QUARTERLY GROUNDWATER TREATMENT PERFORMANCE MONITORING REPORT Q4 2004 MOSS-AMERICAN SITE MILWAUKEE, WISCONSIN

Prepared for

KERR-MCGEE CHEMICAL, LLC
Kerr-McGee Center
123 Robert S. Kerr Avenue
Oklahoma City, OK 73102

Prepared by

WESTON SOLUTIONS, INC.
Suite 500
750 East Bunker Court
Vernon Hills, IL 60061

March 2005

W. O. No. 02687.007.006.0001

Weston Solutions, Inc.
Suite 500
750 East Bunker Court
Vernon Hills, IL 60061-1450
847-918-4000 • Fax 847-918-4055
www.westonsolutions.com

4 March 2005

Mr. Russell D. Hart (HSRW-6J)
Remedial Project Manager
U. S. Environmental Protection Agency
Region V
77 West Jackson Boulevard
Chicago, IL 60604

Work Order No. 02687.007.006
KMC Work Order No. 40-50-01-AKW-B

Re: Quarterly Groundwater Treatment Performance Monitoring Report, Q4 2004
Moss-American Site, Milwaukee, Wisconsin

Dear Mr. Hart:

On behalf of Kerr-McGee Chemical, LLC (KMC), Weston Solutions, Inc. (WESTON®), is submitting this report summarizing the results of the fourth quarter (Q4) 2004 groundwater monitoring event for the above-referenced project.

If you have any questions or require additional information regarding this submittal, please do not hesitate to call me at (847) 918-4142.

Very truly yours,

Weston Solutions, Inc.

Thomas P. Graan

Thomas P. Graan, Ph.D.
Principal Project Manager

TPG/tg

Attachments

cc: T. Wentland, WDNR
B. Amungwafor, WDNR

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

SECTION 1
INTRODUCTION

In accordance with paragraph 4a of the Remedial Design/Remedial Action Statement of Work (RD/RA SOW), Kerr-McGee Chemical, LLC (KMC) is required to implement a groundwater monitoring program capable of detecting changes in chemical concentrations in the groundwater. KMC has directed Weston Solutions, Inc. (WESTON®) to perform this work. As previously agreed, the monitoring network currently includes seven shallow groundwater monitoring wells (MW-5S, MW-6S, MW-7S, MW-9S, MW-27S, MW-28S, and MW-29S). 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. Nine piezometer wells (PZ-01, PZ-02, PZ-03, PZ-04, PZ-05, PZ-06, PZ-07, PZ-09, and PZ-10) and one staff gauge (SG-01) were installed in December 2002 to monitor groundwater movement. The locations of piezometers, the staff gauge, and the groundwater-monitoring wells that are included in the quarterly sampling program are indicated on Figure 1-1.

In addition to the on-site groundwater monitoring wells, four shallow groundwater monitoring wells (MW-A, MW-B, MW-C and MW-D) were installed in September 2003 to monitor groundwater conditions between old and new river channels in the Reach 1. These four wells are sampled annually (during Q3 sampling events) in accordance with the annual groundwater monitoring program for the Reach 1 area.

In December 2004, seven additional shallow groundwater monitoring wells (MW-E, MW-F, MW-G, MW-H, MW-I, MW-J and MW-K) were installed to monitor groundwater conditions between old and new river channels in the Reaches 2 and 3. These seven wells will be sampled annually (during Q3 sampling events) in accordance with the annual groundwater monitoring program for the Reaches 2 and 3.

Some wells that were previously 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 in early Q4 2001 during the "hot spot" soil excavation and treatment process. Wells MW-20S and MW-20I were removed during Q3 2002 when the Little Menomonee River (LMR) diversion work took place.

As discussed in the Q2 2002 Quarterly Groundwater Treatment Performance Monitoring Report, some modifications were made to the sampling program. The first modification was the reduction of performance monitoring well sampling frequency. The treatment performance monitoring wells were originally sampled on a monthly basis, but sample data showed that minimal changes in site conditions were found on a monthly basis. Therefore a change in sampling frequency from monthly to quarterly was recommended. This recommendation was approved by the Wisconsin Department of Natural Resources (WDNR) and the United States Environmental Protection Agency (collectively "Agencies") and the monthly sampling program was discontinued after October 2002 sampling event. The second modification was the reduction of the groundwater monitoring program scope. It was proposed that some shallow monitoring wells (MW-3S, MW-10S, MW-13S, MW-25S, MW-26S, and MW-20S) and intermediate monitoring wells (MW-3I, MW-7I, MW-9I, and MW-20I) be removed from the groundwater monitoring program due to zero or few sample detections in these wells. The Agencies approved this recommendation, and the sampling of these wells was discontinued after the September (Q3) 2002 sampling event; however, per the Agencies' request, these wells were not abandoned. Instead these wells are utilized to collect water level measurements for the production of more accurate quarterly groundwater potentiometric maps.

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. In addition, 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 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, and the locations are indicated on Figure 1-1.

In accordance with paragraph 4a (i) of the RD/RA SOW, the quarterly field measurement and analysis of groundwater samples collected from the shallow 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 quarterly field measurements for samples collected from the treatment performance monitoring wells include groundwater elevation, pH, temperature, turbidity, specific conductance, redox potential, and DO. Quarterly laboratory analyses required for the treatment performance wells include microbial enumeration, nitrate-nitrogen (NO_3-N), nitrite-nitrogen (NO_2-N), total Kjeldahl nitrogen (TKN), ammonia-nitrogen (NH_3-N), total phosphate-phosphorous (PO_4-P), orthophosphate (ORP), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), BTEX, and the PAHs indicated in the above paragraph.

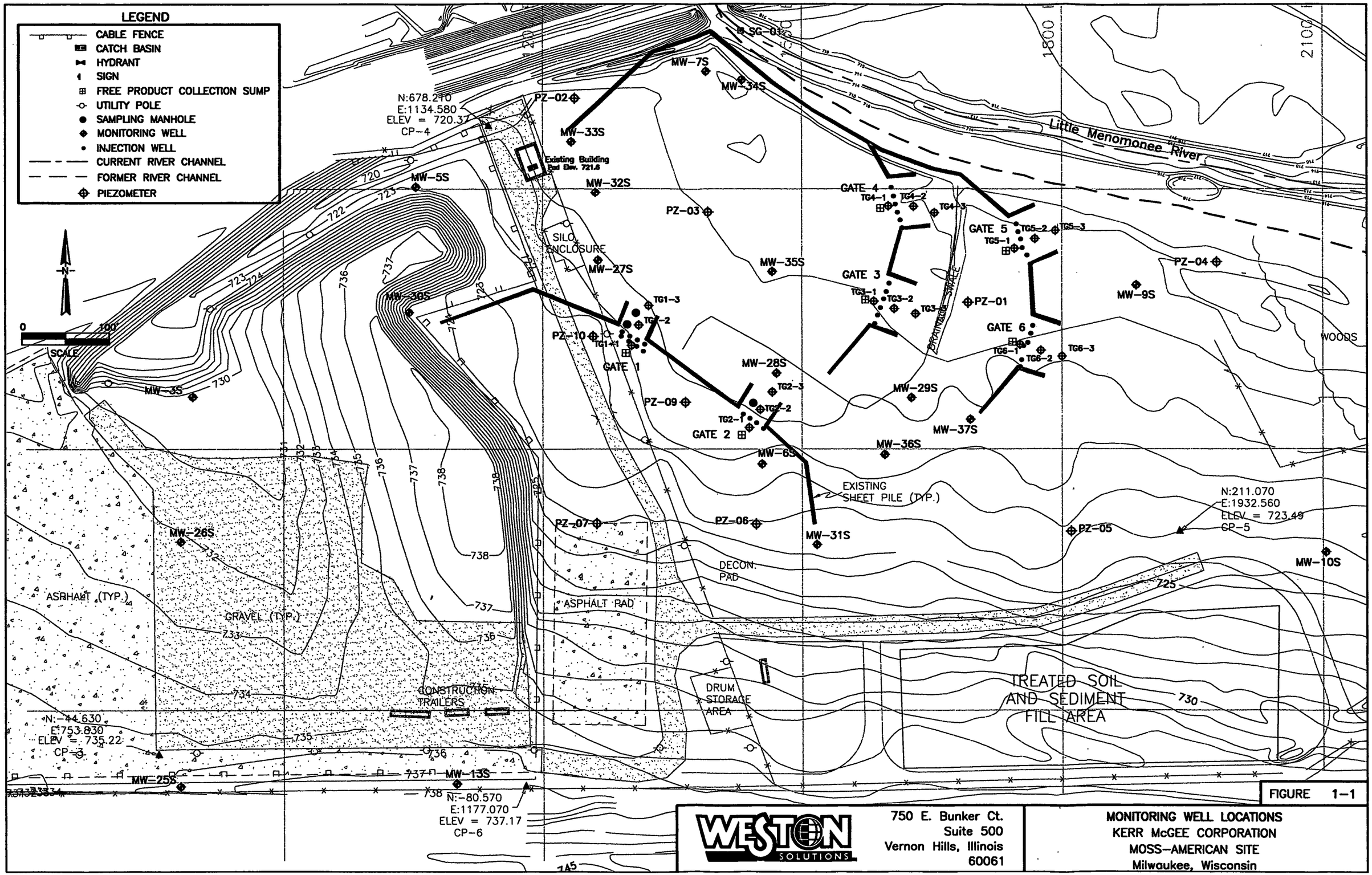


FIGURE 1-1

WESTON SOLUTIONS

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

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

SECTION 2

ON-SITE GROUNDWATER MONITORING RESULTS

The Q4 2004 groundwater-monitoring event at the Moss-American site was completed between 14 and 17 December 2004. Tasks completed during the field effort for this event included the collection of groundwater elevation and DO data from the shallow 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, containment performance, and treatment performance groundwater monitoring wells. The results of the Q4 2004 groundwater sampling event 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, treatment performance monitoring wells, and piezometers on 14 December 2004, prior to the commencement of groundwater sampling. 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 calculated 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 groundwater levels for the piezometers and staff gauge are presented in Table 2-3. Figure 2-1 presents a potentiometric surface map of the shallow groundwater-bearing zone, based on the 14 December 2004 data. Figure 2-2 presents the groundwater potentiometric surface elevations during Q3 2004. An evaluation of the Q4 2004 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 LMR. In the topographically higher (western) portion of the site, the horizontal hydraulic gradient is relatively steep, at approximately 0.029 feet per foot (ft/ft) to

the northeast, as measured from the vicinity of MW-13S to PZ-07. The topography of the site levels out near the river, as does the potentiometric surface with a northerly hydraulic gradient of approximately 0.010 ft/ft, as measured from the vicinity of PZ-05 to PZ-04. The estimated hydraulic gradients within the treatment gates ranged from 0.0001 to 0.0052 ft/ft (Table 2-2). The hydraulic gradient is relatively flat within the treatment gate area with an overall hydraulic gradient from TG1 to TG5 of approximately 0.0028 ft/ft in an easterly direction. The hydraulic gradients calculated in the vicinity of treatment gates, TG3, TG5 and TG6 are negative, 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:

$$v = Ki/n$$

where:

v = groundwater velocity
K = hydraulic conductivity (also referred to as the coefficient of permeability)
i = hydraulic gradient
n = 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 (3 ft/day). Using a hydraulic gradient of 0.029 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 0.0029 ft/day. Near the river, using a hydraulic gradient of 0.010 ft/ft, a porosity of 0.3, and a hydraulic conductivity of 3 ft/day, the velocity of groundwater flow is calculated to be approximately 0.1

ft/day. The groundwater flow velocities within the treatment gates are estimated to range from 0.0009 ft/day to 0.0491 ft/day. 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 33 shallow monitoring wells screened within the shallow groundwater-bearing unit. The shallow wells sampled include seven shallow groundwater monitoring wells (MW-5S, MW-6S, MW-7S, MW-9S, 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).

In addition to the investigative groundwater samples collected, four field sample duplicate, two matrix spike/matrix spike duplicate (MS/MSD), and four field blank (identified by an 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 volatile organic compound (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, DO, and turbidity. The field parameters were collected using a YSI 556 portable water quality meter and a HS Scientific DRT-15CE turbidimeter. Downhole DO readings were collected from each monitoring well prior to purging the well for groundwater sample collection. The groundwater pH, redox potential, specific conductance, temperature, and turbidity were monitored during well purging prior to sampling. The final (stabilized) values for these

measurements prior to sample collection are presented in Table 2-4. Water quality parameter measurements were not collected from well TG1-1 and MW-34S due to the presence of sheen on the purge water during Q4 2004.

2.2.1.1 pH

The pH of the groundwater samples collected during Q4 2004 ranged from 2.97 to 7.81 pH standard units (S.U.). While pH measurements in wells MW-7S, TG5-3, TG6-1, TG6-2 and TG6-3 were anomalously low (below 6) and some pH readings were slightly lower (below 6.5) than neutral, pH readings in most of the wells were near-neutral (7.0 S.U.) during Q4 2004. pH is an important factor in determining the feasibility of bioremediation of contaminants in the site groundwater because biological systems typically function only in narrow pH ranges (typically 6.5 to 8.5 S.U.) and because microbial growth rates are pH dependent.

2.2.1.2 Redox Potential

The redox potentials of the groundwater samples collected at the site during Q4 2004 ranged from 242.7 to 255.3 millivolts (mV). 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^{2-}, and Fe^{3+}) predominate in comparison to their reduced counterparts (NH_4^+, S^{2-}, and Fe^{2+}, respectively). Once DO 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 oxidation potential.

2.2.1.3 Dissolved Oxygen

DO levels for the groundwater samples collected during Q4 2004 ranged from 0.51 to 7.68 milligrams per liter (mg/L). Overall, the DO readings indicate the presence of low levels of oxygen in the water, and the system as a whole is considered to be generally under suboxic conditions. DO promotes the growth of aerobic and facultative bacteria and the production of readily assimilated nutrients. All of these factors are required to facilitate the oxidation reaction responsible for removing the contaminants from the groundwater under aerobic conditions.

2.2.1.4 Specific Conductance

The specific conductance, or conductivity, of the groundwater samples collected during Q4 2004 ranged from 0.098 to 1.1 micromhos per centimeter (umho/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 7.51 to 10.39 degrees Celsius (°C) during Q4 2004. Temperature is an extremely important factor in bioremediation because microbial growth rates are greatly dependent upon temperature.

2.2.1.6 Turbidity

Turbidity ranged from 0.6 to 45.3 nephelometric turbidity units (NTU) during Q4 2004. 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 December 2004 are provided in Appendix A. 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 December 2004 sampling event was analyzed for BTEX and PAH compounds. The results of these analyses are presented and compared to WDNR Preventive Action Limits (PALs) and Enforcement Standards (ESs) in Table 2-5. Table 2-5 identifies parameters detected at concentrations exceeding their respective PALs (shown as bolded values). Parameters with concentrations exceeding both PALs and ESs are presented as shaded and bolded values in Table 2-5. Exceedences are summarized in the following paragraphs. The laboratory reports that included BTEX and PAH analyses results are provided as Appendix A.

Groundwater Sample Results

As shown in Table 2-5, benzene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, fluorene, naphthalene, and pyrene 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:

WDNR PAL Exceedences

- Benzene was detected at concentrations exceeding the PAL of 0.5 micrograms per liter (µg/L) in the groundwater samples collected from wells MW-7S and MW-34S.
- Benzo(a)pyrene was detected at concentrations exceeding the PAL of 0.02 µg/L in the groundwater samples collected from wells MW-27S, MW-34S, TG1-1, and TG4-3.
- Benzo(b)fluoranthene was detected at concentrations exceeding the PAL of 0.02 µg/L in the groundwater samples collected from wells MW-27S, MW-34S, TG1-1, and TG4-3.
- Chrysene was detected at concentrations exceeding the PAL of 0.02 µg/L in the groundwater samples collected from wells MW-27S, MW-34S, TG1-1, TG1-2, and TG4-3.
- Fluoranthene was detected at a concentration exceeding the PAL of 80 µg/L in the groundwater sample collected from well TG1-1.
- Fluorene was detected at concentrations exceeding the PAL of 80 µg/L in the groundwater samples collected from wells MW-34S and TG1-1.
- Naphthalene was detected at concentrations exceeding the PAL of 8 µg/L in the groundwater samples from wells MW-7S, MW-33S, MW-34S, and TG1-1.
- Pyrene was detected at a concentration exceeding the PAL of 50 µg/L in the groundwater sample collected from well TG1-1.

WDNR ES Exceedences

- Benzene was detected at concentrations exceeding the ES of 5 µg/L in the groundwater samples collected from wells MW-7S and MW-34S.
- Benzo(a)pyrene was detected at concentrations exceeding the ES of 0.2 µg/L in the groundwater samples collected from wells MW-27S, TG1-1, and TG4-3.
- Benzo(b)fluoranthene was detected at concentrations exceeding the ES of 0.2 µg/L in the groundwater samples collected from wells MW-27S, TG1-1, and TG4-3.
- Chrysene was detected at concentrations exceeding the ES of 0.2 µg/L in the groundwater samples collected from wells MW-27S, MW-34S, and TG1-1.
- Fluoranthene was detected at a concentration exceeding the ES of 400 µg/L in the groundwater sample collected from well TG1-1.

- Fluorene was detected at a concentration exceeding the ES of 400 µg/L in the groundwater sample collected from well TG1-1.
- Naphthalene was detected at concentrations exceeding the ES of 40 µg/L in the groundwater samples collected from wells MW-7S, MW-33S, MW-34S, and TG1-1.
- Pyrene was detected at a concentration exceeding the ES of 250 µg/L in the groundwater sample collected from well TG1-1.

The plume boundary is primarily in an area encompassing seven shallow monitoring wells (MW-7S, MW-27S, MW-33S, MW-34S, TG1-1, TG1-2, and TG4-3). The majority of PAL and ES exceedences are associated with wells MW-34S and TG1-1 in which free product has historically been observed. 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 demonstrates a northeasterly trend, as indicated in Figure 2-1, similar to the previous 24 quarterly groundwater sampling events.

Overall, the lateral extent of the groundwater contaminant plume is similar in Q4 2004 compared to previous quarters of groundwater sampling, with the exception of some very low exceedances of benzo(a)pyrene and benzo(b)fluoranthene in TG4-3 which appear localized.

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 2-6. Levels of benzene, naphthalene, fluorene, and benzo(a)pyrene fluctuate over wide ranges in some these wells. However, several constituents have shown an overall decreasing trend in monitoring wells MW-32S, MW-33S and MW-35S. Fluorene, benzo(a)pyrene, and naphthalene concentrations have remained relatively constant in MW-7S, while the benzene concentration showed an increasing trend during Q4 2004. Well MW-34S has shown overall fluctuating levels in benzene, naphthalene, fluorene, and benzo(a)pyrene. Well MW-34S did not contain a measurable amount of free product during Q4 2004; however, traces of potential product were noted during purging of MW-34S. Varying levels of free product have been found in MW-34S in the recent past. This correlates with the elevated levels of constituents found in MW-34S. Fluctuating concentrations

of benzene, naphthalene, fluorene, and benzo(a)pyrene have been detected since this well was first sampled in Q3 2000. These fluctuating concentrations could be due to the presence of free product which has historically been observed in well TG1-1.

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, NO_3-N, NO_2-N, TKN, NH_3-N, PO_4-P, ORP, BOD, COD, TOC, BTEX, and PAHs. The analytical results for microbial enumeration, NO_3-N, NO_2-N, TKN, NH_3-N, PO_4-P, ORP, BOD, COD, and TOC are presented in Table 2-7. The analytical results for the treatment performance monitoring well groundwater samples are summarized below. The laboratory reports of nutrient and microbial analyses are also included in Appendix A.

Nitrogen and Phosphorous Compounds

NO_3-N was not detected at or above the detection limits in any of the treatment performance monitoring well samples. NO_2-N was detected in well TG3-3 at a concentration of 0.015 mg/L, but was not detected in any other wells. TKN results include non-detect results and detections with concentrations ranging from 0.53 to 2.2 mg/L. NH_3-N results include non-detect results and detections with concentrations ranging from 0.15 to 2.1 mg/L. Overall, nitrogen compound concentrations are at relatively low levels; however, previous sample results have indicated that NH_3-N concentrations are typically an order of magnitude greater than NO_3-N concentrations and approximately two orders or magnitude greater than NO_2-N.

PO_4-P was not detected in any of the treatment performance wells during Q4 2004. ORP was detected in only one sample (TG3-2) at a concentration of 0.013 mg/L. From the ratio between carbon, nitrogen and phosphorous, a beneficial level of PO_4-P or ORP was not found in any of the treatment gates during Q4 2004.

BOD, COD, and TOC

BOD concentrations for the samples collected throughout the treatment system ranged from non-detect to 8 mg/L. COD concentrations for the samples collected throughout the treatment system ranged from 7.5 to 64 mg/L. TOC concentrations for the samples collected throughout the treatment system ranged from 2.9 to 13.5 mg/L. As expected, the treatment gate wells indicate less BOD compared to COD. COD indicates the presence of constituents that exert an oxygen demand, including carbon compounds such as the site contaminants in the groundwater, and other constituents such as ammonia, sulfurous compounds; and biological material such as humic acids and detritus. A significant portion of oxygen demand 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 the COD analysis detected is catalyzed chemically and thermally. The low BOD indicates low concentrations of material that is readily biodegradable and/or quickly oxidized.

Microbial Enumeration

The total microbial populations for TG1 and TG2 ranged from 4.1×10^2 to 2.1×10^4 colony forming units per milliliter (CFU/mL) during Q4 2004. The total microbial populations for TG3 and TG4 ranged from 1.0×10^3 to 5.6×10^3 CFU/mL during Q4 2004. The total microbial populations for TG5 and TG6 ranged from 3.2×10^2 to 4.9×10^3 CFU/mL during Q4 2004.

The result of degrader microbial population analysis for TG1 and TG2 ranged from non-detect to 9.0×10^2 CFU/mL during Q4 2004. The degrader microbial populations for TG3 and TG4 ranged from non-detect to 1.2×10^2 CFU/mL during Q4 2004. The degrader microbial populations for TG5 and TG6 ranged from non-detect to 30 CFU/mL during Q4 2004.

LEGEND

- CABLE FENCE
- CATCH BASIN
- HYDRANT
- SIGN
- FREE PRODUCT COLLECTION SUMP
- UTILITY POLE
- SAMPLING MANHOLE
- MONITORING WELL
- INJECTION WELL
- STAFF GAUGE
- PIEZOMETER
- CURRENT RIVER CHANNEL
- FORMER RIVER CHANNEL
- DIRECTION OF GROUNDWATER FLOW
- GROUNDWATER ELEVATION CONTOUR DASHED WHERE INFERRED
- ESTIMATED BOUNDARY OF CONTAMINANT PLUME

N

0 100' SCALE

N:698.240
E:1134.580
ELEV = 720.37
CP-4

MW-7S 716.83
MW-34S 716.73
PZ-02 715.82
MW-33S 716.72
Existing Building Pad Elev. 721.6
MW-5S 719.49
MW-32S 717.47
PZ-03 716.99
MW-27S 718.49
MW-30S 723.14
MW-35S 717.04
TG1-3 718.01
TG2-2 718.12
TG1-1 718.13
PZ-10 719.89
GATE 1
MW-28S 717.97
TG2-3 717.87
TG2-2 718.02
TG2-1 718.39
PZ-09 720.24
GATE 2
MW-3S 724.55
MW-26S 727.81
MW-25S 735.32
MW-13S 734.41
N:-80.570
E:1177.070
ELEV = 737.17
CP-6
N:-44.630
E:753.830
ELEV = 735.22
CP-3
PZ-07 724.41
PZ-06 723.18
MW-31S 721.47
MW-36S 719.10
MW-6S 721.82
MW-37S 717.74
MW-29S 717.83
GATE 4 717.03
TG4-1 717.06
TG4-2
TG4-3 717.05
GATE 3
TG3-1 717.14
TG3-2 717.22
TG3-3 717.18
PZ-01 716.89
GATE 5 716.80
TG5-1 716.77
TG5-2
TG5-3 716.85
GATE 6
TG6-1 717.18
TG6-2 717.47
TG6-3 717.19
PZ-04 716.28
MW-9S 716.61
PZ-05 719.90
MW-10S 720.14
N:211.070
E:1932.560
ELEV = 723.49
CP-5
EXISTING SHEET PILE (TYP.)
Little Menomonee River
SILO ENCLOSURE
DRAINAGE SWALE
ASPHALT (TYP.)
GRAVEL (TYP.)
ASPHALT PAD
DECON. PAD
CONSTRUCTION TRAILERS
DRUM STORAGE AREA
TREATED SOIL AND SEDIMENT FILL AREA
WOODS

NOTE:
THIS POTENTIOMETRIC SURFACE MAP WAS GENERATED USING TRADITIONAL CONTOURING METHODS (MANUAL AND CONTOURING SOFTWARE [SURFER]), AS OPPOSED TO BEING CREATED BY THE CALIBRATED MODFLOW MODEL.

FIGURE 2-1

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

GROUNDWATER ELEVATION CONTOUR MAP-4TH QUARTER 2004
KERR McGEE CORPORATION
MOSS-AMERICAN SITE
Milwaukee, Wisconsin

LEGEND

- CABLE FENCE
- CATCH BASIN
- HYDRANT
- SIGN
- FREE PRODUCT COLLECTION SUMP
- UTILITY POLE
- SAMPLING MANHOLE
- MONITORING WELL
- INJECTION WELL
- STAFF GAUGE
- PIEZOMETER
- CURRENT RIVER CHANNEL
- FORMER RIVER CHANNEL
- DIRECTION OF GROUNDWATER FLOW
- 726 GROUNDWATER ELEVATION CONTOUR DASHED WHERE INFERRED
- ESTIMATED BOUNDARY OF CONTAMINANT PLUME

N

0 100' SCALE

N:678.240
E:1134.580
ELEV = 720.37
CP-4

SG-01

MW-7S 714.37

MW-34S 714.32

PZ-02 713.66

MW-33S 714.12

Existing Building Bot. Elev. 721.8

MW-5S 717.98

MW-32S 714.41

PZ-03 714.42

Little Menomonee River

GATE 4 714.25
TG4-1 714.16
TG4-2
TG4-3 714.45

GATE 5 714.48
TG5-1 714.50
TG5-2
TG5-3 714.57

SILO ENCLOSURE

716.15 MW-27S

MW-35S 714.41

GATE 3
TG3-1 714.40
TG3-2 714.17
TG3 714.22

DRAINAGE SWALE

PZ-01 714.69

PZ-04 713.52

MW-9S 714.22

MW-30S 721.72

TG1-3 715.91
TG1-2 716.08
TG1-1 716.19

PZ-10 717.94

GATE 1

GATE 6
TG6-1 714.85
TG6-2 714.84
TG6-3 714.85

WOODS

MW-28S 715.31

TG2-3 715.41
TG2-2 715.99
TG2-1 716.21

714.87
MW-29S

PZ-09 718.22

GATE 2

MW-37S 715.43

MW-36S 716.05

MW-6S 717.94

MW-3S 723.05

EXISTING SHEET PILE (TYP.)

N:211.070
E:1932.560
ELEV = 723.48
CP-5

PZ-07 721.04

PZ-06 719.48

MW-31S 717.63

PZ-05 716.03

MW-10S 715.51

MW-26S 725.72

DECON. PAD

ASPHALT (TYP.)

GRAVEL (TYP.)

ASPHALT PAD

DRUM STORAGE AREA

CONSTRUCTION TRAILERS

TREATED SOIL AND SEDIMENT FILL AREA

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

MW-25S 732.44

MW-13S 731.33

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

NOTE:
THIS POTENTIOMETRIC SURFACE MAP WAS GENERATED USING TRADITIONAL CONTOURING METHODS (MANUAL AND CONTOURING SOFTWARE [SURFER]), AS OPPOSED TO BEING CREATED BY THE CALIBRATED MODFLOW MODEL.

FIGURE 2-2

WESTON SOLUTIONS

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

GROUNDWATER ELEVATION CONTOUR MAP-3RD QUARTER 2004
KERR McGEE CORPORATION
MOSS-AMERICAN SITE
Milwaukee, Wisconsin

J:\CAD93\000\00303.dwg

Table 2-1

Groundwater Elevation Measurements
Shallow and Containment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Well ID	Ground Elevation	TOC Elevation	Depth to Water	GW Elevation	Product Thickness
MW-3S	729.71	731.45	6.90	724.55	None Detected
MW-5S	723.41	724.63	5.14	719.49	
MW-6S	723.11	725.24	4.22	721.02	
MW-7S	719.47	721.59	4.76	716.83	
MW-9S	719.15	721.66	5.05	716.61	
MW-10S	723.95	726.76	6.62	720.14	
MW-13S	737.73	738.58	4.11	734.47	
MW-25S	736.95	739.19	3.87	735.32	
MW-26S	732.31	731.87	4.06	727.81	
MW-27S	720.57	723.10	4.61	718.49	
MW-28S	719.64	722.13	4.16	717.97	
MW-29S	719.51	722.17	4.54	717.63	
MW-30S	725.35	727.34	4.20	723.14	
MW-31S	725.29	725.31	3.84	721.47	
MW-32S	719.68	722.79	5.79	717.00	
MW-33S	719.25	721.81	5.09	716.72	
MW-34S	718.97	721.52	4.79	716.73	Trace
MW-35S	718.14	721.75	4.71	717.04	None Detected
MW-36S	720.41	723.21	4.11	719.10	
MW-37S	721.33	723.30	5.56	717.74	

Notes:

All values in feet.

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

TOC = Top of well casing.

GW = Groundwater.

Depth to groundwater was measured on 14 December 2004

Table 2-2

Groundwater Elevation Measurements
Treatment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Well ID	Ground Elevation	TOC Elevation	Depth to Water	GW Elevation	Hydraulic Gradient (ft/ft)	Groundwater Velocity (ft/day)	Product Thickness
TG1-1	719.77	723.32	5.19	718.13	0.0012	0.0113	Trace
TG1-2	720.06	722.81	4.77	718.04			None Detected
TG1-3	719.56	722.53	4.52	718.01			
TG2-1	720.67	723.80	5.41	718.39	0.0052	0.0491	
TG2-2	720.62	723.05	5.03	718.02			
TG2-3	720.06	722.61	4.74	717.87			
TG3-1	719.14	721.05	3.91	717.14	-0.0005	-0.0047	
TG3-2	718.87	720.92	3.64	717.28			
TG3-3	718.35	720.60	3.41	717.19			
TG4-1	718.06	721.14	4.08	717.06	0.0001	0.0009	
TG4-2	718.26	720.75	3.72	717.03			
TG4-3	718.01	720.04	2.99	717.05			
TG5-1	717.60	721.12	4.35	716.77	-0.0008	-0.0076	
TG5-2	718.18	720.63	3.83	716.80			
TG5-3	718.17	719.99	3.14	716.85			
TG6-1	719.47	721.96	4.78	717.18	-0.0001	-0.0009	
TG6-2	719.70	722.05	4.88	717.17			
TG6-3	719.58	722.47	5.28	717.19			

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 = 3.0 ft/day.
TOC = Top of the casing.
GW = Groundwater.
ft/day = feet per day.
ft/ft = feet per foot.
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 14 December 2004

Table 2-3

Groundwater Elevation Measurements
Piezometer and Staff Guage
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Well ID	Ground Elevation	TOC Elevation	Depth to Water	Water Elevation	Product Thickness
Groundwater					
PZ-01	718.04	721.05	4.16	716.89	None Detected
PZ-02	718.89	721.84	6.02	715.82	
PZ-03	719.00	722.09	5.10	716.99	
PZ-04	717.30	720.22	3.94	716.28	
PZ-05	724.34	727.43	7.53	719.90	
PZ-06	724.62	727.79	4.61	723.18	
PZ-07	725.78	728.72	4.31	724.41	
PZ-09	721.12	724.08	3.84	720.24	
PZ-10	722.04	725.05	5.16	719.89	
Surface Water					
SG-01	716.22	---	NM	---	

Notes:
All values in feet.
All elevation measurements are with respect to Mean Sea Level (MSL).
TOC = Top of well casing.
GW = Groundwater.
NM = Not Measured
Depth to groundwater was measured on 14 December 2004

Table 2-4

Field-Measured Parameters
Shallow Groundwater and Containment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Well ID	pH (Standard Units)	Specific Conductance (uohm/cm)	Temperature (Deg C)	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW-5S	7.56	0.119	8.83	253.7	3.33	3.9
MW-6S	7.27	0.101	9.82	247.9	1.08	16.3
MW-7S	2.97	0.116	8.53	246	0.59	8.51
MW-9S	7.04	0.115	9.16	253.1	0.86	45.3
MW-27S	6.95	0.18	9.02	253.2	0.76	14.8
MW-28S	6.44	0.167	8.37	247.2	0.59	4.8
MW-29S	7.23	0.116	8.86	253	1.05	25
MW-30S	7.45	0.228	8.84	253.6	0.63	6.4
MW-31S	7.26	0.099	9.79	247	3.8	19.8
MW-32S	7.57	0.139	10.39	252.9	0.81	3.18
MW-33S	7.45	0.161	8.39	251.6	1.09	8.2
MW-35S	6.52	0.155	8.3	247.9	0.67	9.1
MW-36S	7.81	0.088	9.52	252.7	5.96	26.4
MW-37S	7.64	0.102	9.46	255.3	0.98	4.8

Table 2-4 (Continued)

Field-Measured Parameters
Treatment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Well ID	pH (Standard Units)	Specific Conductance (uohm/cm)	Temperature (Deg C)	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
TG1-2	7.08	0.131	8.04	247.3	0.78	15.8
TG1-3	7.01	0.144	8.84	245.5	0.51	9.3
TG2-1	7.33	0.12	7.57	250.5	1.05	9.7
TG2-2	7.33	0.098	8.49	250.7	0.63	16.1
TG2-3	6.99	0.138	8.38	251.1	0.85	18.2
TG3-1	6.31	1.1	7.95	249.5	7.68	4.7
TG3-2	6.96	0.773	7.57	249.6	0.82	2.3
TG3-3	6.69	0.853	7.67	250.5	0.56	4.3
TG4-1	7.25	0.799	7.86	248.9	0.74	1.6
TG4-2	6.57	0.821	8.51	248.2	0.69	1.61
TG4-3	6.89	0.809	8.22	251.1	0.87	1.61
TG5-1	6.71	0.902	7.51	246.1	2.05	8.7
TG5-2	6.06	0.739	7.71	244	0.69	5.8
TG5-3	5.27	0.76	8.66	246.5	1.96	1.5
TG6-1	5.17	0.929	8.95	246.2	1.22	8.3
TG6-2	4.66	1.007	8.95	245	1.26	6.65
TG6-3	4.86	0.981	8.96	242.7	1.22	0.6

Notes:
S - Shallow well.
TG - Treatment gate performance monitoring well.
NA - Not applicable; monitoring well is only sampled for DO and depth to groundwater.
NM - Not measured due frozen conditions or free product in well.
uohm/cm - microhms per centimeter
Deg C - Degrees Celcius
mV - millivolt
mg/L - milligram per liter
NTU - Nephelometric Turbidity unit

Table 2-5

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

Sample ID	MA3-MW5S-121604-15	MA3-MW5S-121604-15-DP	MA3-MW6S-121704-7	MA3-MW7S-121704-3	MA3-MW9S-121704-9	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	12/16/2004	12/16/2004	12/17/2004	12/17/2004	12/17/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l	ug/l		
VOCS							
Benzene	0.2 U	0.2 U	0.2 U	8.6	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	15	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	1 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	27	0.6 U	124	650
PAHS							
Acenaphthene	1.5 U	1.5 U	1.5 U	45	1.5 U	NA	NA
Acenaphthylene	1.5 U	1.5 U	1.5 U	150 U	1.5 U	NA	NA
Anthracene	0.038 U	0.038 U	0.039 U	0.038 U	0.038 U	600	3,000
Benzo(a)anthracene	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	NA	NA
Benzo(a)pyrene	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.02	0.2
Benzo(b)fluoranthene	0.038 U	0.038 U	0.039 U	0.038 U	0.038 U	0.02	0.2
Benzo(g,h,i)perylene	0.095 U	0.096 U	0.097 U	0.095 U	0.096 U	NA	NA
Benzo(k)fluoranthene	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	NA	NA
Chrysene	0.076 U	0.077 U	0.077 U	0.076 U	0.077 U	0.02	0.2
Dibenz(a,h)anthracene	0.038 U	0.038 U	0.039 U	0.038 U	0.038 U	NA	NA
Fluoranthene	0.038 U	0.038 U	0.039 U	0.038 U	0.038 U	80	400
Fluorene	0.17 U	0.17 U	0.17 U	7.5	0.17 U	80	400
Indeno(1,2,3-cd)pyrene	0.076 U	0.077 U	0.077 U	0.076 U	0.077 U	NA	NA
Naphthalene	1.5 U	1.5 U	1.5 U	1,600	1.5 U	8	40
Phenanthrene	0.14 J	0.14 J	0.077 U	0.088 J	0.077 U	NA	NA
Pyrene	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	50	250

Table 2-5 (Continued)

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

Sample ID	MA3-MW27S-121604-10	MA3-MW28S-121704-6	MA3-MW28S-121704-6DP	MA3-MW29S-121604-9	MA3-MW30S-121604-16	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	12/16/2004	12/17/2004	12/17/2004	12/16/2004	12/16/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l	ug/l		
VOCS							
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS							
Acenaphthene	1.5 U	1.5 U	1.5 U	1.6 U	1.5 U	NA	NA
Acenaphthylene	1.5 U	1.5 U	1.5 U	1.6 U	1.5 U	NA	NA
Anthracene	0.13 J	0.038 U	0.038 U	0.04 U	0.038 U	600	3,000
Benzo(a)anthracene	0.21	0.019 U	0.019 U	0.02 U	0.019 U	NA	NA
Benzo(a)pyrene	0.21	0.019 U	0.019 U	0.02 U	0.019 U	0.02	0.2
Benzo(b)fluoranthene	0.22	0.038 U	0.038 U	0.04 U	0.038 U	0.02	0.2
Benzo(g,h,i)perylene	0.19 J	0.095 U	0.095 U	0.1 U	0.095 U	NA	NA
Benzo(k)fluoranthene	0.23	0.019 U	0.019 U	0.02 U	0.019 U	NA	NA
Chrysene	0.24 J	0.076 U	0.076 U	0.08 U	0.076 U	0.02	0.2
Dibenz(a,h)anthracene	0.26	0.038 U	0.038 U	0.04 U	0.038 U	NA	NA
Fluoranthene	0.18 J	0.038 U	0.038 U	0.04 U	0.04 J	80	400
Fluorene	1.2	0.17 U	0.17 U	0.18 U	0.17 U	80	400
Indeno(1,2,3-cd)pyrene	0.18 J	0.076 U	0.076 U	0.08 U	0.076 U	NA	NA
Naphthalene	1.5 U	1.5 U	1.5 U	1.6 U	1.5 U	8	40
Phenanthrene	0.13 J	0.076 U	0.076 U	0.08 U	0.076 U	NA	NA
Pyrene	0.21 J	0.17 U	0.17 U	0.18 U	0.17 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Containment Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Sample ID	MA3-MW31S-121704-8	MA3-MW32S-121604-11	MA3-MW33S-121604-12	MA3-MW33S-121604-12-DP	MA3-MW34S-121704-2	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	12/17/2004	12/16/2004	12/16/2004	12/16/2004	12/17/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l	ug/l		
VOCS							
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	7.2 J	0.5	5
Ethylbenzene	0.2 U	0.2 U	1.5	1.4	24	140	700
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	12	68.6	343
Total Xylenes	0.6 U	0.6 U	2.6 J	2.8 J	87	124	650
PAHS							
Acenaphthene	1.6 U	1.5 U	23	26	190	NA	NA
Acenaphthylene	1.6 U	1.5 U	3.9 J	4.5 J	82	NA	NA
Anthracene	0.04 U	0.038 U	0.04 U	0.039 U	7.8	600	3,000
Benzo(a)anthracene	0.02 U	0.019 U	0.02 U	0.02 U	0.6	NA	NA
Benzo(a)pyrene	0.02 U	0.019 U	0.02 U	0.02 U	0.15	0.02	0.2
Benzo(b)fluoranthene	0.04 U	0.038 U	0.04 U	0.039 U	0.14 J	0.02	0.2
Benzo(g,h,i)perylene	0.1 U	0.095 U	0.1 U	0.098 U	0.095 U	NA	NA
Benzo(k)fluoranthene	0.02 U	0.019 U	0.02 U	0.02 U	0.083 J	NA	NA
Chrysene	0.08 U	0.076 U	0.08 U	0.078 U	0.61	0.02	0.2
Dibenz(a,h)anthracene	0.04 U	0.038 U	0.04 U	0.039 U	0.038 U	NA	NA
Fluoranthene	0.04 U	0.038 U	0.04 U	0.039 U	12	80	400
Fluorene	0.18 U	0.17 U	6.9	7.8	99	80	400
Indeno(1,2,3-cd)pyrene	0.08 U	0.076 U	0.08 U	0.078 U	0.076 U	NA	NA
Naphthalene	1.6 U	1.5 U	140	160	5,700	8	40
Phenanthrene	0.08 U	0.076 U	0.96	1.1	100	NA	NA
Pyrene	0.18 U	0.17 U	0.18 U	0.18 U	8.2	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Containment Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Sample ID	MA3-MW35S-121704-5	MA3-MW35S-121704-5-DP	MA3-MW36S-121604-8	MA3-MW37S-121604-7	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	12/17/2004	12/17/2004	12/16/2004	12/16/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l		
VOCS						
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS						
Acenaphthene	2.1 J	2 J	1.5 U	1.6 U	NA	NA
Acenaphthylene	1.5 U	1.5 U	1.5 U	1.6 U	NA	NA
Anthracene	0.039 U	0.038 U	0.038 U	0.04 U	600	3,000
Benzo(a)anthracene	0.02 J	0.023 J	0.019 U	0.02 U	NA	NA
Benzo(a)pyrene	0.019 U	0.019 U	0.019 U	0.02 U	0.02	0.2
Benzo(b)fluoranthene	0.039 U	0.038 U	0.038 U	0.04 U	0.02	0.2
Benzo(g,h,i)perylene	0.096 U	0.095 U	0.095 U	0.099 U	NA	NA
Benzo(k)fluoranthene	0.019 U	0.019 U	0.019 U	0.02 U	NA	NA
Chrysene	0.077 U	0.076 U	0.076 U	0.079 U	0.02	0.2
Dibenz(a,h)anthracene	0.039 U	0.038 U	0.038 U	0.04 U	NA	NA
Fluoranthene	0.53	0.55	0.038 U	0.04 U	80	400
Fluorene	0.39 J	0.42 J	0.17 U	0.18 U	80	400
Indeno(1,2,3-cd)pyrene	0.077 U	0.076 U	0.076 U	0.079 U	NA	NA
Naphthalene	1.5 U	1.5 U	1.5 U	1.6 U	8	40
Phenanthrene	0.077 U	0.076 U	0.076 U	0.079 U	NA	NA
Pyrene	0.33 J	0.34 J	0.17 U	0.18 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Treatment Performance Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Sample ID	MA3-TG1-1-121604-1	MA3-TG1-2-121604-2	MA3-TG1-3-121604-3	MA3-TG2-1-121604-4	MA3-TG2-2-121604-5	MA3-TG2-3-121604-6	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	12/16/2004	12/16/2004	12/16/2004	12/16/2004	12/16/2004	12/16/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
VOCS								
Benzene	0.5 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	22	0.2 J	0.2 J	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.4 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	29	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS								
Acenaphthene	690	37	2 J	1.5 U	1.5 U	1.6 UJ	NA	NA
Acenaphthylene	52 J	2 J	1.7 U	1.5 U	1.5 U	1.6 UJ	NA	NA
Anthracene	86	1.1	0.042 U	0.038 U	0.038 U	0.04 UJ	600	3,000
Benzo(a)anthracene	74	0.067 J	0.021 U	0.019 U	0.019 U	0.02 UJ	NA	NA
Benzo(a)pyrene	33	0.019 U	0.021 U	0.019 U	0.019 U	0.02 UJ	0.02	0.2
Benzo(b)fluoranthene	30	0.038 U	0.042 U	0.038 U	0.038 U	0.04 UJ	0.02	0.2
Benzo(g,h,i)perylene	12 U	0.096 U	0.11 U	0.095 U	0.096 U	0.1 UJ	NA	NA
Benzo(k)fluoranthene	17	0.019 U	0.021 U	0.019 U	0.019 U	0.02 UJ	NA	NA
Chrysene	130	0.086 J	0.085 U	0.076 U	0.076 U	0.08 UJ	0.02	0.2
Dibenz(a,h)anthracene	8 U	0.038 U	0.042 U	0.038 U	0.038 U	0.04 UJ	NA	NA
Fluoranthene	430	2.2	0.13 J	0.038 U	0.045 J	0.04 UJ	80	400
Fluorene	420	17	0.49 J	1.4	0.17 U	0.18 UJ	80	400
Indeno(1,2,3-cd)pyrene	11	0.077 U	0.085 U	0.076 U	0.076 U	0.08 UJ	NA	NA
Naphthalene	1,600	27	1.7 U	1.5 U	1.5 U	1.6 UJ	8	40
Phenanthrene	930	6.2	0.085 U	0.076 U	0.076 U	0.08 UJ	NA	NA
Pyrene	360	1.4	0.19 U	0.17 U	0.17 U	0.18 UJ	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Treatment Performance Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Sample ID	MA3-TG3-1-121504-10	MA3-TG3-2-121504-11	MA3-TG3-3-121504-12	MA3-TG4-1-121504-7	MA3-TG4-2-121504-8	MA3-TG4-3-121504-9	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	12/15/2004	12/15/2004	12/15/2004	12/15/2004	12/15/2004	12/15/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
VOCS								
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.3 J	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS								
Acenaphthene	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U	1.6 U	NA	NA
Acenaphthylene	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U	1.6 U	NA	NA
Anthracene	0.04 U	0.038 U	0.038 U	0.04 U	0.039 U	0.19 J	600	3,000
Benzo(a)anthracene	0.02 U	0.019 U	0.019 U	0.02 U	0.02 U	0.3	NA	NA
Benzo(a)pyrene	0.02 U	0.019 U	0.019 U	0.02 U	0.02 U	0.3	0.02	0.2
Benzo(b)fluoranthene	0.04 U	0.038 U	0.038 U	0.04 U	0.039 U	0.32	0.02	0.2
Benzo(g,h,i)perylene	0.1 U	0.095 U	0.095 U	0.1 U	0.099 U	0.35 J	NA	NA
Benzo(k)fluoranthene	0.02 U	0.019 U	0.019 U	0.02 U	0.02 U	0.3	NA	NA
Chrysene	0.08 U	0.076 U	0.076 U	0.08 U	0.079 U	0.19 J	0.02	0.2
Dibenz(a,h)anthracene	0.04 U	0.038 U	0.038 U	0.04 U	0.039 U	0.15 J	NA	NA
Fluoranthene	0.04 U	0.038 U	0.068 J	0.04 U	0.23	0.31	80	400
Fluorene	0.18 U	0.17 U	0.17 U	0.18 U	0.25 J	0.19 U	80	400
Indeno(1,2,3-cd)pyrene	0.08 U	0.076 U	0.076 U	0.08 U	0.079 U	0.29 J	NA	NA
Naphthalene	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U	1.6 U	8	40
Phenanthrene	0.08 U	0.076 U	0.076 U	0.08 U	0.079 U	0.28 J	NA	NA
Pyrene	0.18 U	0.17 U	0.17 U	0.18 U	0.18 U	0.33 J	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Treatment Performance Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Sample ID	MA3-TG5-1-121504-1	MA3-TG5-2-121504-2	MA3-TG5-3-121504-3	MA3-TG6-1-121504-4	MA3-TG6-2-121504-5	MA3-TG6-3-121504-6	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	12/15/2004	12/15/2004	12/15/2004	12/15/2004	12/15/2004	12/15/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
VOCS								
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	0.2 J	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS								
Acenaphthene	1.7 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	NA	NA
Acenaphthylene	1.7 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	NA	NA
Anthracene	0.043 U	0.038 U	0.038 U	0.039 U	0.038 U	0.038 U	600	3,000
Benzo(a)anthracene	0.021 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	NA	NA
Benzo(a)pyrene	0.021 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.02	0.2
Benzo(b)fluoranthene	0.043 U	0.038 U	0.038 U	0.039 U	0.038 U	0.038 U	0.02	0.2
Benzo(g,h,i)perylene	0.11 U	0.096 U	0.095 U	0.096 U	0.095 U	0.094 U	NA	NA
Benzo(k)fluoranthene	0.021 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	NA	NA
Chrysene	0.085 U	0.076 U	0.076 U	0.077 U	0.076 U	0.075 U	0.02	0.2
Dibenz(a,h)anthracene	0.043 U	0.038 U	0.038 U	0.039 U	0.038 U	0.038 U	NA	NA
Fluoranthene	0.043 U	0.053 J	0.05 J	0.04 J	0.089 J	0.058 J	80	400
Fluorene	0.19 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	80	400
Indeno(1,2,3-cd)pyrene	0.085 U	0.076 U	0.076 U	0.077 U	0.076 U	0.075 U	NA	NA
Naphthalene	1.7 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	8	40
Phenanthrene	0.085 U	0.076 U	0.076 U	0.077 U	0.076 U	0.075 U	NA	NA
Pyrene	0.19 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Field Blank Samples
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Sample ID	MA3-FB-121604-13	MA3-FB-121704-10	MA3-FB-121704-1	MA3-FB-121704-4	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	12/16/2004	12/17/2004	12/17/2004	12/17/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l		
VOCS						
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.5 J	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS						
Acenaphthene	1.6 U	1.8 U	1.6 U	1.7 U	NA	NA
Acenaphthylene	1.6 U	1.8 U	1.6 U	1.7 U	NA	NA
Anthracene	0.04 U	0.044 U	0.04 U	0.042 U	600	3,000
Benzo(a)anthracene	0.02 U	0.022 U	0.02 U	0.021 U	NA	NA
Benzo(a)pyrene	0.02 U	0.022 U	0.02 U	0.021 U	0.02	0.2
Benzo(b)fluoranthene	0.04 U	0.044 U	0.04 U	0.042 U	0.02	0.2
Benzo(g,h,i)perylene	0.1 U	0.11 U	0.1 U	0.1 U	NA	NA
Benzo(k)fluoranthene	0.02 U	0.022 U	0.02 U	0.021 U	NA	NA
Chrysene	0.08 U	0.088 U	0.08 U	0.083 U	0.02	0.2
Dibenz(a,h)anthracene	0.04 U	0.044 U	0.04 U	0.042 U	NA	NA
Fluoranthene	0.04 U	0.044 U	0.04 U	0.042 U	80	400
Fluorene	0.18 U	0.2 U	0.18 U	0.19 U	80	400
Indeno(1,2,3-cd)pyrene	0.08 U	0.088 U	0.08 U	0.083 U	NA	NA
Naphthalene	1.6 U	1.8 U	1.6 U	1.7 U	8	40
Phenanthrene	0.08 U	0.088 U	0.08 U	0.083 U	NA	NA
Pyrene	0.18 U	0.2 U	0.18 U	0.19 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Trip Blank Samples and Table Notes
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Sample ID	MA3-TB-121504-20	MA3-TB-121604-14	MA3-TB-121704-20	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater		
Sample Date	12/15/2004	12/16/2004	12/17/2004		
Units of measure	ug/l	ug/l	ug/l		
VOCS					
Benzene	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	124	650

U-Constituent not detected. Detection limit indicated.
J-Estimated concentration.
VOC-Volatile Organic Compound.
PAH-Polynuclear Aromatic Hydrocarbon.
PAL-Wisconsin Department of Natural Resources (WDNR) Preventative Action Limit.
ES-Enforcement Standard (WDNR).
NA-Not Applicable. PAL or ES not available for this parameter.
NS-Not sampled due to frozen conditions.
Bolded values indicate concentration exceeding PAL.
Shaded and bolded values indicate concentration exceeding PAL and ES.

Table 2-6

Concentration Trends in Groundwater Monitoring Wells
First Quarter 2002 through Fourth Quarter 2004
Moss-American Site
Milwaukee, Wisconsin

	MW-7S	MW-32S	MW-33S	MW-34S	MW-35S	TG1-1
Benzene (ug/L)						
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	0.20 U	3.2 J
Third Quarter (September '02)	5 U	0.20 U	4 UJ	10 UJ	0.20 U	1.3
Fourth Quarter (December '02)	4 U	0.20 U	2 U	5.6 J	0.20 U	4.9 J
First Quarter (March '03)	2.9 J	0.20 U	1.0 U	6.4 J	0.20 U	2.7 J
Second Quarter (June '03)	2.4 J	0.2 U	2 U	15 J	0.2 U	1.4 J
Third Quarter (September '03)	10 U	0.2 U	0.3 J	10 U	0.2 U	2 U
Fourth Quarter (December '03)	2.3 J	0.2 U	0.2 U	6.6	0.2 U	1 U
First Quarter (March '04)	4 U	0.2 U	4 J	5.7 J	0.2 U	1.5
Second Quarter (June '04)	2 U	0.2 U	1 U	7.8 J	0.2 U	1 U
Third Quarter (September '04)	2.2 J	0.2 U	1 U	7.1 J	0.2 U	2 U
Fourth Quarter (December '04)	8.6	0.2 U	0.2 U	7.2 J	0.2 U	0.5 J
Naphthalene (ug/L)						
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
Fourth Quarter (December '02)	2,800	1.0 U	2,100	5,300	1.00 U	8,900
First Quarter (March '03)	2,800	1.0 U	2,300	6,100	1.00 U	1,900
Second Quarter (June '03)	3,400	1.2 U	2,500	6,100	1.2 U	1,300 J
Third Quarter (September '03)	3,800	1.3 U	2,600	5,000	1.2 U	5,800
Fourth Quarter (December '03)	3,000	1.4 U	58 J	6,500 J	1.3 U	1,500
First Quarter (March '04)	2,500	1.4 UJ	660 J	7,400	1.4 U	2,200
Second Quarter (June '04)	2,700	1.6 U	600	6,800	1.5 U	1,500
Third Quarter (September '04)	2,700	1.6 U	970	11,000 J	1.7 U	3,200
Fourth Quarter (December '04)	1,600	1.5 U	140	5,700	1.5 U	1,600

Table 2-6 (Continued)

Concentration Trends in Groundwater Monitoring Wells
First Quarter 2002 through Fourth Quarter 2004
Moss-American Site
Milwaukee, Wisconsin

	MW-7S	MW-32S	MW-33S	MW-34S	MW-35S	TG1-1
Fluorene (ug/L)						
First Quarter (March '02)	8.0	0.20 U	37	80	0.20 U	270
Second Quarter (June '02)	7	0.20 U	50	120	0.20 U	70
Third Quarter (September '02)	11	0.20 U	60	130	0.20 U	330
Fourth Quarter (December '02)	11	0.20 UJ	59.0 J	170 J	0.20 UJ	3,400J
First Quarter (March '03)	9.5	1.9	62	150	0.20 U	230
Second Quarter (June '03)	8	0.17 U	72	84	0.18 U	170 J
Third Quarter (September '03)	11	0.19 U	88	86	0.18 U	2,400
Fourth Quarter (December '03)	8	0.18 U	0.84 J	180 J	0.17 U	150
First Quarter (March '04)	7	0.18 UJ	13	470	0.21 J	160
Second Quarter (June '04)	6.9	0.17 U	19	280	0.19 J	150
Third Quarter (September '04)	7.8	0.18 U	59	2100 J	1.3	800
Fourth Quarter (December '04)	7.5	0.17 U	6.9	99	0.39 J	420
Benzo(a) pyrene (ug/L)						
First Quarter (March '02)	0.02 U	0.02 U	0.02 U	0.2	0.020 U	23
Second Quarter (June '02)	0.02 J	0.02 U	0.02 U	4	0.02 U	0.05 J
Third Quarter (September '02)	0.20 U	0.02 U	0.02 U	0.78	0.02 U	25
Fourth Quarter (December '02)	0.20 U	0.02 UJ	0.02 UJ	5.6 J	0.02 UJ	290J
First Quarter (March '03)	0.20 U	0.02 U	0.02 U	3.2	0.02 U	15
Second Quarter (June '03)	0.02 U	0.02 U	0.02 U	0.18	0.02 U	7.9 J
Third Quarter (September '03)	0.022 U	0.29 J	0.021 U	0.047 J	0.02 U	190
Fourth Quarter (December '03)	0.019 U	0.02 U	0.02 U	5.9 J	0.028 J	5.9
First Quarter (March '04)	0.019 U	0.02 UJ	0.02 UJ	29	0.02 U	6.2
Second Quarter (June '04)	0.019 U	0.019 U	0.019 U	17	0.022 J	5.1
Third Quarter (September '04)	0.02 U	0.02 U	0.021 U	140 J	0.021 U	56
Fourth Quarter (December '04)	0.019 U	0.019 U	0.02 U	0.15	0.019 U	33

U - Constituent not detected; method detection limit (MDL) of the analysis reported.
J - Estimated concentration.
ug/L - Micrograms per liter.

Table 2-7

Groundwater Sample Analytical Results
Treatment Performance Monitoring Wells- Nutrient and Biological Parameters
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Parameter (mg/L)	Sample Identification					
	TG1-1	TG1-2	TG1-3	TG2-1	TG2-2	TG2-3
Kjeldahl nitrogen	1.7	1.5	1.5	0.5 U	0.67 J	1.9
Nitrite	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ
Nitrate (as N)	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	1.3	1.3	1 J	0.15 J	0.5 J	1.2
Ortho-Phosphate as P	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Biochemical oxygen demand	6	8	5.6	2.1 U	3.2 U	6.4
Total Organic Carbon	11.5	12.4	13.5	3.7	2.9	12.9
Total Phosphorus as PO4 water	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chemical oxygen demand	64	33.7	33	8.2	7.5 J	34.1
Total Microbial Population (mean) (cfu/mL)	7.4E+02	6.5E+03	2.1E+04	4.1E+02	7.4E+02	9.1E+03
Degrader Microbial Population (mean) (cfu/mL)	10 U	10 U	9.0E+02	10	20	20

Parameter (mg/L)	Sample Identification					
	TG3-1	TG3-2	TG3-3	TG4-1	TG4-2	TG4-3
Kjeldahl nitrogen	0.53 J	0.9 J	1.8	0.67 J	1.2	1.1
Nitrite	0.015 U	0.015 U	0.015 J	0.015 U	0.015 UJ	0.015 U
Nitrate (as N)	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	0.38 J	1 J	1.2	0.79 J	1.3	0.71 J
Ortho-Phosphate as P	0.01 U	0.013 J	0.01 U	0.01 U	0.01 U	0.01 U
Biochemical oxygen demand	1.9 UJ	3.4 UJ	11.6 J	2.1 UJ	3.1 UJ	3.1 UJ
Total Organic Carbon	8.7	7	11.4	6.1	9.2	9.4
Total Phosphorus as PO4 water	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chemical oxygen demand	20.3	18	32.3	15.4	23.6	24
Total Microbial Population (mean) (cfu/mL)	1.2E+03	4.9E+03	3.1E+03	1.0E+03	2.3E+03	5.6E+03
Degrader Microbial Population (mean) (cfu/mL)	10	10 U	10 U	20	1.0E+02	1.2E+02

Parameter (mg/L)	Sample Identification					
	TG5-1	TG5-2	TG5-3	TG6-1	TG6-2	TG6-3
Kjeldahl nitrogen	0.5 U	0.69 J	0.84 J	2.2	1.1 J	1.1
Nitrite	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Nitrate (as N)	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	0.29 J	0.84 J	0.67 J	2.1	0.87 J	1.2
Ortho-Phosphate as P	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Biochemical oxygen demand	1.6 UJ	1.7 UJ	1.8 UJ	3.2 UJ	1.7 UJ	2.4 UJ
Total Organic Carbon	4.8	5.7	6.3	11.1	7.5	8.9
Total Phosphorus as PO4 water	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chemical oxygen demand	11.6	16.5	15.4	26.2	19.1	22.1
Total Microbial Population (mean) (cfu/mL)	3.0E+03	4.9E+03	3.2E+02	2.2E+03	7.3E+02	7.0E+02
Degrader Microbial Population (mean) (cfu/mL)	10	10 U	10 U	30	10 U	10 U

U-Constituent not detected. Detection limit indicated.
J-Estimated concentration.

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 ($KHPO_4$). System modifications were proposed in the Q2 2002 Quarterly Groundwater Treatment Performance Monitoring Report and are discussed in this section. Information regarding system performance is also presented.

3.1 DISSOLVED OXYGEN

During Q4 2004, the DO concentrations in many of the wells exceeded 1.0 mg/L The concentrations of DO exceeded 1.0 mg/L in wells in MW-5S, MW-6S, MW-29S, MW-31S, MW-33S, MW-36S, TG2-1, TG3-1, TG5-1, TG5-3, TG6-1, TG6-2 and TG6-3 during Q4 2004. With the exception of MW-33S and TG2-1, most of these wells have historically had very little or no contaminant concentrations. These high DO concentrations may be due to the combination of limited electron donor (i.e. groundwater contaminant) concentrations and ample supply of oxygen from the treatment system.

$N\text{-}NO_3$ and $N\text{-}NO_2$ were not detected in most of the treatment performance wells. This indicates that nitrogen is primarily present in its reduced state, and a reducing environment exists in the wells. Nitrogen data were not collected for the shallow monitoring wells.

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 Q1 and Q2 2003. KMC/WESTON attempted to install inflatable bladder packers in TG1 and TG2 injection wells in August 2001. However, the packers could not be properly installed 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

Nutrient injection was discontinued at gate area TG1 as a part of the site modifications recommended in the Q2 2002 Monitoring Report. This took place at the end of October 2002, after the Agencies granted approval. However, nutrient and contaminant levels will continue to be monitored.

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 TG1 through TG4 (6.31 to 7.33 S.U.) is sufficient to facilitate biological activity. pH values in TG5 and TG6 were anomalously low during Q4 2004. This decrease in pH needs to be monitored closely as these pH values may inhibit desired biological activities at the site.

Table 3-1 contains calculated C:N:P ratios for each of the treatment performance monitoring wells. During Q4 2004, the treatment performance monitoring wells did not exhibit the desired C:N:P ratio of 100:14:1. Nitrogen and phosphorous appear to be the limiting nutrients at the site.

3.3 BACTERIAL POPULATIONS

While total bacterial counts in the performance monitoring wells decreased in most wells during Q4 2004 when compared to Q3 2004 counts, the degrader bacterial counts remained relatively steady during the same time period. The decrease in the total microbial count is most likely due to an overestimation of total microbial population during Q3 2004. During the Q3 2004 sampling event, a problem with sample shipment caused some of the samples to arrive at the laboratory past the holding time and at warmer sample temperatures. This most likely resulted in an overestimation of microbial counts in these Q3 2004 samples.

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 degrader bacterial population levels in TG1 and TG2 since Q1 2001. It is uncertain what the cause of this bacterial decrease is at the site. However, this decrease in degrader bacterial population needs to be closely monitored so that actions to augment the degrader population can be implemented as necessary.

3.4 HYDROGEOLOGY

KMC/WESTON identified a potential concern associated with the site hydrogeology in the Q2 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. No significant change was observed in relation to site hydrogeology during Q4 2004.

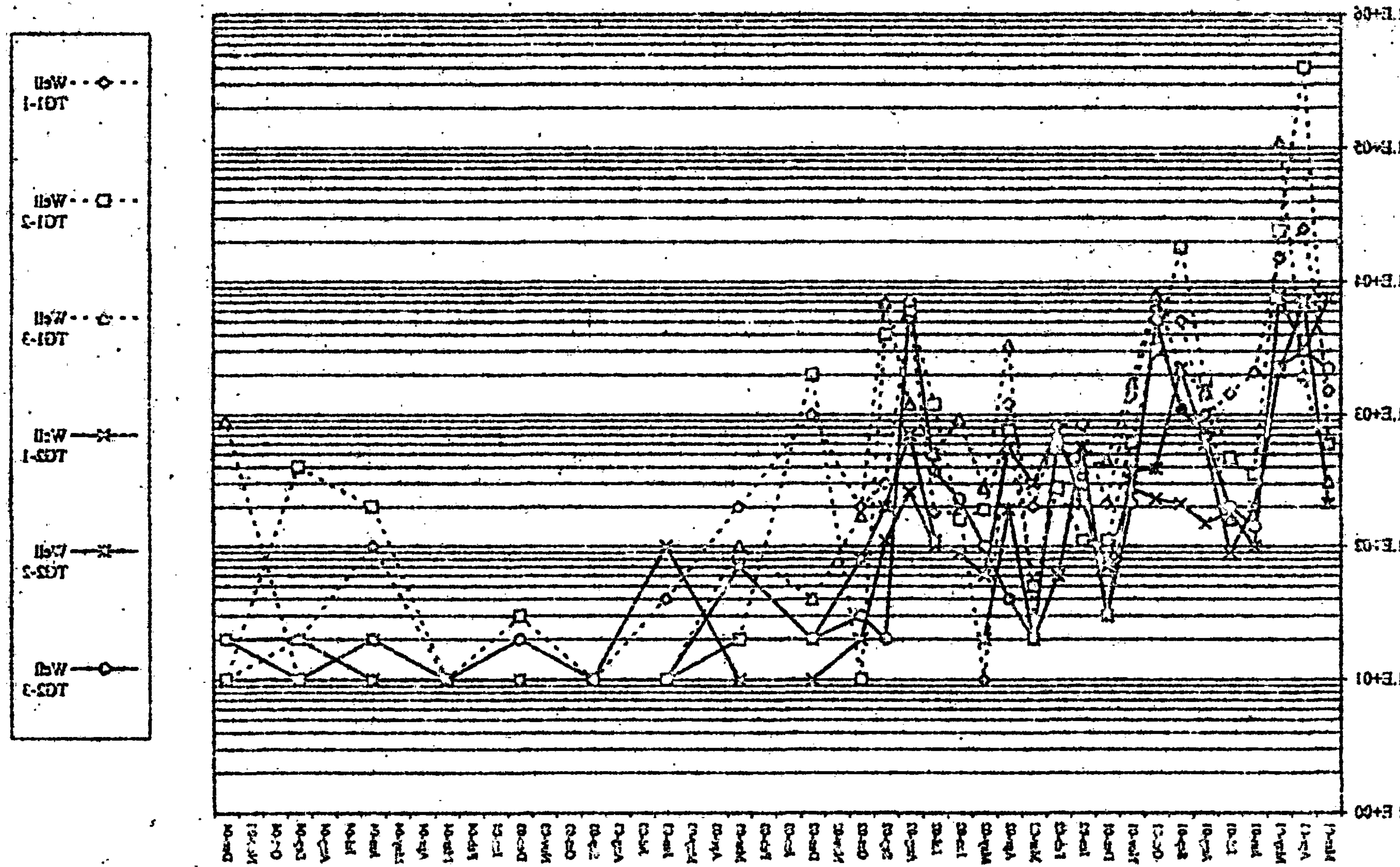
3.5 SITE MODIFICATIONS

Per the Q2 2002 Monitoring Report recommendations, modifications have been made to the system at the site. In October 2002, the performance monitoring well sampling frequency and scope reductions went into effect following the Agencies' approval. Groundwater sampling was revised to a quarterly sampling regime instead of a monthly sampling regime. In addition, shallow monitoring wells MW-3S, MW-10S, MW-13S, MW-25S, MW-26S, and MW-20S and 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's request. Water levels will continue to be gathered from these wells on a quarterly basis to assist with the production of the groundwater elevation contour map. Discontinuation of nutrient injection at gate TG1 was also approved and was implemented in October 2002.

The hydrogeologic investigation proposed in the Q2 2002 Monitoring Report took place in December 2002. This work included the installation of nine piezometers (PZ-01 thru PZ-07, PZ-09, and PZ-10) as well as a staff gauge (SG-1). Records were updated with this information, and used to prepare the groundwater elevation contour map for this quarter.

Figure 3-1

Comparison of Degrader Populations in Treamcnt Gates 1 and 2 since Q2 2001
Moss-American Site
Milwaukee, Wisconsin



Note: Laboratory detection limit is shown where degrader population was not detected at or above the detection limit.

Table 3-1

Calculation of Carbon:Nitrogen:Phosphorous Ratios
Treatment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Fourth Quarter 2004

Well	Carbon[1], mg/L	Total Nitrogen[2], mg/L	Phosphorous[3], mg/L	C-N-P Ratio (100-14-1 desired)		
TG1-1	11.5	1.3	ND	100	11.30	0
TG1-2	12.4	1.3	ND	100	10.48	0
TG1-3	13.5	1	ND	100	7.41	0
TG2-1	3.7	0.15	ND	100	4.05	0
TG2-2	2.9	0.5	ND	100	17.24	0
TG2-3	12.9	1.2	ND	100	9.30	0
TG3-1	8.7	0.38	ND	100	4.37	0
TG3-2	7.00	1.00	0.01	100	14.29	0.19
TG3-3	11.4	1.215	ND	100	10.66	0
TG4-1	6.1	0.79	ND	100	12.95	0
TG4-2	9.2	1.3	ND	100	14.13	0
TG4-3	9.4	0.71	ND	100	7.55	0
TG5-1	4.80	0.29	ND	100	6.04	0
TG5-2	5.7	0.84	ND	100	14.74	0
TG5-3	6.3	0.67	ND	100	10.63	0
TG6-1	11.10	2.10	ND	100	18.92	0
TG6-2	7.5	0.87	ND	100	11.60	0
TG6-3	8.9	1.2	ND	100	13.48	0
Site Average	8.50	0.60	0.01	100	7.06	0.15

1 - Carbon measured as Total Organic Carbon (non-purgable).
2 - Nitrogen measured as NH_3-N, NO_2-N, and NO_3-N.
3 - Phosphorous measured as phosphate (PO_4-P).
ND - Constituent not detected.

Shaded values indicate values at or above desired quantity.

SECTION 4

REFERENCES

Weston Solutions, Inc. (WESTON). 1999. *Quality Assurance Project Plan for Installation of Groundwater Remedial System.* October 1999.

WESTON. 2001. *Quality Assurance Project Plan for Installation of Groundwater Remedial System Addendum No.1.* May 2001.

APPENDIX A

DECEMBER 2004 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Analytical Data Validation Report
Kerr-McGee Corporation
Moss American Site-WI- Water Samples
SDG #: KMA61

PAH Method SW-846 8310 by HPLC:
SDG # KMA61
1.Samples:

Client Description	Lab Sample Number	Matrix	Date Collected	Date Extracted	Date Analyzed
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG4-1-121504-7MS	4432377	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG4-1-121504-7MSD	4432378	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	12/20/04	12/24/04
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	12/20/04	12/25/04
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	12/20/04	12/25/04

2. Holding Times:
The samples were extracted and analyzed within the required holding time. According to the laboratory narrative case due to the nature of the sample matrix, reduced aliquots were used in the extraction of 4432381.

3. Method Blank:
The method blank SBLKWJ3532 was with SDG analyzed on 12/24/04 with (4432373 thru 4432386) and the results were free of contamination.

4. Matrix Spike/Matrix Spike Duplicate:
A water matrix spike was performed on 4432376. The MS/MSD recoveries were within the acceptance control limit. Also, the RPD values were within the quality control limit.

5. Laboratory control Sample:
The laboratory control samples recoveries were within the acceptance control limit.

6. Surrogate:
A Lancaster laboratory quantity the reported PAH compounds from the UV-detector, due to reduce sensitivity on the fluorescence detector. All the surrogate recoveries were within the control limits on UV-detector.

7. Retention Time:
The retention time recoveries were within acceptance limits.

8. Initial and Continuing Calibration:
The initial calibrations results were within the quality control limit (RSD >+/-30%). Also, all HPLC calibration verification results were acceptable.

BTEX SW-846 8021B:
SDG # KMA61
1.Samples:

Client Description	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed
MA3-TB-121504-20	4432372	Water	12/15/04	12/21/04	12/21/04
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	12/21/04	12/21/04
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	12/21/04	12/21/04
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	12/21/04	12/21/04
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	12/20/04	12/20/04
MA3-TG4-1-121504-7MS	4432377	Ground Water	12/15/04	12/20/04	12/20/04
MA3-TG4-1-121504-7MSD	4432378	Ground Water	12/15/04	12/20/04	12/20/04
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	12/20/04	12/21/04
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	12/20/04	12/21/04
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	12/20/04	12/21/04
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	12/20/04	12/21/04
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	12/20/04	12/21/04
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	12/20/04	12/21/04
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	12/20/04	12/21/04
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	12/22/04	12/22/04

2. Holding Times:
The samples were prepared and analyzed within the required holding time.

3. Method Blank:
Three method blanks BLK2061, BLK2062 and BLK2063 were associated with this SDG. BLK2061 was analyzed on 12/20/04 with 4432376 and MS/MSD. BLK2062 was analyzed on 12/21/04 with 4432372 thru 4432375 and 4432379 thru 4432382. BLK2063 was analyzed on 12/21/04 with (4432383 thru 4432386). The three method blanks BLK2061, BLK2062 and BLK2063 results were free of contamination.

4. Matrix Spike/Matrix Spike Duplicate:
A water matrix spike was performed on 4432376. The MS/MSD recoveries were within the acceptance control limit. Also, the RPD values were within the quality control limit,

5. Laboratory control Sample:
The laboratories control sample recoveries were within the required quality control limit.

6. Surrogate:
The method blank and the investigated samples had surrogate recovery within the acceptance quality control limit.

7. Initial and Continuing Calibration:
The initial calibrations and all the associated continuing calibrations results were acceptable.

WET CHEMISTRY ANALYSIS
Kjeldahl Nitrogen Analysis (TKN):
1. Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Digested	Date Analyzed
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	01/04/05	01/06/05
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	01/04/05	01/06/05

2. Holding Times:
All samples were digested and analyzed within the required holding times.

3. Method Blank:
The associated method blank result was free of contamination.

4. Matrix Spike Recovery:
The two matrix spikes were performed on 4432373 and 4432385. Both matrix spikes recoveries were outside the laboratory and QAPP acceptance limits. Therefore, qualify the results as estimated (J/UJ).

5. Duplicate Recovery:
Two duplicates 4432373 and 4432385 were analyzed with the SDG. Both duplicates recovery were acceptable.

6. Laboratory Control Sample Recovery:
The laboratory control sample recovery was within the acceptance QC control limits.

7. Initial and Continuing Verification Calibration:
The initial and continuing calibration results were all within the QC control limits.

8. Initial and Continuing Calibration Blank:
The initial and continuing calibration blanks results were free of contamination.

Nitrite Nitrogen Analysis:
1.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	12/17/04
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	12/17/04
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	12/17/04
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	12/17/04
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	12/17/04
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	12/17/04
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	12/17/04
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	12/17/04
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	12/17/04
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	12/17/04
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	12/17/04
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	12/17/04

2. Holding Times:
All samples were analyzed within the required holding times, except sample 4432379 was analyzed past the 48 hour hold time for nitrite nitrogen. Therefore, qualify the 4432379 result as (J/UJ).

3. Method Blank:
The associated method blank result was free of contamination.

4. Matrix Spike Recovery:
The matrix spike was performed on 4432375. The MS recovery was within the laboratory and QAPP acceptance limit. Also, the spike sample recovery was acceptable.

5. Laboratory Control Sample Recovery:
The laboratory control sample recovery was within the QC acceptance control limits.

6. Duplicate Recovery:
The duplicate result was acceptable. Also, the duplicate background was acceptable.

7. Initial and Continuing Verification Calibration:
The initial and continuing calibration results were all within the QC control limits.

8. Initial and Continuing Calibration Blank:
The initial and continuing calibration blanks results were free of contamination.

Nitrate Nitrogen Analysis:

1. Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	01/06/05
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	01/06/05
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	01/06/05
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	01/06/05
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	01/06/05
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	01/06/05
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	01/06/05
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	01/06/05
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	01/06/05
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	01/06/05
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	01/06/05
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	01/06/05

2. Holding Time:

All samples were analyzed within the required holding time.

3. Method Blank:

The associated method blank result was free of contamination.

4. Matrix Spike Recovery:

The matrix spike was performed on 4432373. The MS recovery was within the laboratory and QAPP acceptance limit. However, the spike sample recovery was outside the control limit. No action was applied.

5. Duplicate Recovery:

The duplicate result was acceptable. Also, the duplicate background was acceptable.

6. Laboratory Control Sample Recovery:

The laboratory control sample recovery was within the acceptance QC control limits.

7. Initial and Continuing Verification Calibration:

The initial and continuing calibration results were all within the QC control limits.

8. Initial and Continuing Calibration Blank:

The initial and continuing calibration blanks results were free of contamination.

Total Phosphorus as (PO4):

1`.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Extracted	Date Analyzed
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	12/23/04	01/04/05
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	12/23/04	01/04/05

2. Holding Time:

All samples were prepared and analyzed within the required holding time.

3. Method Blank:

The associated method blank result was free of contamination.

4. Matrix Spike Recovery:

The two matrix spikes were performed on 4432376 and 4432384. Both matrix spikes recoveries were within the laboratory and QAPP acceptance limits.

5. Duplicate Recovery:

The two duplicates 4432376 and 4432384 recoveries were acceptable.

6. Laboratory Control Sample Recovery:

The laboratory control sample recovery was within the acceptance QC control limits.

7. Initial and Continuing Verification Calibration:

The initial and continuing calibration results were all within the QC control limits.

8. Initial and Continuing Calibration Blank:

The initial and continuing calibration blanks results were free of contamination.

Ammonia Nitrogen Analysis:

1. Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	12/21/04
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	12/21/04
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	12/21/04
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	12/21/04
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	12/21/04
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	12/21/04
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	12/21/04
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	12/21/04
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	12/21/04
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	12/21/04
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	12/21/04
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	12/21/04

2. Holding Time:

All samples were analyzed within the required holding time.

3. Method Blank:

The method blank result was free of contamination.

4. Duplicate Recovery:

The duplicate recovery was acceptable.

5. Matrix Spike Recovery:

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

6. Laboratory Control Sample Recovery:

The laboratory control sample/laboratory control sample duplicate recoveries were within the acceptance QC control limits. Also, the RPD value was acceptable.

Ortho-Phosphate as P Analysis:

1.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	12/17/04
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	12/17/04
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	12/17/04
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	12/17/04
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	12/17/04
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	12/17/04
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	12/17/04
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	12/17/04
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	12/17/04
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	12/17/04
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	12/17/04
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	12/17/04

2. Holding Times:

All samples were analyzed within the required holding times.

3. Method Blank:

The method blank result was free of contamination.

4. Matrix Spike Recovery:

The matrix spike/matrix spike duplicates recoveries were within the laboratory and QAPP acceptance limits. However, the RPD value was outside the control limit. However, No qualification was applied on the samples results because results in 4432373 thru 4432376 and 4432379 thru 4432386 were non-detected.

5. Duplicate Recovery:

The duplicate sample 4432376 result was acceptable.

6. Laboratory Control Sample Recovery:

The laboratory control sample recovery was within the control limit.

Biochemical Oxygen Demand (BOD) Method EPA 405.1:

1.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	12/17/04
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	12/17/04
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	12/17/04
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	12/17/04
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	12/17/04
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	12/17/04
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	12/17/04
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	12/17/04
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	12/17/04
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	12/17/04
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	12/17/04
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	12/17/04

2. Holding Times:

According to the laboratory narrative samples 4432373 thru 4432376 and 4432379 thru 4432386 were not submitted with sufficient time for the biochemical oxygen demand analysis to be completed within the 48 hour hold time. Therefore, samples results should be qualified as (J/UJ).

3. Matrix Spike Recovery:

A matrix spike was performed on sample from different SDG. The MS/MSD recoveries were within the laboratory and QAPP acceptance limits. Also, the RPD value was acceptable.

4. Duplicate Recovery:

Duplicate sample was performed on sample from different SDG. The duplicate sample result was outside the quality control limit. Therefore, qualify the samples results 4432373 thru 4432376 and 4432379 thru 4432386 as estimated (J).

5. Laboratory Control Sample Recovery:

The LCS/LCSD recoveries were within the laboratory and QAPP acceptance limits. Also, the RPD value was acceptable.

Chemical Oxygen Demand (COD) Method EPA 410.2:

1.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	12/21/04
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	12/21/04
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	12/21/04
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	12/21/04
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	12/21/04
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	12/21/04
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	12/21/04
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	12/21/04
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	12/21/04
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	12/21/04
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	12/21/04
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	12/21/04

2. Holding Times:

All samples were analyzed within the required holding times.

3. Matrix Spike Recovery:

Two matrix spikes were associated with this SDG, one from different SDG and the other is 4432384. The two MS/MSD recoveries were within the laboratory and QAPP acceptance limits. Also, the two RPDs values were acceptable.

4. Duplicate Recovery:

Two duplicate samples were associated with this SDG. One duplicate sample from different SDG and the other is 4432384. Both duplicates results were acceptable.

5. Laboratory Control Sample Recovery:

The two LCSs recoveries were within the laboratory and QAPP acceptance limits.

Total Organic Carbon (TOC) Method EPA 415.1:

1.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG3-1-21504-10	4432373	Ground Water	12/15/04	12/30/04
MA3-TG3-2-21504-11	4432374	Ground Water	12/15/04	01/04/05
MA3-TG3-3-21504-12	4432375	Ground Water	12/15/04	01/08/05
MA3-TG4-1-121504-7	4432376	Ground Water	12/15/04	01/07/05
MA3-TG4-2-121504-8	4432379	Ground Water	12/15/04	01/07/05
MA3-TG4-3-121504-9	4432380	Ground Water	12/15/04	01/07/05
MA3-TG5-1-121504-1	4432381	Ground Water	12/15/04	01/07/05
MA3-TG5-2-121504-2	4432382	Ground Water	12/15/04	01/07/05
MA3-TG5-3-121504-3	4432383	Ground Water	12/15/04	01/07/05
MA3-TG6-1-121504-4	4432384	Ground Water	12/15/04	01/07/05
MA3-TG6-2-121504-5	4432385	Ground Water	12/15/04	01/07/05
MA3-TG6-3-121504-6	4432386	Ground Water	12/15/04	01/08/05

2. Holding Times:

All samples were analyzed within the required holding times.

3. Method Blank:

Five methods blanks were associated with this SDG. The method blank that was analyzed on 12/23/04 results contained 1.043 mg/l. No associated sample from this SDG was analyzed with this blank. Therefore, no qualification was applied.

The two method blanks that were analyzed on 01/07/05 results were free of contamination and were associated with 4432374, 4432376, and 4432379 thru 4432384.

The method blank that was analyzed with 4432385 and 4432386 on 01/07/05-01/08/05 result contained 0.50 mg/l. However, the presence of TOC in method blank had no affect on the samples results because the sample results were greater 5 times than the blank value. Therefore, no action was taken.

The method blank that was analyzed with 4432375 on 01/08/05 result was free of contamination.

4. Matrix Spike Recovery:

Four matrix spikes were performed on 4432373, 4432376, 4432381 and 4432386. All matrix spikes recoveries were within the laboratory and QAPP acceptance limits. Also, the spike sample recovery was acceptable.

5. Duplicate Recovery:

All the duplicate samples results were acceptable.

6. Laboratory Control Sample Recovery:

All the laboratories control samples were within the acceptance QC control limits.

7. Initial and Continuing Verification Calibration:

All the initial and continuing calibrations results were all within the QC control limits.

Data Reviewed by: Tania Shammo 02/15/05

Sample Reference List for SDG Number KMA61 with a Data Package Type of I

07802 - Kerr-McGee Corporation
Moss American

Lab Sample Number	Lab Sample Code	Client Sample Description				
4432372	MA3TB	MA3-TB	MA3-TB-121504-20	Water	121504-7	02687.007.006.0001
4432373	TG3-1	MA3-TG3-1	MA3-TG3-1-121504-10	Groundwater	121504-2,3,7	02687.007.006.0001
4432374	TG3-2	MA3-TG3-2	MA3-TG3-2-121504-11	Groundwater	121504-2,3,7	02687.007.006.0001
4432375	TG3-3	MA3-TG3-3	MA3-TG3-3-121504-12	Groundwater	121504-2,3,7	02687.007.006.0001
4432376	TG4-1	MA3-TG4-1	MA3-TG4-1-121504-7	Groundwater	121504-3,5,7	02687.007.006.0001
4432377	TG4-1	MA3-TG4-1	MA3-TG4-1-121504-7-MS	Groundwater	121504-4,7	02687.007.006.0001
4432378	TG4-1	MA3-TG4-1	MA3-TG4-1-121504-7-MSD	Groundwater	121504-4,7	02687.007.006.0001
4432379	TG4-2	MA3-TG4-2	MA3-TG4-2-121504-8	Groundwater	121504-2,3,7	02687.007.006.0001
4432380	TG4-3	MA3-TG4-3	MA3-TG4-3-121504-9	Groundwater	121504-2,4,7	02687.007.006.0001
4432381	TG5-1	MA3-TG5-1	MA3-TG5-1-121504-1	Groundwater	121504-5,6,7	02687.007.006.0001
4432382	TG5-2	MA3-TG5-2	MA3-TG5-2-121504-2	Groundwater	121504-5,6,7	02687.007.006.0001
4432383	TG5-3	MA3-TG5-3	MA3-TG5-3-121504-3	Groundwater	121504-5,6,7	02687.007.006.0001
4432384	TG6-1	MA3-TG6-1	MA3-TG6-1-121504-4	Groundwater	121504-4,6,7	02687.007.006.0001
4432385	TG6-2	MA3-TG6-2	MA3-TG6-2-121504-5	Groundwater	121504-4,6,7	02687.007.006.0001
4432386	TG6-3	MA3-TG6-3	MA3-TG6-3-121504-6	Groundwater	121504-4,6,7	02687.007.006.0001

8881

7802 925489 4432372-86

COC ID: COC121504-7

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Green
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 353.2-NO2 &NO3	EPA 353.2-NO2 &NO3	EPA 365.3-ORTHO P, EPA 405.1-BOD	EPA 415.1-TOC	SW846 8021B-BTEX					
						Filtered									
						Container	40 ml Vials	40 ml Vials	500-ml Poly	250 ml Glass	40 ml Vials				
						Preservative	H2SO4	N/A	N/A	N/A	HCl				
	MA3-TB-121504-20	G		N	12/15/2004 18:30					3					
	MA3-TG3-1-121504-10	G		N	12/15/2004 16:45	1	1	1	1	3					
	MA3-TG3-2-121504-11	G		N	12/15/2004 16:50	1	1	1	1	3					
	MA3-TG3-3-121504-12	G		N	12/15/2004 16:55	1	1	1	1	3					
	MA3-TG4-1-121504-7	G		N	12/15/2004 15:30	1	1	1	1	3					
	MA3-TG4-1-121504-7-MSD	G		Y	12/15/2004 15:30					6					
	MA3-TG4-2-121504-8	G		N	12/15/2004 15:35	1	1	1	1	3					
	MA3-TG4-3-121504-9	G		N	12/15/2004 15:40	1	1	1	1	3					
	MA3-TG5-1-121504-1	G		N	12/15/2004 10:20	1	1	1	1	3					
	MA3-TG5-2-121504-2	G		N	12/15/2004 10:25	1	1	1	1	3					
	MA3-TG5-3-121504-3	G		N	12/15/2004 10:30	1	1	1	1	3					
	MA3-TG6-1-121504-4	G		N	12/15/2004 12:40	1	1	1	1	3					
	MA3-TG6-2-121504-5	G		N	12/15/2004 12:45	1	1	1	1	3					
	MA3-TG6-3-121504-6	G		N	12/15/2004 12:50	1	1	1	1	3					

Remarks/Comments

Lab Use Only

Temp of Cooler when Received, C: 1 | 2 | 3 | 4 | 5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Property Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	12-15-04 2000	[illegible]	12-16-04	[illegible]	12-16-04 1726	[illegible]	12-17-04 0915

Sampled By: M. Pirl

7802 925489 4432372-86

COC ID: COC121504-2

Chain of Custody Record

WESTON

Page 1 of 1

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.008.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Green
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	TKN, TP PO4,COD							
					Filtered									
					Container	1-L Glass	1-L Glass							
					Preservative	N/A	N/A							
	MA3-TG3-1-121504-10	G		N	12/15/2004 16:45	1	1							
	MA3-TG3-2-121504-11	G		N	12/15/2004 16:50	1	1							
	MA3-TG3-3-121504-12	G		N	12/15/2004 16:55	1	1							
	MA3-TG4-2-121504-8	G		N	12/15/2004 15:35	1	1							
	MA3-TG4-3-121504-9	G		N	12/15/2004 15:40	1	1							

Remarks/Comments

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels Indicate Properly Preserved Y N
Received within Holding Time Y N

Sampled By: M. Pohl

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	12/15/04 2000	[signature]	12-16-04 / 1445	[signature]	12-16-04 / 1600	[signature]	121704-0915

7802 925489 4432372-86

COC ID: COC121504-3

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.008.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Green
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2300 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS									
						Filtered									
						Container	1-L Amber								
						Preservative	N/A								
	MA3-TG3-1-121504-10	G		N	12/15/2004 16:45	2									
	MA3-TG3-2-121504-11	G		N	12/15/2004 16:50	2									
	MA3-TG3-3-121504-12	G		N	12/15/2004 16:55	2									
	MA3-TG4-1-121504-7	G		N	12/15/2004 15:30	2									
	MA3-TG4-2-121504-8	G		N	12/15/2004 15:35	2									

Remarks/Comments

Sampled By: M. Pul

Lab Use Only

Temp of Cooler when Received, C: 1 | 2 | 3 | 4 | 5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	12/15/04 1900	[illegible]	12-16-04 1055	[illegible]	12-16-04 1200	[illegible]	12-17-04 0915

7802 925489 4432372-86

COC ID: COC121504-5

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Green
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP PO4,COD							
						Filtered									
						1-L Glass	1-L Amber	1-L Glass							
						Preservative	N/A	N/A	N/A							
	MA3-TG4-1-121504-7	G		N	12/15/2004 15:30	1		1							
	MA3-TG3-1-121504-1	G		N	12/15/2004 10:20		2	1							
	MA3-TG3-2-121504-2	G		N	12/15/2004 10:25	1	2								
	MA3-TG3-3-121504-3	G		N	12/15/2004-10:30		2								

Remarks/Comments

Sampled By: M. Pihl

Lab Use Only

Temp of Cooler when Received, C: 1 | 2 | 3 | 4 | 5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
M. Pihl	12/15/04 2000		12-16-04 1054		12-16-04 1700		
							12-17-04 0915

7802 925489 4432372-86

COC ID: COC121504-4

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Mesa American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Grean
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1627

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310 PAHs								
						Filtered								
						Container	1-L Amber							
						Preservative	N/A							
	MA3-TG4-1-121504-7-MSD	G		Y	12/15/2004 15:30		4							
	MA3-TG4-3-121504-9	G		N	12/15/2004 15:40		2							
	MA3-TG6-1-121504-4	G		N	12/15/2004 12:40		2							
	MA3-TG6-2-121504-5	G		N	12/15/2004 12:45		2							
	MA3-TG6-3-121504-6	G		N	12/15/2004 12:50		2							

Remarks/Comments

Sampled By: M Pihl

Lab Use Only

Temp of Cooler when Received, C: 1 | 2 | 3 | 4 | 5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels Indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	12/15/04 2000		12-16-04/1055		12-16-04/1055		
							12/17/04 0915

7802 925489 4432372-86

Chain of Custody Record

WESTON SOLUTIONS

COC ID: COC121504-6

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.008.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Green
Contact Phone No.: 847-818-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	TKN, TP P04,COD								
						Filtered									
						Container	1-L Glass	1-L Glass							
						Preservative	N/A	N/A							
	MA3-TG5-1-121504-1	G		N	12/15/2004 10:20	1									
	MA3-TG5-2-121504-2	G		N	12/15/2004 10:25		1								
	MA3-TG5-3-121504-3	G		N	12/15/2004 10:30	1	1								
	MA3-TG6-1-121504-4	G		N	12/15/2004 12:40	1	1								
	MA3-TG6-2-121504-5	G		N	12/15/2004 12:45	1	1								
	MA3-TG6-3-121504-6	G		N	12/15/2004 12:50	1	1								

Remarks/Comments

Sampled By: M. Pihl

Lab Use Only

Temp of Cooler when Received, C: 1 | 2 | 3 | 4 | 5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
M. Pihl	12-15-04 1800		12-16-04 0700		12-16-04 1700		12-17-04 0915

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Pg: 1 of 2

Client/Project: Weston Solutions (IL)
Date of Receipt: 12-17-04
Time of Receipt: 0915
Source Code: 50-1

Shipping Container Sealed: (Y) / N
Custody Seal Present: (Y) / N
Custody Seal Intact: (Y) / N / NA
Packaged: (Chilled) / Not Chilled
Unpacker Emp. No.: 1696

Temperature of Shipping Containers	
#1	**#2**
Thermometer ID: 8956	Thermometer ID: 8956
Temp.: 3.1°	Temp.: 3.3°
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) N Loose / (Bagged)	Ice Present? (Y) N Loose / (Bagged)
#3 Vials	**#4**
Thermometer ID: 8956	Thermometer ID: 8956
Temp.: 2.2°	Temp.: 4.1°
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) N Loose / (Bagged)	Ice Present? (Y) N Loose / (Bagged)

Paperwork Discrepancy/Unpacking Problems: received 3 extra 1-L containers with ID: MA3-TG4-1-121504-6-MSD
received 1 extra 250 mL bottle with ID: MA3-TG4-1-121504-6 not on COC

Sample Administration Internal Chain of Custody			
Name	**Date**	**Time**	**Reason for Transfer**
Jayson Tkach	12-17-04	1245	Unpacking
Annibelle Hutchison	12/17/04	1400	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

eeee

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: Weston Solutions (IL)

Date of Receipt: 12-17-04

Time of Receipt: 0915

Source Code: 50-1

Shipping Container Sealed: (Y) / N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1696

Temperature of Shipping Containers	
~~#1~~ #5	~~#2~~ #6
Thermometer ID: 8956	Thermometer ID: 8956
Temp.: 3.5°	Temp.: 5.9°
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose (Bagged)	Ice Present? (Y) / N Loose (Bagged)
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Jayson Tkach	12-17-04	1245	Unpacking
Anushia Hutchins	12/17/04	1400	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

METHODOLOGY SUMMARY/REFERENCE

8213 BTEX (8021)

The volatile compounds are extracted by bubbling an inert gas through the sample, and are collected on a sorbent trap. The trap is thermally desorbed and the compounds are separated by gas chromatography under programmed temperature conditions. Each analyte is quantitated using a photoionization detector.

Reference: Test Methods for Evaluating Solid Waste
SW-846, 8021B, Revision 2, December 1996

****

1146 GC VOA Water Prep

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Waste,
SW-846, Method 5030B, Revision 2, December 1996

****

0774 (Prep # 3337) PAH's in Water by HPLC

The sample aliquot is extracted with methylene chloride, dried, concentrated by evaporation and exchanged into acetonitrile. If necessary, silica gel cleanup is used. The extract is analyzed by reverse phase HPLC with both UV and Fluorescence detectors.

Reference: Test Methods for Evaluating Solid Wastes,
SW-846, Method 8310, September 1986

Reference: Test Methods for Evaluating Solid Wastes,
SW-846, Method 3510C, December 1996

~~8618~~

0217 Kjeldahl Nitrogen (water/waste)

The sample is previously digested with sulfuric acid, potassium sulfate, and mercuric sulfate. This solution is then analyzed for the converted ammonia nitrogen using the reaction of the ammonia and sodium salicylate, sodium nitroprusside, and sodium hypochlorite in a buffered alkaline medium to form an ammonia salicylate complex. The absorbance is read at 660 nm and is compared to a standard curve. An autoanalyzer is used.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 351.2

****

0219 Nitrite Nitrogen (water)

Nitrite ions react with sulfanilamide to yield a diazo compound which couples with N-1-naphthylethylene diamine dihydrochloride to form a soluble, highly-colored dye. The absorbance is read at 520nm and is compared to a standard curve. An autoanalyzer is used.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 353.2

****

0220 Nitrate Nitrogen (water)

The sample is passed through a column containing granulated copper-cadmium to reduce nitrate to nitrite. Nitrite ions react with sulfanilamide to yield a diazo compound which couples with N-1-naphthylethylene diamine dehydrochloride to form a soluble, highly-colored dye. The absorbance is read at 520nm and is compared to a standard curve. An autoanalyzer is used.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 353.2

****

1460 Total Kjeldahl Nitrogen Digestion (water)

This procedure converts nitrogen components of biological origin such as amino acids, proteins, and peptides to ammonia using a sulfuric acid/potassium sulfate digestion with mercuric oxide as a catalyst. ee11

Reference: EPA Methods for Chemical Analysis of Water and
Wastes, EPA 600/4-79-020, Method 351.2

0273 Total Organic Carbon (water)

Following acidification, the sample is purged with nitrogen to remove inorganic carbon. Persulfate is injected to oxidize organic carbon to carbon dioxide which is detected by IR. An OI Model 700 TOC Analyzer is used.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 415.1

****

8264 Total Phos as PO4 Prep (water)

All forms of phosphorus are converted to orthophosphate by an acid-persulfate digestion. The orthophosphate ion reacts with ammonium molybdate in acidic solution to form an antimony-phosphomolybdate complex.

Reference: Methods for Chemical Analysis of Water and Wastes,
EPA 600/4-79-020, 365.1

****

0345 Total Phosphorus as PO4 (water/solid)

All forms of phosphorus are converted to orthophosphorus by an acid-persulfate digestion. The orthophosphate ion reacts with ammonium molybdate in acidic solution to form an antimony-phosphomolybdate complex. On reduction with ascorbic acid, this complex turns blue. The absorbance is read at 660 nm and is compared to a standard curve. An Alpkem Autoanalyzer is used.

Reference: Methods for Chemical Analysis of Water and Wastes
EPA 600/4-79-020, Method 365.1

****

0221 Ammonia Nitrogen (water)

The sample is distilled into a solution of boric acid and titrated with standard sulfuric acid using a mixed indicator.

Reference: Method for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 350.2

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

0235 Biochemical Oxygen Demand (water)

A seeded sample of the waste is incubated with nutrients for 5 days at 20C. The reduction of dissolved oxygen concentration during the incubation yields a measure of the BOD.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 405.1

****

0226 Orthophosphate as P (water)

Orthophosphate is determined colorimetrically with ammonium molybdate and antimony potassium tartrate. The absorbance is read at 660 nm and compared to a standard curve.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 365.3

****

1553 Chemical Oxygen Demand - low level

The COD is determined titrimetrically with ferrous ammonium sulfate in the presence of potassium dichromate after reflux with sulfuric acid.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 410.2

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

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

734-367-7900

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 925489. Samples arrived at the laboratory on Friday, December 17, 2004. The PO# for this group is ZAKW1KEOK0A90089.

Client Description			Lancaster Labs Number
MA3-TB	MA3-TB-121504-20	Water	4432372
MA3-TG3-1	MA3-TG3-1-121504-10	Groundwater	4432373
MA3-TG3-2	MA3-TG3-2-121504-11	Groundwater	4432374
MA3-TG3-3	MA3-TG3-3-121504-12	Groundwater	4432375
MA3-TG4-1	MA3-TG4-1-121504-7	Groundwater	4432376
MA3-TG4-1	MA3-TG4-1-121504-7-MS	Groundwater	4432377
MA3-TG4-1	MA3-TG4-1-121504-7-MSD	Groundwater	4432378
MA3-TG4-2	MA3-TG4-2-121504-8	Groundwater	4432379
MA3-TG4-3	MA3-TG4-3-121504-9	Groundwater	4432380
MA3-TG5-1	MA3-TG5-1-121504-1	Groundwater	4432381
MA3-TG5-2	MA3-TG5-2-121504-2	Groundwater	4432382
MA3-TG5-3	MA3-TG5-3-121504-3	Groundwater	4432383
MA3-TG6-1	MA3-TG6-1-121504-4	Groundwater	4432384
MA3-TG6-2	MA3-TG6-2-121504-5	Groundwater	4432385
MA3-TG6-3	MA3-TG6-3-121504-6	Groundwater	4432386

METHODOLOGY

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

1 COPY TO	Weston Solutions, Inc.	Attn: Mr. Tom Graan
1 COPY TO	Kerr-McGee Corporation	Attn: Mr. Roy Widmann
1 COPY TO	Data Package Group	

8814

Lancaster Laboratories

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

Respectfully Submitted,

Dana M Kauffman

Dana M. Kauffman
Group Leader

2815

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

MEMBER ACIL

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432372

MA3-TB MA3-TB-121504-20 Water
121504-7 02687.007.006.0001
Moss American
Collected:12/15/2004 18:30

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:56
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA3TB SDG#: KMA61-01TB

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	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	12/21/2004 15:35	Michael F Barrow	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 15:35	Michael F Barrow	1

9816

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432373

MA3-TG3-1 MA3-TG3-1-121504-10 Groundwater
121504-2,3,7 02687.007.006.0001
Moss American
Collected:12/15/2004 16:45 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:56 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG3-1 SDG#: KMA61-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.53 (J)	0.50	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	0.38 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. UJ	1.9	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.					
00273	Total Organic Carbon	n.a.	8.7	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	20.3	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	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.	0.18	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

TBS 12/15/04

0817

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432373

MA3-TG3-1 MA3-TG3-1-121504-10 Groundwater
121504-2,3,7 02687.007.006.0001
Moss American
Collected:12/15/2004 16:45 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:56
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG3-1 SDG#: KMA61-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:37	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:19	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 18:22	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	12/30/2004 21:42	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 11:53	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/21/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/21/2004 16:12	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 18:42	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 16:12	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

5518

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432374

MA3-TG3-2 MA3-TG3-2-121504-11 Groundwater
121504-2,3,7 02687.007.006.0001
Moss American
Collected:12/15/2004 16:50 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:56 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG3-2 SDG#: KMA61-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.90	J	0.50	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	J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.013	J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	UJ	3.4	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.						
00273	Total Organic Carbon	n.a.	7.0		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	18.0		2.1	mg/l	1
							TBS 2/15/05
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	0.3	J	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.038	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.019	ug/l	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432374

MA3-TG3-2 MA3-TG3-2-121504-11 Groundwater
121504-2,3,7 02687.007.006.0001
Moss American
Collected:12/15/2004 16:50 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:56
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG3-2 SDG#: KMA61-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:53	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:20	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 20:11	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/07/2005 15:13	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 11:54	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/21/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/21/2004 16:50	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 19:20	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 16:50	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

8828

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432375

MA3-TG3-3 MA3-TG3-3-121504-12 Groundwater
121504-2,3,7 02687.007.006.0001
Moss American
Collected:12/15/2004 16:55 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:56 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG3-3 SDG#: KMA61-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.8 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	0.015 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	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	11.6 J	0.80	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.					
00273	Total Organic Carbon	n.a.	11.4	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	32.3	2.1	mg/l	1
08213	BTEX (8021)					TBS 2/15/05
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.068 J	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	8021
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432375

MA3-TG3-3 MA3-TG3-3-121504-12 Groundwater
121504-2,3,7 02687.007.006.0001
Moss American
Collected:12/15/2004 16:55 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:56 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG3-3 SDG#: KMA61-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:54	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:22	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 20:12	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/08/2005 10:24	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 11:55	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/21/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/21/2004 17:27	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 19:59	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 17:27	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

8822

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432376

MA3-TG4-1 MA3-TG4-1-121504-7 Groundwater
121504-3,5,7 02687.007.006.0001
Moss American
Collected:12/15/2004 15:30 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:56
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-1 SDG#: KMA61-05BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.67 (J)	0.50	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	0.79 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. UJ	2.1	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.					TBS 2/15/05
00273	Total Organic Carbon	n.a.	6.1	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	15.4	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	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.	0.18	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	8021
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432376

MA3-TG4-1 MA3-TG4-1-121504-7 Groundwater
121504-3,5,7 02687.007.006.0001
Moss American
Collected:12/15/2004 15:30 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:56
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-1 SDG#: KMA61-05BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:43	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:12	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 19:46	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/07/2005 15:21	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 11:56	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/20/2004 21:27	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 11:38	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/20/2004 21:27	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

0824

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432377

MA3-TG4-1 MA3-TG4-1-121504-7-MS Groundwater
121504-4,7 02687.007.006.0001
Moss American
Collected:12/15/2004 15:30 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-1 SDG#: KMA61-05MS

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	22.	0.2	ug/l	1
00777	Toluene	108-88-3	22.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	22.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	65.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	170.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	180.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	160.	1.6	ug/l	1
00784	Fluorene	86-73-7	18.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	5.5	0.080	ug/l	1
00789	Anthracene	120-12-7	2.8	0.040	ug/l	1
00807	Fluoranthene	206-44-0	2.8	0.040	ug/l	1
00811	Pyrene	129-00-0	19.	0.18	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	1.4	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.5	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	5.4	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	9.4	0.10	ug/l	1
07409	Chrysene	218-01-9	5.6	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	12/20/2004 22:05	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 12:16	Mark A Cl[illegible]825	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/20/2004 22:05	Brian C Veety	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432377

MA3-TG4-1 MA3-TG4-1-121504-7-MS Groundwater
121504-4,7 02687.007.006.0001
Moss American
Collected:12/15/2004 15:30 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-1 SDG#: KMA61-05MS

6826

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432378

MA3-TG4-1 MA3-TG4-1-121504-7-MSD Groundwater
121504-4,7 02687.007.006.0001
Moss American
Collected:12/15/2004 15:30 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-1 SDG#: KMA61-05MSD

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	22.	0.2	ug/l	1
00777	Toluene	108-88-3	22.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	22.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	65.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	170.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	180.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	170.	1.6	ug/l	1
00784	Fluorene	86-73-7	19.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	5.6	0.080	ug/l	1
00789	Anthracene	120-12-7	2.9	0.040	ug/l	1
00807	Fluoranthene	206-44-0	2.8	0.040	ug/l	1
00811	Pyrene	129-00-0	19.	0.18	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	1.4	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.6	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	5.7	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	12/20/2004 22:42	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 12:55	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/20/2004 22:42	Brian C Veety	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432378

MA3-TG4-1 MA3-TG4-1-121504-7-MSD Groundwater
121504-4,7 02687.007.006.0001
Moss American
Collected:12/15/2004 15:30 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-1 SDG#: KMA61-05MSD

9828

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432379

MA3-TG4-2 MA3-TG4-2-121504-8 Groundwater
121504-2,3,7 02687.007.006.0001
Moss American
Collected:12/15/2004 15:35 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-2 SDG#: KMA61-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.2 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D. UJ	0.015	mg/l	1
	This sample was analyzed past the 48 hour hold time for nitrite nitrogen.					
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.3	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. UJ	3.1	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.					
00273	Total Organic Carbon	n.a.	9.2	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	23.6	2.1	mg/l	1
08213	BTEX (8021)					TBS 2/15/05
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	0.25 J	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.079	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.039	ug/l	1
00807	Fluoranthene	206-44-0	0.23	0.039	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	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.	0.039	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.	0.039	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.079	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.099	ug/l	8823
07409	Chrysene	218-01-9	N.D.	0.079	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432379

MA3-TG4-2 MA3-TG4-2-121504-8 Groundwater
121504-2,3,7 02687.007.006.0001
Moss American
Collected:12/15/2004 15:35 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-2 SDG#: KMA61-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:44	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 16:47	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 19:47	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/07/2005 15:29	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:00	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/21/2004 18:04	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 20:37	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 18:04	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

0030

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432380

MA3-TG4-3 MA3-TG4-3-121504-9 Groundwater
121504-2,4,7 02687.007.006.0001
Moss American
Collected:12/15/2004 15:40 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-3 SDG#: KMA61-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.1 J		0.50	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	0.71	J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. UT		3.1	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.						
00273	Total Organic Carbon	n.a.	9.4		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	24.0		2.1	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.19	ug/l	1
00785	Phenanthrene	85-01-8	0.28	J	0.082	ug/l	1
00789	Anthracene	120-12-7	0.19	J	0.041	ug/l	1
00807	Fluoranthene	206-44-0	0.31		0.041	ug/l	1
00811	Pyrene	129-00-0	0.33	J	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.30		0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	0.32		0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	0.30		0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	0.15	J	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	0.29	J	0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	0.35	J	0.10	ug/l	1
07409	Chrysene	218-01-9	0.19	J	0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	0.30		0.021	ug/l	1

TBS 2/15/05

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432380

MA3-TG4-3 MA3-TG4-3-121504-9 Groundwater
121504-2,4,7 02687.007.006.0001
Moss American
Collected:12/15/2004 15:40 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:57 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG4-3 SDG#: KMA61-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:45	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:18	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 19:49	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/07/2005 22:01	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:01	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/21/2004 18:41	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 21:16	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 18:41	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

8832

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432381

MA3-TG5-1 MA3-TG5-1-121504-1 Groundwater
121504-5,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 10:20 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG5-1 SDG#: KMA61-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	N.D. UJ	0.50	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	0.29 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. UJ	1.6	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.					
00273	Total Organic Carbon	n.a.	4.8	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	11.6	2.1	mg/l	1
						TBS 2/15/0
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.085	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.043	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.043	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.085	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.085	ug/l	0033
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1
	Due to the nature of the sample matrix, a reduced aliquot was used for					

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432381

MA3-TG5-1 MA3-TG5-1-121504-1 Groundwater
121504-5,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 10:20 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG5-1 SDG#: KMA61-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:45	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:04	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 19:50	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/07/2005 22:09	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:02	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/21/2004 19:18	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 21:55	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 19:18	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

8834

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432382

MA3-TG5-2 MA3-TG5-2-121504-2 Groundwater
121504-5,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 10:25 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:57 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG5-2 SDG#: KMA61-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.69 (J)	0.50	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	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. VJ	1.7	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.					
00273	Total Organic Carbon	n.a.	5.7	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	16.5	2.1	mg/l	1
08213	BTEX (8021)					TBS 2/15/05
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.053 J	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.096	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1 9835
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432382

MA3-TG5-2 MA3-TG5-2-121504-2 Groundwater
121504-5,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 10:25 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG5-2 SDG#: KMA61-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:46	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:05	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 19:51	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/07/2005 22:50	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:06	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/21/2004 19:56	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 22:33	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 19:56	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

8836

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432383

MA3-TG5-3 MA3-TG5-3-121504-3 Groundwater
121504-5,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 10:30 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG5-3 SDG#: KMA61-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.84 (J)	0.50	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	0.67 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. UJ	1.8	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.					
00273	Total Organic Carbon	n.a.	6.3	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	15.4	2.1	mg/l	1
08213	BTEX (8021)					TBS 2/15/05
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.050 J	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432383

MA3-TG5-3 MA3-TG5-3-121504-3 Groundwater
121504-5,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 10:30 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:57 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG5-3 SDG#: KMA61-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:47	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:07	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 19:52	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/07/2005 22:58	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:07	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/21/2004 22:25	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/24/2004 23:12	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 22:25	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

9839

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432384

MA3-TG6-1 MA3-TG6-1-121504-4 Groundwater
121504-4,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 12:40 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:57 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG6-1 SDG#: KMA61-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	(2.2) J		0.50	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	2.1		0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. UJ		3.2	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.						
00273	Total Organic Carbon	n.a.	11.1		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	26.2		2.1	mg/l	1
							TBS 2/15/05
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	0.2	J	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.077	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.039	ug/l	1
00807	Fluoranthene	206-44-0	0.040	J	0.039	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.039	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.039	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.077	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.096	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.077	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.019	ug/l	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432384

MA3-TG6-1 MA3-TG6-1-121504-4 Groundwater
121504-4,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 12:40 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG6-1 SDG#: KMA61-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:48	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:08	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 19:57	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/07/2005 23:06	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:08	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/21/2004 23:02	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 00:29	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 23:02	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

0640

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432385

MA3-TG6-2 MA3-TG6-2-121504-5 Groundwater
121504-4,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 12:45 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:57 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG6-2 SDG#: KMA61-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.1 J	0.50	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	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. UJ	1.7	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.					
00273	Total Organic Carbon	n.a.	7.5	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	19.1	2.1	mg/l	1
						TBS 2/15/05
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.089 J	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432385

MA3-TG6-2 MA3-TG6-2-121504-5 Groundwater
121504-4,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 12:45 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG6-2 SDG#: KMA61-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:49	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:09	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 20:01	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/07/2005 23:14	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:11	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/21/2004 23:40	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 01:07	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/21/2004 23:40	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

8842

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432386

MA3-TG6-3 MA3-TG6-3-121504-6 Groundwater
121504-4,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 12:50 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:57 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG6-3 SDG#: KMA61-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.1 J	0.50	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	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. WT	2.4	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.					
00273	Total Organic Carbon	n.a.	8.9	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	22.1	2.1	mg/l	1
						2/15/05
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.075	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.058 J	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.075	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.094	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.075	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432386

MA3-TG6-3 MA3-TG6-3-121504-6 Groundwater
121504-4,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 12:50 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 14:57 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG6-3 SDG#: KMA61-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.1 J	0.50	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	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D. WJ	2.4	mg/l	1
	This sample was not submitted with sufficient time for the analysis to be completed within the 48-hour hold time for BOD.					
00273	Total Organic Carbon	n.a.	8.9	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	22.1	2.1	mg/l	1
08213	BTEX (8021)					2/15/05
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.075	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.058 J	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.075	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.094	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.075	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432386

MA3-TG6-3 MA3-TG6-3-121504-6 Groundwater
121504-4,6,7 02687.007.006.0001
Moss American
Collected:12/15/2004 12:50 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 14:57
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG6-3 SDG#: KMA61-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/06/2005 08:55	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 11:10	Katherine D Webster	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 20:02	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/17/2004 11:00	Kenneth A Bell	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 21:49	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/08/2005 00:03	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:13	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/22/2004 00:17	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 01:46	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 00:17	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/04/2005 08:45	Choon Y Tian	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 10:30	Andrew G Newton	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

8844

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

Semivolatiles by GC/MS Data

Case Narrative
Conformance/Nonconformance Summary

Case Narrative
Client: Kerr-McGee Corporation
SDG: KMA61

LANCASTER LABORATORIES
PAH by HPLC

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Water	Comments
4432373	TG3-1	X	
4432374	TG3-2	X	
4432375	TG3-3	X	
4432376	TG4-1	X	Unspiked
4432377	TG4-1MS	X	Matrix Spike
4432378	TG4-1MSD	X	Matrix Spike Dup
4432379	TG4-2	X	
4432380	TG4-3	X	
4432381	TG5-1	X	
4432382	TG5-2	X	
4432383	TG5-3	X	
4432384	TG6-1	X	
4432385	TG6-2	X	
4432386	TG6-3	X	
LABORATORY SUBMITTED QC:			
SBLKWJ353	SBLKWJ3532	X	Method Blank
353WJLCS	353WJLCS2	X	Lab Control Sample

SAMPLE PREPARATION:

Due to the nature of the sample matrix, a reduced aliquot of 936 mls was used in the extraction of TG5-1.

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

Lancaster Laboratories • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425
Phone: 717-656-2300 • Fax: 717-656-2300 • http:// www.LancasterLabs.com

Case Narrative (continued)
SDG#: KMA61

ANALYSIS:

The method used for analysis was SW-846 8310.

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.

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Christi M. Ratcliff for CJN Date: 2-8-05
Charles J. Neslund
Group Leader, GC/MS Semivolatiles

Lancaster Laboratories • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425
Phone: 717-656-2300 • Fax: 717-656-2300 • http:// www.LancasterLabs.com

Analytical Data Validation Report
Kerr-McGee Corporation
Moss American Site-WI- Water Samples
SDG #: KMA62

PAH Method SW-846 8310 by HPLC:
SDG # KMA62
1.Samples:

Client Description	Lab Sample Number	Matrix	Date Collected	Date Extracted	Date Analyzed
MA3-FB-121604-13	4432559	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW27S-121604-10	4432560	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW29S-121604-9	4432561	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW30S-121604-16	4432562	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW32S-121604-11	4432563	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW32S-121604-11-MS	4432564	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW32S-121604-11-MSD	4432565	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW33S-121604-12	4432566	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW33S-121604-12-DP	4432567	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW36S-121604-8	4432568	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW37S-121604-7	4432569	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW5S-121604-15	4432570	Ground Water	12/16/04	12/20/04	12/25/04
MA3-MW5S-121604-15-DP	4432571	Ground Water	12/16/04	12/20/04	12/25/04
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	12/20/04	12/25&29
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	12/20/04	12/25/04
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	12/20/04	12/25/04
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	12/20/04	12/25/04
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	12/20/04	12/25/04
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	12/20/04	12/25/04

2. Holding Time:
The samples were extracted and analyzed within the required holding time. According to the laboratory narrative case due to the nature of the sample matrix, reduced aliquots were used in the extraction of 4432573. Also, 4432573 was analyzed at an initial 10X dilution then reanalyzed with 100X dilution. The sample 4432578 was re-extracted due to surrogate recoveries outside the QC limit. However, the re-extraction was performed outside the method required holding time and did not confirm the original extraction. Therefore, both analyses for sample result for 4432578 should qualify as (J/UJ).

3. Method Blank:
Two method blanks were associated with this SDG SBLKWD3552 and SBLKWC3642. The method blank SBLKWD3552 was analyzed on 12/25/04 with (4432559 thru 4432571 and 4432573 thru 4432578). The method blank SBLKWD3552 results were free of contamination. The method blank SBLKWC3642 was analyzed on 01/02/05 with 4432578-RR. Also, the method blank SBLKWC3642 results were free of contamination.

4. Matrix Spike/Matrix Spike Duplicate:
A water matrix spike was performed on 4432563. The MS/MSD recoveries were within the acceptance control limit. Also, the RPD values were within the quality control limit.

Sufficient sample volume was not available to perform a MS/MSD for the reanalyzed sample 4432578-RR analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

5. Laboratory control Sample:
The laboratory control sample recoveries were within the acceptance control limit.

The laboratory control samples/laboratory control sample duplicate associated with 4432578-RR recoveries were within the acceptance control limit. However, the RPD values were outside the quality control limit for dibenz (a, h) anthracene and benzo (g, h, i) perylene. Sample 4432578-RR results were already qualified.

6. Surrogate:
A Lancaster laboratory quantity the reported PAH compounds from the UV-detector, due to reduce sensitivity on the fluorescence detector. All the surrogate recoveries were within the control limits on UV-detector, except in 4432573 and 4432573DL triphenylene was diluted out. Also, sample 4432578 nitrobenzene and triphenylene were diluted out. Therefore, qualify the results in 4432578 as (J/UJ). No qualification was applied on 4432573 and 4432573DL because at least one surrogate compound was acceptable.

7. Retention Time:
According to the laboratory case narrative that due to the presence of interferents near retention times, the following compounds benzo (g, h, i) perylene, and dibenz (a, h) anthracene in 4432560. Therefore, qualify these compounds benzo (g, h, i) perylene, indeno (1, 2, 3-cd) pyrene, benzo (a) benzo (g, h, i) perylene, and dibenz (a, h) anthracene in 4432560 as (J/UJ).

8. Initial and Continuing Calibration:
The initial calibrations results were within the quality control limit (RSD >+/-30%). Also, all HPLC calibration verification results were acceptable.

BTEX SW-846 8021B:
SDG # KMA62
1.Samples:

Client Description	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed
MA3-FB-121604-13	4432559	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW27S-121604-10	4432560	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW29S-121604-9	4432561	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW30S-121604-16	4432562	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW32S-121604-11	4432563	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW32S-121604-11-MS	4432564	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW32S-121604-11-MSD	4432565	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW33S-121604-12	4432566	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW33S-121604-12-DP	4432567	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW36S-121604-8	4432568	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW37S-121604-7	4432569	Ground Water	12/16/04	12/22/04	12/22/04
MA3-MW5S-121604-15	4432570	Ground Water	12/16/04	12/23/04	12/23/04
MA3-MW5S-121604-15-DP	4432571	Ground Water	12/16/04	12/23/04	12/23/04
MA3-TB-121604-14	4432572	Water	12/16/04	12/23/04	12/23/04
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	12/23/04	12/23/04
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	12/23/04	12/23/04
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	12/23/04	12/23/04
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	12/23/04	12/23/04
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	12/23/04	12/23/04
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	12/23/04	12/23/04

2. Holding Time:
The samples were prepared and analyzed within the required holding time. Sample 4432573 was analyzed at an initial 2X dilution

3. Method Blank:
Three method blanks BLK2064, BLK2065 and BLK2066 were associated with this SDG. BLK2064 was analyzed on 12/22/04 with 4432563 and MS/MSD. BLK2065 was analyzed on 12/22/04 with 4432559 thru 4432562, 4432573 and 4432566 thru 4432570. BLK2066 was analyzed on 12/23/04 with (4432571, 4432572 and 4432574 thru 4432578). The three method blanks BLK2064, BLK2065 and BLK2066 results were free of contamination.

4. Matrix Spike/Matrix Spike Duplicate:
A water matrix spike was performed on 4432563. The MS/MSD recoveries were within the acceptance control limit. Also, the RPD values were within the quality control limit.

5. Laboratory control Sample:
The laboratories control sample/ laboratories control sample duplicates recoveries were within the required quality control limit. Also, the RPD values were within the quality control limit.

6. Surrogate:
The method blank and the investigated samples had surrogate recovery within the acceptance quality control limit.

7. Initial and Continuing Calibration:
The initial calibrations and all the associated continuing calibrations results were acceptable.

WET CHEMISTRY ANALYSIS
Kjeldahl Nitrogen Analysis (TKN):
1. Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Digested	Date Analyzed
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	01/03/05	01/04/05
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	01/03/05	01/04/05
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	01/03/05	01/04/05
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	01/03/05	01/04/05
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	01/03/05	01/04/05
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	01/03/05	01/04/05

2. Holding Time:
All samples were digested and analyzed within the required holding time.

3. Method Blank:
The associated method blank result was free of contamination.

4. Matrix Spike Recovery:
The two matrix spikes were performed on 4432573 and 4432578 and both associated with this SDG. The 4432573MS recovery was within the quality control limit. However, 4432578MS recovery was outside the laboratory and QAPP acceptance limits. No action was taken because at least one MS recovery was acceptable.

5. Duplicate Recovery:
Two duplicates 4432573 and 4432578 were analyzed with the SDG. Both duplicates recovery were acceptable.

6. Laboratory Control Sample Recovery:
The laboratory control sample recovery was within the acceptance QC control limits.

7. Initial and Continuing Verification Calibration:
The initial and continuing calibration results were all within the QC control limits.

8. Initial and Continuing Calibration Blank:
The initial and continuing calibration blanks results were free of contamination.

Nitrite Nitrogen Analysis:

1.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	12/17/04
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	12/17/04
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	12/17/04
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	12/17/04
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	12/17/04
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	12/17/04

2. Holding Time:

All samples were analyzed within the required holding time.

3. Method Blank:

The associated method blank result was free of contamination.

4. Matrix Spike Recovery:

The matrix spike was performed on 4432573. The MS recovery was within the laboratory and QAPP acceptance limit. Also, the spike sample recovery was acceptable.

5. Laboratory Control Sample Recovery:

The laboratory control sample recovery was within the QC acceptance control limits.

6. Duplicate Recovery:

The duplicate result was acceptable. Also, the duplicate background result was acceptable.

7. Initial and Continuing Verification Calibration:

The initial and continuing calibration results were all within the QC control limits.

8. Initial and Continuing Calibration Blank:

The initial and continuing calibration blanks results were free of contamination.

Nitrate Nitrogen Analysis:

1. Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	01/06/05
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	01/06/05
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	01/06/05
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	01/06/05
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	01/06/05
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	01/06/05

2. Holding Time:
All samples were analyzed within the required holding time.

3. Method Blank:
The associated method blank result was free of contamination.

4. Matrix Spike Recovery:
The matrix spike was performed from different SDG. The MS recovery was outside the lower laboratory and QAPP acceptance limit. Therefore, qualify the result in 4432573 thru 4432578 as (J/UJ).

5. Duplicate Recovery:
The duplicate result was acceptable.

6. Laboratory Control Sample Recovery:
The laboratory control sample recovery was within the acceptance QC control limits.

7. Initial and Continuing Verification Calibration:
The initial and continuing calibration results were all within the QC control limits.

8. Initial and Continuing Calibration Blank:
The initial and continuing calibration blanks results were free of contamination.

Total Phosphorus as (PO4):
1`.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Extracted	Date Analyzed
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	12/23/04	01/04/05
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	12/23/04	01/04/05
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	12/23/04	01/04/05
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	12/23/04	01/04/05
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	12/23/04	01/04/05
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	12/23/04	01/04/05

2. Holding Time:
All samples were prepared and analyzed within the required holding time.

3. Method Blank:
The associated method blank result was free of contamination.

4. Matrix Spike Recovery:
The matrix spikes were performed on 4432384 from different SDG. The MS recovery was within the laboratory and QAPP acceptance limits.

5. Duplicate Recovery:
The duplicate 4432384 from different SDG result was acceptable.

6. Laboratory Control Sample Recovery:
The laboratory control sample recovery was within the acceptance QC control limits.

7. Initial and Continuing Verification Calibration:
The initial and continuing calibration results were all within the QC control limits.

8. Initial and Continuing Calibration Blank:
The initial and continuing calibration blanks results were free of contamination.

Ammonia Nitrogen Analysis:

1. Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	12/21/04
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	12/21/04
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	12/21/04
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	12/21/04
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	12/21/04
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	12/21/04

2. Holding Time:
All samples were analyzed within the required holding time.

3. Method Blank:
The method blank result was free of contamination.

4. Duplicate Recovery:
The duplicate recovery was acceptable.

5. Matrix Spike Recovery:
Sufficient sample volume was not available to perform a MS/MSD for the ammonia nitrogen analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

6. Laboratory Control Sample Recovery:
The laboratory control sample/laboratory control sample duplicate recoveries were within the acceptance QC control limits. Also, the RPD value was acceptable.

Ortho-Phosphate as P Analysis:

1.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	12/18/04
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	12/18/04
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	12/18/04
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	12/18/04
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	12/18/04
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	12/18/04

2. Holding Time:

All samples were analyzed within the required holding time.

3. Method Blank:

The method blank result was free of contamination.

4. Matrix Spike Recovery:

Sufficient sample volume was not available to perform a MS/MSD for the ortho-phosphate as P analysis. Therefore, a LCS was performed to demonstrate precision and accuracy at a batch level.

5. Duplicate Recovery:

The duplicate sample 4432577 result was acceptable.

6. Laboratory Control Sample Recovery:

The laboratory control sample recovery was within the control limit.

Biochemical Oxygen Demand (BOD) Method EPA 405.1:

1.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	12/17/04
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	12/17/04
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	12/17/04
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	12/17/04
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	12/17/04
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	12/17/04

2. Holding Time:

All samples were analyzed within the required holding time.

3. Duplicate Recovery:

The duplicate sample value was within the acceptance QC control limits. Also, the RPD value was acceptable.

4. Matrix Spike Recovery:
Sufficient sample volume was not available to perform a MS/MSD for the BOD analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

5. Laboratory Control Sample Recovery:
The laboratory control sample/laboratory control sample duplicate recoveries were within the acceptance QC control limits. Also, the RPD value was acceptable.

Chemical Oxygen Demand (COD) Method EPA 410.2:

1.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	12/22/04
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	12/22/04
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	12/22/04
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	12/22/04
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	12/22/04
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	12/22/04

2. Holding Time:
All samples were analyzed within the required holding time.

3. Duplicate Recovery:
The duplicate sample was from different SDG. The duplicates result was acceptable.

4. Matrix Spike Recovery:
Sufficient sample volume was not available to perform a MS/MSD for the COD analysis. Therefore, a LCS was performed to demonstrate precision and accuracy at a batch level.

5. Laboratory Control Sample Recovery:
The laboratory control sample recovery was within the acceptance QC control limits.

Total Organic Carbon (TOC) Method EPA 415.1:

1.Samples:

Client Code	Lab Sample Number	Matrix	Date Collected	Date Analyzed
MA3-TG1-1-121604-1	4432573	Ground Water	12/16/04	01/08/05
MA3-TG1-2-121604-2	4432574	Ground Water	12/16/04	01/08/05
MA3-TG1-3-121604-3	4432575	Ground Water	12/16/04	01/08/05
MA3-TG2-1-121604-4	4432576	Ground Water	12/16/04	01/08/05
MA3-TG2-2-121604-5	4432577	Ground Water	12/16/04	01/08/05
MA3-TG2-3-121604-6	4432578	Ground Water	12/16/04	01/08/05

2. Holding Time:
All samples were analyzed within the required holding time.

3. Method Blank:
The associated method blank result was free of contamination.

4. Matrix Spike Recovery:
A matrix spikes was performed on 4432386 from different SDG. The MS recovery was within the laboratory and QAPP acceptance limits.

5. Duplicate Recovery:
The duplicate sample result was acceptable.

6. Laboratory Control Sample Recovery:
The laboratory control sample recovery was within the acceptance QC control limits.

7. Initial and Continuing Verification Calibration:
All the initial and continuing calibrations results were all within the QC control limits.

Data Reviewed by: Tania Shammo 02/15/05

Sample Reference List for SDG Number KMA62 with a Data Package Type of I

07802 - Kerr-McGee Corporation
Moss American

Lab Sample Number	Lab Sample Code	Client Sample Description			
4432559	MA3FB	MA3-FB	MA3-FB-121604-13	Groundwater 121604-4,7	02687.007.006.0001
4432560	MA27S	MA3-MW27S	MA3-MW27S-121604-10	Groundwater 121604-4,7	02687.007.006.0001
4432561	MA29S	MA3-MW29S	MA3-MW29S-121604-9	Groundwater 121604-3,7	02687.007.006.0001
4432562	MA30S	MA3-MW30S	MA3-MW30S-121604-16	Groundwater 121604-5,7	02687.007.006.0001
4432563	MA32S	MA3-MW32S	MA3-MW32S-121604-11	Groundwater 121604-6,7	02687.007.006.0001
4432564	MA32S	MA3-MW32S	MA3-MW32S-121604-11-MS	Groundwater 121604-6,7	02687.007.006.0001
4432565	MA32S	MA3-MW32S	MA3-MW32S-121604-11-MSD	Groundwater 121604-6,7	02687.007.006.0001
4432566	MA33S	MA3-MW33S	MA3-MW33S-121604-12	Groundwater 121604-6,7	02687.007.006.0001
4432567	MA33D	MA3-MW33S	MA3-MW33S-121604-12-DP	Groundwater 121604-6,7	02687.007.006.0001
4432568	MA36S	MA3-MW36S	MA3-MW36S-121604-8	Groundwater 121604-5,7	02687.007.006.0001
4432569	MA37S	MA3-MW37S	MA3-MW37S-121604-7	Groundwater 121604-3,7	02687.007.006.0001
4432570	MA05S	MA3-MW5S	MA3-MW5S-121604-15	Groundwater 121604-5,7	02687.007.006.0001
4432571	MA05D	MA3-MW5S	MA3-MW5S-121604-15-DP	Groundwater 121604-5,7	02687.007.006.0001
4432572	MA-TB	MA3-TB	MA3-TB-121604-14	Water 121604-7	02687.007.006.0001
4432573	TG1-1	MA3-TG1-1	MA3-TG1-1-121604-1	Groundwater 121604-2,4,7	02687.007.006.0001
4432574	TG1-2	MA3-TG1-2	MA3-TG1-2-121604-2	Groundwater 121604-2,4,7	02687.007.006.0001
4432575	TG1-3	MA3-TG1-3	MA3-TG1-3-121604-3	Groundwater 121604-2,4,7	02687.007.006.0001
4432576	TG2-1	MA3-TG2-1	MA3-TG2-1-121604-4	Groundwater 121604-2,3,7	02687.007.006.0001
4432577	TG2-2	MA3-TG2-2	MA3-TG2-2-121604-5	Groundwater 121604-2,3,7	02687.007.006.0001
4432578	TG2-3	MA3-TG2-3	MA3-TG2-3-121604-6	Groundwater 121604-3,5,7	02687.007.006.0001

7802 925509 4432559-78

COC ID: COC121604-7

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Mesa American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Groan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 353.2-NO2 &NO3	EPA 353.2-NO2 &NO3	EPA 365.3-ORTHO P, EPA 405.1-BOD	EPA 415.1-TOC	SW846 8021B-BTEX					
						Filtered									
						Container	40 ml Vials	40 ml Vials	500-ml Poly	250 ml Glass	40 ml Vials				
						Preservative	H2SO4	N/A	N/A	N/A	HCl				
	MA3-FB-121604-13	G		N	12/16/2004 14:50					3					
	MA3-MW27S-121604-10	G		N	12/16/2004 14:05					3					
	MA3-MW29S-121604-9	G		N	12/16/2004 11:40					3					
	MA3-MW30S-121604-16	G		N	12/16/2004 15:20					3					
	MA3-MW32S-121604-11	G		N	12/16/2004 14:10					3					
	MA3-MW32S-121604-11-MSD	G		Y	12/16/2004 14:10					6					
	MA3-MW33S-121604-12	G		N	12/16/2004 14:15					3					
	MA3-MW33S-121604-12-DP	G		N	12/16/2004 14:15					3					
	MA3-MW36S-121604-8	G		N	12/16/2004 11:35					3					
	MA3-MW37S-121604-7	G		N	12/16/2004 11:30					3					
	MA3-MW38-121604-15	G		N	12/16/2004 15:15					3					
	MA3-MW38-121604-15-DP	G		N	12/16/2004 15:15					3					
	MA3-TB-121604-14	G		N	12/16/2004					3					
	MA3-TG1-1-121604-1	G		N	12/16/2004 08:45	1	1	1	1	3					
	MA3-TG1-2-121604-2	G		N	12/16/2004 08:50	1	1	1	1	3					
	MA3-TG1-3-121604-3	G		N	12/16/2004 08:55	1	1	1	1	3					
	MA3-TG2-1-121604-4	G		N	12/16/2004 10:15	1	1	1	1	3					
	MA3-TG2-2-121604-5	G		N	12/16/2004 10:20	1	1	1	1	3					
	MA3-TG2-3-121604-6	G		N	12/16/2004 10:25	1	1	1	1	3					

Remarks/Comments

Lab Use Only

Temp of Cooler when Received, C: 1 | 2 | 3 | 4 | 5: 2.4c

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	12/16/2004						
							12/17/04 0825

Sampled By: M. Rhl

7802 925509 4432559-78

COC ID: COC121604-4

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee

Site Name: Moss American | Contact Name: Tom Green

W. O.: 02597.007.009.0001 | Contact Phone No.: 847-918-4142

Lab: LANCASTER LABS | Lab Contact: C. SWEIGART

TAT: PER QUOTE | Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS								
						Filtered								
						Container	1-L Amber							
						Preservative	N/A							
	MA3-FB-121604-13	G		N	12/16/2004 14:50	2								
	MA3-MW27S-121604-10	G		N	12/16/2004 14:05	2								
	MA3-TG1-1-121604-1	G		N	12/16/2004 08:45	2								
	MA3-TG1-2-121604-2	G		N	12/16/2004 08:50	2								
	MA3-TG1-3-121604-3	G		N	12/16/2004 08:55	2								

Remarks/Comments

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
	2.1°			

COC Tape was present on outer package (Y) N

COC Tape was unbroken on outer package (Y) N

COC Tape was present on sample Y (N)

COC Tape was unbroken on sample Y (N)

Received in good condition (Y) N

Labels Indicate Properly Preserved (Y) N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	12/16/2004						
						[signature]	12/17/04 0935

Sampled By: M.P.W

7802 925509 4432559-78

Chain of Custody Record

WESTON SOLUTIONS

COC ID: COC121604-6

Client	Kerr McGee		
Site Name	Moss American	Contact Name	Tom Grean
W. O.	02687.007.008.0001	Contact Phone No.	847-918-4142
Lab	LANCASTER LABS	Lab Contact	C. SWEIGART
TAT	PER QUOTE	Lab Phone	717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	PAHs SW846 8310								
						Filtered								
						Container	1-L Amber							
						Preservative	N/A							
	MA3-MW22S-121604-11	G		N	12/16/2004 14:10	2								
	MA3-MW22S-121604-11-MSD	G		Y	12/16/2004 14:10	4								
	MA3-MW23S-121604-12	G		N	12/16/2004 14:15	2								
	MA3-MW23S-121604-12-DP	G		N	12/16/2004 1415	2								

Remarks/Comments

Sampled By M. Pirl

Lab Use Only

Temp of Cooler when Received, C: 5.6 2.2°

COC Tape was present on outer package (Y) N
COC Tape was unbroken on outer package (Y) N
COC Tape was present on sample Y (N)
COC Tape was unbroken on sample Y (N)

Received in good condition (Y) N
Labels indicate Properly Preserved (Y) N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
M. Pirl	12/16/04 2000						
							12/17/04 0915

7802 4432559-78 925509

COC ID: COC121604-2

Chain of Custody Record

WESTON

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Green
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	TKN, TP PO4,COD								
						Filtered									
						Container	1-L Glass	1-L Glass							
						Preservative	N/A	N/A							
	MA3-TG1-1-121604-1	G		N	12/16/2004 08:45	1	1								
	MA3-TG1-2-121604-2	G		N	12/16/2004 08:50	1	1								
	MA3-TG1-3-121604-3	G		N	12/16/2004 08:55	1	1								
	MA3-TG2-1-121604-4	G		N	12/16/2004 10:15	1	1								
	MA3-TG2-2-121604-5	G		N	12/16/2004 10:20	1	1								

Remarks/Comments:

Lab Use Only

Temp of Cooler when Received, C: 1 | 2 | 3 2.9° | 4 | 5

COC Tape was present on outer package: (Y) N
COC Tape was unbroken on outer package: (Y) N
COC Tape was present on sample: Y (N)
COC Tape was unbroken on sample: Y (N)

Received in good condition: (Y) N
Labels indicate Properly Preserved: (Y) N
Received within Holding Time: Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	12/16/04 2000						12/17/04 0915

Sampled By: M. Pilli

7802 925509 4432559-78

COC ID: COC121604-3

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee

Site Name: Moss American | Contact Name: Tom Green

W. O.: 02687.007.008.0001 | Contact Phone No.: 847-918-4142

Lab: LANCASTER LABS | Lab Contact: C. SWEIGART

TAT: PER QUOTE | Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310 PAHS									
						Filtered									
						Container	1-L Amber								
						Preservative	N/A								
	MA3-MW29S-121604-9	G		N	12/16/2004 11:40	2									
	MA3-MW37S-121604-7	G		N	12/16/2004 11:30	2									
	MA3-TG2-1-121604-4	G		N	12/16/2004 10:15	2									
	MA3-TG2-2-121604-5	G		N	12/16/2004 10:20	2									
	MA3-TG2-3-121604-6	G		N	12/16/2004 10:25	2									

Remarks/Comments

Sampled By: M. Pihl

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
			4.0°	

COC Tape was present on outer package Y N

COC Tape was unbroken on outer package Y N

COC Tape was present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition Y N

Labels Indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	12/16/2004						12/17/04 09:15

7802 925509 44 32559-78

COC ID: COC121604-6

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee

Site Name: Moss American | Contact Name: Tom Green

W. O.: 02687.007.008.0001 | Contact Phone No.: 847-918-4142

Lab: LANCASTER LABS | Lab Contact: C. SWEIGART

TAT: PER QUOTE | Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP PO4,COD							
						Filtered									
						Container	1-L Glass	1-L Amber	1-L Glass						
						Preservative	N/A	N/A	N/A						
	MA3-MW30S-121604-16	G		N	12/16/2004 15:20		2								
	MA3-MW36S-121604-8	G		N	12/16/2004 11:35		2								
	MA3-MW5S-121604-13	G		N	12/16/2004 15:15		2								
	MA3-MW5S-121604-15-DP	G		N	12/16/2004 15:15		2								
	MA3-TB3-1-121604-6	G		N	12/16/2004 10:25	1		1							

Remarks/Comments

Sampled By: M. Pahl

Lab Use Only

Temp of Cooler when Received, C: 1 3.5c | 2 | 3 | 4 | 5

COC Tape was present on outer package Y (N)

COC Tape was unbroken on outer package Y (N)

COC Tape was present on sample Y (N)

COC Tape was unbroken on sample Y (N)

Received in good condition (Y) N

Labels Indicate Properly Preserved (Y) N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	12/16/04 1200					[signature]	12/17/04 0915

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: Roy F Weston Inc (Kerr McGee) (TL)

Date of Receipt: 12/17/04

Time of Receipt: 0915

Source Code: 50-1

Shipping Container Sealed: (Y) / N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1420

Temperature of Shipping Containers	
#1 Amber+Glass 1L	#2 Amber 1L
Thermometer ID: 8917	Thermometer ID: 8917
Temp.: 3.3°C	Temp.: 2.1°C
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)
#3 Glass 1L	#4 Amber 1L
Thermometer ID: 8917	Thermometer ID: 8917
Temp.: 2.9°C	Temp.: 4.0°C
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[signature]	12/17/04	1225	Unpacking
Anneliese Hutchison	12/17/04	1330	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

8888

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

Client/Project: Roy F. Weston Inc (IL) (Kerr McGee)

Date of Receipt: 12/17/04

Time of Receipt: 0915

Source Code: 60-1

Shipping Container Sealed: (Y) N

Custody Seal Present: (Y) N

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: MF263

Temperature of Shipping Containers	
#1 5 vials (1220ml) 500ml plastic	#2 6 Amber 1L
Thermometer ID: 8917	Thermometer ID: 8917
Temp.: 2.4°C	Temp.: 2.2°C
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) N Loose / (Bagged)	Ice Present? (Y) N Loose / (Bagged)
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[signature]	12/17/04	1225	Unpacking
Annelisa Hotchkiss	12/17/04	1330	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

6869

METHODOLOGY SUMMARY/REFERENCE

8213 BTEX (8021)

The volatile compounds are extracted by bubbling an inert gas through the sample, and are collected on a sorbent trap. The trap is thermally desorbed and the compounds are separated by gas chromatography under programmed temperature conditions. Each analyte is quantitated using a photoionization detector.

Reference: Test Methods for Evaluating Solid Waste
SW-846, 8021B, Revision 2, December 1996

****

1146 GC VOA Water Prep

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Waste,
SW-846, Method 5030B, Revision 2, December 1996

****

0774 (Prep # 3337) PAH's in Water by HPLC

The sample aliquot is extracted with methylene chloride, dried, concentrated by evaporation and exchanged into acetonitrile. If necessary, silica gel cleanup is used. The extract is analyzed by reverse phase HPLC with both UV and Fluorescence detectors.

Reference: Test Methods for Evaluating Solid Wastes,
SW-846, Method 8310, September 1986

Reference: Test Methods for Evaluating Solid Wastes,
SW-846, Method 3510C, December 1996

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

0217 Kjeldahl Nitrogen (water/waste)

The sample is previously digested with sulfuric acid, potassium sulfate, and mercuric sulfate. This solution is then analyzed for the converted ammonia nitrogen using the reaction of the ammonia and sodium salicylate, sodium nitroprusside, and sodium hypochlorite in a buffered alkaline medium to form an ammonia salicylate complex. The absorbance is read at 660 nm and is compared to a standard curve. An autoanalyzer is used.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 351.2

****

0219 Nitrite Nitrogen (water)

Nitrite ions react with sulfanilamide to yield a diazo compound which couples with N-1-naphthylethylene diamine dihydrochloride to form a soluble, highly-colored dye. The absorbance is read at 520nm and is compared to a standard curve. An autoanalyzer is used.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 353.2

****

0220 Nitrate Nitrogen (water)

The sample is passed through a column containing granulated copper-cadmium to reduce nitrate to nitrite. Nitrite ions react with sulfanilamide to yield a diazo compound which couples with N-1-naphthylethylene diamine dehydrochloride to form a soluble, highly-colored dye. The absorbance is read at 520nm and is compared to a standard curve. An autoanalyzer is used.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 353.2

****

1460 Total Kjeldahl Nitrogen Digestion (water)

This procedure converts nitrogen components of biological origin such as amino acids, proteins, and peptides to ammonia using a sulfuric acid/potassium sulfate digestion with mercuric oxide as a catalyst.

Reference: EPA Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Method 351.2

3011

0273 Total Organic Carbon (water)

Following acidification, the sample is purged with nitrogen to remove inorganic carbon. Persulfate is injected to oxidize organic carbon to carbon dioxide which is detected by IR. An OI Model 700 TOC Analyzer is used.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 415.1

****

8264 Total Phos as PO4 Prep (water)

All forms of phosphorus are converted to orthophosphate by an acid-persulfate digestion. The orthophosphate ion reacts with ammonium molybdate in acidic solution to form an antimony-phosphomolybdate complex.

Reference: Methods for Chemical Analysis of Water and Wastes,
EPA 600/4-79-020, 365.1

****

0345 Total Phosphorus as PO4 (water/solid)

All forms of phosphorus are converted to orthophosphorus by an acid-persulfate digestion. The orthophosphate ion reacts with ammonium molybdate in acidic solution to form an antimony-phosphomolybdate complex. On reduction with ascorbic acid, this complex turns blue. The absorbance is read at 660 nm and is compared to a standard curve. An Alpkem Autoanalyzer is used.

Reference: Methods for Chemical Analysis of Water and Wastes
EPA 600/4-79-020, Method 365.1

****

0221 Ammonia Nitrogen (water)

The sample is distilled into a solution of boric acid and titrated with standard sulfuric acid using a mixed indicator.

Reference: Method for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 350.2

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

0235 Biochemical Oxygen Demand (water)

A seeded sample of the waste is incubated with nutrients for 5 days at 20C. The reduction of dissolved oxygen concentration during the incubation yields a measure of the BOD.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 405.1

****

0226 Orthophosphate as P (water)

Orthophosphate is determined colorimetrically with ammonium molybdate and antimony potassium tartrate. The absorbance is read at 660 nm and compared to a standard curve.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 365.3

****

1553 Chemical Oxygen Demand - low level

The COD is determined titrimetrically with ferrous ammonium sulfate in the presence of potassium dichromate after reflux with sulfuric acid.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 410.2

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

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

734-367-7900

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 925509. Samples arrived at the laboratory on Friday, December 17, 2004. The PO# for this group is ZAKW1KEOK0A90089.

Client Description			Lancaster Labs Number
MA3-FB	MA3-FB-121604-13	Groundwater	4432559
MA3-MW27S	MA3-MW27S-121604-10	Groundwater	4432560
MA3-MW29S	MA3-MW29S-121604-9	Groundwater	4432561
MA3-MW30S	MA3-MW30S-121604-16	Groundwater	4432562
MA3-MW32S	MA3-MW32S-121604-11	Groundwater	4432563
MA3-MW32S	MA3-MW32S-121604-11-MS	Groundwater	4432564
MA3-MW32S	MA3-MW32S-121604-11-MSD	Groundwater	4432565
MA3-MW33S	MA3-MW33S-121604-12	Groundwater	4432566
MA3-MW33S	MA3-MW33S-121604-12-DP	Groundwater	4432567
MA3-MW36S	MA3-MW36S-121604-8	Groundwater	4432568
MA3-MW37S	MA3-MW37S-121604-7	Groundwater	4432569
MA3-MW5S	MA3-MW5S-121604-15	Groundwater	4432570
MA3-MW5S	MA3-MW5S-121604-15-DP	Groundwater	4432571
MA3-TB	MA3-TB-121604-14	Water	4432572
MA3-TG1-1	MA3-TG1-1-121604-1	Groundwater	4432573
MA3-TG1-2	MA3-TG1-2-121604-2	Groundwater	4432574
MA3-TG1-3	MA3-TG1-3-121604-3	Groundwater	4432575
MA3-TG2-1	MA3-TG2-1-121604-4	Groundwater	4432576
MA3-TG2-2	MA3-TG2-2-121604-5	Groundwater	4432577
MA3-TG2-3	MA3-TG2-3-121604-6	Groundwater	4432578

METHODOLOGY

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

8614

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

Lancaster Laboratories

1 COPY TO	Weston Solutions, Inc.	Attn: Mr. Tom Graan
1 COPY TO	Kerr-McGee Corporation	Attn: Mr. Roy Widmann
1 COPY TO	Data Package Group	

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

Respectfully Submitted,

Dana M Kauffman

Dana M. Kauffman
Group Leader

9815

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

MEMBER ACIL

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432559

MA3-FB MA3-FB-121604-13 Groundwater
121604-4,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:50 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:00 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

MA3FB SDG#: KMA62-01FB

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.		0.2	ug/l	1
00777	Toluene	108-88-3	0.5	J	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.18	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.		0.18	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 Trial#	Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/22/2004 19:03	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 05:37	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 19:03	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432559

MA3-FB MA3-FB-121604-13 Groundwater
121604-4,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:50 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:00
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA3FB SDG#: KMA62-01FB

0017

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432560

MA3-MW27S MA3-MW27S-121604-10 Groundwater
121604-4,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:05 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:00 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

MA27S SDG#: KMA62-02

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.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.5	ug/l	1
00784	Fluorene	86-73-7	1.2		0.17	ug/l	1
00785	Phenanthrene	85-01-8	0.13	J	0.076	ug/l	1
00789	Anthracene	120-12-7	0.13	J	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.18	J	0.038	ug/l	1
00811	Pyrene	129-00-0	0.21	J	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.21		0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	0.22		0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	0.21		0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	0.26		0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	0.18	(J)	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	0.19	(J)	0.095	ug/l	1
07409	Chrysene	218-01-9	0.24	J	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	0.23		0.019	ug/l	1

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

TBS 2/15/05

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/22/2004 19:40	Michael F Barrow 0018	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432560

MA3-MW27S MA3-MW27S-121604-10 Groundwater
121604-4,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:05 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:00
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA27S SDG#: KMA62-02

00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 06:16	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 19:40	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432561

MA3-MW29S MA3-MW29S-121604-9 Groundwater
121604-3,7 02687.007.006.0001
Moss American
Collected:12/16/2004 11:40 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:00 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

MA29S SDG#: KMA62-03

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	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.	0.18	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	12/22/2004 20:17	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 07:33	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 20:17	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432561

MA3-MW29S MA3-MW29S-121604-9 Groundwater
121604-3,7 02687.007.006.0001
Moss American
Collected:12/16/2004 11:40 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:00
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA29S SDG#: KMA62-03

0021

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432562

MA3-MW30S MA3-MW30S-121604-16 Groundwater
121604-5,7 02687.007.006.0001
Moss American
Collected:12/16/2004 15:20 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:01 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

MA30S SDG#: KMA62-04

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.040 J	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	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	12/22/2004 20:54	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 08:12	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 20:54	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432562

MA3-MW30S MA3-MW30S-121604-16 Groundwater
121604-5,7 02687.007.006.0001
Moss American
Collected:12/16/2004 15:20 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA30S SDG#: KMA62-04

8823

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432563

MA3-MW32S MA3-MW32S-121604-11 Groundwater
121604-6,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:10 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA32S SDG#: KMA62-05BKG

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	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	12/22/2004 13:19	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 03:42	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 13:19	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432563

MA3-MW32S MA3-MW32S-121604-11 Groundwater
121604-6,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:10 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA32S SDG#: KMA62-05BKG

9825

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432564

MA3-MW32S MA3-MW32S-121604-11-MS Groundwater
121604-6,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:10 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA32S SDG#: KMA62-05MS

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	21.	0.2	ug/l	1
00777	Toluene	108-88-3	20.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	20.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	60.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	140.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	150.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	150.	1.5	ug/l	1
00784	Fluorene	86-73-7	16.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	5.0	0.076	ug/l	1
00789	Anthracene	120-12-7	2.5	0.038	ug/l	1
00807	Fluoranthene	206-44-0	2.5	0.038	ug/l	1
00811	Pyrene	129-00-0	17.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.3	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.0	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.2	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.1	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	4.4	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	8.1	0.095	ug/l	1
07409	Chrysene	218-01-9	5.1	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.0	0.019	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	12/22/2004 15:20	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 04:20	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 15:20	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432564

MA3-MW32S MA3-MW32S-121604-11-MS Groundwater
121604-6,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:10 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA32S SDG#: KMA62-05MS

8827

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432565

MA3-MW32S MA3-MW32S-121604-11-MSD Groundwater
121604-6,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:10 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA32S SDG#: KMA62-05MSD

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	21.	0.2	ug/l	1
00777	Toluene	108-88-3	21.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	20.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	60.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	140.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	150.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	140.	1.5	ug/l	1
00784	Fluorene	86-73-7	16.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	4.9	0.076	ug/l	1
00789	Anthracene	120-12-7	2.5	0.038	ug/l	1
00807	Fluoranthene	206-44-0	2.5	0.038	ug/l	1
00811	Pyrene	129-00-0	17.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.2	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	0.99	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.2	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.2	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	4.6	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	8.4	0.095	ug/l	1
07409	Chrysene	218-01-9	5.0	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.0	0.019	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	12/22/2004 15:57	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 04:59	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 15:57	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432565

MA3-MW32S MA3-MW32S-121604-11-MSD Groundwater
121604-6,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:10 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA32S SDG#: KMA62-05MSD

3829

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432566

MA3-MW33S MA3-MW33S-121604-12 Groundwater
121604-6,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:15 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:01 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

MA33S SDG#: KMA62-06

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.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	1.5		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	2.6	J	0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	140.		1.6	ug/l	1
00782	Acenaphthylene	208-96-8	3.9	J	1.6	ug/l	1
00783	Acenaphthene	83-32-9	23.		1.6	ug/l	1
00784	Fluorene	86-73-7	6.9		0.18	ug/l	1
00785	Phenanthrene	85-01-8	0.96		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.		0.18	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	12/22/2004 21:31	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 08:50	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 21:31	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432566

MA3-MW33S MA3-MW33S-121604-12 Groundwater
121604-6,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:15 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA33S SDG#: KMA62-06

9831

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432567

MA3-MW33S MA3-MW33S-121604-12-DP Groundwater
121604-6,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:15 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:01 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

MA33D SDG#: KMA62-07FD

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.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	1.4		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	2.8	J	0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	160.		1.6	ug/l	1
00782	Acenaphthylene	208-96-8	4.5	J	1.6	ug/l	1
00783	Acenaphthene	83-32-9	26.		1.6	ug/l	1
00784	Fluorene	86-73-7	7.8		0.18	ug/l	1
00785	Phenanthrene	85-01-8	1.1		0.078	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.039	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.039	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.18	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.		0.039	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.		0.039	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.078	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.098	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.078	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	12/22/2004 22:08	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 09:29	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 22:08	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432567

MA3-MW33S MA3-MW33S-121604-12-DP Groundwater
121604-6,7 02687.007.006.0001
Moss American
Collected:12/16/2004 14:15 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA33D SDG#: KMA62-07FD

8433

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432568

MA3-MW36S MA3-MW36S-121604-8 Groundwater
121604-5,7 02687.007.006.0001
Moss American
Collected:12/16/2004 11:35 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA36S SDG#: KMA62-08

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	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	12/22/2004 22:46	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 10:07	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 22:46	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

6834

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432568

MA3-MW36S MA3-MW36S-121604-8 Groundwater
121604-5,7 02687.007.006.0001
Moss American
Collected:12/16/2004 11:35 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA36S SDG#: KMA62-08

0035

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

MEMBER ACIL

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432569

MA3-MW37S MA3-MW37S-121604-7 Groundwater
121604-3,7 02687.007.006.0001
Moss American
Collected:12/16/2004 11:30 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:01 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

MA37S SDG#: KMA62-09

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.079	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.	0.18	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.	0.079	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.099	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.079	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 Trial#	Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/22/2004 23:23	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 10:46	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 23:23	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Henshey Jr	1

0036

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432569

MA3-MW37S MA3-MW37S-121604-7 Groundwater
121604-3,7 02687.007.006.0001
Moss American
Collected:12/16/2004 11:30 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA37S SDG#: KMA62-09

9837

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432570

MA3-MW5S MA3-MW5S-121604-15 Groundwater
121604-5,7 02687.007.006.0001
Moss American
Collected:12/16/2004 15:15 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:01 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

MA05S SDG#: KMA62-10

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.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.17	ug/l	1
00785	Phenanthrene	85-01-8	0.14	J	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.038	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.019	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	12/23/2004 00:00	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 11:25	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2004 00:00	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432570

MA3-MW5S MA3-MW5S-121604-15 Groundwater
121604-5,7 02687.007.006.0001
Moss American
Collected:12/16/2004 15:15 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA05S SDG#: KMA62-10

9839

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432571

MA3-MW5S MA3-MW5S-121604-15-DP Groundwater
121604-5,7 02687.007.006.0001
Moss American
Collected:12/16/2004 15:15 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA05D SDG#: KMA62-11FD

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.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.17	ug/l	1
00785	Phenanthrene	85-01-8	0.14	J	0.077	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.038	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.077	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.096	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.077	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.019	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	12/23/2004 02:29	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 12:03	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2004 02:29	Michael F Barrow	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1

3842

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432571

MA3-MW5S MA3-MW5S-121604-15-DP Groundwater
121604-5,7 02687.007.006.0001
Moss American
Collected:12/16/2004 15:15 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA05D SDG#: KMA62-11FD

3841

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432572

MA3-TB MA3-TB-121604-14 Water
121604-7 02687.007.006.0001
Moss American
Collected:12/16/2004 Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:01 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

MA-TB SDG#: KMA62-12TB

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	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	12/23/2004 03:06	Michael F Barrow	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2004 03:06	Michael F Barrow	1

8842

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432573

MA3-TG1-1 MA3-TG1-1-121604-1 Groundwater
121604-2,4,7 02687.007.006.0001
Moss American
Collected:12/16/2004 08:45 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG1-1 SDG#: KMA62-13

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.7		0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	UJ	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.3		0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	6.0		0.80	mg/l	1
00273	Total Organic Carbon	n.a.	11.5		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	64.0		2.1	mg/l	1
08213	BTEX (8021)						TBS 2/15/05
00776	Benzene	71-43-2	0.5	J	0.4	ug/l	2
00777	Toluene	108-88-3	0.4	J	0.4	ug/l	2
00778	Ethylbenzene	100-41-4	22.		0.4	ug/l	2
00779	Total Xylenes	1330-20-7	29.		1.2	ug/l	2
	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	1,600.		15.	ug/l	10
00782	Acenaphthylene	208-96-8	52.	J	15.	ug/l	10
00783	Acenaphthene	83-32-9	690.		15.	ug/l	10
00784	Fluorene	86-73-7	420.		17.	ug/l	100
00785	Phenanthrene	85-01-8	930.		7.6	ug/l	100
00789	Anthracene	120-12-7	86.		3.8	ug/l	100
00807	Fluoranthene	206-44-0	430.		3.8	ug/l	100
00811	Pyrene	129-00-0	360.		17.	ug/l	100
00812	Benzo(a)anthracene	56-55-3	74.	J	1.9	ug/l	100
00818	Benzo(b)fluoranthene	205-99-2	30.	J	0.38	ug/l	10
00823	Benzo(a)pyrene	50-32-8	33.	J	0.19	ug/l	10
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	UJ	8.0	ug/l	10
00898	Indeno(1,2,3-cd)pyrene	193-39-5	11.	J	0.76	ug/l	10
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	UJ	12.	ug/l	10
07409	Chrysene	218-01-9	130.	J	0.76	ug/l	10
07410	Benzo(k)fluoranthene	207-08-9	17.	J	0.19	ug/l	10

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

No need for the qualifiers

TBS 2/15/05

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432573

MA3-TG1-1 MA3-TG1-1-121604-1 Groundwater
121604-2,4,7 02687.007.006.0001
Moss American
Collected:12/16/2004 08:45 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG1-1 SDG#: KMA62-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the PAH by HPLC compounds were raised.

Due to the presence of interferents near their retention times, normal reporting limits were not attained for several target compounds. The reporting limits for these compounds were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/04/2005 09:29	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 19:34	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 20:04	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/18/2004 06:15	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 22:01	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/08/2005 00:43	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:14	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/22/2004 18:26	Michael F Barrow	2
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 12:45	Mark A Clark	10
00774	PAH's in Water by HPLC	SW-846 8310	1	12/29/2004 05:51	Mark A Clark	100
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 18:26	Michael F Barrow	2
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/03/2005 14:05	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432574

MA3-TG1-2 MA3-TG1-2-121604-2 Groundwater
121604-2,4,7 02687.007.006.0001
Moss American
Collected:12/16/2004 08:50 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG1-2 SDG#: KMA62-14

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		0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D. UJ		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.3		0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	8.0		0.80	mg/l	1
00273	Total Organic Carbon	n.a.	12.4		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	33.7		2.1	mg/l	1
08213	BTEX (8021)				TBS 2/15/05		
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	0.2	J	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	27.		1.5	ug/l	1
00782	Acenaphthylene	208-96-8	2.0	(J)	1.5	ug/l	1
00783	Acenaphthene	83-32-9	37.		1.5	ug/l	1
00784	Fluorene	86-73-7	17.		0.17	ug/l	1
00785	Phenanthrene	85-01-8	6.2		0.077	ug/l	1
00789	Anthracene	120-12-7	1.1		0.038	ug/l	1
00807	Fluoranthene	206-44-0	2.2		0.038	ug/l	1
00811	Pyrene	129-00-0	1.4		0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.067	J	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.077	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.096	ug/l	1
07409	Chrysene	218-01-9	0.086	J	0.077	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.019	ug/l	1

Nonced for the qualifier

9845

TBS 2/15/05

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432574

MA3-TG1-2 MA3-TG1-2-121604-2 Groundwater
121604-2,4,7 02687.007.006.0001
Moss American
Collected:12/16/2004 08:50 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG1-2 SDG#: KMA62-14

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/04/2005 09:48	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 19:37	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 20:05	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/18/2004 06:15	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 22:01	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/08/2005 00:51	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:15	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/23/2004 03:43	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 14:41	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2004 03:43	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/03/2005 14:05	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

8845

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432575

MA3-TG1-3 MA3-TG1-3-121604-3 Groundwater
121604-2,4,7 02687.007.006.0001
Moss American
Collected:12/16/2004 08:55 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:01 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG1-3 SDG#: KMA62-15

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		0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D. VJ		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.0	J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	5.6		0.80	mg/l	1
00273	Total Organic Carbon	n.a.	13.5		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	33.0		2.1	mg/l	1
08213	BTEX (8021)					TBS 2/15/05	
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	0.2	J	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.7	ug/l	1
00783	Acenaphthene	83-32-9	2.0	J	1.7	ug/l	1
00784	Fluorene	86-73-7	0.49	J	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.085	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.042	ug/l	1
00807	Fluoranthene	206-44-0	0.13	J	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.085	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.085	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.021	ug/l	1

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

8647

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432575

MA3-TG1-3 MA3-TG1-3-121604-3 Groundwater
121604-2,4,7 02687.007.006.0001
Moss American
Collected:12/16/2004 08:55 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG1-3 SDG#: KMA62-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/04/2005 09:49	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 19:39	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 20:06	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/18/2004 06:15	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 22:01	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/08/2005 00:59	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:16	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/23/2004 04:20	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 15:19	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2004 04:20	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/03/2005 14:05	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

8849

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432576

MA3-TG2-1 MA3-TG2-1-121604-4 Groundwater
121604-2,3,7 02687.007.006.0001
Moss American
Collected:12/16/2004 10:15 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG2-1 SDG#: KMA62-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	N.D.	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D. UJ	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.15 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	2.1	mg/l	1
00273	Total Organic Carbon	n.a.	3.7	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	8.2	2.1	mg/l	1
08213	BTEX (8021)				TBS 2/15/05	
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	1.4	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

A disparity of >40% between the primary and confirmatory analysis occurred.
Due to suspected interference, the lower result was reported for fluorene.

8849

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432576

MA3-TG2-1 MA3-TG2-1-121604-4 Groundwater
121604-2,3,7 02687.007.006.0001
Moss American
Collected:12/16/2004 10:15 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:01
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG2-1 SDG#: KMA62-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/04/2005 09:50	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 20:29	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 20:07	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/18/2004 06:15	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 22:01	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/08/2005 01:07	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:20	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/23/2004 04:57	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 15:58	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2004 04:57	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/03/2005 14:05	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

0958

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

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432577

MA3-TG2-2 MA3-TG2-2-121604-5 Groundwater
121604-2,3,7 02687.007.006.0001
Moss American
Collected:12/16/2004 10:20 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:02
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG2-2 SDG#: KMA62-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.67 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D. UJ	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.50 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	3.2	mg/l	1
00273	Total Organic Carbon	n.a.	2.9	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	7.5 J	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.045 J	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.096	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

TBS 2/15/05

8851

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432577

MA3-TG2-2 MA3-TG2-2-121604-5 Groundwater
121604-2,3,7 02687.007.006.0001
Moss American
Collected:12/16/2004 10:20 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:02
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG2-2 SDG#: KMA62-17

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/04/2005 09:51	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 20:30	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 20:09	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/18/2004 06:15	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 22:01	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/08/2005 01:15	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:21	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/23/2004 05:34	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 16:37	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2004 05:34	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/03/2005 14:05	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

8852

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432578

MA3-TG2-3 MA3-TG2-3-121604-6 Groundwater
121604-3,5,7 02687.007.006.0001
Moss American
Collected:12/16/2004 10:25 by MP

Account Number: 07802

Submitted: 12/17/2004 09:15
Reported: 01/10/2005 at 15:02
Discard: 02/25/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG2-3 SDG#: KMA62-18*

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	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D. UJ	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.2	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	6.4	0.80	mg/l	1
00273	Total Organic Carbon	n.a.	12.9	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	mg/l	1
01553	Chemical Oxygen Demand	n.a.	34.1	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D. UJ	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	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.	0.18	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

TBS 2/15/05

Surrogate recoveries were outside of QC limits for the HPLC PAH compounds. The analysis was repeated outside of the required hold time and surrogate recoveries met requirements. The data reported is from the initial extraction of the

0853

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

TBS 2/15/05

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4432578

MA3-TG2-3 MA3-TG2-3-121604-6 Groundwater
121604-3,5,7 02687.007.006.0001
Moss American
Collected:12/16/2004 10:25 by MP Account Number: 07802

Submitted: 12/17/2004 09:15 Kerr-McGee Corporation
Reported: 01/10/2005 at 15:02 PO Box 3048
Discard: 02/25/2005 Livonia MI 48150

TG2-3 SDG#: KMA62-18*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
	sample.					

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	01/04/2005 09:52	Nicole M Kepley	1
00219	Nitrite Nitrogen	EPA 353.2	1	12/17/2004 20:31	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	01/06/2005 20:10	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	12/21/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	12/18/2004 06:15	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	12/17/2004 22:01	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	01/08/2005 01:23	Kyle W Eckenroad	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	01/04/2005 12:22	Nicole M Kepley	1
01553	Chemical Oxygen Demand	EPA 410.2	1	12/22/2004 05:25	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	12/23/2004 06:12	Michael F Barrow	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/25/2004 17:15	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2004 06:12	Michael F Barrow	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	01/03/2005 14:05	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:00	David V Hershey Jr	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	12/23/2004 08:50	Nancy J Shoop	1

0054

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

PAH by HPLC Data

Case Narrative
Conformance/Nonconformance Summary

Case Narrative
Client: Kerr-McGee Corporation
SDG: KMA62

LANCASTER LABORATORIES
PAH by HPLC

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Water	Comments
4432559	MA3FB	X	Client Blank
4432560	MA27S	X	
4432561	MA29S	X	
4432562	MA30S	X	
4432563	MA32S	X	Unspiked
4432564	MA32SMS	X	Matrix Spike
4432565	MA32SMSD	X	Matrix Spike Dup
4432566	MA33S	X	
4432567	MA33D	X	
4432568	MA36S	X	
4432569	MA37S	X	
4432570	MA05S	X	
4432571	MA05D	X	
4432573	TG1-1	X	10X Dilution
4432573DL	TG1-1DL	X	100X Dilution
4432574	TG1-2	X	
4432575	TG1-3	X	
4432576	TG2-1	X	
4432577	TG2-2	X	
4432578	TG2-3	X	
4432578RE	TG2-3RE	X	Reextraction
LABORATORY SUBMITTED QC:			
SBLKWD355	SBLKWD3552	X	Method Blank
SBLKWC364	SBLKWC3642	X	Method Blank
355WDLCS	355WDLCS2	X	Lab Control Sample
364WCLCS	364WCLCS2	X	Lab Control Sample
364WCLCSD	364WCLCSD2	X	Lab Control Sample Dup

8057

Case Narrative (continued)
SDG#: KMA62

SAMPLE PREPARATION:

Due to the nature of the sample matrix, a reduced aliquot of 943 mls was used in the extraction of TG1-3.

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

ANALYSIS:

The method used for analysis was SW-846 8310.

Sufficient sample volume was not available to perform a MS/MSD for the analysis of TG2-3RE. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Due to the nature of the sample matrix, TG1-1 was analyzed at an initial 10X dilution.

Reextraction was required for TG2-3 due to unacceptable surrogate recoveries.

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

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

Due to surrogate recoveries outside QC limits, TG2-3 was reextracted. The reextraction was performed outside the method required holding time and did not confirm the original extraction. Both sets of data are included in this data package.

The relative percent differences (RPD's) for dibenz(a,h)anthracene and benzo(g,h,i)perylene between 364WCLCS2 and 364WCLCSD2 were greater than 30 percent.

All other QC was within specifications.

Case Narrative (continued)
SDG#: KMA62

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

Due to incorrect integrations during the initial processing, manual integrations were performed for the following compounds.

Sample Code	Compound
MA27S	benzo(g,h,i)perylene, indeno(1,2,3-cd)pyrene
TG1-1	triphenylene, benzo(a)anthracene, chrysene, dibenz(a,h)anthracene, benzo(g,h,i)perylene
TG1-1DL	triphenylene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, benzo(g,h,i)perylene, indeno(1,2,3-cd)pyrene
TG1-2	acenaphthylene
364WCLCS2	anthracene

Due to the presence of interferents near their retention times, the following compound reporting limits were not met. The reporting limits were adjusted accordingly.

Sample Code	Compound
TG1-1	dibenz(a,h)anthracene, benzo(g,h,i)perylene

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Christine M. Ratchuff for CJN Date: 2-8-05
Charles J. Neslund
Group Leader, GC/MS Semivolatiles

0059

Analytical Data Validation Report
Kerr-McGee Corporation
Moss American Site-WI- Water Samples
SDG #: KMA63

PHA Method SW-846 8310 by HPLC:
SDG # KMA63
1.Samples:

Client Description	Lab Sample Number	Matrix	Date Collected	Date Extracted	Date Analyzed
MA3-FB-121704-1	4433713	Ground Water	12/17/04	12/20/04	12/26/04
MA3-FB-121704-10	4433714	Ground Water	12/17/04	12/20/04	12/26/04
MA3-FB-121704-4	4433715	Ground Water	12/17/04	12/20/04	12/26/04
MA3-MW28S-121704-6	4433716	Ground Water	12/17/04	12/20/04	12/26/04
MA3-MW28S-121704-6DP	4433717	Ground Water	12/17/04	12/20/04	12/26/04
MA3-MW31S-121704-8	4433718	Ground Water	12/17/04	12/20/04	12/26/04
MA3-MW31S-121704-8MS	4433719	Ground Water	12/17/04	12/20/04	12/26/04
MA3-MW31S-121704-8MSD	4433720	Ground Water	12/17/04	12/20/04	12/26/04
MA3-MW34S-121704-2	4433721	Ground Water	12/17/04	12/20/04	12/26&29
MA3-MW35S-121704-5	4433722	Ground Water	12/17/04	12/20/04	12/26/04
MA3-MW35S-121704-5DP	4433723	Ground Water	12/17/04	12/20/04	12/26/04
MA3-MW6S-121704-7	4433724	Ground Water	12/17/04	12/20/04	12/26/04
MA3-MW7S-121704-3	4433725	Ground Water	12/17/04	12/20/04	12/27&29
MA3-MW9S-121704-9	4433726	Ground Water	12/17/04	12/20/04	12/27/04

2. Holding Times:
The sample was extracted and analyzed within the required holding time. The two samples 4433721 was reanalyzed at 20X dilution and 4433725 reanalyzed at 10X dilution.
According to the laboratory narrative case due to the nature of the sample matrix, reduced aliquots were used in the extraction of 4433714 & 4433715.

3. Method Blank:
The method blank SBLKWC3552 was with SDG analyzed on 12/26/04 with (4433713 and 4433727) and the results were free of contamination.

4. Matrix Spike/Matrix Spike Duplicate:
A water matrix spike was performed on 4433718. The MS/MSD recoveries were within the acceptance control limit. Also, the RPD values were within the quality control limit.

5. Laboratory control Sample:
The laboratory control samples recoveries were within the acceptance control limit.

6. Surrogate:
A Lancaster laboratory quantity the reported PAH compounds from the UV-detector, due to reduce sensitivity on the fluorescence detector. All the surrogate recoveries were within the control limits on UV-detector.

7. Retention Time:
The retention time recoveries were within acceptance limits.

8. Initial and Continuing Calibration:
The initial calibrations results were within the quality control limit (RSD >+/-30%). The results were taken only from the UV-detector 1 with id SH03830.i.
All the associated continuing calibrations with the sample results were within the (RSD >+/-25%).

BTEX SW-846 8021B:
SDG # KMA63
1.Samples:

Client Description	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed
MA3-FB-121704-1	4433713	Ground Water	12/17/04	12/22/04	12/22/04
MA3-FB-121704-10	4433714	Ground Water	12/17/04	12/22/04	12/22/04
MA3-FB-121704-4	4433715	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW28S-121704-6	4433716	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW28S-121704-6DP	4433717	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW31S-121704-8	4433718	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW31S-121704-8MS	4433719	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW31S-121704-8MSD	4433720	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW34S-121704-2	4433721	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW35S-121704-5	4433722	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW35S-121704-5DP	4433723	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW6S-121704-7	4433724	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW7S-121704-3	4433725	Ground Water	12/17/04	12/22/04	12/22/04
MA3-MW9S-121704-9	4433726	Ground Water	12/17/04	12/22/04	12/22/04
MA3-TB-121704-20	4433727	Ground Water	12/17/04	12/22/04	12/22/04

2. Holding Times:
The samples were prepared and analyzed within the required holding time.

3. Method Blank:
The method blank BLK562 was associated with this SDG and analyzed on 12/22/04 with (4433713 and 4433727). The method blank BLK562 results were free of contamination.

4. Matrix Spike/Matrix Spike Duplicate:
A water matrix spike was performed on 4433718. The MS/MSD recoveries were within the acceptance control limit. Also, the RPD values were within the quality control limit,

5. Laboratory control Sample:
The laboratories control sample/laboratories control sample duplicates recoveries were within the required quality control limit. Also, the RPD values were acceptable.

6. Surrogate:
The method blank and the investigated samples had surrogate recovery within the acceptance quality control limit.

7. Initial and Continuing Calibration:
The initial calibrations and all the associated continuing calibrations results were acceptable.

Data Reviewed by: Tania Shammo 02/14/05

Sample Reference List for SDG Number KMA63 with a Data Package Type of I

07802 - Kerr-McGee Corporation
Moss American Site - WI

Lab Sample Number	Lab Sample Code	Client Sample Description			
4433713	A3FB1	MA3-FB	MA3-FB-121704-1	Groundwater COC121704-1,3	02687.007.006.0001
4433714	3FB10	MA3-FB	MA3-FB-121704-10	Groundwater COC121704-1,3	02687.007.006.0001
4433715	A3FB4	MA3-FB	MA3-FB-121704-4	Groundwater COC121704-1,3	02687.007.006.0001
4433716	3-28S	MA3-MW28S	MA3-MW28S-121704-6	Groundwater COC121704-2,3	02687.007.006.0001
4433717	328SD	MA3-MW28S	MA3-MW28S-121704-6DP	Groundwater COC121704-2,3	02687.007.006.0001
4433718	3-31S	MA3-MW31S	MA3-MW31S-121704-8	Groundwater COC121704-3,4	02687.007.006.0001
4433719	3-31S	MA3-MW31S	MA3-MW31S-121704-8-MS	Groundwater COC121704-2,3	02687.007.006.0001
4433720	3-31S	MA3-MW31S	MA3-MW31S-121704-8-MSD	Groundwater COC121704-2,3	02687.007.006.0001
4433721	3-34S	MA3-MW34S	MA3-MW34S-121704-2	Groundwater COC121704-1,3	02687.007.006.0001
4433722	3-35S	MA3-MW35S	MA3-MW35S-121704-5	Groundwater COC121704-2,3	02687.007.006.0001
4433723	335SD	MA3-MW35S	MA3-MW35S-121704-5-DP	Groundwater COC121704-3,4	02687.007.006.0001
4433724	3A-6S	MA3-MW6S	MA3-MW6S-121704-7	Groundwater COC121704-3,4	02687.007.006.0001
4433725	A3-7S	MA3-MW7S	MA3-MW7S-121704-3	Groundwater COC121704-1,3	02687.007.006.0001
4433726	A3-9S	MA3-MW9S	MA3-MW9S-121704-9	Groundwater COC121704-3,4	02687.007.006.0001
4433727	TBMA3	MA3-TB	MA3-TB-121704-20	Groundwater COC121704-3	02687.007.006.0001

0661

7802 925685 4433713 -27

COC ID: COC121704-1

Chain of Custody Record

WESTON

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.008.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Green
Contact Phone No.: 847-818-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS
					Filtered	
					Container	1-L Amber
					Preservative	N/A
	MA3-FB-121704-1	G		N	12/17/2004 07:30	2
	MA3-FB-121704-10	G		N	12/17/2004 13:00	2
	MA3-FB-121704-4	G		N	12/17/2004 09:15	2
	MA3-MW34S-121704-2	G		N	12/17/2004 08:55	2
	MA3-MW7S-121704-3	G		N	12/17/2004 09:00	2

Remarks/Comments

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	12/17/04 1400					[signature]	12/18/04 1010

Sampled By [signature]

7802 925685 4433713-27

COC ID: COC121704-3

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Mesa American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Grean
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	BTEX SW846 8021B								
						Filtered								
						Container	40 ml Vials							
						Preservative	HCl							
	MA3-FB-121704-1	G		N	12/17/2004 07:30	3								
	MA3-FB-121704-10	G		N	12/17/2004 13:00	3								
	MA3-FB-121704-4	G		N	12/17/2004 09:15	3								
	MA3-MW28S-121704-6	G		N	12/17/2004 09:55	3								
	MA3-MW28S-121704-6-DP	G		N	12/17/2004 09:55	3								
	MA3-MW31S-121704-8	G		N	12/17/2004 11:20	3								
	MA3-MW31S-121704-8-MSD	G		Y		6								
	MA3-MW34S-121704-2	G		N	12/17/2004 08:55	3								
	MA3-MW35S-121704-5	G		N	12/17/2004 09:45	3								
	MA3-MW35S-121704-5-DP	G		N	12/17/2004 09:45	3								
	MA3-MW6S-121704-7	G		N	12/17/2004 11:15	3								
	MA3-MW7S-121704-3	G		N	12/17/2004 09:00	3								
	MA3-MW9S-121704-9	G		N	12/17/2004 12:45	3								
	MA3-TB-121704-20	G		N		3								

Remarks/Comments

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	12/17/04 1400						
							12/18/04 1015

Sampled By

7802 925685 44337-13-27

COC ID: COC121704-2

Chain of Custody Record

WESTON

Client: Kerr McGee

Site Name: Moss American | Contact Name: Tom Green

W. O.: 02687.007.006.0001 | Contact Phone No.: 847-918-4142

Lab: LANCASTER LABS | Lab Contact: C. SWEIGART

TAT: PER QUOTE | Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS
					Filtered	
					Container	1-L Amber
					Preservative	N/A
	MA3-MW28S-121704-6	G		N	12/17/2004 09:55	2
	MA3-MW28S-121704-6DP	G		N	12/17/2004 09:55	2
	MA3-MW31S-121704-8-MSD	G		Y	12/17/2004 11:20	4
	MA3-MW35S-121704-5	G		N	12/17/2004 09:45	2

Remarks/Comments

Sampled By: M.P.W

Lab Use Only

Temp of Cooler when Received, C: 1 | 2 | 3 | 4 | 5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels Indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible signature]	12/17/04 14:00						
						[illegible signature]	12/18/04 10

7802 925685 4433213-27

COC ID: COC121704-4 CAT 1/3/05

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.008.0001
Lab:
TAT:
Contact Name: Tom Green
Contact Phone No.: 847-918-4142
Lab Contact:
Lab Phone:

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	244	244								
						Filtered	N								
						Container	Amber	Amber							
						Preservative	NA	NA							
	MA3-MW21S-121704-8	G		N	12/17/2004 11:20	2									
	MA3-MW25S-121704-5-DP	G		N	12/17/2004 09:45	2									
	MA3-MW6S-121704-7	G		N	12/17/2004 11:15	2									
	MA3-MW9S-121704-9	G		N	12/17/2004 12:45	2									

Remarks/Comments:

Sampled By: M. Pm

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
M. Pm	12/17/04 1400						
						Heather Clark	12/18/04 1015

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: Weston

Date of Receipt: 12/18/04

Time of Receipt: 1040

Source Code: 90-1

Shipping Container Sealed (Y) / N

Custody Seal Present (Y) / N

Custody Seal Intact (Y) / N / NA

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 173

Temperature of Shipping Containers	
#1	**#2**
Thermometer ID: 10559	Thermometer ID: 1813
Temp.: 3.9°C	Temp.: 2.5°C
Temp. Bottle / (Surface Temp.)	(Temp. Bottle) / Surface Temp. wide
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)
#3	**#4**
Thermometer ID: 1813	Thermometer ID: 1813
Temp.: 0.9°C	Temp.: 0.6°C
Temp. (Bottle) / Surface Temp.	Temp. (Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[signature]	12/18/04	1105	Unpacking
[signature]	12/18/04	1110	(Place in Storage) or Entry
[signature]	12/18/04	2015	Remove from Storage / [illegible]
			Place in Storage or Entry
			Entry

8886

METHODOLOGY SUMMARY/REFERENCE

8213 BTEX (8021)

The volatile compounds are extracted by bubbling an inert gas through the sample, and are collected on a sorbent trap. The trap is thermally desorbed and the compounds are separated by gas chromatography under programmed temperature conditions. Each analyte is quantitated using a photoionization detector.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 5030B, Revision 2, December 1996
and 8021B, Revision 2, December 1996

****

1146 GC VOA Water Prep

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Waste,
SW-846, Method 5030B, Revision 2, December 1996

****

0774 (Prep # 3337) PAH's in Water by HPLC

The sample aliquot is extracted with methylene chloride, dried, concentrated by evaporation and exchanged into acetonitrile. If necessary, silica gel cleanup is used. The extract is analyzed by reverse phase HPLC with both UV and Fluorescence detectors.

Reference: Test Methods for Evaluating Solid Wastes,
SW-846, Method 8310, September 1986

Reference: Test Methods for Evaluating Solid Wastes,
SW-846, Method 3510C, December 1996

9887

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

734-367-7900

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 925685. Samples arrived at the laboratory on Saturday, December 18, 2004. The PO# for this group is ZAKW1KEOK0A90089.

Client Description			Lancaster Labs Number
MA3-FB	MA3-FB-121704-1	Groundwater	4433713
MA3-FB	MA3-FB-121704-10	Groundwater	4433714
MA3-FB	MA3-FB-121704-4	Groundwater	4433715
MA3-MW28S	MA3-MW28S-121704-6	Groundwater	4433716
MA3-MW28S	MA3-MW28S-121704-6DP	Groundwater	4433717
MA3-MW31S	MA3-MW31S-121704-8	Groundwater	4433718
MA3-MW31S	MA3-MW31S-121704-8-MS	Groundwater	4433719
MA3-MW31S	MA3-MW31S-121704-8-MSD	Groundwater	4433720
MA3-MW34S	MA3-MW34S-121704-2	Groundwater	4433721
MA3-MW35S	MA3-MW35S-121704-5	Groundwater	4433722
MA3-MW35S	MA3-MW35S-121704-5-DP	Groundwater	4433723
MA3-MW6S	MA3-MW6S-121704-7	Groundwater	4433724
MA3-MW7S	MA3-MW7S-121704-3	Groundwater	4433725
MA3-MW9S	MA3-MW9S-121704-9	Groundwater	4433726
MA3-TB	MA3-TB-121704-20	Groundwater	4433727

METHODOLOGY

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

1 COPY TO	Weston Solutions, Inc.	Attn: Mr. Tom Graan
1 COPY TO	Kerr-McGee Corporation	Attn: Mr. Roy Widmann
1 COPY TO	Data Package Group	

3888

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

Lancaster Laboratories

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

Respectfully Submitted,

Michele A. Jarosick
Senior Chemist, Coordinator

8889

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433713

MA3-FB MA3-FB-121704-1 Groundwater
COC121704-1,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 07:30 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:25
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A3FB1 SDG#: KMA63-01FB

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	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.	0.18	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	12/22/2004 07:19	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 17:48	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 07:19	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rice	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433713

MA3-FB MA3-FB-121704-1 Groundwater
COC121704-1,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 07:30 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:25
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A3FB1 SDG#: KMA63-01FB

0611

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433714

MA3-FB MA3-FB-121704-10 Groundwater
COC121704-1,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 13:00 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3FB10 SDG#: KMA63-02FB

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.8	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.8	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.8	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.088	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.044	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.044	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.044	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.044	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.088	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.088	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.022	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
08213	BTEX (8021)	SW-846 8021B	1	12/22/2004 08:12	Linda C Pape	1

8612

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433714

MA3-FB MA3-FB-121704-10 Groundwater
COC121704-1,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 13:00 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3FB10 SDG#: KMA63-02FB

00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 19:05	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 08:12	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rice	1

8643

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433715

MA3-FB MA3-FB-121704-4 Groundwater
COC121704-1,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:15 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A3FB4 SDG#: KMA63-03FB

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.083	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.042	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.083	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.	0.083	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	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
08213	BTEX (8021)	SW-846 8021B	1	12/22/2004 08:44	Linda C Pape	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433715

MA3-FB MA3-FB-121704-4 Groundwater
COC121704-1,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:15 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A3FB4 SDG#: KMA63-03FB

00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 19:44	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 08:44	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rice	1

8615

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433716

MA3-MW28S MA3-MW28S-121704-6 Groundwater
COC121704-2,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:55 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-28S SDG#: KMA63-04

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	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	12/22/2004 09:49	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 20:22	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 09:49	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rice	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433716

MA3-MW28S MA3-MW28S-121704-6 Groundwater
COC121704-2,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:55 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-28S SDG#: KMA63-04

8817

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433717

MA3-MW28S MA3-MW28S-121704-6DP Groundwater
COC121704-2,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:55 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

328SD SDG#: KMA63-05FD

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	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	12/22/2004 10:22	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 21:01	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 10:22	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rice	1

3218

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433717

MA3-MW28S MA3-MW28S-121704-6DP Groundwater
COC121704-2,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:55 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

328SD SDG#: KMA63-05FD

8819

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433718

MA3-MW31S MA3-MW31S-121704-8 Groundwater
COC121704-3,4 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 11:20 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-31S SDG#: KMA63-06BKG

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	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.	0.18	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	12/22/2004 11:27	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 13:18	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 11:27	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Biggs	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433718

MA3-MW31S MA3-MW31S-121704-8 Groundwater
COC121704-3,4 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 11:20 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-31S SDG#: KMA63-06BKG

8821

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433719

MA3-MW31S MA3-MW31S-121704-8-MS Groundwater
COC121704-2,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 11:20 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-31S SDG#: KMA63-06MS

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.	0.2	ug/l	1
00777	Toluene	108-88-3	20.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	20.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	61.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	150.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	160.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	150.	1.6	ug/l	1
00784	Fluorene	86-73-7	17.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	5.2	0.080	ug/l	1
00789	Anthracene	120-12-7	2.6	0.040	ug/l	1
00807	Fluoranthene	206-44-0	2.6	0.040	ug/l	1
00811	Pyrene	129-00-0	17.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.3	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.0	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.3	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.2	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	4.6	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	7.9	0.10	ug/l	1
07409	Chrysene	218-01-9	5.2	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.0	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	12/22/2004 12:00	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 13:56	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 12:00	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rice	1

3822

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433719

MA3-MW31S MA3-MW31S-121704-8-MS Groundwater
COC121704-2,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 11:20 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-31S SDG#: KMA63-06MS

8823

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433720

MA3-MW31S MA3-MW31S-121704-8-MSD Groundwater
COC121704-2,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 11:20 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-31S SDG#: KMA63-06MSD

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	21.	0.2	ug/l	1
00777	Toluene	108-88-3	21.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	21.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	63.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	160.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	160.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	150.	1.6	ug/l	1
00784	Fluorene	86-73-7	17.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	5.2	0.080	ug/l	1
00789	Anthracene	120-12-7	2.6	0.040	ug/l	1
00807	Fluoranthene	206-44-0	2.6	0.040	ug/l	1
00811	Pyrene	129-00-0	17.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.3	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	0.99	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.2	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.1	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	4.4	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	7.4	0.10	ug/l	1
07409	Chrysene	218-01-9	5.2	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.0	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	12/22/2004 12:33	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 14:35	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 12:33	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rose	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433720

MA3-MW31S MA3-MW31S-121704-8-MSD Groundwater
COC121704-2,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 11:20 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-31S SDG#: KMA63-06MSD

8825

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433721

MA3-MW34S MA3-MW34S-121704-2 Groundwater
COC121704-1,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 08:55 by MP Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-34S SDG#: KMA63-07

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	7.2	J	2.0	ug/l	10
00777	Toluene	108-88-3	12.		2.0	ug/l	10
00778	Ethylbenzene	100-41-4	24.		2.0	ug/l	10
00779	Total Xylenes	1330-20-7	87.		6.0	ug/l	10
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	5,700.		30.	ug/l	20
00782	Acenaphthylene	208-96-8	82.		1.5	ug/l	1
00783	Acenaphthene	83-32-9	190.		1.5	ug/l	1
00784	Fluorene	86-73-7	99.		3.4	ug/l	20
00785	Phenanthrene	85-01-8	100.		1.5	ug/l	20
00789	Anthracene	120-12-7	7.8		0.76	ug/l	20
00807	Fluoranthene	206-44-0	12.		0.76	ug/l	20
00811	Pyrene	129-00-0	8.2		0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.60		0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	0.14	J	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	0.15		0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.095	ug/l	1
07409	Chrysene	218-01-9	0.61		0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	0.083	J	0.019	ug/l	1

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/22/2004 18:33	Linda C Pape	10

8826

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433721

MA3-MW34S MA3-MW34S-121704-2 Groundwater
COC121704-1,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 08:55 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-34S SDG#: KMA63-07

00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 21:39	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/29/2004 08:40	Mark A Clark	20
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 18:33	Linda C Pape	10
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rice	1

8827

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433722

MA3-MW35S MA3-MW35S-121704-5 Groundwater
COC121704-2,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:45 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-35S SDG#: KMA63-08

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.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.5	ug/l	1
00783	Acenaphthene	83-32-9	2.1	J	1.5	ug/l	1
00784	Fluorene	86-73-7	0.39	J	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.077	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.039	ug/l	1
00807	Fluoranthene	206-44-0	0.53		0.039	ug/l	1
00811	Pyrene	129-00-0	0.33	J	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.020	J	0.019	ug/l	1
00813	Benzo(b)fluoranthene	205-99-2	N.D.		0.039	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.039	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.077	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.096	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.077	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.019	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	12/22/2004 10:55	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 22:18	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 10:55	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Biegg	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433722

MA3-MW35S MA3-MW35S-121704-5 Groundwater
COC121704-2,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:45 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3-35S SDG#: KMA63-08

9629

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

MEMBER ACIL

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433723

MA3-MW35S MA3-MW35S-121704-5-DP Groundwater
COC121704-3,4 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:45 by MP Account Number: 07802

Submitted: 12/18/2004 10:10 Kerr-McGee Corporation
Reported: 01/06/2005 at 10:26 PO Box 3048
Discard: 02/21/2005 Livonia MI 48150

335SD SDG#: KMA63-09FD

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.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.5	ug/l	1
00783	Acenaphthene	83-32-9	2.0	J	1.5	ug/l	1
00784	Fluorene	86-73-7	0.42	J	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.55		0.038	ug/l	1
00811	Pyrene	129-00-0	0.34	J	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.023	J	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.019	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	12/22/2004 14:11	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 22:56	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 14:11	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rice	1

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433723

MA3-MW35S MA3-MW35S-121704-5-DP Groundwater
COC121704-3,4 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:45 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

335SD SDG#: KMA63-09FD

9831

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433724

MA3-MW6S MA3-MW6S-121704-7 Groundwater
COC121704-3,4 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 11:15 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3A-6S SDG#: KMA63-10

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.077	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.039	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.039	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.039	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.039	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.077	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.097	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.077	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	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	12/22/2004 14:44	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/26/2004 23:35	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 14:44	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rice	1

0832

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433724

MA3-MW6S MA3-MW6S-121704-7 Groundwater
COC121704-3,4 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 11:15 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3A-6S SDG#: KMA63-10

8633

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433725

MA3-MW7S MA3-MW7S-121704-3 Groundwater
COC121704-1,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:00 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A3-7S SDG#: KMA63-11

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	8.6	1.0	ug/l	5
00777	Toluene	108-88-3	N.D.	1.0	ug/l	5
00778	Ethylbenzene	100-41-4	15.	1.0	ug/l	5
00779	Total Xylenes	1330-20-7	27.	3.0	ug/l	5
	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	1,600.	15.	ug/l	10
00782	Acenaphthylene	208-96-8	N.D.	150.	ug/l	1
00783	Acenaphthene	83-32-9	45.	1.5	ug/l	1
00784	Fluorene	86-73-7	7.5	0.17	ug/l	1
00785	Phenanthrene	85-01-8	0.088 J	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1
	Due to the presence of an interferent near its retention time, the normal reporting limit was not attained for acenapthylene. The reporting limit for this compound was raised accordingly.					

Laboratory Chronicle

8034

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433725

MA3-MW7S MA3-MW7S-121704-3 Groundwater
COC121704-1,3 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 09:00 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A3-7S SDG#: KMA63-11

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/22/2004 19:06	Linda C Pape	5
00774	PAH's in Water by HPLC	SW-846 8310	1	12/27/2004 00:14	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/29/2004 09:22	Mark A Clark	10
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 19:06	Linda C Pape	5
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Rice	1

0035

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433726

MA3-MW9S MA3-MW9S-121704-9 Groundwater
COC121704-3,4 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 12:45 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A3-9S SDG#: KMA63-12

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.077	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.077	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.096	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.077	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	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	12/22/2004 15:16	Linda C Pape	1
00774	PAH's in Water by HPLC	SW-846 8310	1	12/27/2004 00:52	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 15:16	Linda C Pape	1
03337	PAH Water Extraction	SW-846 3510C	1	12/20/2004 17:40	JoElla L Bige	1

0836

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433726

MA3-MW9S MA3-MW9S-121704-9 Groundwater
COC121704-3,4 02687.007.006.0001
Moss American Site - WI
Collected:12/17/2004 12:45 by MP

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A3-9S SDG#: KMA63-12

8637

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

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4433727

MA3-TB MA3-TB-121704-20 Groundwater
COC121704-3 02687.007.006.0001
Moss American Site - WI
Collected: n.a.

Account Number: 07802

Submitted: 12/18/2004 10:10
Reported: 01/06/2005 at 10:26
Discard: 02/21/2005

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TBMA3 SDG#: KMA63-13TB*

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.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	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	12/22/2004 09:17	Linda C Pape	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/22/2004 09:17	Linda C Pape	1

8838

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

PAH by HPLC Data

8039

Case Narrative
Conformance/Nonconformance
Summary

Case Narrative
Client: Kerr-McGee Corporation
SDG: KMA63

LANCASTER LABORATORIES
PAH by HPLC

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Water	Comments
4433713	A3FB1	X	Client Blank
4433714	3FB10	X	Client Blank
4433715	A3FB4	X	Client Blank
4433716	3-28S	X	
4433717	328SD	X	
4433718	3-31S	X	Unspiked
4433719	3-31SMS	X	Matrix Spike
4433720	3-31SMSD	X	Matrix Spike Dup
4433721	3-34S	X	
4433721DL	3-34SDL	X	20X Dilution
4433722	3-35S	X	
4433723	335SD	X	
4433724	3A-6S	X	
4433725	A3-7S	X	
4433725DL	A3-7SDL	X	10X Dilution
4433726	A3-9S	X	

LABORATORY SUBMITTED QC:

SBLKWC355	SBLKWC3552	X	Method Blank
355WCLCS	355WCLCS2	X	Lab Control Sample

SAMPLE PREPARATION:

Due to the nature of the sample matrix, reduced aliquots were used in the extraction of the following samples.

Lancaster Laboratories • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425
Phone: 717-656-2300 • Fax: 717-656-2300 • http:// www.LancasterLabs.com

Case Narrative (continued)
SDG#: KMA63

Sample Code	Volume
3FB10	912 mls
A3FB4	962 mls

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

ANALYSIS:

The method used for analysis was SW-846 8310.

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.

Due to incorrect integrations during the initial processing, manual integrations were performed for the following compounds.

Sample Code	Compound
3-34S	triphenylene
3-34SDL	triphenylene
A3-7S	acenaphthylene
A3-7SDL	acenaphthylene

No further interpretation is necessary for the data submitted.

Lancaster Laboratories • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425
Phone: 717-656-2300 • Fax: 717-656-2300 • http:// www.LancasterLabs.com

Case Narrative (continued)
SDG#: KMA63

Case Narrative Reviewed and Approved by:

Christine M. Ratchford for CJN Date: 2-8-05
Charles J. Neslund
Group Leader, GC/MS Semivolatiles

6643

Microbac

January 07, 2005

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

Work Order No.: ME0412534

RE: Moss America

Dear Tom Graan:

Microbac Laboratories, Inc. received 12 samples on 12/17/2004 10:00:00 AM for the analyses presented in the following report.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted. This report includes the numbered pages as well as the Cooler Inspection Report and Chain of Custody form(s).

The SIMALABS Division of Microbac Laboratories, Inc. is an accredited laboratory under the requirements of the National Environmental Laboratory Accreditation Program (IL EPA lab #100435). All data included has been reviewed for and meets all project specific and Quality Control requirements of this accreditation, unless otherwise noted. This report shall not be reproduced except in full, without the written approval of the SIMALABS Division.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

Sincerely,
Microbac Laboratories, Inc.

Karen A. Ziolkowski
Senior Project Manager

Enclosures

Microbac

Work Order Sample Summary

Date: *07-Jan-05*

CLIENT: Weston Solutions, Inc.
Project: Moss America
Lab Order: ME0412534

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
ME0412534-01A	MA3-TG3-1-121504-10		12/15/2004 4:45:00 PM	12/17/2004
ME0412534-02A	MA3-TG3-2-121504-11		12/15/2004 4:50:00 PM	12/17/2004
ME0412534-03A	MA3-TG3-3-121504-12		12/15/2004 4:55:00 PM	12/17/2004
ME0412534-04A	MA3-TG4-1-121504-7		12/15/2004 3:30:00 PM	12/17/2004
ME0412534-05A	MA3-TG4-2-121504-8		12/15/2004 3:35:00 PM	12/17/2004
ME0412534-06A	MA3-TG4-3-121504-9		12/15/2004 3:40:00 PM	12/17/2004
ME0412534-07A	MA3-TG5-1-121504-1		12/15/2004 10:20:00 A	12/17/2004
ME0412534-08A	MA3-TG5-2-121504-2		12/15/2004 10:30:00 A	12/17/2004
ME0412534-09A	MA3-TG5-3-121504-3		12/15/2004 10:30:00 A	12/17/2004
ME0412534-10A	MA3-TG6-1-121504-4		12/15/2004 12:40:00 PM	12/17/2004
ME0412534-11A	MA3-TG6-2-121504-5		12/15/2004 12:45:00 PM	12/17/2004
ME0412534-12A	MA3-TG6-3-121504-6		12/15/2004 12:50:00 PM	12/17/2004

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG3-1-121504-10	***Work Order:***	ME0412534
Collection Date:	12/15/2004 4:45:00 PM	***SIMALABS ID:***	ME0412534-01
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **12/17/2004 2:03:50 PM**		Analyst: **NM**			
Total Aerobic Bacteria	A	*1200*	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	*10*	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG3-2-121504-11	***Work Order:***	ME0412534
Collection Date:	12/15/2004 4:50:00 PM	***SIMALABS ID:***	ME0412534-02
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **12/17/2004 2:03:50 PM** Analyst: **NM**

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
Total Aerobic Bacteria	A	*4900*	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	*ND*	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG3-3-121504-12	***Work Order:***	ME0412534
Collection Date:	12/15/2004 4:55:00 PM	***SIMALABS ID:***	ME0412534-03
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**	Prep Date/Time: **12/17/2004 2:03:50 PM**		Analyst: **NM**				
Total Aerobic Bacteria	A	***3100***	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	***ND***	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG4-1-121504-7	***Work Order:***	ME0412534
Collection Date:	12/15/2004 3:30:00 PM	***SIMALABS ID:***	ME0412534-04
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**			Prep Date/Time: **12/17/2004 2:03:50 PM**		Analyst: **NM**		
Total Aerobic Bacteria	A	*1000*	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	*20*	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG4-2-121504-8	***Work Order:***	ME0412534
Collection Date:	12/15/2004 3:35:00 PM	***SIMALABS ID:***	ME0412534-05
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **12/17/2004 2:03:50 PM** Analyst: **NM**

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
Total Aerobic Bacteria	A	***2300***	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	***100***	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC, concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I - Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800:536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG4-3-121504-9	***Work Order:***	ME0412534
Collection Date:	12/15/2004 3:40:00 PM	***SIMALABS ID:***	ME0412534-06
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **12/17/2004 2:03:50 PM** Analyst: **NM**

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
Total Aerobic Bacteria	A	***5600***	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	***120***	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG5-1-121504-1	***Work Order:***	ME0412534
Collection Date:	12/15/2004 10:20:00 AM	***SIMALABS ID:***	ME0412534-07
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **12/17/2004 2:03:50 PM** Analyst: **NM**

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
Total Aerobic Bacteria	A	***3000***	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	***10***	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG5-2-121504-2	***Work Order:***	ME0412534
Collection Date:	12/15/2004 10:30:00 AM	***SIMALABS ID:***	ME0412534-08
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **12/17/2004 2:03:50 PM** Analyst: **NM**							
Total Aerobic Bacteria	A	***4900***	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	***ND***	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 · TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG5-3-121504-3	***Work Order:***	ME0412534
Collection Date:	12/15/2004 10:30:00 AM	***SIMALABS ID:***	ME0412534-09
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **12/17/2004 2:03:50 PM**		Analyst: **NM**			
Total Aerobic Bacteria	A	***320***	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	***ND***	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG6-1-121504-4	***Work Order:***	ME0412534
Collection Date:	12/15/2004 12:40:00 PM	***SIMALABS ID:***	ME0412534-10
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **12/17/2004 2:03:50 PM**		Analyst: **NM**			
Total Aerobic Bacteria	A	*2200*	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	*30*	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
*.- Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG6-2-121504-5	***Work Order:***	ME0412534
Collection Date:	12/15/2004 12:45:00 PM	***SIMALABS ID:***	ME0412534-11
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **12/17/2004 2:03:50 PM** Analyst: **NM**

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
Total Aerobic Bacteria	A	*730*	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	*ND*	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG6-3-121504-6	***Work Order:***	ME0412534
Collection Date:	12/15/2004 12:50:00 PM	***SIMALABS ID:***	ME0412534-12
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **12/17/2004 2:03:50 PM** Analyst: **NM**

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
Total Aerobic Bacteria	A	*700*	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	*ND*	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference
H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

COC ID: COC121504-1

Chain of Custody Record

WESTON SOLUTIONS

Page 1 of 1

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: MICROBAC LABS
TAT: PER QUOTE

Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: N. MCDONALD
Lab Phone: 219-932-1770

	MICROBIAL ENUMERATION									
Filtered										
Container	POLY-100mL									
Preservative	N/A									

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected										
															041253 4
	MA3-TG3-1-121504-10	G		N	12/15/2004 16:45	1									01-A
	MA3-TG3-2-121504-11	G		N	12/15/2004 16:50	1									02-A
	MA3-TG3-3-121504-12	G		N	12/15/2004 16:55	1									03-A
	MA3-TG4-1-121504-7	G		N	12/15/2004 15:30	1									04-A
	MA3-TG4-2-121504-8	G		N	12/15/2004 15:35	1									05-A
	MA3-TG4-3-121504-9	G		N	12/15/2004 15:40	1									06-A
	MA3-TG5-1-121504-1	G		N	12/15/2004 10:20	1									07-A
	MA3-TG5-2-121504-2	G		N	12/15/2004 10:25	1									08-A
	MA3-TG5-3-121504-3	G		N	12/15/2004 10:30	1									09-A
	MA3-TG6-1-121504-4	G		N	12/15/2004 12:40	1									10-A
	MA3-TG6-2-121504-5	G		N	12/15/2004 12:45	1									11-A
	MA3-TG6-3-121504-6	G		N	12/15/2004 12:50	1									12-A

Remarks/Comments

Sampled By: M. Pihl

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
			4	

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape ws present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	12/15/04 1000						
							12/16/04 0945

12/15-04/1000

Microbac Laboratories, Inc.
250 W. 84th Drive
Merrillville, IN 46410
(219) 769-8378

COOLER INSPECTION

Friday, December 17, 2004

Client Name WESTON - VERNON HILLS
Work Order Number ME0412534
Checklist completed by _____ 12-15-04
Signature / Date

Date / Time Received: 12/17/2004 10:00:00 AM
Received by: DP
Reviewed by _____ 12/17/04
Initials / Date

Carrier name: FedEx

After-Hour Arrival?	Yes ☐	No ☑	
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody included sufficient client identification?	Yes ☑	No ☐	
Chain of custody included sufficient sample collector information?	Yes ☑	No ☐	
Chain of custody included a sample description?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Chain of custody identified the appropriate matrix?	Yes ☑	No ☐	
Chain of custody included date of collection?	Yes ☑	No ☐	
Chain of custody included time of collection?	Yes ☑	No ☐	
Chain of custody identified the appropriate number of containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Chain of custody identified the appropriate preservatives?	Yes ☐	No ☑	
Samples properly preserved?	Yes ☑	No ☐	

If No, adjusted by? _____ Date/Time _____

Chain of custody included the requested analyses?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Samples received on ice?	Yes ☑	No ☐

Container/Temp Blank temperature: Temp: 4 °C

VOA vials have zero headspace? No VOA vials submitted ☑ Yes ☐ No ☐

ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.

General Comments: The COC identifies samples 04A, 05A, and 06A as MA3-TG4-1-121504-7, MA3-TG4-2-121504-8, and MA3-TG4-3-121504-9 respectively. The bottle labels identify them as MA3-TG4-1-121504-6, MA3-TG4-2-121504-7, MA3-TG4-3-121504-8. The COC was used to log in the samples.

Sample ID	Client Sample ID	Cont. Lot #	Comments
ME0412534-01A	MA3-TG3-1-121504-10		
ME0412534-02A	MA3-TG3-2-121504-11		
ME0412534-03A	MA3-TG3-3-121504-12		
ME0412534-04A	MA3-TG4-1-121504-7		
ME0412534-05A	MA3-TG4-2-121504-8		
ME0412534-06A	MA3-TG4-3-121504-9		
ME0412534-07A	MA3-TG5-1-121504-1		
ME0412534-08A	MA3-TG5-2-121504-2		
ME0412534-09A	MA3-TG5-3-121504-3		
ME0412534-10A	MA3-TG6-1-121504-4		

Sample ID	Client Sample ID	Cont. Lot #	Comments
ME0412534-11A	MA3-TG6-2-121504-5		
ME0412534-12A	MA3-TG6-3-121504-6		

Client representative contacted: _____ Date contacted: _____

Contacted by: _____ Regarding: _____

Notes: _____

Microbac

January 07, 2005

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

Work Order No.: ME0412532

RE: Moss America

Dear Tom Graan:

Microbac Laboratories, Inc. received 6 samples on 12/17/2004 10:00:00 AM for the analyses presented in the following report.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted. This report includes the numbered pages as well as the Cooler Inspection Report and Chain of Custody form(s).

The SIMALABS Division of Microbac Laboratories, Inc. is an accredited laboratory under the requirements of the National Environmental Laboratory Accreditation Program (IL EPA lab #100435). All data included has been reviewed for and meets all project specific and Quality Control requirements of this accreditation, unless otherwise noted. This report shall not be reproduced except in full, without the written approval of the SIMALABS Division.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

Sincerely,
Microbac Laboratories, Inc.

Karen A. Ziolkowski
Senior Project Manager

Enclosures

Microbac

Work Order Sample Summary

Date: *07-Jan-05*

CLIENT: Weston Solutions, Inc.
Project: Moss America
Lab Order: ME0412532

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
ME0412532-01A	MA3-TG1-1-121604-1		12/16/2004 8:45:00 AM	12/17/2004
ME0412532-02A	MA3-TG1-2-121604-2		12/16/2004 8:50:00 AM	12/17/2004
ME0412532-03A	MA3-TG1-3-121604-3		12/16/2004 8:55:00 AM	12/17/2004
ME0412532-04A	MA3-TG2-1-121604-4		12/16/2004 10:15:00 A	12/17/2004
ME0412532-05A	MA3-TG2-2-121604-5		12/16/2004 10:20:00 A	12/17/2004
ME0412532-06A	MA3-TG2-3-121604-6		12/16/2004 10:25:00 A	12/17/2004

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG1-1-121604-1	***Work Order:***	ME0412532
Collection Date:	12/16/2004 8:45:00 AM	***SIMALABS ID:***	ME0412532-01
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**	Prep Date/Time: **12/17/2004 2:03:50 PM**		Analyst: **NM**				
Total Aerobic Bacteria	A	*740*	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	*ND*	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG1-2-121604-2	***Work Order:***	ME0412532
Collection Date:	12/16/2004 8:50:00 AM	***SIMALABS ID:***	ME0412532-02
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **12/17/2004 2:03:50 PM** Analyst: **NM**							
Total Aerobic Bacteria	A	*6500*	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	*ND*	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG1-3-121604-3	***Work Order:***	ME0412532
Collection Date:	12/16/2004 8:55:00 AM	***SIMALABS ID:***	ME0412532-03
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **12/17/2004 2:03:50 PM**		Analyst: **NM**			
Total Aerobic Bacteria	A	***21000***	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	***900***	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG2-1-121604-4	***Work Order:***	ME0412532
Collection Date:	12/16/2004 10:15:00 AM	***SIMALABS ID:***	ME0412532-04
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**	Prep Date/Time: **12/17/2004 2:03:50 PM**	Analyst: **NM**					
Total Aerobic Bacteria	A	*410*	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	*10*	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG2-2-121604-5	***Work Order:***	ME0412532
Collection Date:	12/16/2004 10:20:00 AM	***SIMALABS ID:***	ME0412532-05
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **12/17/2004 2:03:50 PM** Analyst: **NM**

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
Total Aerobic Bacteria	A	*740*	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	*20*	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *07-Jan-05*

CLIENT: **Weston Solutions, Inc.**

Sample Description		***Client Project:***	Moss America
Client Sample ID:	MA3-TG2-3-121604-6	***Work Order:***	ME0412532
Collection Date:	12/16/2004 10:25:00 AM	***SIMALABS ID:***	ME0412532-06
Date Received:	12/17/04	***Sample Matrix:***	AQUEOUS

COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **12/17/2004 2:03:50 PM** Analyst: **NM**

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
Total Aerobic Bacteria	A	***9100***	10		cfu/ml	1	12/17/2004
Total Aerobic Degrader Bacteria	A	***20***	10		cfu/ml	1	12/17/2004

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

COC ID: COC121604-1

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee

Site Name: Moss American | Contact Name: Tom Graan

W. O.: 02687.007.006.0001 | Contact Phone No.: 847-918-4142

Lab: MICROBAC LABS | Lab Contact: N. MCDONALD

TAT: PER QUOTE | Lab Phone: 219-932-1770

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	MICROBIAL ENUMERATION									
						Filtered									
						Container	POLY-100mL								
						Preservative	N/A								
															041253 2
	MA3-TG1-1-121604-1	G		N	12/16/2004 08:45	1									01-A
	MA3-TG1-2-121604-2	G		N	12/16/2004 08:50	1									02-A
	MA3-TG1-3-121604-3	G		N	12/16/2004 08:55	1									03-A
	MA3-TG2-1-121604-4	G		N	12/16/2004 10:15	1									04-A
	MA3-TG2-2-121604-5	G		N	12/16/2004 10:20	1									05-A
	MA3-TG2-3-121604-6	G		N	12/16/2004 10:25	1									06-A

Remarks/Comments

Lab Use Only

Temp of Cooler when Received, C: 1 | 2 | 3 ✓ | 4 | 5

COC Tape was present on outer package Y N

COC Tape was unbroken on outer package Y N

COC Tape ws present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition Y N

Labels indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	12/16/04 2000						
							12-17-04/1000

Sampled By: M. P.M

Microbac Laboratories, Inc.
250 W. 84th Drive
Merrillville, IN 46410
(219) 769-8378

COOLER INSPECTION

Friday, December 17, 2004

Client Name WESTON - VERNON HILLS
Work Order Number ME0412532
Checklist completed by [signature] (Signature) 12-17-04 (Date)
Date / Time Received: 12/17/2004 10:00:00 AM
Received by:
Reviewed by [initials] (Initials) 12/17/04 (Date)

Carrier name: FedEx

After-Hour Arrival?	Yes ☐	No ☑	
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody included sufficient client identification?	Yes ☑	No ☐	
Chain of custody included sufficient sample collector information?	Yes ☑	No ☐	
Chain of custody included a sample description?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Chain of custody identified the appropriate matrix?	Yes ☑	No ☐	
Chain of custody included date of collection?	Yes ☑	No ☐	
Chain of custody included time of collection?	Yes ☑	No ☐	
Chain of custody identified the appropriate number of containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Chain of custody identified the appropriate preservatives?	Yes ☐	No ☑	
Samples properly preserved?	Yes ☑	No ☐	
If No, adjusted by? _____		Date/Time _____	
Chain of custody included the requested analyses?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Samples received on ice?	Yes ☑	No ☐	
Container/Temp Blank temperature	Temp: 4 °C		
VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐

ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.

General Comments:

Sample ID	Client Sample ID	Cont. Lot #	Comments
ME0412532-01A	MA3-TG1-1-121604-1		
ME0412532-02A	MA3-TG1-2-121604-2		
ME0412532-03A	MA3-TG1-3-121604-3		
ME0412532-04A	MA3-TG2-1-121604-4		
ME0412532-05A	MA3-TG2-2-121604-5		
ME0412532-06A	MA3-TG2-3-121604-6		

Sample ID	Client Sample ID	Cont. Lot #	Comments

Client representative contacted: _____ Date contacted: _____

Contacted by: _____ Regarding: _____

Notes: _____