long</u></td> <td>Date: <u>9-25-02</u></td> <td>Time: <u>1800</u></td> <td>Received by: _____</td> <td>Date: _____</td> <td>Time: _____</td> </tr> <tr> <td>Relinquished by: _____</td> <td>Date: _____</td> <td>Time: _____</td> <td>Received by: _____</td> <td>Date: _____</td> <td>Time: _____</td> </tr> <tr> <td>Relinquished by: _____</td> <td>Date: _____</td> <td>Time: _____</td> <td>Received by: _____</td> <td>Date: _____</td> <td>Time: _____</td> </tr> <tr> <td>Relinquished by: _____</td> <td>Date: _____</td> <td>Time: _____</td> <td>Received by: _____</td> <td>Date: _____</td> <td>Time: _____</td> </tr> <tr> <td>Relinquished by: _____</td> <td>Date: _____</td> <td>Time: _____</td> <td>Received by: <u>Kathy Berkley</u></td> <td>Date: <u>9-26-02</u></td> <td>Time: <u>0905</u></td> </tr> </table>	Relinquished by: <u>Ben D. Long</u>	Date: <u>9-25-02</u>	Time: <u>1800</u>	Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____	Relinquished by: _____	Date: _____	Time: _____	Received by: <u>Kathy Berkley</u>	Date: <u>9-26-02</u>	Time: <u>0905</u>
Relinquished by: <u>Ben D. Long</u>	Date: <u>9-25-02</u>	Time: <u>1800</u>	Received by: _____	Date: _____	Time: _____																										
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____																										
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____																										
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____																										
Relinquished by: _____	Date: _____	Time: _____	Received by: <u>Kathy Berkley</u>	Date: <u>9-26-02</u>	Time: <u>0905</u>																										

Analysis Request/Environmental Services Chain of Custody



For Lancaster Laboratories use only
 Acct. # 7802 Sample # _____

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>W. P. G. T. M.</u> Project Name/#: <u>Mossy American</u> Project Manager: <u>Tom Graan</u> Sampler: <u>B. Schaefer, T. Hanzely, Franki</u> Name of state where samples were collected: <u>VT</u>		Acct. # _____ PWSID # _____ P.O.# _____ Quote # _____	Matrix 4 Soil Water Other	Analytes Requested 5 NO2 NO3	For lab use only FSC: _____ SCR #: _____
Sample Identification	Date Collected	Time Collected	SDG	Contaminants	Remarks
MA3-TG-6-2-250902-05	9/25/02	1045	X	X	
MA3-TG-5-3-250902-03	9/25/02	0940	X	X	

7 Turnaround Time Requested (TAT) (please circle): Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: <u>SDG TAT</u>	Relinquished by: <u>B. Schaefer</u> Date: <u>9-25-02</u> Time: <u>1800</u>	Received by: _____ Date: _____ Time: _____
Rush results requested by (please circle): Phone _____ Fax _____ Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4055</u>	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____
8 Data Package Options (please circle if requested)	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____
QC Summary: Type VI (Raw Data) <u>PER QUOTE</u> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Type I (Tier I): GLP <input type="checkbox"/> Type II (Tier II): Other <input type="checkbox"/> Type III (NJ Red. Del.): _____ Type IV (CLP): _____	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____
Site-specific QC required? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (if yes, indicate QC sample and submit triplicate volume.) Internal Chain of Custody required? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Relinquished by: _____ Date: _____ Time: _____	Received by: <u>Kathy Binkley</u> Date: <u>9-26-02</u> Time: <u>0905</u>

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only



Acct. # 7802 Sample # _____

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>Wagon</u>		Acct. # _____		Matrix 4		Analyses Requested 5						For lab use only						
Project Name/#: <u>Mass American</u>		PWSID #: _____										FSC: _____						
Project Manager: <u>John Girard</u>		P.O.# _____										SCR#: <u>1165957</u>						
Sampler: <u>B. Schaefer, T. Hanzely, E. Lambi</u>		Quote #: _____																
Name of state where samples were collected: <u>WI</u>				Soil		Water		Air		Ice		Other						
Sample Identification	Date collected	Time collected	Geo	Cont	Soil	Water	Air	Ice	Other	PAH	NH3	TKN	TP-PH	COD	BOD	O-PH	Remarks	
<u>MA3-TG6-2-2509-02-05</u>	<u>9/25/02</u>	<u>1045</u>	<u>X</u>		<u>X</u>				<u>2</u>	<u>X</u>								
<u>MA3-TG6-2-2509-02-05-MSD</u>	<u>↓</u>	<u>1045</u>	<u>X</u>		<u>X</u>				<u>2</u>	<u>X</u>								
<u>MA3-TG6-2-2509-02-05</u>	<u>↓</u>	<u>1045</u>	<u>X</u>		<u>X</u>				<u>5</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>		
<u>MA3-TG5-1-2509-02-01</u>	<u>↓</u>	<u>0930</u>	<u>X</u>		<u>X</u>				<u>1</u>						<u>X</u>	<u>X</u>		

7 Turnaround Time Requested (TAT) (please circle): Normal <input type="radio"/> Rush <input type="radio"/> (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: <u>STD TAT</u> Rush results requested by: (please circle): Phone <input type="radio"/> Fax <input type="radio"/> Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4055</u>		Relinquished by: <u>[Signature]</u> Date: <u>5/17/02</u> Time: <u>0415</u>		Received by: _____ Date: _____ Time: _____		9	
		Relinquished by: <u>[Signature]</u> Date: <u>9-25-02</u> Time: <u>1800</u>		Received by: _____ Date: _____ Time: _____			
		Relinquished by: _____ Date: _____ Time: _____		Received by: _____ Date: _____ Time: _____			
		Relinquished by: _____ Date: _____ Time: _____		Received by: <u>[Signature]</u> Date: <u>9-26-02</u> Time: <u>0905</u>			
8 Data Package Options (please circle if requested)			SDG Complete? Yes <input type="radio"/> No <input checked="" type="radio"/>				
QC Summary Type VI (Raw Data) <u>PER. QUOTE</u>			Yes <input type="radio"/> No <input checked="" type="radio"/>				
Type I (Tier I): GLP			Site-specific QC required? Yes <input type="radio"/> No <input type="radio"/> (If yes, indicate QC sample and submit triplicate volume.)				
Type II (Tier II): Other			Internal Chain of Custody required? Yes <input type="radio"/> No <input type="radio"/>				
Type III (NJ Red: Del.)							
Type IV (CLP)							

Analysis Request / Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 7802 Group# _____ Sample # _____

COC # 0003201

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Weston Acct. #: _____
 Project Name#: Moss American PWSID #: _____
 Project Manager: Tom Graan P.O.#: _____
 Sampler: B. Schaefer, T. Hanzely, S. Wambi Quote #: _____
 Name of state where samples were collected: WI

2 Sample Identification	Date Collected	Time Collected	3 Grab Composite	4 Matrix				5 Analyses Requested							6 For Lab Use Only FSC: _____ SCR #: _____			
				Soil	Water	Sludge/Sediment	Other	Total # of Containers	PAH	TKM	TP-POL	COD	NH2	BOD		O-POL	TOL	Remarks
MA3-TG4-1-250902-07	9/25/02	1345	X		X			2	X									
MA3-TG4-2-250902-08		1350	X		X			2	X	X	X	X	X	X				
MA3-TG4-3-250902-09		1355	X		X			3	X					X	X			
MA3-TG5-1-250902-01		0930	X		X			1							X			
MA3-TG5-2-250902-02		0935	X		X			1							X			
MA3-TG5-3-250902-03		0940	X		X			1							X			

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax E-mail
 Phone #: 847-918-4000 Fax #: 847-918-4055
 E-mail address: _____

Relinquished by: <u>Karen Schaefer</u>	Date: <u>9-25-02</u>	Time: <u>1800</u>	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: <u>Kathy Binkley</u>	Date: <u>9-26-02</u>	Time: <u>0905</u>

8 Data Package Options (please circle if required) SDG Complete?

QC Summary	Type VI (Raw Data) <input type="checkbox"/>	PER QUOTE Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type I (Tier I)	GLP	State-specific QC required? Yes <input type="checkbox"/> No <input type="checkbox"/>
Type II (Tier II)	Other	(If yes, indicate QC sample and submit triplicate volume.)
Type III (NJ Red. Del.)		Internal Chain of Custody required? Yes <input type="checkbox"/> No <input type="checkbox"/>
Type IV (CLP)		

Analysis Request/Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct # 7802 Sample # _____

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>Wipston</u>		Acct. #: _____		Matrix 4		Analyses Requested 5					For lab use only			
Project Name/#: <u>Mass American</u>		PWSID #: _____		Soil Water Sludge Other Total # of Containers		PAH NH3 TKN TP-PO4 COD					FSC: _____			
Project Manager: <u>Tom Givan</u>		PO.#: _____									SCR#: <u>1165957</u>			
Sampler: <u>B. Schaefer, T. Hanzely, F. Womb</u>		Quote #: _____												
Name of state where samples were collected: <u>WI</u>				Grab 3		Composite							Temperature 6	
Sample Identification		Date Collected		Time Collected										
<u>FB03</u>		<u>9/25/02</u>		<u>1645</u>										
<u>MAB-TG5-2-250902-02</u>				<u>0935</u>		<u>X</u>								
<u>MAB-TG5-1-250902-01</u>				<u>0930</u>		<u>X</u>								
<u>TC45 MAB-MW-31-250902-15</u>				<u>1620</u>		<u>X</u>								
<u>MAB-MW-265-250902-14</u>				<u>1610</u>		<u>X</u>								

7 Turnaround Time Requested (TAT) (please circle): Normal <input type="checkbox"/> Rush <input type="checkbox"/> (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: <u>SD 7/17</u> Rush results requested by (please circle): Phone <input type="checkbox"/> Fax <input type="checkbox"/> Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4055</u>		Relinquished by: <u>Sherry Mann</u> Date: <u>9/11/02</u> Time: <u>0425</u>		Received by: _____ Date: _____ Time: _____		9	
8 Data Package Options (please circle if requested): QC Summary: Type VI (Raw Data) <u>PER QUOTE</u> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Type I (Tier I): GLP <input type="checkbox"/> Type II (Tier II): Other <input type="checkbox"/> Type III (NJ Red. Del.): _____ Type IV (CLP): _____		Relinquished by: _____ Date: _____ Time: _____		Received by: _____ Date: _____ Time: _____			
Site-specific QC required? Yes <input type="checkbox"/> No <input type="checkbox"/> (If yes, indicate QC sample and submit triplicate volume.) Internal Chain of Custody required? Yes <input type="checkbox"/> No <input type="checkbox"/>		Relinquished by: _____ Date: _____ Time: _____		Received by: <u>Kathy Binkley</u> Date: <u>9-26-02</u> Time: <u>0905</u>			

Analysis Request / Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 7802

Group#

Sample #

COC # 0002700

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Worston Acct. #: _____
 Project Name#: Moss American PWSID #: _____
 Project Manager: Tom Groen P.O.#: _____
 Sampler: B. Schaefer, T. Hanzely, F. Lambi Quote #: _____
 Name of state where samples were collected: WI

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Sludge	Total # of Containers	5 Analyses Requested								Remarks	6
									TKN	TP-POL	COD	NH4	TPAH	BOD	O-POL	TOL		
MA3-TG63-250902-06	9/25/02	1050	X		X			2	X	X	X	X						
MA3-TG64-250902-04		1040	X		X			5	X	X	X	X	X	X				
MA3-TG41-250902-07		1345	X		X			4	X	X	X	X	X	X				
MA3-TG42-250902-08		1350	X		X			1						X				
MA3-TG43-250902-09		1355	X		X			1						X				

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT

Rush results requested by (please circle): Phone Fax E-mail
 Phone #: 847-918-4000 Fax #: 847-918-4055
 E-mail address: _____

Relinquished by: <u>[Signature]</u>	Date: <u>9-25-02</u>	Time: <u>1850</u>	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by: <u>Kathy Brinkley</u>	Date: <u>9-26-02</u>	Time: <u>0905</u>

8 Data Package Options (please circle if required) SDG Complete?

QC Summary Type VI (Raw Data) PERQ VOL Yes No

Type I (Tier I) GLP State-specific QC required? Yes No

Type II (Tier II) Other (If yes, indicate QC sample and submit triplicate volume.)

Type III (NJ Red. Del.) Internal Chain of Custody required? Yes No

Type IV (GLP)

Analysis Request / Environmental Services Chain of Custody



For Lancaster Laboratories Use only

Acct. # 7802 Group# _____ Sample # _____

COC # 0003202

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: W. Weston Acct. # _____
 Project Name #: Mass American RWSID # _____
 Project Manager: Tom Graan P.O. # _____
 Sampler: B. Schaefer, J. Hanzely, F. Wamb Quote # _____
 Name of state where samples were collected: MA

Matrix	Analyses Requested						For Lab Use Only	
	Asph	TKN	TAPOL	COU	HEAVY	TOC	FSC	SCR#
4	/						6	

2 Sample Identification	Date Collected	Time Collected	3 G.P.	Composite	Soil	Water	Other	4 Total # of containers	5	6	Remarks	
MA3-TG4-3-250902-09	9/25/02	1555	X			X		2	X	X	X	
MA3-TG5-3-250902-03		0940	X			X		4	X	X	X	
MA3-TG5-2-250902-02		0935	X			X		2			X	
MA3-TG5-1-250902-01		0930	X			X		2			X	
MA3-TG6-2-250902-05	V	1045	X			X		1			X	

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STP TAT
 Rush results requested by (please circle): Phone Fax E-mail
 Phone #: 847-918-4000 Fax #: 847-918-4055
 E-mail address: _____

Relinquished by: <u>Fre. Sharp</u>	Date: <u>9-29-02</u>	Time: <u>1830</u>	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by: <u>Kathy Binkley</u>	Date: <u>9-26-02</u>	Time: <u>0905</u>

8 Data Package Options (please circle if required)

QC Summary	Type VI (Raw Data) <u>PER QUOTE</u>	SDG Complete? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type I (Tier I)	GLP	State-specific QC required? Yes <input type="checkbox"/> No <input type="checkbox"/>
Type II (Tier II)	Other	(If yes, indicate QC sample and submit triplicate volume.)
Type III (NJ Red. Del.)		Internal Chain of Custody required? Yes <input type="checkbox"/> No <input type="checkbox"/>
Type IV (CLP)		

Analysis Request / Environmental Services, Chem of Cust



For Lancaster Laboratories use only

Acct # 7002 Group# _____ Sample # _____

COC # 0002698

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Weston Acct #: _____
 Project Name#: Mozz American PWSID #: _____
 Project Manager: Tom Graun P.O.#: _____
 Sampler: B. Schreff, T. Hanzely, F. Anzobi Quote #: _____
 Name of state where samples were collected: WI

Sample Identification	Date Collected	Time Collected	GRA Composite	Matrix 4				Analyses Requested 5							Remarks	For Lab Use Only FSC: _____ SCR #: _____
				Soil	Water	Sludge	Other	TKN	TP-POLY	COD	NH3	PAH	BOD	D-POLY		
MAS- TG3-1-250902-10	9/25/02	1430	X	X		6	X	X	X	X	X	X	X	X		
MAS- TG3-2-250902-11	↓	1435	X	X		6	X	X	X	X	X	X	X	X		
MAS- TG3-3-250902-12	↓	1440	X	X		1								X		

7 Turnaround Time Requested (TAT) (please circle) Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax E-mail
 Phone #: 847-918-4000 Fax #: 847-918-4055
 E-mail address: _____

Relinquished by:	Date	Time	Received by:	Date	Time
<u>Brian Schreff</u>	9-25-02	1800			
			<u>Kathy Binkley</u>	9-26-02	0905

8 Data Package Options (please circle if required)

QC Summary	Type VI (Raw Data) <u>PER QUOTE</u>	SDG Complete? <u>Yes</u> <input type="checkbox"/> <u>No</u> <input type="checkbox"/>
Type I (Tier I)	GLP	State-specific QC required? <u>Yes</u> <input type="checkbox"/> <u>No</u> <input type="checkbox"/>
Type II (Tier II)	Other	(If yes, indicate QC sample and submit triplicate volume.)
Type III (NJ Red. Del.)		Internal Chain of Custody required? <u>Yes</u> <input type="checkbox"/> <u>No</u> <input type="checkbox"/>
Type IV (CLP)		

CASE NARRATIVE

Client: Kerr-McGee Corporation
SDG #: KMA24

LANCASTER LABORATORIES
PAH BY HPLC

SAMPLE NUMBER(S) :

<u>LL #'s</u>	<u>Sample Code</u>	<u>Matrix Water:</u>	<u>Comments</u>
3906861	TG5-1	X	
3906862	TG5-2	X	
3906863	TG5-3	X	
3906864	TG6-1	X	
3906865	TG6-2	X	Unspiked
3906866	TG6-2MS	X	Matrix Spike
3906867	TG6-2MSD	X	Matrix Spike Dup
3906868	TG6-3	X	
3906869	TG4-1	X	
3906870	TG4-2	X	
3906871	TG4-3	X	
3906872	TG3-1	X	
3906873	TG3-2	X	
3906874	TG3-3	X	
3906875	MW-3S	X	
3906876	MW3SD	X	
3906877	MW26S	X	
3906878	MW3I-	X	
3906879	FB-03	X	Client Blank
LABORATORY SUBMITTED QC:			
SBLKWA273	SBLKWA2731	X	Method Blank
273WALCS	273WALCS1	X	Lab Control Sample

Case Narrative
SDG #: KMA24 continued

SAMPLE PREPARATION:

Due to insufficient sample, reduced volumes were used in the extraction of the following samples.

<u>Sample Code</u>	<u>Volume</u>
TG5-1	992 mls
TG5-2	999 mls
TG6-1	997 mls
TG4-1	937 mls
TG4-2	953 mls
TG4-3	991 mls
TG3-1	940 mls

No other problems were encountered during the extraction of these samples.

ANALYSIS:

The method used for analysis was SW-846 8310.

All samples were analyzed for polynuclear aromatic hydrocarbons by HPLC.

No problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC was within specifications.

DATA INTERPRETATION:

Only non-conformances for client requested compounds are addressed in this case narrative.

Case Narrative
SDG #: KMA24 continued

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Christine M. Ratchell for CJN Date: 10-17-02
Charles J. Neslund
Group Leader, GC/MS Semivolatiles

I have reviewed the analytical data provided by Lancaster Laboratories for the Moss American Site in Milwaukee, Wisconsin upon the information that was provided by the laboratory. The water samples were analyzed for Polynuclear Aromatic Hydrocarbons PAHs, and Petroleum analyses (BETX).

A summary of the data validation is provided below for samples delivery group SDG# KMA25 for PAH, and BETX.

Polynuclear Aromatic Hydrocarbons (PAHs by HPLC, U.S. EPA Method 8310)

Moss American Site

SDG # KMA25

1. Samples:

<u>Client Code</u>	<u>Lab Sample Number</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Extracted</u>	<u>Date Analyzed</u>
MA3-TG2-1-260902-01	3908040	Water	09/26/02	10/02/02	10/05/02
MA3-TG2-1-260902-01MS	3908041	Water	09/26/02	10/02/02	10/05/02
MA3-TG2-1-260902-01MSD	3908042	Water	09/26/02	10/02/02	10/05/02
MA3-TG2-2-260902-02	3908043	Water	09/26/02	10/02/02	10/05/02
MA3-TG2-3-260902-03	3908044	Water	09/26/02	10/02/02	10/06/02
MA3-TG1-1-260902-04	3908045	Water	09/26/02	10/02/02	10/06/02
MA3-TG1-1-260902-04-RR	3908045	Water	09/26/02	10/02/02	10/10/02
MA3-TG1-2-260902-05	3908046	Water	09/26/02	10/02/02	10/06/02
MA3-TG1-2-260902-05DUP	3908047	Water	09/26/02	10/02/02	10/06/02
MA3-TG1-3-260902-06	3908048	Water	09/26/02	10/02/02	10/06/02
MA3-MW-13S-260902-07	3908049	Water	09/26/02	10/02/02	10/06/02
MA3-MW-13S-260902-07DUP	3908050	Water	09/26/02	10/02/02	10/06/02
FB-04	3908051	Water	09/26/02	10/02/02	10/06/02
MA3-MW25S-260902-08	3908052	Water	09/26/02	10/02/02	10/06/02
FB-05	3908053	Water	09/26/02	10/02/02	10/06/02
MA3-MW-30S-260902-09	3908054	Water	09/26/02	10/02/02	10/06/02

2. Holding Times:

All samples were extracted and analyzed within the required holding times. Sample 3908045 was analyzed at an initial 10X dilution on 10/06/02 due to high concentration and reanalyzed on 10/10/02 with a 100X dilution.

3. Method Blank:

The method blank SBLKWJ274 was associated with this SDG. SBLKWJ274 was extracted on 10/02/02 and analyzed on 10/05/02 with samples (3908040 thru 3908054). SBLKWJ274 results were free of contamination.

4. Surrogate:

The method blank and the investigated samples had surrogate recoveries within the required quality control limits, except triphenylene in sample (3908045, and 3908045DL) was diluted out due to matrix interference. No action was taken. The surrogate recoveries were reported from UV detector.

5. Matrix Spike/Matrix Spike Duplicate Recovery:

The matrix spike and matrix spike duplicate was performed on sample 3908040. The MS/MSD recoveries were within the acceptance quality control limits, except MS in acenaphthylene. No action was taken. However, the RPD% values were acceptable.

6. Laboratory Control Sample:

The laboratory control samples recoveries were all within the acceptance quality control limits.

7. Retention Time:

All the retention time results were acceptable.

8. Initial and Continuing Calibration:

The initial calibration, and continuing calibration verification were all acceptable.

However, the retention time, initial and continuing calibration results were used in the calculation from two detectors. Naphthalene, acenaphthylene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, fluorene, phenanthrene, and anthracene were taken from ultraviolet detector, and fluoranthene, pyrene, benzo (a) anthracene, chrysene, benzo (b) fluoranthene, benzo (k) fluoranthene, benzo (a) pyrene, dibenzo (a, h) anthracene, benzo (g, h, i) perylene, and indeno (1, 2, 3-cd) pyrene were taken from fluorescence detector.

VOLATILE-BETX by GC/MS (U.S. EPA Method 8021B)

Moss American Site

SDG # KMA25

1. Samples:

<u>Client Code</u>	<u>Lab Sample Number</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>
MA3-TG2-1-260902-01	3908040	Water	09/26/02	09/30/02	09/30/02
MA3-TG2-1-260902-01MS	3908041	Water	09/26/02	09/30/02	09/30/02
MA3-TG2-1-260902-01MSD	3908042	Water	09/26/02	09/30/02	09/30/02
MA3-TG2-2-260902-02	3908043	Water	09/26/02	09/30/02	09/30/02
MA3-TG2-3-260902-03	3908044	Water	09/26/02	09/30/02	09/30/02
MA3-TG1-1-260902-04	3908045	Water	09/26/02	10/01/02	10/01/02
MA3-TG1-2-260902-05	3908046	Water	09/26/02	09/30/02	09/30/02
MA3-TG1-2-260902-05DUP	3908047	Water	09/26/02	09/30/02	09/30/02
MA3-TG1-3-260902-06	3908048	Water	09/26/02	09/30/02	09/30/02
MA3-MW-13S-260902-07	3908049	Water	09/26/02	09/30/02	09/30/02
MA3-MW-13S-260902-07DUP	3908050	Water	09/26/02	09/30/02	09/30/02
FB-04	3908051	Water	09/26/02	09/30/02	09/30/02
MA3-MW25S-260902-08	3908052	Water	09/26/02	09/30/02	09/30/02
FB-05	3908053	Water	09/26/02	09/30/02	09/30/02
MA3-MW-30S-260902-09	3908054	Water	09/26/02	09/30/02	09/30/02
TB-04	3908055	Water	09/26/02	09/30/02	09/30/02

2. Holding Times:

All samples were analyzed within the required holding times.

3. Method Blank:

Two method blanks BLK0108, and BLK0109 were associated with the SDG. BLK0108 was analyzed on 09/30/02 with (3908040 thru 3908044, 3908046, 3908947, 3908049 thru 3908053, 3908055, and MS/MSD). BLK0109 was analyzed on 09/30/02 with (3908045, 3908048, and 3908054). Both method blanks BLK0108, and BLK0109 result were free of contamination.

4. Matrix Spike/Matrix Spike Duplicate Recovery:

The matrix spike and matrix spike duplicate was performed on sample (3908040). The MS/MSD recoveries were all within the acceptance quality control limits. Also, the RPD% values were acceptable.

5. Laboratory Control Sample Recovery:

The laboratories control sample/laboratories control sample duplicates recoveries were within the quality control limits. Also, the RPD% values were acceptable.

6. Surrogate:

All method blanks and the investigated samples had surrogate recoveries within the required quality control limits (71-130%), except trifluorotoluene in sample 3908052. No qualification was applied because all sample results were non-detected.

7. Initial, Continuing Calibration, and Internal Standards:

The initial calibration, continuing calibration verification and the internal standards results were all acceptable.

Data Reviewed By: Tania Balikji-Shammo

Date: 11/06/02



ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City OK 73125

405-270-2602

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 824612. Samples arrived at the laboratory on Friday, September 27, 2002.

<u>Client Description</u>	<u>Lancaster Labs Number</u>
MA3-TG2-1-260902-01 Unspiked Grab Water Sample	3908040
MA3-TG2-1-260902-01 Matrix Spike Grab Water Sample	3908041
MA3-TG2-1-260902-01 Matrix Spike Dup. Grab Water	3908042
MA3-TG2-2-260902-02 Grab Water Sample	3908043
MA3-TG2-3-260902-03 Grab Water Sample	3908044
MA3-TG1-1-260902-04 Grab Water Sample	3908045
MA3-TG1-2-260902-05 Grab Water Sample	3908046
MA3-TG1-2-260902-05 Dup Grab Water Sample	3908047
MA3-TG1-3-260902-06 Grab Water Sample	3908048
MA3-MW-13S-260902-07 Grab Water Sample	3908049
MA3-MW-13S-260902-07 Dup Grab Water Sample	3908050
FB-04 Grab Water Sample	3908051
MA3-MW25S-260902-08 Grab Water Sample	3908052
FB-05 Grab Water Sample	3908053
MA3-MW-30S-260902-09 Grab Water Sample	3908054
TB-04 Grab Water Sample	3908055

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Kerr-McGee Corporation
1 COPY TO Weston Solutions, Inc.
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer
Attn: Mr. Tom Graan



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

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Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

Christine M. Ratcliff
Christine M. Ratcliff
Sr. Chemist



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

0015



Lancaster Laboratories Sample No. WW 3908040

Collected: 09/26/2002 09:30 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Reported: 10/16/2002 at 12:26

Discard: 11/16/2002

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-TG2-1-260902-01 Unspiked Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MA3G2 SDG#: KMA25-01BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	0.41 J		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.		0.46	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		1.8	mg/l	1
<p>The laboratory control standard (LCS) and LCS duplicate analyzed with this sample had percent recoveries of 116% and 113%, respectively. The method acceptance window is 85% to 115%. The analysis was not repeated because the 48-hour hold time had lapsed. The BOD result is reported with client consent.</p>							
00273	Total Organic Carbon	n.a.	3.1		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	8.4		1.7	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.20	ug/l	1
00777	Toluene	108-88-3	N.D.		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.60	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.040	ug/l	1



Lancaster Laboratories, Inc.
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Lancaster Laboratories Sample No. WW 3908040

Collected: 09/26/2002 09:30 by BS Account Number: 07802

Submitted: 09/27/2002 09:15
 Reported: 10/16/2002 at 12:26
 Discard: 11/16/2002
 MA3-TG2-1-260902-01 Unspiked Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

MA3G2 SDG#: KMA25-01BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Detection Limit	
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/01/2002 20:28	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/28/2002 09:01	Christian C Ehrhart	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 16:17	Nicole M Kepley	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/01/2002 15:45	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/28/2002 06:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/27/2002 17:38	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/01/2002 23:11	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 16:57	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/03/2002 05:50	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 03:59	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/05/2002 21:56	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 03:59	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/01/2002 13:05	Cheryl L Robinson	1
03337	PAH Water Extraction	SW-846 3510C	1	10/02/2002 09:45	Felix C Arroyo	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2002 09:30	Cheryl L Robinson	1

0017



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3908041

Collected: 09/26/2002 09:30 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:26

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG2-1-260902-01 Matrix Spike Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MA3G2 SDG#: KMA25-01MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	20.	0.20	ug/l	1
00777	Toluene	108-88-3	21.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	21.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	64.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	140.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	150.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	160.	0.80	ug/l	1
00784	Fluorene	86-73-7	16.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	4.9	0.080	ug/l	1
00789	Anthracene	120-12-7	2.6	0.040	ug/l	1
00807	Fluoranthene	206-44-0	3.0	0.040	ug/l	1
00811	Pyrene	129-00-0	18.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.4	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.2	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.5	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	3.1	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	6.0	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	11.	0.10	ug/l	1
07409	Chrysene	218-01-9	5.7	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.2	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 04:42	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/05/2002 22:35	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 04:42	Linda C Pape	n.a.



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 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3908041

Collected: 09/26/2002 09:30 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:26

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG2-1-260902-01 Matrix Spike Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MA3G2 SDG#: KMA25-01MS

03337 PAH Water Extraction

SW-846 3510C

1 10/02/2002 09:45

Felix C Arroyo

1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3908042

Collected: 09/26/2002 09:30 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:26

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG2-1-260902-01 Matrix Spike Dup. Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MA3G2 SDG#: KMA25-01MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
08213	BTEX (8021)						
00776	Benzene	71-43-2	20.	0.20		ug/l	1
00777	Toluene	108-88-3	21.	0.20		ug/l	1
00778	Ethylbenzene	100-41-4	21.	0.20		ug/l	1
00779	Total Xylenes	1330-20-7	63.	0.60		ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	150.	1.0		ug/l	1
00782	Acenaphthylene	208-96-8	150.	0.80		ug/l	1
00783	Acenaphthene	83-32-9	160.	0.80		ug/l	1
00784	Fluorene	86-73-7	16.	0.20		ug/l	1
00785	Phenanthrene	85-01-8	5.1	0.080		ug/l	1
00789	Anthracene	120-12-7	2.7	0.040		ug/l	1
00807	Fluoranthene	206-44-0	3.0	0.040		ug/l	1
00811	Pyrene	129-00-0	18.	0.20		ug/l	1
00812	Benzo (a) anthracene	56-55-3	1.4	0.020		ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	1.2	0.040		ug/l	1
00823	Benzo (a) pyrene	50-32-8	1.5	0.020		ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	3.1	0.040		ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	6.1	0.080		ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	12.	0.10		ug/l	1
07409	Chrysené	218-01-9	5.7	0.080		ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	1.2	0.020		ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 05:25		Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/05/2002 23:13		Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 05:25		Linda C Pape	n.a.



Lancaster Laboratories, Inc.
 2425 New Holland Pike
 PO Box 12425
 Lancaster, PA 17605-2425
 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3908042

Collected: 09/26/2002 09:30 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:26

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG2-1-260902-01 Matrix Spike Dup. Grab Water

Sample

Moss American Superfund Site - Milwaukee, WI

MA3G2 SDG#: KMA25-01MSD

03337 PAH Water Extraction

SW-846 3510C

1 10/02/2002 09:45 Felix C Arroyo

1



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3908043

Collected: 09/26/2002 09:35 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:26

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG2-2-260902-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

A3G22 SDG#: KMA25-02

CAT No.	Analysis Name	CAS Number	As Received		As Received		Dilution Factor
			Result		Method	Units	
00217	Kjeldahl Nitrogen	7727-37-9	0.79	J	0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.		0.46	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		2.8	mg/l	1
The laboratory control standard (LCS) and LCS duplicate analyzed with this sample had percent recoveries of 116% and 113%, respectively. The method acceptance window is 85% to 115%. The analysis was not repeated because the 48-hour hold time had lapsed. The BOD result is reported with client consent.							
00273	Total Organic Carbon	n.a.	3.3		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.15	J	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	12.4		1.7	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.20	ug/l	1
00777	Toluene	108-88-3	N.D.		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.60	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.045	J	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.040	ug/l	1

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Lancaster Laboratories Sample No. WW 3908043

Collected: 09/26/2002 09:35 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:26

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG2-2-260902-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

A3G22 SDG#: KMA25-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Detection Limit	
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/01/2002	20:44	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/28/2002	09:02	Christian C Ehrhart	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002	16:18	Nicole M Kepley	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/01/2002	15:45	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/28/2002	06:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/27/2002	17:38	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/02/2002	08:36	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002	16:59	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/03/2002	05:50	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002	15:34	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/05/2002	23:52	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002	15:34	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/01/2002	13:05	Cheryl L Robinson	1
03337	PAH Water Extraction	SW-846 3510C	1	10/02/2002	09:45	Felix C Arroyo	1
08264	Total Phos as. PO4 Prep (water)	EPA 365.1	1	10/01/2002	09:30	Cheryl L Robinson	1



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Lancaster Laboratories Sample No. WW 3908044

Collected: 09/26/2002 09:40 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:27

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG2-3-260902-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

ATG23 SDG#: KMA25-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.5		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	0.021	J	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.99	J	0.46	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		4.8	mg/l	1
<p>The laboratory control standard (LCS) and LCS duplicate analyzed with this sample had percent recoveries of 116% and 113%, respectively. The method acceptance window is 85% to 115%. The analysis was not repeated because the 48-hour hold time had lapsed. The BOD result is reported with client consent.</p>							
00273	Total Organic Carbon	n.a.	9.8		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.36		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	32.4		1.7	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.20	ug/l	1
00777	Toluene	108-88-3	N.D.		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.60	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.040	ug/l	1

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Lancaster Laboratories Sample No. WW 3908044

Collected: 09/26/2002 09:40 by BS Account Number: 07802

Submitted: 09/27/2002 09:15
 Reported: 10/16/2002 at 12:27
 Discard: 11/16/2002
 MA3-TG2-3-260902-03 Grab Water Sample
 Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation
 P.O. Box 25861
 Oklahoma City OK 73125

ATG23 SDG#: KMA25-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/01/2002 20:48	Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/28/2002 09:03	Christian C Ehrhart	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 16:20	Nicole M Kepley	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/01/2002 15:45	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/28/2002 06:20	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/27/2002 17:38	Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/02/2002 08:44	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 17:00	Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/03/2002 05:50	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 16:17	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 00:30	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 16:17	Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/01/2002 13:05	Cheryl L Robinson	1
03337	PAH Water Extraction	SW-846 3510C	1	10/02/2002 09:45	Felix C Arroyo	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2002 09:30	Cheryl L Robinson	1



Lancaster Laboratories Sample No. WW 3908045

Collected: 09/26/2002 10:30 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:27

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG1-1-260902-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

A3G11 SDG#: KMA25-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.1		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.58 J		0.46	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	6.5		0.80	mg/l	1
<p>The laboratory control standard (LCS) and LCS duplicate analyzed with this sample had percent recoveries of 116% and 113%, respectively. The method acceptance window is 85% to 115%. The analysis was not repeated because the 48-hour hold time had lapsed. The BOD result is reported with client consent.</p>							
00273	Total Organic Carbon	n.a.	8.1		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	39.6		1.7	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	1.3		0.20	ug/l	1
00777	Toluene	108-88-3	0.33 J		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	13.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	17.		0.60	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	1,200.		10.	ug/l	10
00782	Acenaphthylene	208-96-8	45. J		8.0	ug/l	10
00783	Acenaphthene	83-32-9	490.		8.0	ug/l	10
00784	Fluorene	86-73-7	330.		2.0	ug/l	10
00785	Phenanthrene	85-01-8	670.		8.0	ug/l	100
00789	Anthracene	120-12-7	82.		4.0	ug/l	100
00807	Fluoranthene	206-44-0	310.		4.0	ug/l	100
00811	Pyrene	129-00-0	310.		2.0	ug/l	10
00812	Benzo(a)anthracene	56-55-3	54.		2.0	ug/l	100
00818	Benzo(b)fluoranthene	205-99-2	23.		0.40	ug/l	10
00823	Benzo(a)pyrene	50-32-8	25.		0.20	ug/l	10
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		5.0	ug/l	10



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02/20/03



Lancaster Laboratories Sample No. WW 3908045

Collected: 09/26/2002 10:30 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:27

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG1-1-260902-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

A3G11 SDG#: KMA25-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00898	Indeno(1,2,3-cd)pyrene	193-39-5	10.	0.80	ug/l	10	
00907	Benzo(g,h,i)perylene	191-24-2	7.1	1.0	ug/l	10	
07409	Chrysene	218-01-9	34.	0.80	ug/l	10	
07410	Benzo(k)fluoranthene	207-08-9	13.	0.20	ug/l	10	

Due to the high concentration of non-target compounds, a dilution was necessary to perform the PAH by HPLC analysis. Therefore, the reporting limits for the HPLC PAH compounds were raised.

Due to the presence of an interferent near its retention time, the normal reporting limit was not attained for dibenz(a,h)anthracene. The reporting limit for this compound was raised accordingly.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample extraction.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/01/2002 20:52		Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/28/2002 09:05		Christian C Ehrhart	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 16:21		Nicole M Kepley	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/01/2002 15:45		Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/28/2002 06:20		Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/27/2002 17:38		Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/02/2002 08:52		Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 17:01		Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/03/2002 05:50		Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/01/2002 04:47		Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 01:13		Mark A Clark	10
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2002 10:26		Mark A Clark	100
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2002 04:47		Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/01/2002 13:05		Cheryl L Robinson	1
03337	PAH Water Extraction	SW-846 3510C	1	10/02/2002 09:45		Felix C Arroyo	1



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Lancaster Laboratories Sample No. WW 3908045

Collected: 09/26/2002 10:30 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:27

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Discard: 11/16/2002

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MA3-TG1-1-260902-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

A3G11 SDG#: KMA25-04

08264 Total Phos as PO4 Prep
(water)

EPA 365.1

1 10/01/2002 09:30

Cheryl L Robinson

1



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00200



Lancaster Laboratories Sample No. WW 3908046

Collected: 09/26/2002 10:35 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:27

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG1-2-260902-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3TG12 SDG#: KMA25-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.5		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	0.017	J	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.64	J	0.46	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		4.7	mg/l	1
<p>The laboratory control standard (LCS) and LCS duplicate analyzed with this sample had percent recoveries of 116% and 113%, respectively. The method acceptance window is 85% to 115%. The analysis was not repeated because the 48-hour hold time had lapsed. The BOD result is reported with client consent.</p>							
00273	Total Organic Carbon	n.a.	11.5		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.22		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	33.1		1.7	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.20	ug/l	1
00777	Toluene	108-88-3	0.22	J	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	0.69	J	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	0.61	J	0.60	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	27.		1.0	ug/l	1
00782	Acenaphthylene	208-96-8	1.8	J	0.80	ug/l	1
00783	Acenaphthene	83-32-9	30.		0.80	ug/l	1
00784	Fluorene	86-73-7	13.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	12.		0.080	ug/l	1
00789	Anthracene	120-12-7	1.8		0.040	ug/l	1
00807	Fluoranthene	206-44-0	2.9		0.040	ug/l	1
00811	Pyrene	129-00-0	2.0		0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.10		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.040	ug/l	1



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Lancaster Laboratories Sample No. WW 3908046

Collected: 09/26/2002 10:35 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:27

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Discard: 11/16/2002

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MA3-TG1-2-260902-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3TG12 SDG#: KMA25-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Detection Limit	
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	0.083 J	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/01/2002 20:53		Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/28/2002 09:08		Christian C Ehrhart	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 16:22		Nicole M Kepley	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/01/2002 15:45		Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/28/2002 06:20		Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/27/2002 17:38		Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/02/2002 09:01		Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 17:02		Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/03/2002 05:50		Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 10:24		Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 01:51		Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 10:24		Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/01/2002 13:05		Cheryl L Robinson	1
03337	PAH Water Extraction	SW-846 3510C	1	10/02/2002 09:45		Felix C Arroyo	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2002 09:30		Cheryl L Robinson	1



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Lancaster Laboratories Sample No. WW 3908047

Collected: 09/26/2002 10:30

by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:27

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG1-2-260902-05 Dup Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

SDPMA SDG#: KMA25-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	0.21 J	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	0.53 J	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	33.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	2.2 J	0.80	ug/l	1
00783	Acenaphthene	83-32-9	33.	0.80	ug/l	1
00784	Fluorene	86-73-7	15.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	14.	0.080	ug/l	1
00789	Anthracene	120-12-7	2.0	0.040	ug/l	1
00807	Fluoranthene	206-44-0	2.9	0.040	ug/l	1
00811	Pyrene	129-00-0	1.9	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.092 J	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 11:07	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 02:30	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 11:07	Linda C Pape	n.a.



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Lancaster Laboratories Sample No. WW 3908047

Collected: 09/26/2002 10:30 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Reported: 10/16/2002 at 12:27

Discard: 11/16/2002

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-TG1-2-260902-05 Dup Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

SDPMA SDG#: KMA25-06

03337 PAH Water Extraction

SW-846 3510C

1 10/02/2002 09:45 Felix C Arroyo

1



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Lancaster Laboratories Sample No. WW 3908048

Collected: 09/26/2002 10:40 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:27

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-TG1-3-260902-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MTG13 SDG#: KMA25-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
00217	Kjeldahl Nitrogen	7727-37-9	1.2		0.30	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.61 J		0.46	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.0066	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		4.7	mg/l	1
<p>The laboratory control standard (LCS) and LCS duplicate analyzed with this sample had percent recoveries of 116% and 113%, respectively. The method acceptance window is 85% to 115%. The analysis was not repeated because the 48-hour hold time had lapsed. The BOD result is reported with client consent.</p>							
00273	Total Organic Carbon	n.a.	7.4		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.24		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	23.6		1.7	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.20	ug/l	1
00777	Toluene	108-88-3	N.D.		0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.60	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.080	ug/l	1
00789	Anthracene	120-12-7	0.049 J		0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.079 J		0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	N.D.		0.040	ug/l	1



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Account Number: 07802

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Oklahoma City OK 73125

MA3-TG1-3-260902-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MTG13 SDG#: KMA25-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Units	
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/01/2002 20:54		Venia B McFadden	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/28/2002 09:10		Christian C Ehrhart	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2002 16:23		Nicole M Kepley	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/01/2002 15:45		Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/28/2002 06:20		Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/27/2002 17:38		Elaine F Stoltzfus	1
00273	Total Organic Carbon	EPA 415.1	1	10/02/2002 09:09		Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/01/2002 17:03		Venia B McFadden	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/03/2002 05:50		Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 21:16		Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 03:47		Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 21:16		Linda C Pape	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/01/2002 13:05		Cheryl L Robinson	1
03337	PAH Water Extraction	SW-846 3510C	1	10/02/2002 09:45		Felix C Arroyo	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2002 09:30		Cheryl L Robinson	1



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4-01-05



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Collected: 09/26/2002 13:00 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

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Reported: 10/16/2002 at 12:27

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Discard: 11/16/2002

Oklahoma City OK 73125

MA3-MW-13S-260902-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13S07 SDG#: KMA25-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 11:50	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 04:25	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 11:50	Linda C Pape	n.a.



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Lancaster Laboratories Sample No. WW 3908049

Collected: 09/26/2002 13:00 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:27

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-MW-13S-260902-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13S07 SDG#: KMA25-08

03337 PAH Water Extraction

SW-846 3510C

1 10/02/2002 09:45

Felix C Arroyo

1



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Lancaster Laboratories Sample No. WW 3908050

Collected: 09/26/2002 13:00 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Reported: 10/16/2002 at 12:28

Discard: 11/16/2002

Kerr-McGee Corporation

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Oklahoma City OK 73125

MA3-MW-13S-260902-07 Dup Grab Water Sample
Moss American Superfund Site - Milwaukee, WI

9027D SDG#: KMA25-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Detection Limit	
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	0.90	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.090	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 13:58	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 05:04	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 13:58	Linda C Pape	n.a.



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Lancaster Laboratories Sample No. WW 3908050

Collected: 09/26/2002 13:00 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:28

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-MW-13S-260902-07 Dup Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

9027D SDG#: KMA25-09

03337 PAH Water Extraction

SW-846 3510C

1 10/02/2002 09:45

Felix C Arroyo

1



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000415005



Lancaster Laboratories Sample No. WW 3908051

Collected: 09/26/2002 08:20 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:28

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

FB-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

FB04M SDG#: KMA25-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.90	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.90	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.090	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.090	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.090	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
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Lancaster Laboratories Sample No. WW 3908051

Collected: 09/26/2002 08:20 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Reported: 10/16/2002 at 12:28

Discard: 11/16/2002

FB-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

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Oklahoma City OK 73125

FB04M	SDG#: KMA25-10					
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 12:33	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 05:42	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 12:33	Linda C Pape	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/02/2002 09:45	Felix C Arroyo	1



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040808



Lancaster Laboratories Sample No. WW 3908052

Collected: 09/26/2002 13:10 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:28

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Oklahoma City OK 73125

MA3-MW25S-260902-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

90208 SDG#: KMA25-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
Due to the nature of the sample matrix, the surrogate standard recovery is above the range of specifications.						
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 14:41	Linda C. Pape	1



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Lancaster Laboratories Sample No. WW 3908052

Collected: 09/26/2002 13:10 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:28

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-MW25S-260902-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

90208 SDG#: KMA25-11

00774 PAH's in Water by HPLC

SW-846 8310

1 10/06/2002 06:21

Mark A Clark

1

01146 GC VOA Water Prep

SW-846 5030B

1 09/30/2002 14:41

Linda C Pape

n.a.

03337 PAH Water Extraction

SW-846 3510C

1 10/02/2002 09:45

Felix C Arroyo

1



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00412



Lancaster Laboratories Sample No. WW 3908053

Collected: 09/26/2002 12:45 by BS

Account Number: Q7802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:28

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

FB-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

B05MA SDG#: KMA25-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	0.046 J	0.040	ug/l	1
00807	Fluoranthene	206-44-0	0.060 J	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo (a) anthracene	56-55-3	0.067 J	0.020	ug/l	1
00818	Benzo (b) fluoranthene	205-99-2	0.073 J	0.040	ug/l	1
00823	Benzo (a) pyrene	50-32-8	0.22	0.020	ug/l	1
00895	Dibenz (a, h) anthracene	53-70-3	0.087 J	0.040	ug/l	1
00898	Indeno (1, 2, 3-cd) pyrene	193-39-5	0.084 J	0.080	ug/l	1
00907	Benzo (g, h, i) perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo (k) fluoranthene	207-08-9	0.078 J	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 13:15	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 06:59	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 13:15	Linda C Pape	n.a.

4
3



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Lancaster Laboratories Sample No. WW 3908053

Collected: 09/26/2002 12:45 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:28

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

FB-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

B05MA SDG#: KMA25-12

03337 PAH Water Extraction

SW-846 3510C

1 10/02/2002 09:45

Felix C Arroyo

1



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Lancaster Laboratories Sample No. WW 3908054

Collected: 09/26/2002 13:50 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:28

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-MW-30S-260902-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3S209 SDG#: KMA25-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.0	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	0.80	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	0.80	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 21:59	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/06/2002 07:38	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 21:59	Linda C Pape	n.a.



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Lancaster Laboratories Sample No. WW 3908054

Collected: 09/26/2002 13:50 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:28

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

MA3-MW-30S-260902-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3S209 SDG#: KMA25-13

03337 PAH Water Extraction

SW-846 3510C

1 10/02/2002 09:45

Felix C Arroyo

1



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04080



Lancaster Laboratories Sample No. WW 3908055

Collected: 09/26/2002 15:25 by BS

Account Number: 07802

Submitted: 09/27/2002 09:15

Kerr-McGee Corporation

Reported: 10/16/2002 at 12:28

P.O. Box 25861

Discard: 11/16/2002

Oklahoma City OK 73125

TB-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

TB04M SDG#: KMA25-14TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.	0.20		ug/l	1
00777	Toluene	108-88-3	N.D.	0.20		ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.20		ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.60		ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08213	BTEX (8021)	SW-846 8021B	1	09/30/2002 09:41	Linda C Pape	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/30/2002 09:41	Linda C Pape	n.a.



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 Acct. # 7802 Sample # 3908040-55

6ip # 8246172
 11 3908074-76 6ip # 8246178

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: W. P. Ston Acct. #: _____
 Project Name/#: Mass American PWSID #: _____
 Project Manager: Tom Gorman P.O.# _____
 Sampler: B. Schaefer, T. Hanzely, F. Wamb Quote #: _____
 Name of state where samples were collected: WI

Matrix 4
 Soil
 Water
 Other
 Potable (check if applicable)
 NPDES (check if applicable)

5 Analyses Requested
 BTEX
 NO2
 NO3

For lab use only
 FSC: _____
 SCR #: _____

6 Temperature of samples upon receipt (if requested)

2 Sample Identification	Date Collected	Time Collected	3 Grab	Composite	Soil	Water	Other	Total # of Containers	Analyses Requested	Remarks	6
MA3-TG1-3-260902-06	9/26/02	1040	X		X				X X X -		
MA3-TG1-2-260902-05-DUP		1035	X		X				X -		
FB-05		1245	X		X				X -		
MA3-MW-55-260902-10-MD		1400	X		X				X		
MA3-TG1-1-260902-04		1030	X		X				X X X -		
MA3-TG2-2-260902-02		0935	X		X				X X X -		
MA3-TG2-1-260902-01		0930	X		X				X X X -		
MA3-TG2-3-260902-03		0940	X		X				X X X -		
TB-04	9/26/02	1525	X		X				X -		

7 Turnaround Time Requested (TAT) (please circle): Normal: Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax
 Phone #: 847-918-4000 Fax #: 847-918-4055

8 Data Package Options (please circle if requested) SDG Complete? No

QC Summary Type VI (Raw Data) PER QUOTE
 Type I (Tier I) GLP
 Type II (Tier II) Other
 Type III (NJ Red. Del.)
 Type IV (CLP)

Site-specific QC required? Yes No
 (If yes, indicate QC sample and submit triplicate volume.)
 Internal Chain of Custody required? Yes No

Relinquished by: Are Slay Date: 9-26-02 Time: 1700
 Relinquished by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____

9



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Acct. # 7802 Sample # 3908040-55

GIP # 824612

3908074-76 GIP # 824618

Please print. Instructions on reverse side correspond with circled numbers.

Client: Wpston Acct. #: _____
 Project Name/#: Moss American PWSID #: _____
 Project Manager: Tom Graan P.O.# _____
 Sampler: B. Schaefer, T. Hanzely, F. Wombi Quote #: _____
 Name of state where samples were collected: WI

Matrix **4**
 Soil Potable Water NPDES Other

Analyses Requested **5**
PAH
PTATAS

For lab use only
 FSC: _____
 SCR#: _____

Temperature of samples upon receipt (if requested) **6**

Sample Identification	Date Collected	Time Collected	Grab 3	Composite	Soil	Potable Water	NPDES	Other	Total # of Containers	Remarks	Temperature of samples upon receipt (if requested)
<u>FB-05</u>	<u>9/26/02</u>	<u>1245</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<u>2</u>	<u>X</u>	
<u>MA3-MW-305-260902-09</u>	<u> </u>	<u>1350</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<u>2</u>	<u>X</u>	
<u>MA3-MW-55-260902-10</u>	<u> </u>	<u>1400</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<u>2</u>	<u>X</u>	
<u>MA3-MW-55-260902-10-MS</u>	<u> </u>	<u>1400</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<u>2</u>	<u>X</u>	
<u>MA3-MW-55-260902-10-MSD</u>	<u>✓</u>	<u>1400</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<u>2</u>	<u>X</u>	

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT
 Rush results requested by (please circle): Phone Fax
 Phone #: 847-918-4200 Fax #: 847-918-4055

8 Data Package Options (please circle if requested)

QC Summary Type VI (Raw Data) PERQUTE SDG Complete? Yes No
 Type I (Tier I) GLP
 Type II (Tier II) Other
 Type III (NJ Red. Del.)
 Type IV (CLP)

Site-specific QC required? Yes No
 (If yes, indicate QC sample and submit triplicate volume.)
 Internal Chain of Custody required? Yes No

Relinquished by: Ben Selby Date: 9-26-02 Time: 1700
 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____



For Lancaster Laboratories use only
 Acct. # 4502 Sample # 3908040-55
 Grp # 824612

Please print. Instructions on reverse side correspond with circled numbers.

3908044-76 Grp # 824618

1 Client: WPS star Acct. #: _____
 Project Name/#: Moss American PWSID #: _____
 Project Manager: Tom Graan P.O.# _____
 Sampler: B. Schaefer, T. Hanzely, F. Wambi Quote #: _____
 Name of state where samples were collected: WI

Matrix 4
 Soil Potable Grab if
 Water NPDES applicable
 Other

5 Analyses Requested
PAH
BTEX
NO2
NO3

For lab use only
 FSC: _____
 SCR #: 7168995

6 Temperature of samples upon receipt (if requested)

2 Sample Identification	Date Collected	Time Collected	3 Grab	Composite	Soil	Water	Other	Total # of Containers	5 Analyses Requested	Remarks	6 Temperature of samples upon receipt (if requested)
<u>MA3-MW-255-26902-08</u>	<u>9/26/02</u>	<u>1310</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		
<u>MA3-MW-135-26902-07</u>		<u>1300</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		
<u>MA3-MW-135-26902-07-DUP</u>		<u>1300</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		
<u>MA3-TG-2-1-26902-01-MS</u>		<u>0930</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
<u>MA3-TG-1-2-26902-05</u>		<u>1035</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		
<u>FB 04</u>		<u>0820</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
<u>MA3-TG-2-1-26902-01-MSD</u>		<u>0930</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
<u>MA3-MW-55-26902-10</u>		<u>1400</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
<u>MA3-MW-55-26902-10-MS</u>		<u>1400</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
<u>MA3-MW-38-26902-09</u>	<input checked="" type="checkbox"/>	<u>1350</u>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
 Date results are needed: STD TAT

Rush results requested by (please circle): Phone Fax
 Phone #: 847-918-4000 Fax #: 847-918-4055

8 Data Package Options (please circle if requested) SDG Complete? Yes No

QC Summary Type VI (Raw Data) PER QUOTE
 Type I (Tier I) GLP
 Type II (Tier II) Other
 Type III (NJ Red. Del.)
 Type IV (CLP)

Site-specific QC required? Yes No
 (If yes, indicate QC sample and submit triplicate volume.)
 Internal Chain of Custody required? Yes No

Relinquished by: [Signature] Date: 8-23-02 Time: 1115 Received by: _____ Date: _____ Time: _____
 Relinquished by: [Signature] Date: 9-26-02 Time: 1700 Received by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____ Received by: [Signature] Date: 9/12/02 Time: 0915

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>Weston</u> Acct. #: _____ Project Name/ #: <u>Moss American</u> PWSID #: _____ Project Manager: <u>Tom Graan</u> P.O.# _____ Sampler: <u>B. Schaffer, T. Hanzely, F. Wambi</u> Quote #: _____ Name of state where samples were collected: <u>WI</u>		Matrix: <u>4</u> <input type="checkbox"/> Soil <input type="checkbox"/> Water <input type="checkbox"/> Other		Analyses Requested: <u>5</u> PAH, TKN, TP-P04, COD, NH ₃ , BOD, O-P04, TOL							For lab use only FSC: _____ SCR #: <u>1168995</u>							
Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	Remarks							Temperature of samples upon receipt (if requested)		
FB-04	9/26/02	0820	X			X		2	X									
MA3-TG2-3-260902-03	↓	0940	X			X		6	X	X	X	X	X	X	X	X		
MA3-TG1-3-260902-06	↓	1040	X			X		4	X					X	X	X		

7 Turnaround Time Requested (TAT) (please circle): Normal <input type="checkbox"/> Rush <input type="checkbox"/> (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: <u>STD TAT</u> Rush results requested by (please circle): Phone <input type="checkbox"/> Fax <input type="checkbox"/> Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4055</u>	Relinquished by: <u>[Signature]</u> Date: <u>8-23-02</u> Time: <u>1115</u> Received by: _____ Date: _____ Time: _____
	Relinquished by: <u>[Signature]</u> Date: <u>8-26-02</u> Time: <u>1700</u> Received by: _____ Date: _____ Time: _____
	Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____
	Relinquished by: _____ Date: _____ Time: _____ Received by: <u>[Signature]</u> Date: <u>9/26/02</u> Time: <u>0915</u>

8 Data Package Options (please circle if requested)		SDG Complete? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
QC Summary Type VI (Raw Data) <u>PER QUOTE</u> Type I (Tier I) GLP Type II (Tier II) Other Type III (NJ Red. Del.) Type IV (CLP)	Site-specific QC required? Yes <input type="checkbox"/> No <input type="checkbox"/> (If yes, indicate QC sample and submit triplicate volume.) Internal Chain of Custody required? Yes <input type="checkbox"/> No <input type="checkbox"/>	



For Lancaster Laboratories use only
 Acct. # 4802 Sample # 3908040-55

Corp # 824612

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: <u>Waston</u> Acct. #: _____ Project Name/#: <u>Mass American</u> PWSID #: _____ Project Manager: <u>Tom Graan</u> P.O.#: _____ Sampler: <u>B. Schaefer, T. Hanzely, F. Wambi</u> Quote #: _____ Name of state where samples were collected: <u>WI</u>		Matrix: 4 <input type="checkbox"/> Soil <input type="checkbox"/> Water <input type="checkbox"/> Potable (check if applicable) <input type="checkbox"/> NPDES <input type="checkbox"/> Other		5 Analyses Requested PAH, NH3, TKN, TP-P04, COD, BOD, D-P04, TOC							For lab use only FSC: _____ SCR #: <u>1168985</u>								
2 Sample Identification		Date Collected	Time Collected	3 Grab Composite	Soil	Water	Potable (check if applicable)	NPDES	Other	Total # of Containers	Remarks							6 Temperature of samples upon receipt (if requested)	
<u>MA3-TG1-2-260902-05-DUP</u>		<u>9/26/02</u>	<u>1035</u>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<u>2</u>	<input checked="" type="checkbox"/>								
<u>MA3-TG1-2-260902-05</u>		<u>↓</u>	<u>1035</u>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<u>2</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>MA3-TG1-1-260902-04</u>		<u>↓</u>	<u>1030</u>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<u>6</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

7 Turnaround Time Requested (TAT) (please circle): Normal <input type="checkbox"/> Rush <input type="checkbox"/> (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: <u>STD TAT</u> Rush results requested by (please circle): Phone <input type="checkbox"/> Fax <input type="checkbox"/> Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4055</u>	Relinquished by: <u>[Signature]</u> Date: <u>8-23-02</u> Time: <u>1115</u>	Received by: _____ Date: _____ Time: _____
	Relinquished by: <u>[Signature]</u> Date: <u>9-26-02</u> Time: <u>1700</u>	Received by: _____ Date: _____ Time: _____
	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____
	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____
8 Data Package Options (please circle if requested) QC Summary: Type VI (Raw Data) <u>PER DWTE</u> Type I (Tier I) <input type="checkbox"/> GLP Type II (Tier II) <input type="checkbox"/> Other Type III (NJ Red. Del.) Type IV (CLP)	SDG Complete? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Site-specific QC required? Yes <input type="checkbox"/> No <input type="checkbox"/> (If yes, indicate QC sample and submit triplicate volume.)
	Internal Chain of Custody required? Yes <input type="checkbox"/> No <input type="checkbox"/>	

Analysis Request/Environmental Services



For Lancaster Laboratories use only:
 Acct. # 1802 Sample # 390804055
 Grip # 824612

Please print. Instructions on reverse side correspond with circled numbers.

Client: <u>Wpston</u> Acct. #: _____ Project Name/ #: <u>Miss American</u> PWSID #: _____ Project Manager: <u>Tom Graan</u> P.O. #: _____ Sampler: <u>B. Schaefer, T. Hanzely, L. Wambi</u> Quote #: _____ Name of state where samples were collected: <u>WI</u>		Matrix 4 <input type="checkbox"/> Potable (Govt. applicable) <input type="checkbox"/> Water <input type="checkbox"/> NPDES <input type="checkbox"/> Other Total # of Containers	Analyses Requested 5 NH ₃ TKW TP-P04 COD BOD O-P04 PAH TOC	For lab use only FSC: _____ SCR #: _____
--	--	---	--	--

Sample Identification	Date Collected	Time Collected	Grab 3	Composite	Soil	Water	Other	Total # of Containers	Analyses Requested	Remarks	Temperature of samples upon receipt (if requested) 6
MA3-TG2-1-26902-01	9/26/02	0930	X			X		6	X X X X X X X X		
MA3-TG2-1-26902-01-MS	↓	0930	X			X		2			
MA3-TG2-1-26902-01-MSD	↓	0930	X			X		2			

7 Turnaround Time Requested (TAT) (please circle): Normal Rush (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: <u>STD TAT</u> Rush results requested by (please circle): Phone Fax Phone #: <u>847-918-4500</u> Fax #: <u>847-918-4555</u>	Relinquished by: <u>Brian Schaefer</u> Date: <u>9-26-02</u> Time: <u>1700</u>	Received by: _____ Date: _____ Time: _____	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____
8 Data Package Options (please circle if requested)	QC Summary Type VI (Raw Data) <u>PER QUOTE</u> Type I (Tier I) <u>GLP</u> Type II (Tier II) <u>Other</u> Type III (NJ Red. Del.) Type IV (CLP)	SDG Complete? <u>Yes</u> No Site-specific QC required? Yes No (If yes, indicate QC sample and submit triplicate volume.) Internal Chain of Custody required? Yes No	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____	Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: Lipston Acct. #: _____
Project Name/#: Moss American PWSID #: _____
Project Manager: Tom Groan P.O.# _____
Sampler: B. Schaefer, T. Hanzely, F. Wambi Quote #: _____
Name of state where samples were collected: WI

Matrix 4
Soil Potable (if applicable)
Water NPDES (if applicable)
Other _____
Total of Containers _____

5 Analyses Requested
TKN TP-P04 COD NH3 ROD O-P04 PAH TOC

For lab use only
FSC: _____
SCR #: _____
Temperature of samples upon receipt (if requested) 6

2 Sample Identification	Date Collected	Time Collected	3 Grab	Composite	Soil	Water	Other	Total of Containers	TKN	TP-P04	COD	NH3	ROD	O-P04	PAH	TOC	Remarks
MA3-TG1-3-260902-06	9/26/02	1040	X		X			2	X	X	X	X					
MA3-TG2-2-260902-02		0935	X		X			6	X	X	X	X	X	X	X	X	
MA3-TG1-2-260902-05	✓	1035	X		X			4	X	X	X	X	X	X	X	X	

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: STD TAT
Rush results requested by (please circle): Phone Fax
Phone #: 847-918-4000 Fax #: 847-918-4055

8 Data Package Options (please circle if requested) SDG Complete? Yes No
QC Summary Type VI (Raw Data) PER DUPLICATE Yes No
Type II (Tier II) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Relinquished by: <u>Bru Schaefer</u>	Date: <u>9-26-02</u>	Time: <u>1700</u>	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: <u>Wendy Black</u>	Date: <u>9/28/02</u>	Time: <u>0911</u>

CASE NARRATIVE

Client: Kerr-McGee Corporation
SDG #: KMA25

LANCASTER LABORATORIES
PAH BY HPLC

SAMPLE NUMBER(S) :

<u>LL #'s</u>	<u>Sample Code</u>	<u>Matrix</u> <u>Water</u>	<u>Comments</u>
3908040	MA3G2	X	Unspiked
3908041	MA3G2MS	X	Matrix Spike
3908042	MA3G2MSD	X	Matrix Spike Dup
3908043	A3G22	X	
3908044	ATG23	X	
3908045	A3G11	X	10X Dilution
3908045DL	A3G11DL	X	100X Dilution
3908046	3TG12	X	
3908047	5DPMA	X	
3908048	MTG13	X	
3908049	13S07	X	
3908050	9027D	X	
3908051	FB04M	X	
3908052	90208	X	
3908053	B05MA	X	
3908054	3S209	X	

LABORATORY SUBMITTED QC:

SBLKWJ274	SBLKWJ2741	X	Method Blank
274WJLCS	274WJLCS1	X	Lab Control Sample

SAMPLE PREPARATION:

Due to insufficient sample, reduced volumes were used in the extraction of the following samples.

Case Narrative
SDG#: KMA25 continued

<u>Sample Code</u>	<u>Volume</u>
3TG12	992 mls
5DPMA	987 mls
FB04M	887 mls
BO5MA	974 mls

No other problems were encountered during the extraction of these samples.

ANALYSIS:

The method used for analysis was SW-846 8310.

All samples were analyzed for polynuclear aromatic hydrocarbons by HPLC.

A3G11 was analyzed at an initial 10X dilution due to the high concentration of non-target compounds.

Due to a number of concentrations above calibration range, A3G11 was analyzed at a further 100X dilution.

No other problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The recovery of acenaphthylene in MA3G2MS was outside QC limits. All recoveries were within specifications in 274WJLCS1.

All other QC was within specifications.

DATA INTERPRETATION:

Only non-conformances for client requested compounds are addressed in this case narrative.

Case Narrative
SDG#: KMA25 continued

Due to the presence of an interferent near the retention time for dibenz(a,h)anthracene, the reporting limit for this compound was not attained in A3G11. The reporting limit for this compound was adjusted accordingly.

Due to incorrect integrations, manual integrations were performed for dibenz(a,h)anthracene and benzo(g,h,i)perylene in A3G11.

Due to a missed peak in the initial processing of A3G11DL, triphenylene was manually integrated.

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Christine M. Ratchford for CJN
Charles J. Neslund
Group Leader, GC/MS Semivolatiles

Date: 10-21-02

00002

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CERTIFICATE OF ANALYSIS

Tom Graam
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 10/28/02
P.O. Number: 0018581
Sample ID: 9945-00404
Date Received: 9/27/02
Time Received: 08:50

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
SUBJECT: MA3-TG2-1-260902-01, 9/26/02 @ 09:30 by TG				
Total Aerobic Bacteria	4,700. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	110. cfu/ml	9/27/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG2-2-260902-02, 9/26/02 @ 09:35 by TG				
Total Aerobic Bacteria	2,200. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	200. cfu/ml	9/27/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG2-2-260902-03, 9/26/02 @ 09:40 by TG				
Total Aerobic Bacteria	500. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	20. cfu/ml	9/27/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG1-1-260902-04, 9/26/02 @ 10:30 by TG				
Total Aerobic Bacteria	5,800. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	300. cfu/ml	9/27/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG1-2-260902-05, 9/26/02 @ 10:35 by TG				
Total Aerobic Bacteria	35,000. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	4,000. cfu/ml	9/27/02	NMC	9215B MODIFIED
SUBJECT: MA3-TG1-3-260902-06, 9/26/02 @ 10:40 by TG				
Total Aerobic Bacteria	17,000. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	7,000. cfu/ml	9/27/02	NMC	9215B MODIFIED

*** Certificate Continues On Next Page ***

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Tom Graam
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 10/28/02
P.O. Number: 0018581
Sample ID: 9945-00404
Date Received: 9/27/02
Time Received: 08:50

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
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This document has been reviewed and is electronically signed by:

Karen A. Ziolkowski
Laboratory Director

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CERTIFICATE OF ANALYSIS

Tom Graam
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 10/28/02
P.O. Number: 0018581
Sample ID: 9945-00382
Date Received: 9/26/02
Time Received: 10:15

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
SUBJECT: NA3-NW-TG-3-2-250902-11, 9/25/02 @ 14:35 by TG				
Total Aerobic Bacteria	1,030,000. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	4,000. cfu/ml	9/27/02	NMC	9215B MODIFIED
SUBJECT: NA3-NW-TG-3-3-250902-12, 9/25/02 @ 14:40 by TG				
Total Aerobic Bacteria	4,600. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	50. cfu/ml	9/27/02	NMC	9215B MODIFIED
SUBJECT: NA3-NW-TG-5-1-250902-01, 9/25/02 @ 09:30 by TG				
Total Aerobic Bacteria	7,200. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	300. cfu/ml	9/27/02	NMC	9215B MODIFIED
SUBJECT: NA3-NW-TG-5-2-250902-02, 9/25/02 @ 09:35 by TG				
Total Aerobic Bacteria	63,000. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	4,000. cfu/ml	9/27/02	NMC	9215B MODIFIED
SUBJECT: NA3-NW-TG-5-3-250902-03, 9/25/02 @ 09:40 by TG				
Total Aerobic Bacteria	4,800. cfu/ml	9/27/02	NMC	9215B MODIFIED
T.Aerobic Degradar Bacteria	230. cfu/ml	9/27/02	NMC	9215B MODIFIED

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Tom Graam
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 10/28/02
P.O. Number: 0018581
Sample ID: 9945-00382
Date Received: 9/26/02
Time Received: 10:15

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
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This document has been reviewed and is electronically signed by:

Karen A. Ziolkowski
Laboratory Director

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Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Date Reported: 10/28/02
P.O. Number: 0018581
Sample ID: 9945-00382
Date Received: 9/26/02
Time Received: 10:15

Permit Number

PARAMETERS	RESULTS	DATE	TECH	METHOD
SUBJECT: MA3-MW-TG-6-1-250902-04, 9/25/02 @ 10:40 by TG				
Total Aerobic Bacteria	8,300. cfu/ml	9/27/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	2,000. cfu/ml	9/27/02	NHC	9215B MODIFIED
SUBJECT: MA3-MW-TG-6-2-250902-05, 9/25/02 @ 10:45 by TG				
Total Aerobic Bacteria	5,800. cfu/ml	9/27/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	1,200. cfu/ml	9/27/02	NHC	9215B MODIFIED
SUBJECT: MA3-MW-TG-6-3-250902-06, 9/25/02 @ 10:50 by TG				
Total Aerobic Bacteria	1,200. cfu/ml	9/27/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	30. cfu/ml	9/27/02	NHC	9215B MODIFIED
SUBJECT: MA3-MW-TG-4-1-250902-07, 9/25/02 @ 13:45 by TG				
Total Aerobic Bacteria	3,000. cfu/ml	9/27/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	30. cfu/ml	9/27/02	NHC	9215B MODIFIED
SUBJECT: MA3-MW-TG-4-2-250902-08, 9/25/02 @ 13:50 by TG				
Total Aerobic Bacteria	1,100. cfu/ml	9/27/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	80. cfu/ml	9/27/02	NHC	9215B MODIFIED
SUBJECT: MA3-MW-TG-4-3-250902-09, 9/25/02 @ 13:55 by TG				
Total Aerobic Bacteria	1,010 cfu/ml	9/27/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	40. cfu/ml	9/27/02	NHC	9215B MODIFIED
SUBJECT: MA3-MW-TG-3-1-250902-10, 9/25/02 @ 14:30 by TG				
Total Aerobic Bacteria	1,120. cfu/ml	9/27/02	NHC	9215B MODIFIED
T.Aerobic Degradar Bacteria	10. cfu/ml	9/27/02	NHC	9215B MODIFIED

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Contact person Tom Graan Sampler B. Schaefer, T. Hanzely, F. Wambi
 Project name Moss American Project #
 Project location Milwaukee, WI (City) (state)

Site contaminant * Creosote
 (Used in test for degrader microbial populations, give ratios if applicable, e.g. 50:50, gasoline:diesel)

* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free-product included? yes no

Requested analyses (✓)

Sample ID	Lab use only	Date	Time	✓		Sample depth	#			Additional comments	CEA* (soil/gw) see note <input type="checkbox"/> Aerobic, <input type="checkbox"/> Anaerobic, <input type="checkbox"/> Microaerophilic	Standard nutrient panel (soil/gw) * incl. TKN, ammonium nitrogen, available P, pH, total organic carbon, % moisture (s)	Particle size analysis (soil) <input type="checkbox"/> sieve and hydrometer, <input type="checkbox"/> sieve only	% air-filled pore space (soil) (includes bulk density)	Intact core		Microbial Enumeration
				Soil	GW		Jars	Vials	Core						Soil moisture at field capacity	Bulk density (soil)	
MA3-TG2-1-260902-01		9/26/02	0930		X	-	1										X
MA3-TG2-2-260902-02			0935		X	-	1										X
MA3-TG2-3-260902-03			0940		X	-	1										X
MA3-TG1-1-260902-04			1030		X	-	1										X
MA3-TG1-2-260902-05			1035		X	-	1										X
MA3-TG1-3-260902-06		✓	1040		X	-	1										X

Relinquished by: me Shay Date/time: 9/26/02 / 1700 Comments: _____ Sample condition upon arrival: _____
 Received by: Michael Sedu Date/time: 9/27/02 0850 On ice? Yes, No

Microbac Laboratories,
 HAMMOND DIVISION
 542-544 Conkey Street
 Hammond, Indiana 46324
 219-932-1770

Send results to:
 Name Tom Graan
 Company Weston
 Address 750 E. Bunker Court Suite 500
 City Vernon Hills State IL Zip 60061
 Phone 847-918-4000 Fax 847-918-4055

Send invoice to: Same as results
 Name _____
 Company _____
 Address _____
 City _____ State _____ Zip _____
 Phone _____ Fax _____

*CEA : Comparative Enumeration Assay Includes total heterotrophic and degrader populations

Front per T. C. in Sr. ler. n. c. l. a. c. J. H. only KL 00001 447-302

Project name Moss American Project # _____

Project location Milwaukee WI (City) _____ (state) _____

Site contaminant * Creosote BTEX PAH

(Used in test for degrader microbial populations, give ratios if applicable, e.g. 50:50, gasoline:diesel)

* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free product included? yes No

Requested analyses (✓)

CEA* (soil/gw) see note <input type="checkbox"/> Aerobic, <input type="checkbox"/> Anaerobic, <input type="checkbox"/> Microaerophilic	Standard nutrient panel (soil/gw) - incl. TKN, ammonium nitrogen, available P, pH, total organic carbon, % moisture (s)	Particle size analysis (soil) <input type="checkbox"/> sieve and hydrometer, <input type="checkbox"/> sieve only	% air-filled pore space (soil) (includes bulk density)	Intact core		Microbial Enumeration
				Soil moisture at field capacity	Bulk density (soil)	

9
10
11
12

Sample ID	Lab use only	Date	Time	(✓)		Sample depth	#			Additional comments
				Soil	GW		Jars	Vials	Core	
MA3-MW-TG-3-3-250902-12		9/25/02	1440		X	1	1			
MA3-MW-TG-5-1-250902-01			0930		X	1	1			
MA3-MW-TG-5-2-250902-02			0935		X	1	1			
MA3-MW-TG-5-3-250902-03			0940		X	1	1			

Relinquished by: Karen Schauf Date/time: 9/25/02 1600

Received by: Michael Seda Date/time: 9/26/02 1015

Comments: _____

Sample condition upon arrival: _____

On Ice? Yes, No

Microbac Laboratories,
HAMMOND DIVISION
542-544 Conkey Street
Hammond, Indiana 46324
219-932-1770

Send results to:
 Name Tom Graan
 Company Weston
 Address 750 E. Bunker Court Suite 500
 City Vernon Hills State IL Zip 60061
 Phone 847-918-4000 Fax 847-918-4055

Send invoice to: Same as results

Name _____
 Company _____
 Address _____
 City _____ State _____ Zip _____
 Phone _____ Fax _____

*CEA : Comparative Enumeration Assay Includes total heterotrophic and degrader populations

Contact person Tom Graan Sampler B. Schaller, T. Hanzely, F. Wambi

Project name Moss American Project # _____

Project location Milwaukee, WI (City) (State)

Site contaminant * Cresote Btex PAH
 (Used in test for degrader microbial populations, give ratios if applicable, e.g. 50:50, gasoline:diesel)

* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free product included? yes No

7740-002

Requested analyses (✓)

CEA* (soil/gw) see note <input type="checkbox"/> Aerobic, <input type="checkbox"/> Anaerobic, <input type="checkbox"/> Microaerophilic	Standard nutrient panel (soil/gw) - incl. TKN, ammonium nitrogen, available P, pH, total organic carbon, % moisture (s)	Particle size analysis (soil) <input type="checkbox"/> sieve and hydrometer, <input type="checkbox"/> sieve only	% air-filled pore space (soil) (includes bulk density)	Soil moisture at field capacity	Bulk density (soil)	Intact core		Microbial Enumeration

	Sample ID	Lab use only	Date	Time	(✓)		Sample depth	#			Additional comments	
					Soil	GW		Jars	Vials	Core		
1	MA3-MW-TG- 6-1-250902-04		9/25/02	1040		X	-	1				
2	MA3-MW-TG- 6-2-250902-05			1045		X	-	1				
3	MA3-MW-TG- 6-3-250902-06			1050		X	-	1				
4	MA3-MW-TG- 4-1-250902-07			1345		X	-	1				
5	MA3-MW-TG- 4-2-250902-08			1350		X	-	1				
6	MA3-MW-TG- 4-3-250902-09			1355		X	-	1				
7	MA3-MW-TG- 3-1-250902-10			1430		X	-	1				
8	MA3-MW-TG- 3-2-250902-11		✓	1435		X	-	1				

Relinquished by: <u>Bruce S. Dap</u>	Date/time: 9/25/02 / 1800	Comments:	Sample condition upon arrival:
Received by: <u>Michael Sedo</u>	Date/time: 9/26/02 1015		

Microbac Laboratories,
 HAMMOND DIVISION
 542-544 Conkey Street
 Hammond, Indiana 46324
 219-932-1770

Send results to:
 Name Tom Graan
 Company Weston
 Address 750 E. Bunker Court, Suite 500
 City Vernon Hills State IL Zip 60061
 Phone 847-918-4000 Fax 847-918-4055

Send invoice to: Same as results
 Name _____
 Company _____
 Address _____
 City _____ State _____ Zip _____
 Phone _____ Fax _____

*CEA : Comparative Enumeration Assay includes total heterotrophic and degrader populations