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STAGE 1 & 2 REPORTS

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REXENE CORPORATION
DALLAS, TEXAS

PHASE I SITE INVESTIGATION
FIELD INVESTIGATION REPORT FOR
OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

PART II

PROJECT #604-9
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TABLE OF CONTENTS

TABLE OF CONTENTS
- CONTINUED -

LIST OF TABLES

TABLE OF CONTENTS
- CONTINUED -

LIST OF DRAWINGS

EXECUTIVE SUMMARY

The Old Brickland Refinery Investigation report was submitted in two parts, the first part covering all field and background data investigations and the second covering the laboratory results. This executive summary gives a synopsis of the whole investigation. In addition, a summary of conclusions is set forth at the end of this report.

The investigation followed a workplan which was approved by the New Mexico Environmental Improvement Division on March 15, 1990. Field work was began on March 21, 1990 and included 15 monitoring well installations, 24 soil boring, 91 backhoe test pits, plus 20 surface soil, hand auger, river and stream-bank samplings. The drilling and backhoe digging was preceeded by soil gas and geophysical (magnetometer) surveys which were used to screen the property for volatile organic compound "hot spots" and to detect subsurface piping, tanks, or other obstacles. The above techniques were valuable as investigative aids and as health & safety precautions against drilling or digging into buried obstacles. A second round of groundwater samples and selected soil samples was collected in July 1990 after consultation with the NMEID.

Petroleum hydrocarbon contamination was generally assessed by a soil analysis for oil and grease because this analysis would normally encompass all oil related hydrocarbons and their residuals. The results of the soil gas survey provided a preliminary indication of the extent of volatile organic compounds (VOCs) in soil which were further identified and quantified in laboratory analyses for VOCs. The oil and grease results were used to select particular soil samples for comprehensive analyses of semi-volatile organic compounds (SVOCs) which were used to identify the individual compounds in the contaminated soil. In general

terms, this report refers to oil and grease contamination in soil as "low" [less than 1,000 milligrams per kilogram (mg/kg)], moderate (1,000 to 100,000 mg/kg), and high (greater than 100,000 mg/kg). More detailed information on contaminant concentrations is available in the report tables and figures and in the laboratory data sheets. Lead and copper concentrations in soil tended to correlate closely with hydrocarbon contamination and are also discussed in general terms in this summary.

The former refinery site was broken down into seven areas based on a review of historical aerial photographs and descriptions of former petroleum process areas or other land uses. Area A, the northernmost area, contained several aboveground petroleum storage tanks and pressure tanks. This area was undeveloped until about 1950 and was not a production area. No evidence of petroleum contamination was discovered in Area A except for a small area of stained surface soil. Laboratory analysis of the stained soil indicated an oil-related leak or spill. Soil analyses for metals in Area A did not reveal any priority pollutant metals above background concentrations. A large portion of Area A is covered by construction debris, mainly broken concrete.

Area B is immediately south of Area A and the historical aerial photographs indicate that product transfer piping crossed this area. A large part of Area B is covered with debris which consists of broken stone, concrete, bricks, etc. This debris is apparently from construction/demolition activity and it did not appear to include drums or other containers which could contain possible contaminants. Furthermore, no staining or odors were noted in the debris area, however, a soil boring encountered a layer of petroleum-stained soil which is probably due to a small leak or spill near the east fence line, a former piping route.

Area C is immediately south of Area B and it was also an area of former pipelines between the refinery and storage tanks.

Historical aerial photographs show that company houses were located here. There are piles of demolition debris scattered about this area although not to the extent found in Area B. Test pits which were dug to inspect the subsoil in this area encountered petroleum hydrocarbon contamination along the eastern fence line at low to moderate concentrations with one area of high contamination. Otherwise Area C was relatively uncontaminated.

Area D was the center of refinery transportation including loading/unloading activities, vehicle maintenance and warehousing plus administration and laboratory facilities. The refinery also operated a gasoline pump to fuel vehicles in this area. Moderate petroleum hydrocarbon contamination was found in Area D particularly near the former loading/unloading racks.

Area E housed petroleum storage tanks plus truck loading/unloading racks, drum storage and maintenance facilities. Most of Area E contained moderate soil contamination by petroleum hydrocarbons with some highly contaminated spots along the eastern boundary. Lead was the only heavy metal contaminant found in significant concentrations with the highest value by far (13.9%) reported for a soil sample near the former loading racks.

Area F was a production area which contained cracking towers, cooling towers and other refining equipment. A cooling water holding pond was also located here. Except for the location of the former cooling water pond, moderate to high petroleum contamination was found over the area. The petroleum in soil had different characteristics depending on location, with a gasoline-like product occurring in the north-western part and a heavy, oil-like or tar-like material being found along the eastern border.

Area G, the southernmost area contained ponds or lagoons which have been covered with river dredging spoil and are not visible today. There were also several tanks in this area. Moderate to

high concentrations of both oil and gasoline related hydrocarbons were found in this area. This may reflect the heterogeneous nature of the wastewater which was held in an impoundment and which may have left the petroleum residuals which were detected in the soil. A gasoline-like hydrocarbon was found localized in the northwestern corner of Area G and other parts of the area were relatively uncontaminated.

Groundwater contamination by volatile organic compounds (VOCs) was highest at the southern end of the site, primarily Areas F and G with a moderately high concentration at Well MW-5 in Area D. VOC concentrations also drop off significantly to the south of well MW-11 in Area G. The occurrence of VOCs appears to relate to the refining process areas and to the loading/unloading rack areas. Semi-volatile organic compounds (SVOCs) in groundwater were found in moderate to high concentrations in conjunction with high VOCs with the exception of one well in Area D (MW-4) which contained moderate SVOCs and no VOCs. SVOCs are ordinarily much lower in solubility than VOCs and SVOC solubilities can be enhanced by the presence of VOCs.

Heavy metals which were found with the petroleum contaminated soils, mainly lead and copper were not found in the groundwater at significant concentrations. This is attributed to the high pH of the groundwater, which severely limits heavy metal solubility. In general, the ambient groundwater chemistry would be characterized as saline and would not meet drinking water standards without regard to the petroleum-related contaminants found beneath the former refinery. Furthermore, a review of the available data and reports for the four mile radius from the site did not reveal any drinking water wells which could intercept groundwater from the site. Surface water samples collected from the Rio Grande at points upstream, adjacent to and downstream of the site were essentially indistinguishable in chemical quality.

Despite the occurrence of soil contamination by petroleum and of free-phase petroleum under parts of the former Brickland Refinery, there does not appear to be significant human or environmental exposure to this contamination. Heavy metals which were found in the soil appear to be chemically bound to the soil and are not readily leaching into the groundwater. Groundwater does contain dissolved VOCs and SVOCs which relate to petroleum however no halogenated or solvent-related VOCs were found.

I. INTRODUCTION

Eder Associates Consulting Engineers, P.C. (EA) was retained by Simpson Thacher & Bartlett, counsel to Rexene Corporation (Rexene), to investigate the Brickland Refinery Site in Sunland Park, New Mexico. The investigation was performed in accord with a January 1990 workplan approved by the New Mexico Environmental Improvements Division (EID), Santa Fe. This report presents analytical data collected at the site during two separate sampling events: March-April 1990, and July 18-23, 1990. This report supplements the August 1990 Field Investigation Report previously submitted to EID.

The August 1990 report and this document constitute the complete study findings including those conclusions which can be drawn at this time.

The analytical data presented in this report were collected in two phases. Data from the second round of sampling were used in lieu of certain laboratory data from the first round that could not meet QA/QC validation requirements. The second sampling round also provided a temporal dimension to the water chemistry and water-level data base. Phase I soil sampling was done using composite samples and oil and grease as a surrogate indicator of semi-volatile organic compounds to limit the number of samples and to provide more complete areal coverage. This approach has been used with success in environmental investigations when the suspected contaminants are related to a particular class of substances. Historical information and limited field investigations by the NMEID supported this approach because the site was used solely to refine petroleum into finished products. Metals such as lead, chromium and copper which are commonly associated with petroleum refining as additives or reagents were also included in the investigation.

A total of 132 soil samples were analyzed for the petroleum surrogate (oil and grease) and from this group, 38 and 41 samples were selected and analyzed volatile (VOCs) and semi-volatile (SVOCs) organic compounds. The 38 VOC samples were collected from test pits that had high needle deflection on a photoionization detector (PID), while SVOC samples were analyzed based on oil and grease results. In most cases, SVOC and VOC samples were collected from different test pits. A total of 142 soil samples were composited into 51 samples for priority pollutant metals analysis. The composite metals results were used to select 118 individual soil samples for analysis of significant heavy metals found in the composites. Sixteen monitoring wells installed for this project were sampled twice along with three surface-water sampling stations along the Rio Grande River. Water samples were analyzed for selected VOCs, SVOCs and metals plus major anions and cations. The analytical data fairly portray the nature and distribution of petroleum-related contaminants in soil and groundwater at the Old Brickland Refinery.

II. GEOLOGIC CROSS SECTIONS

Five geologic cross-sections were prepared based on data from the monitoring wells and soil borings. These cross-sections are labeled A-A^1, B-B^1, C-C^1, D-D^1 and E-E^1 and are shown on Drawing II-1. In those instances where a well cluster was installed, the cross-section shows only the deep well information because the lithologic data are applicable to the entire cluster. Detailed well logs and well construction diagrams are included in the first volume of this study under Appendix E.

In general, the cross-sections depict unconsolidated deposits of sand, silty sand, clay, silty and sandy clay, fine gravel and man-made fill. The surface is covered in most areas with a layer of fine sand underlain by layers of clay or silty/sandy clay which is extremely hard in many areas due to cementing by caliche. Saturated sands with some silt and clay were found at approximately 6 to 10 feet below grade. A layer of fine gravel was penetrated in wells MW-3D and MW-6D. The lithologic character of the monitoring well and soil borings is consistent with those found in the published regional literature.

Lithology is an important factor in the fate and transport of the contaminants beneath the site. The formation of caliche is a typical feature in the region and is due to the high rate of evaporation of capillary water above the water table which leaves behind a residue of minerals, chiefly salts which are part of the naturally high dissolved solids in the ground water. These minerals form a dense hard material which has generally low to very low hydraulic conductivity depending on the grain size of the original soil matrix. This caliche layer appeared to be dry (unsaturated) in boring logs but the water-level in the boring or well rose above the caliche layer once the layer was breached by

the drill. Boring log and test pit data also suggest that the caliche layer retards the downward movement of oily wastes and petroleum liquid phases as it confines the ground-water below. The water level in the monitoring wells was higher than the caliche layer and stabilized only a few feet below grade in most cases. This made it impossible to construct the monitoring wells with screens a few feet above the water table (to detect floating phases) as the top of the screen would have been virtually at grade.

The water-level in the monitoring wells is shown on the cross-sections for both the April and July 1990 measurement rounds. The July water level had risen by over 1 foot which correlates with a rise in stage of the Rio Grande during the irrigation season. There was very little difference in the water levels of adjacent wells in well clusters and there does not appear to be a significant potential for vertical flow in the upper 35 feet of the saturated zone, which is the maximum depth of the monitoring well clusters at the site. Furthermore, the water level gradients and flow directions did not change substantially between water-level measuring rounds. Water levels and flow direction are shown on Figure Nos. 5 and 6 of Part I of this report.

III. DATA PRESENTATION - SOIL SAMPLING

The workplan divided the site into seven study areas, A-G, following a logical separation based on previous site usage and current conditions. The sampling plan and subsequent amendments based on EID requests listed minimum numbers of samples collected in each study area. The study areas are shown on the enclosed drawings. Table 1 shows the soil sampling matrix from the state-approved workplan compared to the actual number of VOCs, metals and semi-volatile samples collected on-site. In addition to the sampling outlined in the workplan, nine surface soil samples were collected from areas selected by EID and analyzed for mercury, chromium, copper, nickel and lead. Off-site soil samples were collected from drainage culverts and from a background monitoring well, #12. A memo summarizing metals background data for the site is shown in Appendix A. The analytical data have been located on site maps to provide an overall picture of areas sampled and their corresponding concentrations. The VOC soils data are shown on Drawing II-2. The SVOC soils data are shown on Drawing II-3. All oil and grease results are shown on Drawing II-4. The unique metals analysis for lead, copper and arsenic are located and summarized on Drawing II-5, II-6 and II-7. Drawing II-8 summarized July 1990 groundwater VOC and SVOC sampling result.

The samples analyzed for SVOCs were identified based on an analysis of a split sample for oil and grease, as previously described. The laboratory had QA/QC problems with the Oil and Grease analyses and oil and grease samples which were therefore re-run. The re-run oil and grease results are shown in Table 2 and presented on Drawing II-4.

There were QA/QC problems with the round one VOC analyses that required resampling. The data tables herein present round I (March-April) and round II (July) samples together with -2

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 1

SUMMARY OF SAMPLES COLLECTED ON-SITE

	VOCs					Semi-VOCs	
Location	Proposed	Collected	Proposed Composite Metals	Actual Composite Metals	Unique Metals	Proposed	Collected
A	2	1	2	2	8	2	--
B	1	--	2	2	8	2	--
C	1	3	2	2	8	2	3
D	4	6	6	6	24	6	8
E	4	8	6	7	19	6	11
F	4	9	6	6	31	6	7
G	4	11	6	5	20	6	12
Total	20	38	30	30	118	30	41

NOTE: Area G was divided into a subarea delineated H included in G numbers.

TABLE 2

OIL AND GREASE IN SOIL SAMPLES
(mg/kg)

Sample I.D.	Oil & Grease	Sample I.D	Oil & Grease	Sample I.D.	Oil & Grease
C-TP-1	55	F-TP-43	4,900	B-TP-85	51
C-TP-2	59	F-TP-44	ND	B-TP-86	160
C-TP-3	91	F-TP-45	780	A-TP-87	100
C-TP-4	130	F-TP-46	820	A-TP-88	110
C-TP-5	3,000	F-TP-47	1,700	A-TP-89	130
C-TP-6	90	F-TP-48	10,000	A-TP-90	100
C-TP-7	2,100	F-TP-49	4,800	F-TP-91	510
C-TP-8-S	130,000	F-TP-50	14,000	MW-4-SS-08	1,400
C-TP-8-D	13,000	D-TP-51	11,000	MW-5-SS-04	2,900
E-TP-9	33,000	D-TP-52	8,100	MW-6-SS-06	630
E-TP-10	1,200	D-TP-53	4,000	MW-7-SS-02	5,100
E-TP-11	10,000	D-TP-54	370	MW-8-SS-08	330
E-TP-12	13,000	F-TP-55	5,500	MW-10-SS-06	16,000
E-TP-13	120	F-TP-56	2,500	MW-11-SS-10	4,500
E-TP-14	3,000	F-TP-57	96	B-1-(06-08)	350
E-TP-15	9,600	F-TP-58	14,000	B-2	2,500
E-TP-16	5,300	F-TP-59	6,600	B-3	1,700
E-TP-17	9,700	F-TP-60	210	B-4	800
E-TP-18	9,700	F-TP-61	3,100	B-5	210
E-TP-19	4,500	F-TP-62	3,000	B-6	2,100
E-TP-20	14,000	A-TP-63	320	B-7	ND
E-TP-21	10,000	A-TP-64	300	B-8	190
E-TP-22-1	93,000	A-TP-65	76	B-9	1,500
E-TP-22-2	6,900	G-TP-66	23,000	B-10	4,500
E-TP-23	790	G-TP-67	2,800	B-11	310
E-TP-24	3,900	G-TP-68	120,000	B-12	1,700
E-TP-25	22,000	G-TP-68-1	13,000	B-13	1,500
E-TP-26	9,500	G-TP-68-2	6,500	B-14	420
E-TP-27	5,500	G-TP-69	5,900	B-15	1,300
E-TP-28	3,900	G-TP-70	12,000	B-16	2,500
E-TP-29	55,000	G-TP-71	12,000	B-17	730
E-TP-30	5,000	G-TP-72	2,900	B-18	1,500
E-TP-31	17,000	G-TP-73	20,000	B-19	140
E-TP-32	18,000	G-TP-74	310	B-20	2,800
F-TP-33	2,200	G-TP-75	30,000	B-21	1,300
F-TP-34	1,200	G-TP-76	2,000	B-22	3,900
F-TP-35	2,200	G-TP-77	5,600	B-23	360
F-TP-36	1,700	G-TP-78	3,900	B-24	340
F-TP-37	1,300	G-TP-79	1,800	B-28	760
F-TP-38	5,400	G-TP-80	44,000	B-HA-1	230
F-TP-39	39,000	H-TP-81	61,000	B-HA-2	110
F-TP-40	6,900	H-TP-82	21,000	B-HA-3	150
F-TP-41	580	B-TP-83	73	B-HA-4	6,100
F-TP-42	3,600	B-TP-84	79	A-HA-5	56

NOTE:
ND - Not detected

following sample identification to indicate samples from the second sampling round.

Metal samples were composited to reduce the total number of overall analyses. The composites were analyzed for 13 table 1 priority pollutant metals and the results were compared to background levels and selected guideline concentrations to determine which metals to analyze in unique samples. The metals results shown in the body of this report reflect only the analysis of selected metals: lead and copper. The metals were selected on the basis of their relationship to petroleum refining and the analytical "hits" from the composite soil samples. Lead and Copper were both suspected contaminants and were found at significant concentrations in association with petroleum contamination. In addition the results of the non-metallic metal, arsenic, are shown because its levels were above typical background and arsenic is known to be widely distributed in the area from the nearby ASRCO facility from atmospheric deposition. Chromium was a suspected contaminant by reason of its common use as a cooling tower water-treatment but it was not found as a significant soil or groundwater constituent, therefore no map of its distribution was prepared. Preliminary data from the NMEID indicated the presence of mercury at a high concentration in a soil sample from the site; however, none of the samples collected during this investigation contained mercury at significant concentrations. The composite results along with selection criteria memos are presented in Appendix B.

The raw analytical data was validated to adjust for laboratory QA/QC problems. The laboratory data along with any adjustments made during validation are presented in Appendix C. The VOC and SVOC soils data was reduced and summarized for analytes found above the detection limit as shown in Table 3. The table presents both target and non-target VOC and SVOC results. Comments have been added to the table listed as follows: 1) typical laboratory contaminant, 2) possible site related compound, 3) compounds

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 3

PHASES 1 AND 2 SOIL SAMPLING SUMMARY

1. Volatile Organics

Compound	# Hits/Total Samples Sample Date 4/90	Sample Date 7/90	Comment (Remark)
Methylene Chloride	19/24	2/16	1
Acetone	11/24	8/16	1
2-Butanone	3/24	9/16	1
Benzene	19/24	11/16	2
Ethylbenzene	20/24	11/16	2
Xylenes	19/24	10/16	2
Vinyl Acetate	6/24	1/16	1
Toluene	9/24	2/16	2
1,1,2,2-Tetrachloroethane	3/24	5/16	1
4 Methyl-2-Pentanone	16/24	--	1
2 Hexanone	13/24	--	1
1,1,1-Trichloroethane	1/24	--	3
Chloromethane	2/24	--	3
Iso-Butyl Alcohol	2/24	--	3
Chloroethane	1/24	--	3
Chloroform	1/24	--	1
2-Chloroethylvinyl Ether	1/26	--	3
1,1,2 Trichloroethane	--	5/16	1
Carbon Disulfide	--	2/16	1

Table 3 (continued . . .)

2. Non-Target Volatile Organics

Compound	# Hits/Total Samples Sample Date 4/90	Sample Date 7/90	Comment (Remark)
C3-Benzene	17/24	1/16	2
C4-Benzene	17/24	--	3
C5-Benzene	5/24	--	3
Mehtylnaphthalene	14/24	--	3
Tetrahydronaphthalene	10/24	--	3
Dimethylnaphthalene	8/24	--	3
C2-Naphthalene	6/24	--	3
Naphthalene	4/24	--	3
Naphthalene Compound	3/24	--	3
1,2,3,4-Tetrahydromethyl-Naphthalene	2/24	--	3
Decahydrene Naphthalene	1/24	--	3
2,3-Dihydro-methyl-IH-Indene	13/24	--	3
2,3-Dihydro-dimethyl-IH-Indene	10/24	--	3
2,3-Dihydro-trimethyl-IH-Indene	7/24	--	3
Indene Compound	3/24	--	3
Methyl Indene	1/24	--	3
Methyl Cyclopentane	13/24	9/16	1
Pentane	2/24	1/16	1
Methyl Pentane	1/24	5/16	1
Dimethyl Pentane	1/24	--	3
Dimethyl Cyclopentane	2/24	--	3
Ethylcylohexane	9/24	--	3
Dimethylhexane	8/24	--	3
Hexane	5/24	--	3

Table 3 (continued . . .)

Compound	# Hits/Total Samples Sample Date 4/90	Sample Date 7/90	Comment (Remark)
Dimethylcyclohexane	4/24	--	3
C2-Dimethylcyclohexane	5/24	--	3
Cyclohexene	1/24	6/16	1
Methylcyclohexane	2/24	--	1
Methylhexane	1/24	2/16	1
C3-Cyclohexane	1/24	1/16	1
Propylcyclohexane	1/24	--	3
Tetramethylcyclohexane	1/24	--	3
Methylheptane	5/24	--	3
Dimethylheptane	1/24	--	3
C8-Alkane	5/24	--	3
C9-Alkane	4/24	--	3
C6-Alkane	3/24	--	3
Unknown Alkane	3/24	--	3
Methyl Octane	3/24	--	3
Cyclohydrocarbons	2/24	--	3
Unknown Hydrocarbons	2/24	2/16	--
Unknown Aromatic Compound	2/24	--	3
Dimethyl Butane	1/24	--	3
Methylbutane	1/24	--	3
3 Ethyl-Thiophene	--	2/16	3
2 Propyl-Thiophene	--	2/16	3
1,1,2 Trichlorotri-fluoroethane	--	1/16	3
Unknown Compounds	22/24	13/16	--

Table 3 (continued . . .)

3. Semi-Volatile Organics

Compound	# Hits/Total Samples Sample Date 4/90	Sample Date 7/90	Comment (Remark)
Naphthalene	24/31	11/16	2
2-Methylnaphthalene	25/31	12/16	2
Thenanthrene	25/31	7/16	2
Anthracene	24/31	3/16	2
Dibenzofuran	22/31	5/16	2
Fluorene	23/31	7/16	2
2,4-Dimitrotoluene	21/31	--	2
Pyrene	20/31	4/16	2
4 Nitrophenol	17/31	--	2
Butylbenzylphthalate	15/31	3/16	1
Acenaphthene	14/31	2/16	2
Chrysene	13/31	1/16	2
Benzo(a)anthracene	12/31	--	2
Acenaphthylene	11/31	1/16	2
4-Chloroaniline	12/31	--	2
O-Nitrotoluene	10/31	--	2
M-Nitrotoluene	10/31	--	2
Nitrobenzene	9/31	--	2
N-Nitrosodiphenylamine	9/31	--	2
bis(2-Ethylhenzyl) phthalate	9/31	5/16	1
Fluoranthene	8/31	1/16	2
Benzo(a)pyrene	8/31	--	2
2-Chloronaphthalene	6/31	--	2
2,4-Dimitrophenol	6/31	--	2
Isophonone	5/31	--	2
4,6-Dinitro-2-methyl phenol	5/31	--	2

Table 3 (continued . . .)

Compound	# Hits/Total Samples Sample Date 4/90	Sample Date 7/90	Comment (Remark)
Benzo(k)fluoranthene	4/31	--	2
Benzo(g,h,i)perylene	4/31	--	2
2,6-Dinitrotoluene	4/31	--	2
Benzoic Acid	3/31	--	3
2,4,6-Tribromophenol	3/31	--	3
Di-n-octylphthalate	3/31	--	1
Benzidine	3/31	--	3
Di-n-butylphthalate	2/31	6/16	1
Benzo(b)fluoranthene	3/31	--	3
Phenol	--	1/16	3
Bis(2-Chloroisopropyl) ether	--	1/16	3
2-Nitrophenol	--	1/16	3
N-Nitroso-di-n-propylamine	1/31	--	3
2,4-Dimethylphenol	1/31	--	3
2,4,6-Trichlorophenol	1/31	--	3
2,4,5-Trichlorophenol	1/31	--	3
Dimethylphthalate	--	1/16	3
2-Nitroaniline	1/31	--	3
4-Nitroaniline	1/31	--	3
Debenzo(a,h)anthracene	1/31	--	3
Diphenylhydrozine	1/31	--	3
Diethylphthalate	--	1/16	1

4. Non-Target Semi-Volatile Organics

Compound	# Hits/Total Samples Sample Date 4/90	Sample Date 7/90	Comment (Remark)
C14-Alkane	20/31	9/16	2
C13-Alkane	13/31	11/16	2
C16-Alkane	13/31	5/16	2
C18-Alkane	12/31	2/16	2
C12-Alkane	11/31	7/16	2
C19-Alkane	9/31	4/16	2
C11-Alkane	8/31	7/16	2
C15-Alkane	5/31	3/16	2
C17-Alkane	4/31	--	3
C20-Alkane	4/31	--	3
C10-Alkane	2/31	--	3
C21-Alkane	2/31	1/16	2
C22-Alkane	2/31	1/16	2
C2,3,8,23,24,25,27 28,29-Alkane	1/31	--	3
Unknown Cycloalkane	5/31	--	3
Substituted Alkane	1/31	1/16	2
Unknown Alkane	23/31	9/16	2
Methylnaphthalene (isomer)	22/31	8/16	2
C2-Naphthalene	16/31	4/16	2
C3-Naphthalene	13/31	2/16	2
Decahydro-2-methyl naphthalene	5/31	3/16	2
Decahydro-methyl naphthalene	4/31	2/16	2
Decahydronaphthalene	--	2/16	3
Demethylnaphthalene (isomer)	5/31	7/16	2

Table 3 (continued . . .)

Compound	# Hits/Total Samples Sample Date 4/90	Sample Date 7/90	Comment (Remark)
1,2,3,4-Tetrahydro-methyl naphthal	3/31	--	3
Ethylnaphthalene	2/31	--	3
Methyl-Ethyl naphthalene	1/31	--	3
Trimethyl Naphthalene	--	1/16	3
C8-Naphthalene	1/31	--	3
C6-Cyclohexane	8/31	--	3
C7-Cyclohexane	4/31	1/16	1
C8-Cyclohexane	3/31	--	3
Hexylcyclohexane	1/31	7/16	1
Methyl penthyl cyclohexane	--	2/16	3
Butyltrimethyl cyclohexane	--	1/16	3
Unknown Cyclohexane	1/31	1/16	2
C4-Benzene	6/31	8/16	2
C3-Benzene	3/31	3/16	2
C2-Benzene	2/31	--	3
C6,C14-Benzene	1/31	--	3
Propylbenzene	--	2/16	3
Substituted Benzene	--	1/16	3
C16-Hydrocarbon	3/31	--	3
C18-Hydrocarbon	3/31	--	3
C19-Hydrocarbon	3/31	1/16	2
C12-Hydrocarbon	2/31	1/16	2
C13-Hydrocarbon	2/31	1/16	2
C14-Hydrocarbon	2/31	2/16	2
C9-Hydrocarbon	--	1/16	3
C11 Hydrocarbon	--	2/16	3

Table 3 (continued . . .)

Compound	# Hits/Total Samples Sample Date 4/90	Sample Date 7/90	Comment (Remark)
C15-Hydrocarbon	1/31	--	3
Unknown Hydrocarbon	2/31	--	3
Phenyl-1H-Indene	2/31	--	3
2,3-Dihydro-1M-Indene	1/31	2/16	2
2,3-Dihydromethyl-1M-Indene	1/31	1/16	2
2.3-Dihydrotrimethyl-1M-Indene	1/31	--	3
4-Hydroxy-4-Methyl-2-Pentanone	--	4/16	3
4-Hydroxy-2-Methyl-2-Pentanone	--	1/16	3
4-Methyl-2-Pentanone	--	1/16	3
Hydroxy-Methyl-Pentanone	1/31	--	3
2-Methyldecalin	--	4/16	3
Unknown Acid Ether	5/31	--	3
Decane	1/31	2/16	2
Undecane	4/31	--	3
Dedecane	2/31	--	3
Tridecane	1/31	2/16	2
Tetradecane	2/31	1/16	2
Octadecane, Nonadecane, Pentodecane, Henadecane, Heptadecane	1/31	1/16	2
Methyl Decane, Methyl Undecane, Methyl Dedecane, Dimethyl Undecane	1/31	--	3
Vonana	1/31	--	3
Eicosane	--	1/16	3

Table 3 (continued . . .)

Compound	# Hits/Total Samples Sample Date 4/90	Sample Date 7/90	Comment (Remark)
C2-Octane	1/31	--	3
Octodecanol	--	2/16	3
Sulfur	3/31	--	3
Unknown Aromatic	1/31	--	3
Unknown Phthalate	1/31	2/16	1
Unknown Keton	1/31	--	3
C8-Phenol	1/31	--	3
Diethyl Phenol	--	1/16	3
Unknown Compound	31/31	15/16	--

NOTES:

1. Typical lab contaminant.
2. Possible site related contaminant.
3. Compounds excluded from further discussion based on low frequency of detection (VOCs less than 14% of the time and SVOCs less than 9% of the time) and detected in only one round of sampling.

excluded from further discussion based on low frequency of detection (VOCs less than 14% and SVOCs less than 9%) and detected in only one round of sampling. Only analytes with comment #2 on Table 3 have been included in individual area discussions. Each study area is discussed in turn followed by a summary of off-site soil sampling results.

Area A

Area A is located at the extreme northern end of the site. During the Phase I field work, the fence surrounding Area A was replaced. During the period the refinery was in operation this area was not utilized until approximately 1950. Two product storage tanks and two horizontal pressure cylinders were removed at some time after the refinery shut down. The area is now covered with piles of construction and demolition debris.

Seven test pits and one hand auger hole were dug in Area A shown on Drawing II-2. Locations were selected based on points of access to the area's soil surface.

Soil samples from six of the test pits and a hand augered sample showed no PID needle detection and no VOC sample was collected.

One VOC sample was taken from a test pit in an area of stained soils listed in Table 4. The stained horizon was 4 inches thick, indicating a small spill or leak.

Eight samples were collected for metals and composited into two samples. The unique analyses for metals are shown in Table 5. A sample (A-TP-65) was analyzed for all metal constituents and the results are within the site background range.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 4

VOLATILE ORGANIC COMPOUNDS IN SOIL SAMPLES
AREA A - UNITS (UG/KG)

Compound	A-TP-65
Benzene	ND
Ethylbenzene	ND
Toluene	ND
Xylenes	500
Non-Target Total BTEX Compounds	500
Total	51,000

NOTES:

ND - Not Detected
J - Estimated concentration
B - Detected in associated lab blank

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 5

SELECTED METALS ANALYSIS
FROM UNIQUE SOIL SAMPLES IN AREA "A"

Parameter	A-TP-63	A-TP-64	A-TP-65	A-TP-87	A-TP-88	A-TP-89	A-TP-90	A-HA-5
Mercury	NA	NA	0.06UN	NA	NA	NA	NA	NA
Silver	NA	NA	0.6U	NA	NA	NA	NA	NA
Cadmium	NA	NA	2.9	NA	NA	NA	NA	NA
Chromium	NA	NA	13.5	NA	NA	NA	NA	NA
Copper	169N	151N	112N	96.9N	74.5N	58.3N	107N	5.9N
Nickel	NA	NA	10.2	NA	NA	NA	NA	NA
Zinc	NA	NA	101	NA	NA	NA	NA	NA
Arsenic	NA	NA	19.8*NS	NA	NA	NA	NA	NA
Lead	284	270	139	NA	NA	NA	NA	15.4

NOTES:

NA - Not analyzed
U - Undetected at <Instrument Detection Limit (IDL)
W - Analytical spike recovery out of range
B - Undetected, <Contract Required Quantification Limit (CRQL) but > Instrument Detection Limit (IDL)
E - Matrix interference
N - Matrix spike out of acceptable range
S - Performed by Method of Standard Additions (MSA)
\+ - MSA correlation coefficient <.995
* - Digested duplicate out of 20% Relative Percent Difference (RPD)
Units - (mg/kg) for all analytes

Range of site background metals levels (mg/kg)

Mercury	<0.02-0.11
Silver	<0.25-1.2
Cadmium	0.9-5.5
Chromium	7.5-23
Copper	6-140
Nickel	5-10
Zinc	21-180
Arsenic	<1.4
Lead	6-270

Area B

Area B is directly south of Area A and was fenced during the Phase I field work Area B was used for pipeline runs to the storage tanks in Area A. Currently the area contains 3 piles of construction and demolition debris which ruled out sampling with a backhoe from many of the locations in the original workplan, although it was possible to dig 4 test pits shown on Drawing #2 (Part I of report). Four other samples were taken with a hand auger.

No SVOC samples were collected in the area because oil and grease results did not exceed the predetermined selection criteria, established with the laboratory. Area B oil and grease samples were sent to the lab with Area F samples, therefore the lab ran the highest 20% of the oil and grease samples and no Area B samples fell into this range.

VOC samples were not collected because the (PID) indications were too low.

The metal samples collected by hand auger across the northeastern edge of the site contained copper and lead above background as shown in Table 6. The concentration of oil and grease in a sample collected from a 4 inch thick dark band of soil 44 inches below surface in B-HA-4 was 6100 ppm. The soil stain is the probable result of a low volume pipeline leak.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 6

SELECTED METALS ANALYSIS
FROM UNIQUE SOIL SAMPLES IN AREA "B"

Parameter	B-TP-83	B-TP-84	B-TP-85	B-TP-86	B-HA-1	B-HA-2	B-HA-2	B-HA-4
Mercury	NA	NA	NA	NA	NA	NA	NA	0.41N
Silver	NA	NA	NA	NA	1.4	177	1.8	4.9
Cadmium	NA	NA	NA	NA	NA	NA	NA	4.7*N
Chromium	NA	NA	NA	NA	NA	NA	NA	860
Copper	NA	NA	NA	NA	390*N	35.5*N	37.2*N	1370*N
Nickel	NA	NA	NA	NA	NA	NA	NA	5.4
Zinc	NA	NA	NA	NA	251N	32.3N	30.9N	178N
Arsenic	NA	NA	NA	NA	NA	NA	NA	5.98*NS
Lead	NA	NA	NA	NA	427N	60N	77N	2830N

NOTES:

NA - Not analyzed
U - Undetected at <IDL
W - Analytical spike recovery out of range
B - Undetected, <CRQL but >IDL
E - Matrix interference
N - Matrix spike out of acceptable range
S - Performed by MSA
+ - MSA correlation coefficient <.995
* - Digested duplicate out of 20% RPD
Units - (mg/kg) for all analytes

Chromium 860 ppm

Area C

Area C is located directly south of area B and spans the entire width of the property. Refinery records and aerial photos indicate that activities in this area were limited to petroleum pipelines from the main refining areas to the Area A storage tanks. The area contains construction and demolition debris. The area is separated from Area B by a fence and there is a partial fence separating it from the southern areas.

Soil samples from 3 out of a total of 10 test pits triggered the PID limits which led to sampling for VOCs, Table 7. Of the three samples, C-TP-4-1 contained 627 ppm of VOCs consisting of benzene, ethylbenzene, toluene and total xylenes (BTEX) and non-target VOCs.

The SVOC results for samples selected based on oil and grease analysis results are shown in Table 8. The highest total concentration of SVOC in this area (approximately 11%) was C-TP-8-S. The northeastern corner of the area was significantly stained with petroleum constituents, and samples showed various SVOCs in limited concentrations indicating a probable petroleum leak.

Metal results from 8 samples collected in the area do not show any substantial results except for lead levels in sample C-TP-5 at approximately 2-1/2 times background at 683 ppm shown in Table 9. All other results are at or around background levels.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 7

VOLATILE ORGANIC COMPOUNDS IN SOIL SAMPLES
AREA C - UNITS (UG/KG)

Compound	C-TP-1-2	C-TP-2-2	C-TP-4
Benzene	ND	ND	14,700
Ethylbenzene	ND	ND	75,500
Toluene	ND	ND	ND
Xylenes	ND	ND	125,800
Non-Target Total BTEX Compounds	ND	ND	216,000
Total	ND	ND	410,900

NOTES:

ND - Not detected
J - Estimated concentration
B - Detected in associated lab blank

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 8

SEMIVOLATILE ORGANICS IN SOIL SAMPLES - AREA "C"
(ug/kg)

SEMIVOLATILE ORGANICS	C-TP-8-S	C-TP-1-2 (1)	C-TP-2-2
TARGET COMPOUNDS			
Naphthalene	2900	87 J (3)	ND
2-Methylnaphthalene	25300	48 J	ND
Phenanthrene	19800	81 J	ND
Anthracene	6100	ND	ND
Dibenzofuran	5200	45 J	ND
Fluorene	6700	87 J	ND
2,4-Dinitrotoluene	11200	ND	ND
Pyrene	18800	ND	ND
4-Nitrophenol	ND (2)	ND	ND
Acenaphthene	3200	34 J	ND
Chrysene	5500	ND	ND
Benzo(a)anthracene	4400	ND	ND
Acenaphthylene	ND	ND	ND
4-Chloroaniline	1400	ND	ND
O-Nitrotoluene	ND	ND	ND
M-Nitrotoluene	ND	ND	ND
Nitrobenzene	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND
Fluoranthene	2500	ND	ND
Benzo(a)pyrene	1600	ND	ND
2-Chloronaphthalene	ND	ND	ND
2,4-Dinitrophenol	ND	ND	ND
Isophorone	ND	ND	ND
4,6-Dinitro-2-methylphenol	1700	ND	ND
Benzo(k)fluoranthene	ND	ND	ND
Benzo(g,h,i)perylene	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND
Total	116300	382 J	ND
NON-TARGET COMPOUNDS			
Total	1117700	42380	12520

NOTES:

(1) - samples suffixed with "-2" collected in July 1990.

(2) - not detected.

(3) - value is estimated because compound is present < CRQL.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 9

SELECTED METALS ANALYSIS
FROM UNIQUE SOIL SAMPLES IN AREA "C"

Parameter	C-TP-1	C-TP-2	C-TP-3	C-TP-4	C-TP-5	C-TP-6	C-TP-7	C-TP-8
Mercury	NA	NA	NA	NA	NA	NA	NA	0.06UN
Silver	NA	NA	NA	NA	NA	NA	NA	2.9
Cadmium	2.0	1.3	9.0	0.6	16.5	3.7	19.0	0.2B
Chromium	NA	NA	NA	NA	NA	NA	NA	7.5
Copper	25.5	28.0	184	21.3	280	142	197	4.8
Nickel	NA	NA	NA	NA	NA	NA	NA	10.2
Zinc	51.9	39.8	159	65.4	367	120	221	17.1
Arsenic	19.7	14.7	43.3	25.8*N+	129	14.7	50.9	5.0B*N+
Lead	121	98.1	278	22.7	683	166	328	5.0

NOTES:

NA - Not analyzed
U - Undetected at <IDL
W - Analytical spike recovery out of range
B - Undetected, <CRQL but >IDL
E - Matrix interference
N - Matrix spike out of acceptable range
S - Performed by MSA
\+ - MSA correlation coefficient <.995
* - Digested duplicate out of 20% RPD
Units - (mg/kg) for all analytes

Area D

Most of the refinery transportation activities were located in Areas D and E. Area D is the western section and contained truck unloading racks, a gasoline pump to fuel vehicles, laboratory/ administration building, a vehicle maintenance facility and indoor/outdoor material storage.

A total of 24 soil borings were drilled in Area D during the March/April sampling work along with four test pits and one soil sample collected from MW-5. Two test pits were dug in the area during July field work and sampled for VOCs and SVOCs. Tables 10, 11 and 12 present VOC, SVOC and unique metals analyses of samples collected from the area.

PID field screening found consistent and widespread soil contamination ranging from low to full scale needle deflection, with the highest VOCs found in D-TP-53-1, adjacent to the crude unloading rack. The oil and grease results were consistently over 1,000 ppm reported throughout most of the southeastern two thirds of the area. The total non-target SVOC ranged from .07%-2.2%, with the highest SVOC found in pits adjacent to the crude unloading racks and adjacent to the northernmost storage warehouse. Cadmium, copper, zinc and arsenic were found in one or more soil samples from borings across the area. High metal concentrations coincide with high SVOC results found adjacent the warehouse. Except for the area near the warehouse, lead levels were close to background.

No evidence of significant soil contamination was found near the former laboratory/administration building.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 10

VOLATILE ORGANIC COMPOUNDS IN SOIL SAMPLES - AREA "D"
(ug/kg)

COMPOUND	D-TP-3-2	D-TP-7-2	D-TP-51	D-TP-52	D-TP-53	D-TP-54
Benzene	900 JB	2000 B	2,300	5,100	13,700	17,900
Ethylbenzene	44,600	1,300	28,800	16,700	1,300	3,400
Toluene	ND	ND	ND	ND	ND	ND
Xylenes	9,200	ND	25,000	ND	ND	3,000
Total BTEX	54,700	3,300	56,100	21,800	15,000	24,300
NON-TARGET COMPOUNDS						
Total	44,500	15,900	282,200	205,100	338,600	278,000

NOTES:
ND - not detected in sample.
J - Estimated concentration.
B - Detected in associated lab blank.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 11

SEMIVOLATILE ORGANICS IN SOIL SAMPLES - AREA "D"
(ug/kg)

SEMIVOLATILE ORGANICS	B-5	B-9	B-13	B-22	D-TP-51	D-TP-3-2 (1)	D-TP-7-2	MW-5-SS-04
TARGET COMPOUNDS								
Naphthalene	3000	1800	1270	13800	33000	16000 J (3)	21000	4300
2-Methylnaphthalene	8400	4200	2850	18500	96000	ND	91000	21600
Phenanthrene	200	1100	150	400	2000	2000 J	ND	ND
Anthracene	200	1100	150	400	2000	ND	ND	ND
Dibenzofuran	200	300	160	300	3300	3300 J	ND	ND
Fluorene	200	400	150	400	2200	ND	ND	ND
2,4-Dinitrotoluene	300	400	120	500	ND	ND	ND	ND
Pyrene	ND (2)	900	ND	200	ND	ND	ND	ND
4-Nitrophenol	200	500	100	200	ND	ND	ND	2500
Acenaphthene	ND	ND	50	ND	ND	ND	ND	ND
Chrysene	ND	400	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	ND	400	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	100	ND	ND	ND	ND	ND	ND
4-Chloroaniline	400	100	ND	500	3400	ND	ND	ND
O-Nitrotoluene	600	ND	30	ND	ND	ND	ND	4100
M-Nitrotoluene	400	100	ND	ND	ND	ND	ND	ND
Nitrobenzene	ND	100	130	ND	4400	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	60	200	ND	ND	ND	ND
Fluoranthene	ND	100	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	600	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	2000	ND	ND	ND
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND
Isophorone	ND	ND	1980	ND	1300	ND	ND	ND
4,6-Dinitro-2-methylphenol	ND	ND	60	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	ND	100	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND
Total	14100	12700	7260	35400	149600	21300 J	112000	32500
NON-TARGET COMPOUNDS								
Total	223000	72500	50280	228300	2275000	1211600	1707000	619100

NOTES:

(1) - samples suffixed with "-2" collected in July 1990.

(2) - not detected.

(3) - value is estimated because compound is present < CRQL.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 12

SELECTED METALS ANALYSIS
FROM UNIQUE SOIL SAMPLES IN AREA "D"

Parameter	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	44.4*N	13.8*N	4.6*N	8.7*N	0.2U*N	8.2*N	6.4*N	1.8U
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	951*N	422*N	79.6*N	202*N	1.28*N	251*N	72*N	68.8
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	887N	683N	68.3N	168N	11.1N	236N	97.9N	45.7
Arsenic	169	95.5	13.6	51.0	4.4	58.4	21.7	24.9*NS
Lead	1500N	913N	54.9N	287N	6.0N	65.9N	202N	62.2

Parameter	B-9	B-10	B-11	B-12	B-13	B-14	B-15	B-16
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Silver	0.56U	6.3U	1.3B	0.7U	5.1U	0.6U	10.3	1.2
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	2.1B	119	122	22.6	216	81.1	7.18	71.8
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	11.2B*NS	22.0	21.7	11.1	55.6	14.1*NS	10.3B*NS	13.8
Lead	5.9	201	190	34.8	516	100	134	132

Table 12 Continued . . .

Parameter	B-17	B-18	B-19	B-20	B-21	B-22	B-23	B-24
Mercury	NA	NA	NA	NA	0.09N	NA	NA	NA
Silver	4.9U	0.9B	27.8	1.9	0.6U	18.0	16.5	0.8B
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	5.2	NA	NA	NA
Copper	55.7	154	64.4	165	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	5.4	NA	NA	NA
Zinc	63.5	150	124	158	NA	NA	NA	NA
Arsenic	23.8*NS	25.2*NS	13.0	19.1	10.9	10.1	17.2*NS	11.0
Lead	139	217	152	290	76.7	141	197	308

NOTES:

NA - Not analyzed
U - Undetected at <IDL
W - Analytical spike recovery out of range
B - Undetected, <CRQL but >IDL
E - Matrix interference
N - Matrix spike out of acceptable range
S - Performed by MSA
\+ - MSA correlation coefficient <.995
* - Digested duplicate out of 20% RPD
Units - (mg/kg) for all analytes

Area E

Area E is the eastern side of the refinery transportation center. Facilities in Area E were limited to storage tanks, truck loading/unloading racks, drum storage and a truck storage/maintenance area.

Soil samples from test pits distributed over the area showed widespread oil and grease contamination increasing in concentration toward the south. The VOC analysis showed widespread BTEX compounds in the southern part of the area. A soil sample collected adjacent to the former truck parking area contained 1.9% non-target VOCs (see Table 13).

A total of 11 SVOC analyses were run on samples collected in Area E, seven in Phase I sampling and four in Phase II, Table 14. Total SVOC ranged across the area from 17 ppm to 7.5%. A sample from a tar-like substance covering an area of several hundred square feet along the eastern side of the site contained 7.5% total SVOC. The concentrations of oil and grease in the area's soil are probably related to storage tank and pipe leaks.

Lead was the only metal found in Area E significantly above background values (see Table 15). The areas where lead was found in samples was limited to the two southern most transects, with the highest concentration of lead (13.9%) found adjacent to truck loading racks.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 13

VOLATILE ORGANIC COMPOUNDS IN SOIL SAMPLES - AREA "E"
(ug/kg)

COMPOUND	E-TP-4-2	E-TP-5-2	E-TP-6-2	E-TP-8-2	E-TP-20
Benzene	3,100	1,400	1,500 B	ND	19,600
Ethylbenzene	4,800	8,300	4,100	ND	33,600
Toluene	100	ND	ND	ND	ND
Xylenes	1,700	5,500	3,100	ND	ND
Total BTEX	9,700	15,200	8,700	ND	53,200
NON-TARGET COMPOUNDS					
Total	37,200	43,000	67,910	8,793	1,952,700

COMPOUND	E-TP-22	E-TP-27	E-TP-32
Benzene	15,700	11,900	36,800
Ethylbenzene	30,100	18,300	45,800
Toluene	ND	ND	13,400
Xylenes	119,900	15,200	196,000
Total BTEX	165,700	45,400	292,000
NON-TARGET COMPOUNDS			
Total	1,253,300	722,600	670,100

NOTES:
ND - not detected in sample.
J - Estimated concentration.
B - Detected in associated lab blank.

OLD BRICKLAND REFINERY SITE

SUNLAND PARK, NEW MEXICO

TABLE 14

SEMIVOLATILE ORGANICS IN SOIL SAMPLES - AREA "E"

(ug/kg)

SEMIVOLATILE ORGANICS	E-TP-9	E-TP-15	E-TP-21	E-TP-22	E-TP-25	E-TP-29	E-TP-31	E-TP-4-2 (1)	E-TP-5-2	E-TP-6-2	E-TP-8-2
TARGET COMPOUNDS											
Naphthalene	5900	32000	46000	ND	13000	2000	3400	41000	ND	14000	8000
2-Methylnaphthalene	29500	154000	150000	22000	41000	19000	10200	153000	ND	54000	32000
Phenanthrene	9600	ND	3000	12000	5000	27000	ND	ND	ND	ND	ND
Anthracene	ND (2)	ND	3000	2000	1000	5000	ND	ND	ND	ND	ND
Dibenzofuran	2400	ND	2000	1000	4000	1000	300	ND	ND	ND	ND
Fluorene	3700	ND	3000	2000	3000	5000	200	ND	ND	ND	ND
2,4-Dinitrotoluene	2000	ND	3000	3000	7000	ND	500	ND	ND	ND	ND
Pyrene	3900	ND	ND	11000	2000	18000	ND	ND	ND	ND	ND
4-Nitrophenol	4500	ND	ND	ND	1000	ND	500	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	1000	1000	1000	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	4000	ND	1000	ND	ND	ND	ND	ND
Benzo(a)anthracene	ND	ND	ND	3000	ND	1000	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	1000	ND	ND	ND	ND	ND	ND	ND
4-Chloroaniline	3100	8000	ND	ND	3000	ND	400	ND	ND	ND	ND
O-Nitrotoluene	2700	ND	ND	ND	ND	ND	900	ND	ND	ND	ND
M-Nitrotoluene	ND	4000	6000	ND	ND	ND	400	ND	ND	ND	ND
Nitrobenzene	ND	15000	11000	ND	1000	ND	900	ND	ND	ND	ND
N-Nitrosodiphenylamine	3800	ND	ND	ND	2000	4000	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND	2000	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	ND	ND	ND	1000	2000	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	3000	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	2300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isophorone	ND	5000	ND	ND	ND	ND	4200	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	1000	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	1000	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total	73400	218000	227000	65000	85000	90000	21900	194000	ND	68000	40000
NON-TARGET COMPOUNDS											
Total	1016100	1375000	7592000	2293000	932000	962000	217700	2492000	17260	904000	1086000

NOTES:

(1) - samples suffixed with "-2" collected in July 1990.

(2) - not detected.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 15

SELECTED METALS ANALYSIS
FROM UNIQUE SOIL SAMPLES IN AREA "E"

Parameter	E-TP-9	E-TP-10	E-TP-11	E-TP-12	E-TP-13	E-TP-14	E-TP-15	E-TP-16
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	13.2	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	17.3	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	23.0*NS	33.8*NS	14.0	20.6*NS	10.6B*NW	5.6B*NW	7.7B*NW	9.6B*NS
Lead	NA	NA	NA	NA	NA	NA	NA	NA

Parameter	E-TP-17	E-TP-18	E-TP-19	E-TP-20	E-TP-21	E-TP-21	E-TP-22	E-TP-23
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	4.2	NA	NA	NA
Cadmium	NA	NA	NA	NA	0.2U	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA

Parameter	E-TP-25	E-TP-26	E-TP-27	E-TP-28	E-TP-29	E-TP-30	E-TP-31	E-TP-32
Mercury	0.15N	0.16N	0.76N	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	5.2	NA	NA	NA
Copper	39.1	218	26.9	144*N	53.9*N	71.5*N	9.6B*N	123*N
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	69.8	50.6	48.4	NA	NA	NA	NA	NA
Arsenic	9.0B*NS	33.2*NS	5.4B*N	NA	NA	NA	NA	NA
Lead	93.5	139000	71.5	160*	88.4*	184*	29.5*	686

Table 15 Continued . . .

Parameter	E-SS-4	E-SS-5
Mercury	<0.02	<0.02
Silver	NA	NA
Cadmium	NA	NA
Chromium	75	55
Copper	190	300
Nickel	22	18
Zinc	NA	NA
Arsenic	NA	NA
Lead	1000	1100

NOTES:

NA - Not analyzed
U - Undetected at <IDL
W - Analytical spike recovery out of range
B - Undetected, <CRQL but >IDL
E - Matrix interference
N - Matrix spike out of acceptable range
S - Performed by MSA
\+ - MSA correlation coefficient <.995
* - Digested duplicate out of 20% RPD
Units - (mg/kg) for all analytes

Area F

The refinery production equipment was located in Area F. Data on soil contamination is related to the location of various refinery operations.

The VOC, SVOC and unique metals results are shown in Tables 16, 17 and 18. There was widespread oil and grease in soils with lowest concentrations generally found in the cooling water pond area and highest values located between two former horizontal tanks. What appears to be gasoline is in the northwestern side of the area (indicated by high BTEX concentrations) while the soil contamination tending across the site from the northeastern corner to the southwestern corner of the area was high SVOC related to crude and intermediates from leaking tanks and pipes on either side of the cooling ponds. The highest concentrations of gasoline (BTEX compounds) were found on the northwestern corner of the site adjacent the retain gas operation and in the area of the thermal cracker.

Three metals were distributed across the area at concentrations significantly over background. A total of 5 copper samples were above background in surface soil samples collected in this area. Copper concentration ranging from 2300 to 34,000 ppm were found in surface soil samples collected adjacent to the copper treatment area. Eight zinc samples were above site related background values and ranged between 252 and 2370 ppm. Lead concentrations in soil generally ranged from 1,090 ppm to 37.7%. Other than the samples analyzed as 37.7% lead, the remaining samples were all below 5,000 ppm. The presence of cadmium at low levels but above background in soils near the cooling water ponds was also noted.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 16

VOLATILE ORGANIC COMPOUNDS IN SOIL SAMPLES - AREA "F"
(ug/kg)

COMPOUND	F-TP-9-2	F-TP-10-2	F-TP-34	F-TP-38	F-TP-42
Benzene	35,600	18,700	6,500	498,600	1,600
Ethylbenzene	111,400	92,700	18,100	3,800	5,600
Toluene	ND	ND	1,900	5,200	400
Xylenes	2,600	120,200	20,100	ND	7,000
Total BTEX	149,600	231,600	46,600	507,600	14,600
NON-TARGET COMPOUNDS					
Total	1,080,000	167,500	150,100	1,665,000	81,600

COMPOUND	F-TP-45	F-TP-48	F-TP-61	F-TP-91
Benzene	26,700	76,900	16,000	ND
Ethylbenzene	159,900	157,800	2,500	ND
Toluene	300	174,900	ND	ND
Xylenes	16,300	944,000	1,800	ND
Total BTEX	203,200	410,900	20,300	ND
NON-TARGET COMPOUNDS				
Total	260,700	5,438,600	416,300	ND

NOTES:
ND - Not detected in sample.
J - Estimated concentration.
B - Detected in associated lab blank.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 17

SEMIVOLATILE ORGANICS IN SOIL SAMPLES - AREA "F"
(ug/kg)

SEMIVOLATILE ORGANICS	F-TP-39	F-TP-40	F-TP-48	F-TP-50	F-TP-58	F-TP-9-2 (1)	F-TP-10-2
TARGET COMPOUNDS							
Naphthalene	15800	17700	15700	6500	9100	1100	53900
2-Methylnaphthalene	113900	60400	27700	59600	17800	3600	73700
Phenanthrene	10000	1800	22000	10000	4700	140	ND
Anthracene	9900	1700	3400	1500	800	ND	ND
Dibenzofuran	6700	1100	ND	2400	1400	ND	ND
Fluorene	8000	1300	4100	4700	2100	120	ND
2,4-Dinitrotoluene	7800	1400	1800	3000	2500	ND	ND
Pyrene	1600	500	6400	2300	2800	ND	ND
4-Nitrophenol	4900	1200	ND	5200	400	ND	ND
Acenaphthene	4800	500	ND	3400	500	ND	ND
Chrysene	ND (2)	ND	ND	ND	500	ND	ND
Benzo(a)anthracene	ND	ND	ND	ND	500	ND	ND
Acenaphthylene	2300	500	ND	1500	ND	ND	ND
4-Chloroaniline	ND	ND	ND	ND	500	ND	ND
O-Nitrotoluene	4100	ND	2000	ND	ND	ND	ND
M-Nitrotoluene	ND	2000	ND	ND	1000	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	ND	800	5300	ND	2100	ND	ND
Fluoranthene	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	1900	ND	ND	ND	ND
2,4-Dinitrophenol	ND	ND	ND	ND	600	ND	ND
Isophorone	ND	2600	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	ND	ND	ND	ND	600	ND	ND
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND
Total	189800	93500	90300	100100	47900	4960	127600
NON-TARGET COMPOUNDS							
Total	2669300	768400	730500	872000	542000	35870	2747400

NOTES:

(1) - samples suffixed with "-2" collected in July 1990.

(2) - not detected.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 18

SELECTED METALS ANALYSIS
FROM UNIQUE SOIL SAMPLES IN AREA "F"

Parameter	F-TP-33	F-TP-34	F-TP-35	F-TP-36	F-TP-37	F-TP-38	F-TP-39	F-TP-40
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	13.2	NA
Copper	163*N	233*N	585*N	162*N	172*N	33.1*N	270*N	132*N
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	130	158	252	140	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA
Lead	180*	377000*	4860*	2470*	1090*	32.8*	890*	899*

Parameter	F-TP-41	F-TP-42	F-TP-43	F-TP-44	F-TP-45	F-TP-46	F-TP-47	F-TP-48
Mercury	0.06UN	1.9N	0.06UN	0.05UN	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	8.1	0.9B
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	45.4	34.3
Copper	310*N	247	174*N	9.2*N	61.5*N	72*N	647*N	422*N
Nickel	NA	NA	NA	NA	NA	NA	41.4	39.6
Zinc	NA	NA	NA	NA	376	115	1710	277
Arsenic	NA	NA	NA	NA	NA	NA	35.3	NA
Lead	1340	1400	764*	8.2*	268*	564*	628*	450*

Parameter	F-TP-49	F-TP-50	F-TP-55	F-TP-56	F-TP-57	F-TP-58	F-TP-59	F-TP-60
Mercury	NA	NA	NA	NA	NA	NA	0.26N	2.8N
Silver	6.1	7.5	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	25.4	17.4
Chromium	22.6	47.2	NA	NA	NA	NA	NA	NA
Copper	126*N	390*N	238N	763N	20.8N	153N	2230N	572N
Nickel	42.9	19.2	NA	NA	NA	NA	NA	NA
Zinc[1]	845	525	NA	NA	NA	NA	2370	1380
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA
Lead	488*	676*	NA	NA	NA	NA	NA	NA

Table 18 Continued . . .

Parameter	F-TP-61	F-TP-62	B-27	B-28	F-SS-1	F-SS-2	F-SS-3	F-SS-6	F-TP-91
Mercury	0.06UN	0.26N	NA	NA	8.0	10	3.7	0.1	0.03
Silver	NA	NA	NA	NA	NA	NA	NA	NA	0.45
Cadmium	1.3	10.2	NA	NA	NA	NA	NA	NA	0.85
Chromium	NA	NA	NA	NA	18	28	8.0	8.0	4.7
Copper	52.9	349N	255	206	34000	2300	4700	120	6.5
Nickel	NA	NA	NA	NA	20	13	13	8.0	7.0
Zinc	72.9	358	454	103	NA	NA	NA	NA	23
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	ND
Lead	95.5	718	547	333	320	1100	300	260	17

NOTES:

ND - Not detected
NA - Not analyzed
U - Undetected at <IDL
W - Analytical spike recovery out of range
B - Undetected, <CRQL but >IDL
E - Matrix interference
N - Matrix spike out of acceptable range
S - Performed by MSA
\+ - MSA correlation coefficient <.995
* - Digested duplicate out of 20% RPD
Units - (mg/kg) for all analytes

Area G

Area G is the southernmost area of the site and historical information shows a number of impoundments and tanks. These structures show clearly in aerial photographs but have been covered by sand dredged from the Rio Grande by the U.S. Army Corps of Engineers.

Soil samples from test pits dug in Area G contained moderate to high concentrations of both VOCs and SVOCs (Tables 19 and 20). This indicates contamination by both gasoline-related hydrocarbons and the heavier, oily hydrocarbons which would be present as residuals in wastewater, etc. The highest SVOC concentrations were found on the north side of Area G and near the southeastern corner. The remainder of this area appears to have relatively low degrees of VOC and SVOC contamination which may reflect the previous use of the site for cooling water ponds which would not have been a major source of hydrocarbons.

Heavy metal concentrations in soil (see Table 21), primarily lead and copper did not correlate closely with the highest VOC results in soil and some of the highest SVOC samples had relatively insignificant metals concentrations. Several of the surface soil samples contained relatively high lead and copper concentrations (G-SS-7 and G-SS-8), this may be related to biased sampling of areas of obvious visual contamination were found.

Ground-water chemistry data and the presence of a gasoline-like phase near well MW-11 indicate a localized BTX dissolved phase in the northwestern corner of the area. Downgradient wells MW-10 and the MW-9S/D cluster did not appear to have been affected by this BTX source. It is possible that the age of the source and/or geologic factors have limited the downgradient migration of VOCs from this source.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 19

VOLATILE ORGANIC COMPOUNDS IN SOIL SAMPLES - AREA "G"
(ug/kg)

COMPOUND	G-TP-11-2	G-TP-12-2	G-TP-13-2	G-TP-14-2	G-TP-15-2
Benzene	42	54,000	ND	ND	49
Ethylbenzene	316	79,000	ND	ND	63
Toluene	32	ND	ND	ND	ND
Xylenes	347	120,000	ND	ND	94
Total BTEX	737	253,000	ND	ND	206
NON-TARGET COMPOUNDS					
Total	14,700	167,500	ND	11,506	11,365

COMPOUND	G-TP-16-2	G-TP-68	G-TP-70	G-TP-77	G-TP-80
Benzene	34	200	1,900	500	ND
Ethylbenzene	140	ND	10,800	3,200	300
Toluene	ND	ND	8,900	200	ND
Xylenes	290	ND	21,000	8,000	700
Total BTEX	464	200	42,600	11,900	1,000
NON-TARGET COMPOUNDS					
Total	1,155	455,200	43,000	136,400	17,700

COMPOUND	H-TP-81
Benzene	7,500
Ethylbenzene	45,300
Toluene	16,000
Xylenes	77,600
Total BTEX	146,400
NON-TARGET COMPOUNDS	
Total	439,100

NOTES:
ND - Not detected in sample.
J - Estimated concentration.
B - Detected in associated lab blank.
H-TP-81 sample was collected in area "G", but noted as "H".

OLD BRICKLAND REFINERY SITE

SUNLAND PARK, NEW MEXICO

TABLE 20

SEMIVOLATILE ORGANICS IN SOIL SAMPLES - AREA "G"

(ug/kg)

SEMIVOLATILE ORGANICS	G-TP-66	G-TP-68	G-TP-68-1 (5)	G-TP-80 (3)	G-TP-11-2 (1)	G-TP-12-2
TARGET COMPOUNDS						
Naphthalene	14000	4000	11000	ND	6500 J (3)	11140
2-Methylnaphthalene	40000	16400	41000	ND	19900 J	17800
Phenanthrene	12800	11800	8000	ND	11800	1170 J
Anthracene	2400	2000	1000	ND	3300 J	200 J
Dibenzofuran	3700	1000	4000	ND	ND	530 J
Fluorene	5800	3400	4000	ND	4700 J	600 J
2,4-Dinitrotoluene	ND (2)	5400	6000	ND	ND	ND
Pyrene	5200	6300	2000	ND	6400 J	430 J
4-Nitrophenol	600	1000	1000	ND	ND	ND
Acenaphthene	1700	1000	1000	ND	ND	ND
Chrysene	1100	1900	800	ND	ND	ND
Benzo(a)anthracene	900	1900	800	ND	ND	ND
Acenaphthylene	1000	400	ND	ND	ND	ND
4-Chloroaniline	800	ND	1000	ND	ND	ND
O-Nitrotoluene	ND	500	2000	ND	ND	ND
M-Nitrotoluene	1000	ND	4000	ND	ND	ND
Nitrobenzene	ND	1500	1000	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND
Fluoranthene	600	700	ND	ND	ND	ND
Benzo(a)pyrene	ND	1200	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	800	1200	900	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	500	5700	ND	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	ND	500	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	2200	6000	ND	ND	ND
Total	92900	70000	95500	ND	52600	31870
NON-TARGET COMPOUNDS						
Total	953300	1305000	1286900	792000	1262500	219440

NOTES:

(1) - samples suffixed with "-2" collected in July 1990.

(2) - not detected.

(3) - value is estimated if compound is present < CRQL.

(4) - sample was collected in area "G", but noted as "H".

(5) - samples G-TP-68 and G-TP-68-1 were collected at different depths.

TABLE 20 CONTINUED...

SEMIVOLATILE ORGANICS	G-TP-14-2	G-TP-15-2	G-TP-16-2	MW-10-SS-06	MW-11-SS-10	H-TP-81 (4)
TARGET COMPOUNDS						
Naphthalene	ND	ND	27900	4000	1000	18000
2-Methylnaphthalene	ND	12000	35100	19200	3100	78000
Phenanthrene	ND	2000	1700	6100	4600	19000
Anthracene	ND	ND	200	1000	1000	19000
Dibenzofuran	1700 J	ND	1000	2000	1100	6000
Fluorene	600 J	2000	1000	2800	1900	9000
2,4-Dinitrotoluene	ND	ND	ND	2900	1900	9000
Pyrene	1400 J	ND	700	4400	2300	11000
4-Nitrophenol	ND	ND	ND	800	600	ND
Acenaphthene	ND	ND	300	700	600	ND
Chrysene	600 J	ND	ND	1300	400	ND
Benzo(a)anthracene	ND	ND	ND	ND	400	ND
Acenaphthylene	ND	ND	ND	500	300	ND
4-Chloroaniline	ND	ND	ND	ND	ND	ND
O-Nitrotoluene	ND	ND	ND	400	ND	ND
M-Nitrotoluene	ND	ND	ND	500	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	7000
Fluoranthene	ND	ND	ND	ND	300	ND
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	2700	500	9000
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND	400	ND	ND
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	2600	1200	ND
Total	4300 J	16000	67900	52300	21200	185000
NON-TARGET COMPOUNDS						
Total	645000	2253000	331800	473600	201700	3979000

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 21

SELECTED METALS ANALYSIS
FROM UNIQUE SOIL SAMPLES IN AREA "G"

Parameter	G-TP-66	G-TP-67	G-TP-68	G-TP-69	G-TP-70	G-TP-71	G-TP-72	G-TP-73
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	36.7	3.3	0.4B	1.5	NA	NA	NA	NA
Chromium	20.0	16.4	16.3	14.2	97.0	16.7B	17.6	17.6
Copper	992N	101N	7.1N	38.8N	20100*N	18900*N	412*N	17.6*N
Nickel	14.5	9.9	9.2	8.2	41.2	13U	10.4	12.5
Zinc	985	671	33.7	80.9	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1260	336	19.6	78.3	34900N	18600N	1700N	29.9N

Parameter	G-TP-74	G-TP-75	G-TP-76	G-TP-77	G-TP-78	G-TP-79	G-TP-80	H-TP-81
Mercury	NA	NA	NA	0.06UN	NA	NA	NA	NA
Silver	NA	NA	NA	2.5	NA	NA	NA	NA
Cadmium	2U	24.1	1.5	0.3B*N	NA	NA	NA	NA
Chromium	NA	NA	NA	16.9	18.3	16.9	13.7	NA
Copper	19.6B*N	693*N	199*N	13.0*N	NA	NA	NA	NA
Nickel	23.5B	9.1	NA	7.7	NA	NA	NA	NA
Zinc	NA	NA	79.2N	41.3N	NA	NA	NA	NA
Arsenic	NA	NA	NA	29.9*NS	NA	NA	NA	NA
Lead	14.5N	1200N	2090N	18.4N	NA	NA	NA	NA

Parameter	H-TP-82	G-SS-7	G-SS-8	G-SS-9
Mercury	NA	0.03	0.15	0.09
Silver	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA
Chromium	NA	9.5	7.0	89.5
Copper	NA	3100	2000	800
Nickel	NA	16	12	8.5
Zinc	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA
Lead	NA	3800	24000	800

Table 21 Continued . . .

NOTES:

NA - Not analyzed
U - Undetected at <IDL
W - Analytical spike recovery out of range
B - Undetected, <CRQL but >IDL
E - Matrix interference
N - Matrix spike out of acceptable range
S - Performed by MSA
\+ - MSA correlation coefficient <.995
* - Digested duplicate out of 20% RPD
Units - (mg/kg) for all analytes

Soil samples collected from the culvert of the southernmost storm-water outfall (CUL-4-1) contained SVOCs which are related to petroleum. The SVOC concentrations, however, were considerably lower than those reported for on-site soils in Area G.

Off-Site Soil Samples

Off-site soil samples were collected from four stormwater outfalls between the site and the Rio Grande and from two off-site soil borings. The outfall metal samples were collected from approximately two to eight inches below the surface, while the SVOC samples were collected from stained soils encountered at depths ranging from 12 to 72 inches, at the direction of EID. The analytical results for SVOCs are presented in Table 22. Samples collected adjacent to the site contained total TCL and non-target SVOCs ranging between 1 and 39 ppm. Culvert 4-1 showed the highest value, it drains the northern end of the site along with runoff from an auto salvage yard north of the site. The results alone do not clearly reflect conditions at each outfall; sample CUL 3-1 was collected at 72 inches below grade, while sample CUL 1-1 was collected at 12 inches below grade. Samples were collected at the first depth where visible staining was encountered which is biased method and does not allow comparison of results between various samples. It would appear that surface run off from the site washed through these outfalls. Two off-site soil borings were sampled for VOCs shown in Table 23. The results indicate VOC contaminated soil at six feet below grade in MW-6.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 22

SEMIVOLATILE ORGANICS IN SOIL SAMPLES - OFF-SITE STORMWATER OUTFALLS
(ug/kg)

SEMIVOLATILE ORGANICS	CUL-1-1	CUL-1-2	CUL-2-1	CUL-3-1	CUL-3-2	CUL-4-1
TARGET COMPOUNDS						
Naphthalene	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	200	ND	ND	50	670
Anthracene	ND	200	ND	ND	50	670
Dibenzofuran	ND	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND
Pyrene	ND	300	ND	ND	110	ND
4-Nitrophenol	ND	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND	ND
Chrysene	ND	1000	ND	ND	200	520
Benzo(a)anthracene	ND	700	ND	ND	80	500
Acenaphthylene	ND	ND	ND	ND	ND	ND
4-Chloroaniline	ND	ND	ND	ND	ND	ND
O-Nitrotoluene	ND	ND	ND	ND	ND	ND
M-Nitrotoluene	ND	ND	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	70	1220
Benzo(a)pyrene	ND	900	ND	ND	90	250
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	ND	800	ND	ND	190	ND
Benzo(g,h,i)perylene	ND	500	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND
Total	ND	4600	ND	ND	840	3830
NON-TARGET COMPOUNDS						
Total	35000	30000	30080	1030	25800	38770

NOTE:

ND - not detected.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 23

VOLATILE ORGANIC COMPOUNDS IN SOIL SAMPLES
OFF-SITE BORING SAMPLES - UNITS (UG/KG)

Compound	MW-3-SS-06	MW-6-SS-06
Benzene	ND	ND
Ethylbenzene	ND	1,200
Toluene	ND	ND
Xylenes	ND	7,700
Non-Target Total BTEX Compounds	ND	8,900
Total	ND	63,700

NOTES:

ND - Not detected

IV. WATER DATA PRESENTATION

In general, the occurrence of groundwater contamination relates to the presence of soil contamination above or hydraulically upgradient of the affected monitoring wells. Furthermore, the incidence of the three classes of contaminants found in the soil and groundwater (VOCs, SVOCs and metals) relates to mobility. The VOCs are the most mobile of the three classes followed by certain of the SVOCs and lastly by the heavy metals, which were virtually absent in the ground water. The analytical results indicate that large areas of the site, mainly in the northern part do not seem to be affected by significant ground-water contamination. The analytical results for monitoring well and surface water sampling are shown in Tables 24, 25 and 26.

Groundwater Chemistry

The northern part of the site, areas A, B, C and most of E appear to be free of VOCs in ground water which is consistent with a general lack of VOCs in the soil, and the apparently limited use by the refinery of land in these areas.

Area D near monitoring well MW-5 shows high concentrations of VOCs, chiefly Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) in ground water which may be related to former gasoline pumps in this area. Moderate to high concentrations of the same VOCs were found in soils and ground water at MW-4 hydraulically downgradient of the MW-5 vicinity. The source of these VOCs is believed to be gasoline which may have been spilled near MW-5 and which was observed as a floating phase near the western border of Area D.

Area F has high ground-water concentrations of VOCs (mainly BTEX) at well MW-8. High VOC concentrations were also found in

OLD BRICKLAND REFINERY SITE

SUNLAND PARK, NEW MEXICO

TABLE 24

VOLATILE ORGANICS IN WATER SAMPLES

(ug/l)

COMPOUND	MW-1	MW-2	MW-3D	MW-3S	MW-4	MW-5	MW-6S	MW-6SD	MW-6D
Benzene	ND/ND	ND/ND	ND/ND	ND/ND	1,600/614	11,000/15,000	340/370	-/440	2/ND
Ethylbenzene	ND/ND	ND/ND	ND/ND	ND/ND	ND/93	900/1,100	ND/110	-/45.3	1/ND
Toluene	ND/ND	ND/ND	3/ND	ND/ND	10/10J	600/630	20/19J	-/25J	ND/ND
Xylenes	ND/ND	ND/ND	7/ND	ND/ND	80/26	1,200/1,500	1,570/1,600	-/1,800	ND/ND
Total BTEX	ND/ND	ND/ND	10/ND	ND/ND	1,690/743	13,700/18,230	1,930/2,099	-/2,310	3/ND
NON-TARGET COMPOUNDS									
Total	ND/ND	ND/ND	ND/ND	ND/ND	634/105	860/ND	3,820/1,270	-/1,310	ND/ND

COMPOUND	MW-7	MW-8	MW-9S	MW-9SD	MW-9D	MW-10	MW-11	MW-12	MW-13
Benzene	ND/380	26,100/18,000	ND/ND	ND/-	21/17	13/44	2,800/840D	ND/ND	ND/ND
Ethylbenzene	ND/3	ND/1,500	ND/ND	ND/-	7/6	6/12	ND/ND	ND/ND	ND/ND
Toluene	ND/3	1,700/2,600	ND/ND	ND/-	20/19	4/14	4/2	ND/ND	ND/ND
Xylenes	2/12	5,400/7,900	ND/ND	ND/-	46/55	28/150	5/8J	ND/ND	ND/ND
Total BTEX	2/398	33,200/12,180	ND/ND	ND/-	94/97	51/220	2,809/850	ND/ND	ND/ND
NON-TARGET COMPOUNDS									
Total	57/154	340/1,900J	ND/ND	ND/-	16/ND	12/110	215/198	9/ND	ND/ND

COMPOUND	CISTERN	RG-MS	RG-DS	RG-US	RG-US
Benzene	ND/-	ND/ND	ND/ND	ND/ND	ND/ND
Ethylbenzene	ND/-	ND/ND	ND/ND	ND/ND	ND/ND
Toluene	ND/-	ND/ND	ND/ND	ND/ND	ND/ND
Xylenes	ND/-	ND/ND	ND/ND	ND/ND	ND/ND
Total BTEX	ND/-	ND/ND	ND/ND	ND/ND	ND/ND
NON-TARGET COMPOUNDS					
Total	ND/-	ND/ND	ND/ND	ND/ND	ND/ND

NOTES:

ND - Not detected.

First round/Second round.

The cistern was only sampled once.

SD - shallow well duplicate sample.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 25

SEMIVOLATILE ORGANICS IN WATER SAMPLES
(ug/l)

COMPOUND	MW-1	MW-2	MW-3D	MW-3S	MW-4	MW-5	MW-6S	MW-6SD	MW-6D
2-Methylnaphtalene	ND/ND	ND/ND	ND/ND	ND/ND	95/59	43/58	22/252	-/27J	ND/ND
Naphtalene	ND/ND	ND/ND	ND/ND	ND/ND	105/52	85/120	46/100J	-/12J	ND/ND
2,4-Dimethylphenol	ND/ND	ND/ND	ND/ND	ND/ND	11/3J	10/8J	340/540	-/590	ND/ND
Fluorene	ND/ND	ND/ND	ND/ND	ND/ND	ND/1J	ND/ND	ND/150J	-/ND	ND/ND
Phenanthrene	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	ND/487	-/ND	ND/ND
Phenol	ND/ND	ND/ND	ND/ND	ND/ND	36/ND	74/ND	ND/ND	-/ND	ND/ND
bis(2-chloroisopryl)ether	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	1/ND	-/ND	ND/ND
2-Methylphenol	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	13/ND	ND/ND	-/ND	ND/ND
4-Methylphenol	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	13/12J	ND/ND	-/ND	ND/ND
Anthracene	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	ND/75J	-/ND	ND/ND
Total	ND/ND	ND/ND	ND/ND	ND/ND	247/115	238/198	409/1,604	-/629	ND/ND
NON-TARGET COMPOUNDS									
Total	8/1	62/78	95/38	ND/7	1,807/716	4,213/9,222	1,560/19,940	-/6,500	61/137

COMPOUND	MW-7	MW-8	MW-9S	MW-9SD	MW-9D	MW-10	MW-11	MW-12	MW-13
2-Methylnaphtalene	ND/ND	55/133	ND/ND	ND/-	ND/2J	ND/5J	13/ND	ND/ND	ND/ND
Naphtalene	ND/ND	151/208	ND/ND	ND/-	ND/2J	ND/2J	ND/ND	ND/ND	ND/ND
2,4-Dimethylphenol	ND/ND	286/98	ND/ND	ND/-	ND/ND	ND/4J	ND/ND	ND/ND	ND/ND
Fluorene	2/2J	3/2J	ND/ND	ND/-	ND/ND	ND/3J	ND/ND	ND/ND	ND/ND
Phenanthrene	1/2J	3/5J	ND/ND	ND/-	ND/ND	ND/10	ND/ND	ND/ND	ND/ND
Phenol	ND/ND	164/108	ND/ND	ND/-	ND/ND	ND/ND	52/ND	ND/ND	ND/ND
bis(2-chloroisopryl)ether	ND/ND	ND/ND	ND/ND	ND/-	7/ND	ND/ND	ND/ND	ND/ND	ND/ND
2-Methylphenol	ND/ND	122/106	ND/ND	ND/-	1/2J	ND/ND	ND/ND	ND/ND	ND/ND
4-Methylphenol	ND/ND	41/ND	ND/ND	ND/-	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND
Anthracene	1/ND	3/ND	ND/ND	ND/-	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND
Total	4/4	828/660	ND/ND	ND/-	8/6	ND/24	65/ND	ND/ND	ND/ND
NON-TARGET COMPOUNDS									
Total	1,210/477	4,166/11,490	35/15.2	47/-	661/787	375/774	1,784/2,416	61/103	25/59

COMPOUND	CISTERN	RG-MS	RG-DS	RG-US
2-Methylnaphtalene	ND/-	ND/ND	ND/ND	ND/ND
Naphtalene	ND/-	ND/ND	ND/ND	ND/ND
2,4-Dimethylphenol	ND/-	ND/ND	ND/ND	ND/ND
Fluorene	ND/-	ND/ND	ND/ND	ND/ND
Phenanthrene	ND/-	ND/ND	ND/ND	ND/ND
Phenol	ND/-	ND/ND	ND/ND	ND/ND
bis(2-chloroisopryl)ether	ND/-	ND/ND	ND/ND	ND/ND
2-Methylphenol	ND/-	ND/ND	ND/ND	ND/ND
4-Methylphenol	ND/-	ND/ND	ND/ND	ND/ND
Anthracene	ND/-	ND/ND	ND/ND	ND/ND
Total	ND/-	ND/ND	ND/ND	ND/ND
NON-TARGET COMPOUNDS				
Total	186/-	ND/ND	ND/ND	ND/ND

NOTES:
ND - Not detected.
First round/Second round.
The cistern was only sampled once.
SD - shallow well duplicate sample.

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

TABLE 26

METALS AND MAJOR CATIONS AND ANIONS IN WATER SAMPLES
UNITS (ug/L)

Ions / Samples	As	Se	Hg	Ag	Be	Ca	Cd	Cr	Cu	K
MW-1	22* 41	26U 26U	0.2U 0.2U	16 5U	4U 4U	79,000 92,900	4U 2B	4U 4U	4 4B	4,800 3,000U
MW-2	7.7BW* 2U	26U 5U	0.2U 0.2U	5U 5U	4U 4U	1,000,000 1,160,000	1.6U 16U	4U 40U	2U 45B	35,000 30,000U
MW-3D	2U* 2U	26U 5U	0.2U 0.2U	5U 50	4U 6B	370,000 470,000	1.6U 16U	4U 40U	2U 35B	18,000 30,000U
MW-3S	2U* 25	26U 5U	0.2U 0.2U	32 5U	4U 4U	180,000 104,000	8 2B	4U 4U	11 8B	12,000 3,000U
MW-4	23* 2U	26U 5U	0.2U 0.2U	15 50U	4U 4U	300,000 593,000	1.6U 17B	4U 40U	2U 40U	29,000 30,000U
MW-5	57* 11	26U 5U	0.2U 0.2U	5U 73B	4U 4B	490,000 570,000	1.6U 16U	4U 40U	2U 28B	18,000 30,000U
MW-6S	44* 42	26U 5U	0.2U 0.2U	5 273	4U 4U	250,000 143,000	1.6U 16U	4U 40U	3 53B	14,000 30,000U
MW-6S-D	42	5U	0.2	223	4U	143,000	16U	40U	53B	30,000U
MW-6D	2U* 2U	26U 5U	0.2U 0.2U	5U 50U	4U 4U	410,000 490,000	1.6U 20B	4U 40U	2U 39B	18,000 30,000
MW-7	14* 6	26U 5U	0.2U 0.2U	25 193	4U 4B	270,000 278,000	1.6U 1.6U	4U 40U	2U 20U	14,000 30,000U
MW-8	100* 88	26U 5U	0.2U 0.2U	5U 101	4U 4	51,000 71,100	1.6U 16U	4U 40U	9 26B	11,000 30,000U

Table 26 (continued . . .)

Ions / Samples	As	Se	Hg	Ag	Be	Ca	Cd	Cr	Cu	K
MW-9S	4B* / 2U	26U / 5U	0.2U / 0.2U	15 / 5U	4U / 4	200,000 / 188,000	1.6U / 1.6U	4U / 4U	2 / 11B	8,600 / 30,000U
MW-9S-D	4.2BW*	26U	0.2U	10	4U	200,000	1.6U	4U	2U	9,100
MW-9D	2U* / 2U	26U / 5U	0.2U / 0.2U	15 / 50U	4U / 4B	450,000 / 504,000	1.6U / 16U	4U / 40U	2U / 55B	21,000 / 30,000U
MW-10	26* / 69	26U / 5U	0.2U / 0.2U	29 / 5U	4U / 0.4U	200,000 / 124,000	1.6U / 1.6U	4U / 4U	2U / 6B	11,000 / 3,000U
MW-11	38* / 81	26U / 5U	0.2U / 0.2U	41 / 5U	4U / 1B	100,000 / 107,000	1.6U / 2B	4U / 4U	7 / 20B	13,000 / 3,000U
MW-12	3.1B* / 2U	26U / 5U	0.2U / 0.2U	5U / 75B	4U / 4B	990,000 / 989,000	1.6U / 13U	4U / 40U	2U / 83	29,000 / 30,000U
MW-13	10* / 2U	26U / 5U	0.2U / 0.2U	5U / 50U	4U / 4U	890,000 / 865,000	1.6U / 16U	4U / 40U	2U / 43B	40,000 / 30,000U
RG-US	4.1* / 11	26U / 5U	0.2U / 0.2U	54 / 26	1 / 3B	83,000 / 157,000	2 / 1.6U	4U / 20	3 / 33	6,600 / 3,000U
RG-MS	3.2B / 15	26U / 5U	0.2U / 0.2U	42 / 30	2 / 3	85,000 / 160,000	4 / 1.6U	4U / 25	2U / 34	6,000 / 3,000U
RG-DS	4B* / 14	26U / 5U	0.2U / 0.2U	46 / 31	4U / 3B	110,000 / 159,000	4 / 1.6U	4U / 29	2U / 41	6,100 / 3,000U
CISTERN	16*	26U	0.2U	46	4U	110,000	2U	4U	2U	17,000

Table 26 (continued . . .)

Ions / Samples	Mg	Na	Ni	Pb	Sb	Tl	Zn	SO_4	Cl	HCO_3
MW-1	20,000 33,700	120,000 149,000	8U 8U	1U* 1U	22U 23B	13U 13U	16 28	120,000 100,000	97,000 94,000	320,000 380,000
MW-2	230,000 660,000	3,300,000 3,430,000	8U 80U	1U* 1U	45 220U	13U 1U	29 13U	2,600,000 2,500,000	6,500,000 6,800,000	610,000 610,000
MW-3D	170,000 321,000	3,400,000 3,120,000	8U 80U	1U* 1U	26 220U	13U 1U	35 13U	2,500,000 2,400,000	5,100,000 5,000,000	430,000 410,000
MW-3S	82,000 57,800	1,700,000 1,070,000	8U 8U	1U* 1U	22U 33B	13U 1U	53 1.3U	120,000 550,000	97,000 1,200,000	320,000 670,000
MW-4	200,000 390,000	2,500,000 2,370,000	8U 80U	1U* 1U	22U 220U	13U 1U	21 15B	240,000 1,300,000	4,500,000 4,300,000	1,300,000 760,000
MW-5	150,000 254,000	2,700,000 2,430,000	8U 80U	1U* 1U	28 220U	13U 1U	15 13U	870,000 1,000,000	4,200,000 4,400,000	1,600,000 1,900,000
MW-6S	69,000 88,600	1,300,000 1,250,000	8U 80U	1U* 1U	22U 220U	13U 1U	14 13B	410,000 130,000	1,400,000 1,500,000	1,300,000 1,900,000
MW-6S-D	88,600	1,250,000	80U	1U	220U	1U	13B	130,000	1,500,000	1,900,000
MW-6D	150,000 271,000	3,410,000 3,130,000	8U 80U	1U* 1U	23 220U	13U 1U	15 13U	2,400,000 2,500,000	5,000,000 4,900,000	410,000 550,000
MW-7	100,000 137,000	2,100,000 1,710,000	8U 80U	1U* 1U	22U 220U	13U 1U	22 13U	1,100,000 540,000	2,700,000 2,400,000	1,100,000 1,100,000
MW-8	40,000 58,300	1,800,000 1,520,000	21 80U	1U* 1U	22U 220U	13U 1U	35 28B	110,000 62,000	1,300,000 1,200,000	2,500,000 2,500,000

Table 26 (continued . . .)

Ions / Samples	Mg	Na	Ni	Pb	Sb	Tl	Zn	SO_4	Cl	HCO_3
MW-9S	69,000	1,200,000	8U	1U*	22U	13U	29	2,200,000	630,000	530,000
	81,500	1,170,000	8U	1U	34B	1U	1.3U	1,900,000	3,700,000	530,000
MW-9S-D	70,000	1,200,000	8U	1U*	22U	13U	12U	2,100,000	650,000	530,000
MW-9D	180,000	3,200,000	8U	1U*	31	13U	27	1,900,000	4,800,000	700,000
	331,000	2,950,000	80U	1U	220U	1U	13U	1,800,000	5,100,000	430,000
MW-10	67,000	230,000	8U	1U*	22U	13U	16	230,000	1,200,000	1,200,000
	70,700	951,000	8B	1U	22U	1U	1.3U	110,000	970,000	1,300,000
MW-11	71,000	190,000	26	1U*	22U	13U	30	79,000	820,000	1,700,000
	93,900	990,000	25B	1U	27B	1U	2B	91,000	850,000	1,600,000
MW-12	220,000	4,300,000	8U	1U*	22U	13U	31	2,400,000	7,900,000	610,000
	510,000	3,810,000	80U	1U	220U	1U	59B	2,300,000	8,200,000	510,000
MW-13	220,000	4,600,000	8U	1U*	44	13U	27	3,600,000	7,300,000	450,000
	527,000	4,590,000	80U	1U	220U	1U	13U	3,800,000	7,800,000	340,000
RG-US	18,000	1,100,000	8U	21U	22U	13U	81	240,000	110,000	200,000
	44,900	94,400	25B	21	30B	1U	82	180,000	68,000	230,000
RG-MS	19,000	120,000	8U	1U*	22U	13U	15	230,000	110,000	200,000
	49,200	97,700	33B	22	22U	1U	97	180,000	71,000	160,000
RG-DS	83,000	1,100,000	8U	1U*	22U	13U	80	240,000	110,000	200,000
	49,100	97,900	35U	22	36B	1U	100	180,000	74,000	180,000
CISTERN	24,000	250,000	8U	21U	22U	13U	29U	300,000	140,000	430,000

FOOTNOTES:

U = Undetected at < IDL
W = Analytical Spike Recovery Out of Range
B = Undetected, < CRDL but > IDL

* - Reanalysis by Furnace
22* - Round I (4/90)
41 - Round II (7/90)
Units - ug/L

well MW-6S which is downgradient of MW-8. High soil VOCs between MW-8 and MW-5 imply a single source, however, historical land use suggests that gasoline and related hydrocarbons may have been spilled or leaked at various points in this same area.

Monitoring well MW-11 in Area G, the southernmost area of the site showed moderately high benzene concentrations but other gasoline-related hydrocarbons were insignificant. This may be related to a different source material or to the age of the product. Monitoring well MW-10 which is in the center of Area G had relatively low VOC concentrations and further downgradient, well cluster MW9S/9D showed no VOCs in the shallow well but low concentrations in the deep well.

The relationship between VOCs and SVOCs in groundwater was not consistent in that SVOC concentrations were typically higher than the VOC concentrations in the majority of wells except for wells MW-5 and MW-8.

The occurrence of high SVOC and VOC concentrations together may be related to the increased solubility of SVOCs in the presence of high VOCs. In general, petroleum products which are chiefly composed of non-volatile or semi-volatile organics do not result in significant dissolved-phase organics in ground water. This is due to the relatively low solubility of SVOCs compared to VOCs. The presence of SVOCs in moderate concentrations but with low or negative VOCs as with MW-4 cannot be explained.

Groundwater analyses for dissolved metals were negative for the heavy metals of concern (lead, copper and chromium) and arsenic. The remaining common metals (calcium, sodium, potassium, and magnesium) were high in concentration but this reflects natural background in which these metals occur as salts, mainly chlorides, sulfates and carbonates. The lack of dissolved heavy metals is explained by the correlation of these metals with oily wastes and

soils which adsorb the metals and which isolate the metals from exposure to water. Furthermore, the natural high pH of the ground water greatly reduces the solubility of these heavy metals. Therefore, both the occurrence of the metals in soil and wastes and the chemistry of the ground water minimizes the aqueous mobility of heavy metals.

Surface Water

The Rio Grande River was sampled at the same time groundwater samples were collected and analyzed for similar parameters, shown on Tables 24, 25 and 26. The sampling locations are shown on Drawings 4 and 4A of Part I of this report. Samples were collected within the banks on the river in April of 1990 because of low flow conditions. No VOC or SVOC were recorded in either round of sampling. The metals and ion sampling did not indicate any compounds at levels of concern. The major ion levels indicated a water with high dissolved solids typical of surface waters in the southwestern United States.

V. CONCLUSIONS

1. The Old Brickland Refinery Phase I Site Investigation identified soil contamination by petroleum refinery wastes. The soil chemistry data identified volatile and semi-volatile organic compounds (VOCs and SVOCs) which are generally classified as petroleum hydrocarbons. The only heavy metals which were found in petroleum contaminated soils were lead and copper and the non-metallic metal, arsenic.

2. Both lead and copper were used in refinery production, however, the source of arsenic is unknown. Lead, arsenic and other metals may also be associated with the ASARCO smelting operation just south of the site. The distribution of arsenic and to some extent the other metals may have been affected by runoff which tends to concentrate surface dust and silt in low areas. Chromium was a suspected contaminant in association with the cooling towers but was only found within background concentrations. Mercury was detected in one soil collected by EID at 700 ppm in an earlier study; however it was not found at significant concentrations in this study and duplicate samples were collected at EID instructions in the vicinity of EID previous sampling.

3. A floating phase of petroleum hydrocarbons was found beneath certain areas of the site. The product appears to resemble gasoline along the western site boundary (MW-5 and MW-8) and oil along the eastern boundary of Area F. No petroleum product seeps into the Rio Grande were observed.

4. Ground-water samples contained dissolved VOCs and SVOCs beneath most of the southern part of the site. The

presence of VOCs and SVOCs correlated closely and the highest VOC/SVOC concentrations were found in close proximity to floating petroleum product and/or soil contamination.

5. Heavy metals results were negative for the groundwater samples collected from the monitoring wells. This indicates that the heavy metals detected in soil, mainly lead and copper, are bound to the soil and petroleum wastes in which they were detected and that they are not being leached by rainwater. The pH of the groundwater is high (alkaline) and the solubility of many heavy metals, including lead and copper would be negligible.

6. Surface water samples collected upstream, adjacent to and downstream of the site did not show any discernible difference in chemical quality for VOCs, SVOCs, Metals or other analyzed parameters.

7. Water-level maps prepared from the April 1990 and July 1990 measurements did not show major differences in the predominant southeast ground-water flow direction measured at low and high river stages respectively. Water levels in adjacent clustered wells did not reveal significant vertical head differences in the upper 35 feet of the aquifer.

8. Water chemistry data from the cluster wells show that VOC/SVOC concentrations are much lower at the 35 foot (deep well) depth than in the shallow zone. The well cluster MW9S/9D, however, showed both VOC and SVOC contamination in the deep zone only. These results suggest that the contamination is probably confined to the upper part of the aquifer but the depth of contamination cannot be determined on the basis of the

current data base.

9. While surface water data are limited, there does not appear to be a serious or imminent threat of a release to the Rio Grande. Although petroleum-contaminated soil is present at the well clusters between the levee and the river, only the dissolved hydrocarbon fraction appears to be capable of mobilizing to the river where it is subject to dilution.

APPENDIX A - BACKGROUND METALS CONCENTRATIONS

MEMORANDUM

TO: File # 604-9

FROM: Joe Heaney

DATE: 7/30/90

RE: Background Soil Metals levels at Old Brickland Refinery Site

Select soil samples were collected during the Phase I Site Investigation at the Old Brickland Refinery Site in order to determine background for 13 Priority Pollutant metals. The background samples were collected from Monitoring Well #12 (surface sample), two culverts adjacent to the site and, two composite samples collected on the western side of areas A and B. The attached table presents these values along with a range of detectable "background" values and typical background values reported by the USGS in the western conterminous United States. These values were used as background for our selection criteria for unique metals analysis.

EDER ASSOCIATES CONSULTING ENGINEERS, P.C.

#0051Z

OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

BACKGROUND SOIL METAL LEVELS

Parameter	Western US* USGS Range	Sampling Location CUL-4-1	CUL-3-1	CUL-3-2	MW-12	B-TP 83,84,85,86	A-TP 87,88,89,90	Site Background Range
Arsenic	<0.1-97	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4
Selenium	-	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Mercury	<0.01-4.6	0.04	<0.02	<0.02	0.11	0.06	<0.0002	<0.02-0.11
Silver	-	0.9	<0.25	<0.25	<0.25	1.2	0.85	<0.25-1.2
Beryllium	<1-13	0.9	0.7	1.6	2.2	2.1	1.6	0.9-2.2
Cadmium	-	4.2	0.9	2.3	5.5	2.0	2.6	0.9-5.5
Chromium	3-2,000	23	7.5	12	11	7.5	8.5	7.5-23
Copper	2-300	90	6	13	140	28	55	6-140
Nickel	<5-700	10	5	9.5	8.0	5.5	8.0	5-10
Lead	<10--700	75	6	8	270	6.5	42	6-270
Antimony	<1-2.6	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Thallium	2.4-31	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Zinc	<20-1,500	120	21	30	180	75	50	21-180

*Shaklette, H.T. Et.Al, Element Composition of Surfacial Material in the Conterminous United States, USGS Professional Paper 574-D, 1971.

APPENDIX B - UNIQUE METALS SELECTION CRITERIA MEMO

eder associates
consulting engineers, p. c.

July 25, 1990
File #604-9

Mr. Randy Merker
Superfund Section
New Mexico Health and
Environment Department
Harold Runnels Building
1190 St. Francis Drive
Santa Fe, New Mexico 87503

Re: Selection Criteria for Unique Metals Analysis
at Old Brickland Refinery Site,
Sunland Park, New Mexico

Dear Mr. Merker:

I am enclosing a file memo prepared by Viktor Raykin of EA detailing the selection criteria we intend to follow to analyze the unique samples collected during field work at Brickland. As there are no New Mexico soil guidelines, we have used the New Jersey Department of Environmental Protection soil guidelines.

The diluted values shown in the table represent the most conservative case assumption that one individual sample making up the composite sample contains metals, and that the rest of the samples making up the composite have priority pollutant metals below detectable levels. The analytes selected for analysis are detailed in the enclosed matrix. Please review these proposed criteria and the samples and analytes we have proposed, if you agree with the nature and extent of our proposed analytical program please call me at your earliest convenience.

Very truly yours,

EDER ASSOCIATES, CONSULTING ENGINEERS, P.C.

Joseph M. Heaney III

Joseph M. Heaney
Project Engineer

cc: Michael Hughes
A. Spinelli
Adeeb Fadil, Esq.

0037Z

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MEMORANDUM

TO: File #604-9 Document #0011Z

FROM: Viktor Raykin

DATE: July 24, 1990

RE: Unique Metals Selection Criteria from Composite Samples

Composite samples were collected to define metal constituents of concern above background levels at the Brickland Refinery site. The composite samples were analyzed for 13 priority pollutant metals. The composite analysis results will be used as a selection criteria to run the unique samples for those metals found in the composites at or exceeding a pre-established threshold.

The pre-established metals threshold levels are based on published guidelines were used by the New Jersey Department of Environmental Protection. New Jersey guidelines were used because New Mexico does not have published guidelines for metals in soil and because New Jersey's guidelines are very conservative and should serve as a useful screening device*. The concentration of each specific metal in a composite sample was compared to these threshold levels, considering the number of composited individual samples as a dilution factor. Table 1, attached, shows this process.

In the enclosed Matrix all individual samples which have higher specific metal concentration than the threshold level and therefore require specific metals analysis are marked by "x". All individual samples in which the specific metal concentration is higher than the threshold level but less than background level, are marked by "xy". The Matrix will be used as a laboratory request for analysis on the unique metals samples, currently held at I.T. Analytical Services, Austin Texas.

EDER ASSOCIATES CONSULTING ENGINEERS, P.C.

*In comparison to background soil sample data, the concentrations of As, Pb, Zn and Cd appeared to be higher than the NJDEP guidelines.

TABLE 1

OLD BRICKLAND REFINERY
UNIQUE METALS SELECTION CRITERIA

Priority Pollutant Metals	Guideline Concentration, ppm	Number of Samples in a Composite			
		2	3	4	5
Mercury	1	0.5	0.33	0.25	0.2
Silver	5	2.5	1.67	1.25	1
Beryllium	1	0.5	0.33	0.25	0.2
Cadmium	3	1.5	1.0	0.75	0.6
Chromium	100	50	33.3	25	20
Copper	170	85	23.3	42.5	34
Nickel	100	50	33.3	25	20
Zinc	350	175	117	87.5	70
Arsenic	20	10	6.6	5	4
Lead	250-1000	125-500	83-333	62-250	50-200
Antimony	10	5	3.3	2.5	2
Selenium	4	2	1.3	1	1
Thallium	5	2.5	1.67	1.25	1

#0018Z

TABLE 2

EXAMPLE OF SPECIFIC METALS SELECTION FOR FURTHER ANALYSIS

C-TP-8	Concentration in Composite Sample, ppm	Permissible Concentration, ppm (Considering Dilution Factor*)	Further Analysis Requirement
Mercury	0.07	0.25	No
Silver	<0.50	1.25	No
Beryllium	0.49	0.25	Yes
Cadmium	6.4	0.75	Yes
Chromium	4.4	25	No
Copper	110	42.5	Yes
Nickel	4.4	25	No
Zinc	120	87.5	Yes
Arsenic	29	5	Yes
Lead	410	62 - 250	Yes
Antimony	<0.30	2.5	No
Selenium	<0.50	1	No
Thallium	<0.10	1.25	No

NOTE:

*Individual sample C-TP-8 is included in composite sample C-TP-5, 6, 7, and 8, which means that dilution factor is 4.

#0018Z

SELECTION OF ANALYTES FROM UNIQUE METAL SAMPLES

METALS	C-TP-1	C-TP-2	C-TP-3	C-TP-4	C-TP-5	C-TP-6	C-TP-7	C-TP-8	E-TP-9	E-TP-10	E-TP-11	E-TP-12	E-TP-13	E-TP-14	E-TP-15
MERCURY															
SILVER															
BERYLLIUM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CADMIUM	x	x	x	x	x	x	x	x	xy	xy	xy	xy	xy	xy	xy
CHROMIUM															
COPPER	x	x	x	x	x	x	x	x							
NICKEL															
ZINC	x	x	x	x	x	x	x	x							
ARSENIC	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
LEAD	x	x	x	x	x	x	x	x					xy	xy	xy

NOTES:

x - samples which require specific metals analysis

xy - samples which concentration higher than permissible, but less than background level

SELECTION OF ANALYTES FROM UNIQUE METAL SAMPLES

METALS	E-TP-16	E-TP-17	E-TP-18	E-TP-19	E-TP-20	E-TP-21	E-TP-22	E-TP-23	E-TP-24	E-TP-25	E-TP-26	E-TP-27	E-TP-28	E-TP-29
MERCURY										x	x	x		
SILVER														
BERYLLIUM	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CADMIUM	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy
CHROMIUM														
COPPER										x	x	x	x	x
NICKEL														
ZINC										x	x	x		
ARSENIC	x	xy	xy	xy	xy	xy	xy	xy	xy	x	x	x		
LEAD	xy	xy	xy	xy	xy					x	x	x	x	x

SELECTION OF ANALYTES FROM UNIQUE METAL SAMPLES

METALS	E-TP-30	E-TP-31	E-TP-32	E-TP-33	E-TP-34	E-TP-35	E-TP-36	F-TP-37	F-TP-38	F-TP-39	F-TP-40	F-TP-41	F-TP-42	F-TP-43
MERCURY												x	x	x
SILVER														
BERYLLIUM	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CADMIUM	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy
CHROMIUM														
COPPER	x	x	x	x	x	x	x	x	x	x	x	x	x	x
NICKEL														
ZINC				x	x	x	x							
ARSENIC														
LEAD	x	x	x	x	x	x	x	x	x	x	x	x	x	x

SELECTION OF ANALYTES FROM UNIQUE METAL SAMPLES

METALS	F-TP-44	F-TP-45	F-TP-46	F-TP-47	F-TP-48	F-TP-49	F-TP-50	F-TP-55	F-TP-56	F-TP-57	F-TP-58	F-TP-59	F-TP-60	F-TP-61
MERCURY	x											x	x	x
SILVER				x	x	x	x							
BERYLLIUM	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CADMIUM	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	x	x	x
CHROMIUM				x	x	x	x					x	x	x
COPPER	x	x	x	x	x	x	x	x	x	x	x	x	x	x
NICKEL				x	x	x	x							
ZINC		x	x	x	x	x	x					x	x	x
ARSENIC														
LEAD	x	x	x	x	x	x	x	xy	xy	xy	xy	x	x	x

SELECTION OF ANALYTES FROM UNIQUE METAL SAMPLES

METALS	F-TP-62	A-TP-63	A-TP-64	A-TP-65	G-TP-66	G-TP-67	G-TP-68	G-TP-69	G-TP-70	G-TP-71	G-TP-72	G-TP-73	G-TP-74	G-TP-75
MERCURY	x													
SILVER														
BERYLLIUM	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CADMIUM	x	xy	xy	xy	x	x	x	x	xy	xy	xy	xy	x	x
CHROMIUM	x				x	x	x	x	x	x	x	x		
COPPER	x	x	x	x	x	x	x	x	x	x	x	x	x	x
NICKEL					x	x	x	x						
ZINC	x				x	x	x	x	x	x	x	x	x	x
ARSENIC														
LEAD	x	x	x	x	x	x	x	x	x	x	x	x	x	x

SELECTION OF ANALYTES FROM UNIQUE METAL SAMPLES

METALS	G-TP-76	G-TP-78	G-TP-79	G-TP-80	H-TP-81	H-TP-82	B-TP-83	B-TP-84	B-TP-85	B-TP-86	A-TP-87	A-TP-88	A-TP-89	A-TP-90
MERCURY														
SILVER														
BERYLLIUM	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CADMIUM	x	xy	xy	xy			xy	xy	xy	xy	xy	xy	xy	xy
CHROMIUM		x	x	x										
COPPER	x										x	x	x	x
NICKEL														
ZINC	x													
ARSENIC														
LEAD	x						xy	xy	xy	xy				

SELECTION OF ANALYTES FROM UNIQUE METAL SAMPLES

METALS	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12	B-13	B-14	B-15	B-16	B-17	B-18	B-19	B-20	B-21	B-22
MERCURY																						
SILVER									x	x	x	x	x	x	x	x	x	x	x	x	x	x
BERYLLIUM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CADMIUM	x	x	x	x	x	x	x	x	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy	xy
CHROMIUM																						
COPPER	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
NICKEL																						
ZINC	x	x	x	x	x	x	x	x	xy	xy	xy	xy					x	x	x	x		
ARSENIC	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
LEAD	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

SELECTION OF ANALYTES FROM UNIQUE METAL SAMPLES

METALS	B-23	B-24	B-27	B-28	B-HA-1	B-HA-2	B-HA-3	B-HA-4	A-HA-5	MW-1	MW-2	MW-3	MW-6	MW-9	MW-10	MW-11
MERCURY																
SILVER	x	x			x	x	x	x								
BERYLLIUM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CADMIUM	xy	xy	xy	xy	xy	xy	xy	xy	xy	x	xy	x	x	x	xy	xy
CHROMIUM																
COPPER			x	x	x	x	x	x	x	x		x	x	x		
NICKEL																
ZINC			x	x	x	x	x	x		x		x	x	x		
ARSENIC	x	x														
LEAD	x	x	x	x	x	x	x	x	x	x	xy	x	x	x	xy	xy

APPENDIX C - VALIDATED DATA SUMMARY TABLES

Summary Data Table

TCL Inorganics
Samples Received: April through July 1990
IT Project Number: BO-08-085

	April	Reanalysis By Furnace	July
MW-1			
Arsenic	39	22	41
Selenium	26U		26U
Mercury	.2U		.2U
Silver	16		5U
Beryllium	4U		4U
Calcium	79,000		92,900
Cadmium	4U		2B
Chromium	4U		4U
Copper	4		4B
Potassium	4,800		30000
Magnesium	20,000		33,700
Sodium	120,000		149,000
Nickel	8U		8U
Lead	21U	1U	1U
Antimony	22U		23B
Thallium	13U		13U
Zinc	16		2B
Sulfate	120,000		100,000
Chloride	97,000		94,000
Bicarbonate	320,000		380,000

MW-2

Arsenic	27U	7.7BW	2U
Selenium	26U		5U
Mercury	.2U		.2U
Silver	5U		5U
Beryllium	4U		4U
Calcium	1,000,000		1,160,000
Cadmium	1.6U		16U
Chromium	4U		40U
Copper	2U		45B
Potassium	35,000		30000U
Magnesium	230,000		660,000
Sodium	3,300,000		3,430,000
Nickel	8U		80U
Lead	53	1C	1U
Antimony	45		220U
Thallium	13U		1U
Zinc	29		13U
Sulfate	2,600,000		2,500,000
Chloride	6,500,000		6,800,000
Bicarbonate	610,000		610,000

MW-3D

Arsenic	27U	2U	2U
Selenium	26U		5U
Mercury	.2U		.2U
Silver	5U		5U
Beryllium	4U		6B
Calcium	370,000		470,000
Cadmium	1.6U		16U
Chromium	4U		40U
Copper	2U		35B
Potassium	18,000		30000U
Magnesium	170,000		321,000
Sodium	3,400,000		3,120,000
Nickel	8U		80U
Lead	37	1U	1U
Antimony	26		220U
Thallium	13U		1U
Zinc	35		13U
Sulfate	2,500,000		2,400,000
Chloride	5,100,000		5,000,000
Bicarbonate	430,000		410,000

MW-3S

Arsenic	27U	2U	25
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	32		5U
Beryllium	4U		4U
Calcium	180,000		104,000
Cadmium	8		2B
Chromium	4U		4U
Copper	11		8B
Potassium	12,000		3000U
Magnesium	82,000		57,800
Sodium	1,700,000		1,070,000
Nickel	8U		8U
Lead	24	1U	1U
Antimony	22U		33B
Thallium	13U		1U
Zinc	53		1.3U
Sulfate	120,000		550,000
Chloride	97,000		1,200,000
Bicarbonate	320,000		670,000

MW-4

Arsenic	27U	23	2U
Selenium	26U		5U
Mercury	.2U		.2U
Silver	15		50U
Beryllium	4U		4U
Calcium	300,000		593,000
Cadmium	1.6U		17B
Chromium	4U		40U
Copper	2U		40U
Potassium	29,000		30000U
Magnesium	200,000		390,000
Sodium	2,500,000		2,370,000
Nickel	8U		80U
Lead	39	1U	1U
Antimony	22U		220U
Thallium	13U		1U
Zinc	21		15B
Sulfate	240,000		1,300,000
Chloride	4,500,000		4,300,000
Bicarbonate	1,300,000		760,000

MW-5

Arsenic	36	57	11
Selenium	26U		5U
Mercury	.2U		.2U
Silver	5U		73B
Beryllium	4U		4B
Calcium	490,000		570,000
Cadmium	1.6U		16U
Chromium	4U		40U
Copper	2U		28B
Potassium	18,000		30,000U
Magnesium	150,000		254,000
Sodium	2,700,000		2,430,000
Nickel	8U		80U
Lead	30	1U	1U
Antimony	28		220U
Thallium	13U		1U
Zinc	15		13U
Sulfate	870,000		1,000,000
Chloride	4,200,000		4,400,000
Bicarbonate	1,600,000		1,900,000

MW-6S

Arsenic	27U	44	50
Selenium	26U		5U
Mercury	.2U		.2U
Silver	5		17A
Beryllium	4U		4U
Calcium	250,000		148,000
Cadmium	1.6U		16U
Chromium	4U		40U
Copper	3		20u
Potassium	14,000		300000
Magnesium	69,000		91,700
Sodium	1,300,000		1,300 (TYPO ?)
Nickel	8U		80U
Lead	25	1U	1U
Antimony	22U		220U
Thallium	13U		1U
Zinc	14		13B
Sulfate	410,000		130,000
Chloride	1,400,000		1,500,000
Bicarbonate	1,300,000		1,900,000

MW-6S DUP

Arsenic	42
Selenium	5U
Mercury	.2U
Silver	223
Beryllium	4U
Calcium	143,000
Cadmium	16U
Chromium	40U
Copper	53B
Potassium	30000U
Magnesium	88,600
Sodium	1,250,000
Nickel	80U
Lead	1U
Antimony	220U
Thallium	1U
Zinc	13B
Sulfate	130,000
Chloride	1,500,000
Bicarbonate	1,900,000

MW-6D

Arsenic	27U 2U		2U
Selenium	26U		5U
Mercury	.2U		0.2U
Silver	5U		50U
Beryllium	4U		4U
Calcium	410,000		490,000
Cadmium	1.6U		20B
Chromium	4U		40U
Copper	2U		39B
Potassium	18,000		30,000U
Magnesium	150,000		271,000
Sodium	3,400,000		3,130,000
Nickel	8U		80U
Lead	29	1U	1U
Antimony	23		220U
Thallium	13U		1U
Zinc	15		13U
Sulfate	2,400,000		2,500,000
Chloride	5,000,000		4,900,000
Bicarbonate	410,000		550,000

MW-7

Arsenic	27U	14	6
Selenium	26U		5U
Mercury	.2U		.2U
Silver	25		193
Beryllium	4U		4B
Calcium	270,000		278,000
Cadmium	1.6U		16U
Chromium	4U		40U
Copper	2U		20U
Potassium	14,000		30,000U
Magnesium	100,000		137,000
Sodium	2,100,000		1,710,000
Nickel	8U		80U
Lead	21U	1U	1U
Antimony	22U		220U
Thallium	13U		1U
Zinc	22		13U
Sulfate	1,100,000		540,000
Chloride	2,700,000		2,400,000
Bicarbonate	1,100,000		1,100,000

MW-8

Arsenic	86	100	88
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	5U		101
Beryllium	4U		4
Calcium	51,000		71,100
Cadmium	1.6U		16U
Chromium	4U		40U
Copper	9		26B
Potassium	11,000		30,000U
Magnesium	40,000		58,300
Sodium	1,800,000		1,520,000
Nickel	21		80U
Lead	37	1U	1U
Antimony	22U		220U
Thallium	13U		1U
Zinc	35		28B
Sulfate	110,000		62,000
Chloride	1,300,000		1,200,000
Bicarbonate	2,500,000		2,500,000

MW-9S

Arsenic	27U	4B	2U
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	15		5U
Beryllium	4U		4
Calcium	200,000		188,000
Cadmium	1.6U		1.6U
Chromium	4U		4U
Copper	2		11B
Potassium	8,600		30,000U
Magnesium	69,000		81,500
Sodium	1,200,000		1,170,000
Nickel	8U		8U
Lead	21U	1U	1U
Antimony	22U		34B
Thallium	13U		1U
Zinc	29		1.3U
Sulfate	2,200,000		1,900,000
Chloride	630,000		3,700,000
Bicarbonate	530,000		530,000

MW-9S

Arsenic	27U	4.2BW
Selenium	26U	
Mercury	0.2U	
Silver	10	
Beryllium	4U	
Calcium	200,000	
Cadmium	1.6U	
Chromium	4U	
Copper	2U	
Potassium	9,100	
Magnesium	70,000	
Sodium	1,200,000	
Nickel	8U	
Lead	21U	1U
Antimony	22U	
Thallium	13U	
Zinc	12	
Sulfate	2,100,000	
Chloride	650,000	
Bicarbonate	530,000	

MW-9D

Arsenic	27U	2U	2U
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	15		50U
Beryllium	4U		4B
Calcium	450,000		504,000
Cadmium	1.6U		16U
Chromium	4U		40U
Copper	2U		55B
Potassium	21,000		30,000U
Magnesium	180,000		331,000
Sodium	3,200,000		2,950,000
Nickel	8U		80U
Lead	23	1U	1U
Antimony	31		220U
Thallium	13U		1U
Zinc	27		13U
Sulfate	1,900,000		1,800,000
Chloride	4,800,000		5,100,000
Bicarbonate	700,000		430,000

MW-10

Arsenic	27U	26	69
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	29		5U
Beryllium	4U		.4U
Calcium	200,000		124,000
Cadmium	1.6U		1.6U
Chromium	4U		4U
Copper	2U		6B
Potassium	11,000		3000U
Magnesium	67,000		70,700
Sodium	**230,000**		**951,000**
Nickel	8U		8B
Lead	21U	1U	1U
Antimony	22U		22U
Thallium	13U		1U
Zinc	16		1.3U
Sulfate	**230,000**		**110,000**
Chloride	1,200,000		970,000
Bicarbonate	1,200,000		1,300,000

MW-11

Arsenic	32	38	81
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	41		5U
Beryllium	4U		1B
Calcium	100,000		107,000
Cadmium	1.6U		2B
Chromium	4U		4U
Copper	7		20B
Potassium	13,000		3000U
Magnesium	71,000		93,900
Sodium	190,000		990,000
Nickel	26		25B
Lead	33	1U	1U
Antimony	22U		27B
Thallium	13U		1U
Zinc	30		2B
Sulfate	79,000		91,000
Chloride	820,000		850,000
Bicarbonate	1,700,000		1,600,000

MW-12

Arsenic	27U	3.1B	2U
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	5U		75B
Beryllium	4U		4B
Calcium	990,000		989,000
Cadmium	1.6U		13U
Chromium	4U		40U
Copper	20		83
Potassium	29,000		30,000U
Magnesium	220,000		510,000
Sodium	4,300,000		3,810,000
Nickel	8U		80U
Lead	21U	1U	1U
Antimony	22U		220U
Thallium	13U		1U
Zinc	31		59B
Sulfate	2,400,000		2,300,000
Chloride	7,900,000		8,200,000
Bicarbonate	610,000		510,000

MW-13

Arsenic	27U	10	2U
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	5U		50U
Beryllium	4U		4U
Calcium	890,000		865,000
Cadmium	1.6U		16U
Chromium	4U		40U
Copper	2U		43B
Potassium	40,000		30,000U
Magnesium	220,000		527,000
Sodium	4,600,000		4,590,000
Nickel	8U		80U
Lead	43	1U	1U
Antimony	44		220U
Thallium	13U		1U
Zinc	27		13U
Sulfate	3,600,000		3,800,000
Chloride	7,300,000		7,800,000
Bicarbonate	450,000		340,000

MW-MS

Arsenic	27U	3.2B	15
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	42		30
Beryllium	2		3
Calcium	85,000		160,000
Cadmium	4		1.6U
Chromium	4U		25
Copper	2U		34
Potassium	6,000		30000
Magnesium	19,000		49,200
Sodium	120,000		97,700
Nickel	8U		33B
Lead	21U	1U	22
Antimony	22U		22U
Thallium	13U		1U
Zinc	15		97
Sulfate	230,000		180,000
Chloride	110,000		71,000
Bicarbonate	200,000		160,000

RG-DS

Arsenic	27U	4B	14
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	46		31
Beryllium	4U		3B
Calcium	110,000		159,000
Cadmium	4		1.6U
Chromium	4U		29
Copper	2U		41
Potassium	6,100		3,000U
Magnesium	83,000		49,100
Sodium	1,100,000		97,900
Nickel	8U		35B
Lead	21U	1U	22
Antimony	22U		36B
Thallium	13U		1U
Zinc	80		100
Sulfate	240,000		180,000
Chloride	110,000		74,000
Bicarbonate	200,000		180,000

RG-US

Arsenic	27U	4.1	11
Selenium	26U		5U
Mercury	0.2U		.2U
Silver	54		26
Beryllium	1		3B
Calcium	83,000		157,000
Cadmium	2		1.6U
Chromium	4U		20
Copper	3		33
Potassium	6,600		3000U
Magnesium	18,000		44,900
Sodium	1,100,000		94,400
Nickel	8U		25B
Lead	21U		21
Antimony	22U		30B
Thallium	13U		1U
Zinc	81		82
Sulfate	240,000		180,000
Chloride	110,000		68,000
Bicarbonate	200,000		230,000

S. Stern

Arsenic	27U	16
Selenium	26U	
Mercury	0.2U	
Silver	46	
Beryllium	4U	
Calcium	110,000	
Cadmium	2U	
Chromium	4U	
Copper	2U	
Potassium	17,000	
Magnesium	24,000	
Sodium	250,000	
Nickel	8U	
Lead	21U	
Antimony	22U	
Thallium	13U	
Zinc	29U	
Sulfate	300,000	
Chloride	140,000	
Bicarbonate	430,000	

Summary Data Table
Rexene

PRELIMINARY REPORT

TCL Volatile & Semivolatile Organics
Water Samples

Sample / Analyte	Method Blank Conc. ppb	Lab. Reported Conc. ppb	QA Validation Reported Conc. Decision	Data Validatio	Footnotes
Sample RG-HS-01 (Lab #: B0-04-181-01)					
Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics	(Diluted 2x)				
None Detected					
Non-Target Semivolatile Organics					
None Detected					
Sample RG-DS-01 (Lab #: B0-04-181-02)					
Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics					
None Detected	(Undiluted)				
Non-Target Semivolatile Organics					
None Detected					
Sample RG-US-01 (Lab #: B0-04-180-08)					
Volatile Organics					
None Detected					

Non-Target Volatile Organics
None Detected

Semivolatile Organics	(Undiluted)		
Butylbenzylphthalate	NR	ND	1
Bis(2-Ethylhexyl)Phthalate	NR	ND	4
Total		**ND**	5

Non-Target Semivolatile Organics

Unknown (31.10)	NR	7	7
Total		7	7

Sample MW-1-01 (Lab #: BO-04-160-01)

Volatile Organics (Undiluted)
None Detected

Non-Target Volatile Organics
None Detected

Semivolatile Organics

Bis(2-Ethylhexyl)Phthalate	1.03J	ND	3	negate	1

Non-Target Semivolatile Organics

Methyl Benzene (5.33)	Not Rv'd	6 B	6 B
C2 Benzene (7.39)	Not Rv'd	4	4
Unknown (15.83)	Not Rv'd	10 B	10 B
Unknown (28.01)	Not Rv'd	4	4
Unknown (30.89)	Not Rv'd	5 B	5 B
Total			
Total Aromatics			

Sample MW-2-01 (Lab #: BO-04-180-01)

Volatile Organics

Acetone	NR	ND	5
1,2-Dichloroeethane	NR	ND	1
1,1,2-Trichloroethane	NR	ND	2
Bromoform	NR	ND	1
Total		**ND**	9

Non-Target Volatile Organics
None Detected

Semivolatile Organics
None Detected

* Two acid surrogates out, not repeated.

Non-Target Semivolatile Organics

Unknown (4.66)	NR	6	6
Unknown (7.27)	NR	12	12
2-Cyclohexene-1-one (8.73)	NR	6	6
Unknown (13.78)	NR	31	31
Unknown (14.51)	NR	7	7
Total		**62**	**62**

Sample MW-3D-01 (Lab #: BO-04-161-02)

Volatile Organics

Methylene Chloride	NR	ND	3
Acetone	NR	ND	97
Toluene	NR	ND	3
Xylene	NR	ND	7
Total		**ND**	**111**

Non-Target Volatile Organics
None Detected

Semivolatile Organics
None Detected

Non-Target Semivolatile Organics

Unknown (7.11)	NR	19	19
Unknown (7.72)	NR	6	6
2 Cyclohexane-1-one (8.59)	NR	7	7
Unknown (13.65)	NR	29	29
Unknown Acid Ester (15.82)	NR	24	24
Unknown (16.12)	NR	6	6
Unknown (31.28)	NR	4	4
Total		**95**	**95**

Sample MW-4-01 (Lab #: BO-04-180-02)

Volatile Organics

Benzene	NR	1,700	1,600
Toluene	NR	ND	10
Xylene	NR	81	80
Total		**1,781**	**1,690**

Non-Target Volatile Organics	(Diluted 5x)	(1st internal standard used)	
Cyclopentene (10.60)	NR	35	35
C5 Alkane (11.41)	NR	35	35
Pentane (12.53)	NR	40	40
Unknown Hydrocarbon (12.88)	NR	40	40
Cyclohexane (13.23)	NR	130	130
Methylcyclopentane (13.73)	NR	170 ?	170
Cyclohexene (14.24)	NR	68 ?	68
Methylcyclopentene (15.13)	NR	70 ?	70
Dimethylcyclopentene (18.88)	NR	46 ?	46
Total		**634**	**634**
Total Alkanes		**634**	**634**

Semivolatile Organics	(Diluted 2.5x)		
Phenol	NR	36	36
Nitrobenzene	NR	ND	46
2,4-Dimethylphenol	NR	ND	11
Benzoic Acid	NR	ND	13
Naphthalene	NR	100	105
2-Methylnaphthalene	NR	92	95
2,4-Dinitrophenol	NR	ND	32
4-Nitrophenol	NR	ND	9
Diethylphthalate	NR	ND	23
Total		**228**	**370**

Non-Target Semivolatile Organics	(Diluted 5x)		
Unknown (5.90)	NR	88	88
Unknown (10.05)	NR	50	50
Unknown (10.15)	NR	45	45
2,3-Dimethyl-2-cyclopentene (10.77)	NR	130	130
Methoxyphenol (11.20)	NR	100	100
Unknown (11.92)	NR	130	130
C2-Phenol (12.01)	NR	110	110
C4-Benzene (12.19)	NR	33	33
Unknown (12.44)	NR	180	180
C4-Benzene (12.83)	NR	40	40
1,2,3,4-Tetrahydronaphth (13.01)	NR	50	50
C3- Phenol (13.63)	NR	35	35
Unknown (13.94)	NR	50	50
C3-Phenol (14.15)	NR	70	70
Unknown (14.50)	NR	38	38
C3-Phenol (14.63)	NR	58	58
C4-Phenol (14.80)	NR	23	23
Unknown (14.99)	NR	70	70
C4-Phenol (15.04)	NR	43	43
Unknown (15.28)	NR	28	28
Unknown (15.41)	NR	23	23
Methylnaphthalene (15.46)	NR	50	50

Unknown (15.73)	NR	43	43
Unknown (16.07)	NR	200	200
Unknown (17.35)	NR	120	120
Total		**1,807**	**1,807**
Total Acids		**439**	**439**
Total Aromatics		**173**	**173**
Total Alkanes		**130**	**130**

Sample MW-5-01 (Lab #: BO-04-180-03)

Volatile Organics			
Benzene	NR	12,000	11,000
Toluene	NR	700	600
Ethylbenzene	NR	910	900
Xylene	NR	1,300	1,200
Total		**14,910**	**13,700**
Non-Target Volatile Organics	(Diluted 20x)		
C5 Alkane (11.37)	NR	240	240
Pentane (12.53)	NR	140	140
Cyclohexane (13.19)	NR	280	280
Methyl Cyclohexane (13.69)	NR	200	200
Total		**860**	**860**
Total Alkanes		**860**	**860**
Semivolatile Organics	(Diluted 2.5x)		
Phenol	NR	75	74
2-Methylphenol	NR	ND	13
4-Methylphenol	NR	ND	13
Nitrobenzene	NR	ND	4
2,4-Dimethylphenol	NR	ND	10
Benzoic Acid	NR	ND	31
Naphthalene	NR	86	85
4-Chloro-3-methylphenol	NR	ND	6
2-Methylnaphthalene	NR	44	43
4-Nitrophenol	NR	ND	62
Diethylphthalate	NR	ND	4
4-Nitroanaline	NR	ND	12
Bis(2-ethylhexyl)phthalate	NR	ND	3
Total		**205**	**360**
Non-Target Semivolatile Organics			
C1-Benzene (5.45)	NR	130	130
Unknown (6.16)	NR	130	130
C2-Benzene (7.35)	NR	300	300
C2-Benzene (7.53)	NR	300	300
C2-Benzene (8.00)	NR	180	180

C3-Benzene (9.37)	NR	120	120
C3-Benzene (9.97)	NR	170	170
C3-Benzene (10.52)	NR	68	68
Unknown (10.97)	NR	200	200
1,2,4-Trithiolane (11.92)	NR	850	850
Unknown (12.44)	NR	68	68
Unknown (13.14)	NR	53	53
Unknown (15.39)	NR	120	120
Methylnaphthalene (15.47)	NR	100	100
Unknown (17.30)	NR	80	80
Unknown (17.44)	NR	230	230
Unknown (17.68)	NR	100	100
Unknown (18.12)	NR	190	190
Unknown (18.38)	NR	60	60
Unknown (18.51)	NR	220	220
Unknown (18.77)	NR	33	33
Unknown (19.53)	NR	33	33
Unknown (19.71)	NR	38	38
Unknown (20.52)	NR	110	110
1,3,5,7-Tetrathiocane (21.06)	NR	330	330
Total		**4,213**	**4,213**
Total Aromatics		**1,300**	**1,300**

Sample HW-6S-01 (Lab #: BO-04-160-08)

(Diluted 10x)

Volatile Organics			
Methylene Chloride	NR	ND	50
Acetone	NR	ND	140
Benzene	NR	340	340
Toluene	NR	ND	20
Xylene	NR	1600	1570
Total		**1,940**	**2,120**
Volatile Non-Target Organics			
C3 Benzene (16.69)	NR	690	690
C3 Benzene (17.22)	NR	410	410
C3 Benzene (17.51)	NR	100	100
C3 Benzene (18.51)	NR	590	590
2,3 Dihydro 1-H Indene (19.15)	NR	480	480
C4 Benzene (19.55)	NR	100	100
C4 Benzene (19.86)	NR	130	130
C4 Benzene (20.07)	NR	190	190
1-Methyl 1-2,3 Dihydro Ind(20.39)	NR	150	150
C4 Benzene (20.82)	NR	180	180
C4 Benzene (21.02)	NR	180	180
2,3-Dihydro 4 methyl-Indene (21.79)	NR	70	70
C4-Benzene (22.00)	NR	130	130

2,3-Dihydro 4 methyl-Indene (22.16)	NR	230	230
Tetrahydronaphthalene (22.66)	NR	50	50
Dihydrodimethylindene (22.92)	NR	90	90
Unknown (23.25)	NR	50	50
Total		**3,820**	**3,820**

Semivolatile Organics	Check surrogate area??		
N-Nitrosodimethylamine	NR	ND	1
bis(2-Chloroisopropyl)ether)	NR	ND	1
2,4-Dimethylphenol	NR	340	340
M-Nitrotoluene	NR	ND	13
Naphthalene	NR	45	46
P-Nitrotoluene	NR	ND	12
2-Methylnaphthalene	NR	22	22
Diphenylhydrazine	NR	ND	2
Di-n-Butylphthalate	NR	ND	2
Bis(2-Ethylhexyl)Phthalate	NR	23	23
Total		**430**	**462**

Non-Target Semivolatile Organics			
Unknown Alcohol (7.36)	NR	28	28
C2-Benzene (7.61)	NR	84	84
C2-Benzene (8.08)	NR	84	84
C3-Benzene (9.45)	NR	67	67
Unknown (9.56)	NR	150	150
Unknown (10.12)	NR	140	140
Trimethyl Benzene Isomer (10.60)	NR	55	55
Unknown (10.86)	NR	140	140
Unknown (11.18)	NR	45	45
Trimethylcyclopentanone (11.29)	NR	27	27
Dimethyl Phenol (12.10)	NR	88	88
C4-Benzene (12.28)	NR	46	46
C4-Benzene (12.35)	NR	40	40
Ethyl Phenol (12.58)	NR	34	34
Substituted Indene (12.89)	NR	44	44
C2-Phenol (13.29)	NR	78	78
Unknown (13.78)	NR	75	75
2,3-Dihydro-1H-inden-1-one (15.01)	NR	40	40
Unknown (15.59)	NR	53	53
Unknown (16.09)	NR	28	28
Unknown (25.49)	NR	24	24
Unknown (27.22)	NR	45	45
Unknown (30.87)	NR	31	31
Unknown (32.59)	NR	57	57
Unknown (37.93)	NR	57	57
Total		**1,560**	**1,560**

Sample MW-6D-01 (Lab #: B0-04-160-07)

Volatile Organics			
Methylene Chloride	NR	ND	3
Carbon Disulfide	NR	ND	7
Benzene	NR	ND	2
Ethylbenzene	NR	ND	1
Total		**ND**	**13**
Non-Target Volatile Organics			
None Detected			
Semivolatile Organics			
4-Chloroanaline	NR	ND	1
Non-Target Semivolatile Organics			
Unknown (7.13)	NR	13	13
Unknown (13.65)	NR	22	22
2-Methylpropanoic acid (15.84)	NR	20 B	20
Unknown (16.13)	NR	6	6
Total		**61**	**61**

Sample MW-7-01 (Lab #: B0-04-160-05)

Volatile Organics			
Xylene	NR	ND	2
Non-Target Volatile Organics			
Cyclohexane (13.17)	NR	17	17
Methyl Cyclopentane (13.68)	NR	5	5
Unknown (14.33)	NR	2	2
Unknown (15.11)	NR	2	2
Unknown (15.53)	NR	4	4
Unknown (18.83)	NR	7	7
Unknown (20.57)	NR	9	9
Unknown (21.66)	NR	4	4
Unknown (22.28)	NR	7	7
Total		**57**	**57**
Semivolatile Organics			
bis(2-chloroisopropyl)ether	NR	ND	1
Nitrobenzene	NR	ND	1
Isophrone	NR	ND	2
4-Chloroanaline	NR	ND	1
2-Nitroanaline	NR	ND	3
4-Nitrophenol	NR	ND	5
Fluorene	NR	ND	2
4-Nitroanaline	NR	ND	1

Diphenylhydrazine	NR	ND	2
Phenanthrene	NR	ND	1
Anthracene	NR	ND	1
Total		**ND**	**20**
Non-Target Semivolatile Organics			
Unknown (5.78)	NR	27	27
2,3-dimethyl 1,2,3-butanedioil (7.1	NR	17	17
Unknown (7.87)	NR	18	18
Unknown (9.35)	NR	23	23
C3-Benzene (9.83)	NR	49	**49**
Unknown (9.89)	NR	58	58
Unknown (10.03)	NR	14	14
2,3-dimethyl-2-cyclopenteno (10.66)	NR	37	37
Unknown (11.10)	NR	31	31
Unknown (11.66)	NR	26	26
1,2-dimethyl piperidine (11.72)	NR	32	32
Unknown (11.95)	NR	100	100
C4-Benzene (12.07)	NR	18	**18**
Unknown (12.15)	NR	16	16
Unknown (12.45)	NR	170	170
Unknown (13.04)	NR	66	66
Unknown (13.16)	NR	17	17
alpha-Terpineol (13.39)	NR	110	110
Unknown (13.80)	NR	110	110
Unknown (14.01)	NR	25	25
Unknown (14.25)	NR	74	74
Unknown (14.49)	NR	25	25
Unknown (15.15)	NR	46	46
C4-Phenol (15.37)	NR	60	60
C4-Phenol (15.81)	NR	41	41
Total		**1210**	**1210**

Sample MW-8-01 (Lab #: B0-04-160-06)

Volatile Organics			
Methylene Chloride	NR	ND	54
1,2-Dichloroethane	NR	ND	636
4-Methyl-2-Pentanone	NR	ND	40
Benzene	NR	26,000	**26,100**
Toluene	NR	1,700	**1,700**
Xylene	NR	5,400	**5,400**
Total		**33,100**	**33,930**
Non-Target Volatile Organics (Diluted 10x)			
C3-Benzene (16.58)	NR	120	**120**
C3-Benzene (17.50)	NR	160	**160**

Dihydro Indene (19.13)	NR	60	60
Total		**340**	**340**
Semivolatile Organics			
N-Nitrosodinethylamine	NR	ND	4
Phenol	NR	160	164
2-Chlorophenol	NR	ND	1
2-Methylphenol	NR	120	122
bis(2-Chloroisopropyl)ether	NR	ND	1
4-Methylphenol	NR	41	41
n-Nitrosodi-n-propylamine	NR	ND	16
2,4-Dimethylphenol	NR	290	286
Naphthalene	NR	150	151
4-Chloroanaline	NR	ND	1
2-Methylnaphthalene	NR	55	55
2,4-Dinitrophenol	NR	ND	1
4-Nitrophenol	NR	ND	62
Diethylphthalate	NR	ND	9
Fluorene	NR	ND	3
Diphenylhydrazine	NR	ND	1
Phenanthrene	NR	ND	3
Anthracene	NR	ND	3
Bis(2-ethylhexyl)Phthalate	NR	ND	1
Total		**816**	**925**
Non-Target Semivolatile Organics			
Toluene (5.33)	NR	560 B?	560
Unknown (5.81)	NR	190	190
Unknown (6.95)	NR	44	44
C2-Benzene (7.23)	NR	330	330
Unknown (7.46)	NR	370	370
C2-Benzene (7.91)	NR	360	360
Cis-trans 2,3-dimethylcyclopent(8.6	NR	67	67
C3-Benzene (9.26)	NR	220	220
C3-Benzene (9.38)	NR	120	120
C3-Benzene (9.59)	NR	130	130
C3-Benzene (9.90)	NR	230	230
C3-Benzene (10.43)	NR	94	94
2,3-dihydro-1H-indene (10.67)	NR	120	120
Unknown (10.90)	NR	610	610
Unknown (11.90)	NR	42	42
Unknown (11.97)	NR	52	52
C2-Phenol (12.03)	NR	79	79
C4-Benzene (12.17)	NR	47	47
Unknown (12.44)	NR	120	120
C2-Phenol (13.08)	NR	60	60
Unknown (13.20)	NR	69	69
Unknown (13.46)	NR	71	71

Unknown (16.51)	NR	5	5
Unknown (21.20)	NR	5	5
Total		**47**	**47**

Sample MW-9D-01 (Lab #: BO-04-160-02)

Volatile Organics			
Benzene	NR	21	21
Tetrachloroethene	NR	ND	2
Toluene	NR	20	20
Ethylbenzene	NR	7	7
Xylene	NR	46	46
Total		**94**	**96**
Non-Target Volatile Organics			
Unknown (15.70)	NR	12	12
Unknown (23.22)	NR	4	4
Total		**16**	**16**
Semvolatile Organics			
2-Methylphenol	NR	ND	1
bis(2-chloroisopropyl)ether	NR	ND	7
Nitrobenzene	NR	ND	7
Benzoic Acid	NR	ND	4
2-Nitroanaline	NR	ND	2
Dimethylphthalate	NR	ND	2
2,4-Dinitrophenol	NR	ND	73
Di-n-Butylphthalate	NR	ND	1
Total		**ND**	**97**
Non-Target Semivolatile Organics			
C2-Benzene (7.87)	NR	26	26
Benzenethiol (9.27)	NR	42	42
2-Methylbenzenethiol (11.31)	NR	46	46
Unknown (12.29)	NR	23	23
Unknown (12.48)	NR	16	16
Unknown (12.89)	NR	30	30
C3-Phenol (13.43)	NR	10	10
C3-Phenol (14.67)	NR	48	48
C4-Phenol (14.91)	NR	16	16
Unknown (15.20)	NR	34	34
C3-Phenol (15.31)	NR	40	40
C4-Phenol (15.69)	NR	34	34
C5-Benzene (15.84)	NR	17	17
C5-Phenol (15.90)	NR	18	18
Unknown (16.16)	NR	14	14
Unknown (16.43)	NR	27	27

Unknown (16.54)	NR	25	25
Unknown (16.66)	NR	16	16
Unknown (16.79)	NR	10	10
Unknown (16.96)	NR	11	11
Unknown (17.49)	NR	12	12
Unknown (18.27)	NR	27	27
Diphenyldisulfide (22.14)	NR	29	29
Unknown (23.03)	NR	55	55
Unknown (23.72) not included	NR	35 *	Not included
Total		**661**	**661**

Sample MW-10-01 (Lab #: B0-04-180-04)

Volatile Organics			
1,2-Dichloroethane	NR	ND	2
Benzene	NR	13	13
Trans 1,3-Dichloropropene	NR	ND	21
Toluene	NR	ND	4
Ethlybenzene	NR	5.7	6
Xylene	NR	28	28
Total		**46.7**	**74**
Non-Target Volatile Organics			
Cyclohexane (13.18)	NR	12	12
Semivolatile Organics	(Undiluted)		
Nitrobenzene	NR	ND	2
Isophrone	NR	ND	1
2-Chloronaphthalene	NR	ND	2
4-Nitrophenol	NR	ND	6
Total		**ND**	**11**
Non-Target Semivolatile Organics			
Unknown (5.91)	NR	14	14
3,3-Dimethyl-2,3-Butanediol (7.27)	NR	9	9
Unknown (7.99)	NR	8	8
Unknown (9.45)	NR	52	52
Unknown (10.00)	NR	19	19
Unknown (10.37)	NR	5	5
Unknown (10.76)	NR	10	10
Unknown (11.06)	NR	18	18
Trimethylcyclopentenone (11.20)	NR	12	12
Unknown (11.83)	NR	5	5
Unknown (11.97)	NR	23	23
Unknown (12.09)	NR	6	6
Unknown (12.18)	NR	9	9
Unknown (12.48)	NR	58	58

Unknown (13.05)	NR	7	7
Unknown (13.57)	NR	11	11
Unknown (14.05)	NR	6	6
Unknown (14.27)	NR	15	15
Unknown (14.47)	NR	7	7
C4-Benzene (15.21)	NR	14	14
Unknown (15.26)	NR	12	12
Unknown (15.64)	NR	6	6
Unknown (15.86)	NR	18	18
Unknown (16.68)	NR	23	23
Unknown (31.12)	NR	8	8
Total		**375**	**375**

Sample MW-11-01 (Lab #: BO-04-180-05)

Volatile Organics	(Diluted 200x)		
Acetone	NR	ND	34
1,2-Dichloroethane	NR	12	12
Bromodichloromethane	NR	ND	1
Benzene	NR	2800	2800
trans-1,3-Dichloropropene	NR	ND	5
1,1,2,2-Tetrachloroethane	NR	ND	4
Toluene	NR	ND	4
Xylene	NR	ND	5
Total		**2812**	**2865**

Non-Target Volatile Organics			
C5-Alkane (11.39)	NR	18	18
Cyclohexane (13.21)	NR	82	82
Unknown (19.83)	NR	13	13
Unknown (21.69)	NR	15	15
Unknown (22.28)	NR	39	39
Unknown (25.88)	NR	19	19
2,3-Dihydro-1H-Indene (30.50)	NR	29	29
Total		**215**	**215**

Semivolatile Organics	(Diluted 2.5x)		
Phenol	NR	ND	52
2-Methylnaphthalene	NR	ND	13
4-Nitrophenol	NR	ND	62
4-Nitroanaline	NR	ND	11
Total		**ND**	**138**

Non-Target Semivolatile Organics			
2,3-Dimethyl-2-Cyclopent (10.77)	NR	110	110
Unknown (11.91)	NR	35	35

C2-Phenol (12.00)	NR	28	28
Unknown (12.43)	NR	40	40
Unknown (15.99)	NR	23	23
Unknown (16.09)	NR	30	30
Unknown (16.39)	NR	30	30
Unknown (16.69)	NR	60	60
Unknown (17.30)	NR	200	200
Unknown (17.40)	NR	30	30
Unknown (17.65)	NR	75	75
Unknown (18.08)	NR	95	95
Unknown (18.37)	NR	93	93
Unknown (18.45)	NR	50	50
Unknown (18.50)	NR	63	63
Unknown (18.62)	NR	110	110
Unknown (18.93)	NR	120	120
Unknown (19.33)	NR	53	53
Unknown (19.39)	NR	23	23
Unknown (19.54)	NR	60	60
Unknown (19.75)	NR	190	190
Unknown (19.88)	NR	180	180
Unknown (20.44)	NR	28	28
Unknown (20.53)	NR	58	58
Unknown (21.04)	NR	90	*
Total		**1874**	**1784**

Sample MW-12-01 (Lab #: B0-04-160-04)

Volatile Organics			
Methylene Chloride	NR	ND	3
Non-Target Volatile Organics			
Unknown (20.69)	NR	9	9
Semivolatile Organics			
Di-n-Butylphthalate	NR	ND	2
Bis(2-Ethylhexyl)Phthalate	NR	ND	2
Non-Target Semivolatile Organics			
Methyl Benzene (5.32)	NR	6 B	6
7-Oxabicyclo[4.10]heptane (7.13)	NR	12	12
C2-Benzene (7.39)	NR	7	7
2-Cyclohexen-1-one (8.62)	NR	6	6
Unknown (13.65)	NR	20	20
Unknown (14.38)	NR	5	5
Unknown Acid Ester (15.84)	NR	5 B	5
Total		**61**	**?**

Sample HW-13-01 (Lab #: BO-04180-06)

Volatile Organics
None Detected

Non-Target Volatile Organics
None Detected

Semivolatile Organics
None Detected

Non-Target Semivolatile Organics

Unknown (13.79)	NR	14	14
10-Demethylsqualene (31.11)	NR	11	11
Total		**25**	**25**

Sample HW-35-01 (Lab #: BO-04-160-03)

Volatile Organics

Methylene Chloride	NR	NR	3

Non-Target Volatile Organics
None Detected

Semivolatile Organics

Di-n-Butylphthalate	NR	ND	2
Butylbenzylphthalate	NR	ND	2
Bis(2-Ethylhexyl)Phthalate	NR	ND	3
Total		**ND**	**7**

Non-Target Semivolatile Organics

Methyl Benzene (5.33)	Not Rv'd	5 B	?
Unknown Acid Ester (15.83)	Not Rv'd	6 B	?
Unknown (30.89)	Not Rv'd	5 B	?

Sample S. Stern (Lab #: BO-04-180-07)

Volatile Organics
None Detected

Non-Target Volatile Organics
None Detected

Semivolatile Organics (Diluted 2.5X)

Benzoic Acid	NR	ND	3
Bis(2-ethylhexyl)Phthalate	NR	ND	1

Non-Target Semivolatile Organics			
Unknown (17.35)	NR	5	5
Unknown Alkane (19.76)	NR	10	10
Unknown Alkane (20.46)	NR	20	20
Unknown (22.59)	NR	10	10
Unknown (25.59)	NR	48	48
Unknown (36.49)	NR	93	93
Total		**186**	**186**

Summary Data Table
Hexene

TCL Volatile Organics
Water Samples Received 7/20/90
IT Project #: BO-07-203

Sample / Analyte	Method Blank Conc. ppb	Lab. Reported Conc. ppb	QA Validation Reported Conc. Decision	Data Validatio	Footnotes
Sample MW-1-02 (Lab #: BO-07-203-01)					
Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics					
* Part of acid fraction lost during extraction.					
Di-n-ButylPhthalate	6J	4 JB	4 JB	negate	1
bis(2-ethylhexyl)Phthalate	1J	2 JB	2 JB	negate	1
Non-Target Semivolatile Organics					
7-Oxabicyclo[4,1,0]heptane (7.96)	6J	10 B	10 B	negate	1
Sample MW-2-02 (Lab #: BO-07-203-02)					
Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics					
Di-n-ButylPhthalate	6J	4 JB	4 JB	negate	1
bis(2-ethylhexyl)Phthalate	1J	2 JB	2 JB	negate	1
Non-Target Semivolatile Organics					
7-Oxabicyclo[4,1,0]heptane (7.25)	6J	22 B	22 B	negate	1
2-Cyclohexane -1-one (8.75)	ND	11 B	? Not found in blank raw data		
Unknown (13.78)	ND	41	41		
Unknown (14.30)	ND	10	10		

Unknown (14.50)	ND	27	27		

Sample MW-3S-02 (Lab #: BO-07-203-03)

Volatile Organics					1
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics					
Di-n-ButylPhthalate	6J	5 JB	5 JB	negate	1
bis(2-ethylhexyl)Phthalate	1J	2 JB	2 JB	negate	1
Non-Target Semivolatile Organics					
7-Oxabicyclo[4,1,0]heptane (7.26)	6J	10 B	10 B	negate	1
Unknown (21.36)	ND	7	7		

Sample MW-3D-02 (Lab #: BO-07-203-04)

Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					1
Semivolatile Organics					
Di-n-ButylPhthalate	6J	3 JB	3 JB	negate	1
bis(2-ethylhexyl)Phthalate	1J	2 JB	2 JB	negate	1
Non-Target Semivolatile Organics					
7-Oxabicyclo[4,1,0]heptane (7.26)	6J	24 B	24 B	negate	1
2-Cyclohexane -1-one (8.75)	ND	9 B	9 *	Not Found in Blank	
Unknown (13.78)	ND	29	29		

Sample MW-4-02 (Lab #: BO-07-203-05)

Volatile Organics	(Diluted 5x)				
Benzene	Not Rv'd	610	614		
Toluene	Not Rv'd	10 J	10 J		
Ethylbenzene	Not Rv'd	93	93		
Xylene	Not Rv'd	26	26		
Non-Target Volatile Organics					
Cyclohexane (11.59)	Not Rv'd	65	65		

Methylcyclpcentane (12.18)	Not Rv'd	50	50		
Semivolatile Organics					
Nitrobenzene	10U	10 U	12		
2,4-Dimethylphenol	10U	3 J	3 J		
Naphthalene	10U	52	52		
2-Methylnaphthalene	10U	59	59		
Dibenzofuran	10U	2 J	2 J		
Fluorene	10U	1 J	1 J		
Di-n-butylphthalate	6J	4 JB	4 JB	negate	1
Bis(2-ethylhexyl)phthalate	1J	1 JB	1 JB	negate	1
Non-Target Semivolatile Organics					
Unknown (5.92)	ND	36	36		
Ethyl Benzene (7.34)	ND	0	59		
2,3-Dimethyl 1-2-cyclopenten-1-one	ND	52	52		
Trimethyl-2-cyclopenten-1-one (11.21)	ND	33	33		
Trimethyl-2-cyclopenten-1-one (11.92)	ND	34	34		
Trimethyl-2-cyclopenten-1-one (12.45)	ND	48	48		
C4-Benzene (12.82)	ND	17	17		
Tetrahydronaphthalene (13.00)	ND	21	21		
Unknown (13.54)	ND	14	14		
C13-Alkane (13.70)	ND	17	17		
Unknown (14.17)	ND	27	27		
Unknown (14.34)	ND	27	27		
Unknown Alkane (14.63)	ND	56	56		
Unknown (14.95)	ND	19	19		
Unknown (15.32)	ND	17	17		
Methyl Naphthalene (15.45)	ND	95	95		
Unknown (16.01)	ND	14	14		
Dimethyl naphthalene (16.41)	ND	13	13		
Dimethyl naphthalene (16.82)	ND	15	15		
Dimethyl naphthalene (17.03)	ND	15	22		
Dimethyl naphthalene (17.09)	ND	22	38		
Unknown (17.36)	ND	29	29		
Unknown (18.76)	ND	13	13		
Total		**634**	**716**		
Total Aromatics		**177**	**259**		
Total Alkanes		**73**	**73**		

Sample HW-5-02 (Lab #: B0-07-203-06)

Volatile Organics	(Diluted 100x)		
Benzene	Not Rv'd	15000	15000
Toluene	Not Rv'd	630	630
Ethylbenzene	Not Rv'd	1100	1100
Xylene	Not Rv'd	1500	1500

Non-Target Volatile Organics
None Detected

Semivolatile Organics	(Diluted 5x)				
4-Methylphenol	10U	12 J	12 J		
2,4-Dimethylphenol	10U	8 J	8 J		
Naphthalene	10U	120	120		
2-Methylnaphthalene	10U	58	58		
Di-n-ButylPhthalate	6J	4 JB	4 JB	negate	1

Non-Target Semivolatile Organics

Methyl Benzene (6.08)	ND	0	168
Ethyl Benzene (8.01)	ND	0	438
Dimethyl Benzene (8.17)	ND	350	353
Dimethyl Benzene (8.65)	ND	0	204
C3-Benzene (10.03)	ND	150	149
C3-Benzene (10.63)	ND	250	251
Unknown (11.46)	ND	240	243
1,2,4-Trithiolane (12.74)	ND	5000	4990
Unknown (13.33)	ND	73	73
Unknown (14.42)	ND	74	74
Methyl Benzoic Acid (15.65)	ND	370	374
Methyl Benzoic Acid (15.73)	ND	72	72
Unknown (16.82)	ND	100	104
Unknown (17.21)	ND	340	339
Unknown (18.16)	ND	230	232
Unknown (18.38)	ND	100	103
Unknown (19.09)	ND	60	60
Tetrathiepane (19.29)	ND	550	550
Unknown (19.63)	ND	76	77
Unknown (19.83)	ND	60	61
Unknown (20.35)	ND	0	92
Unknown (20.42)	ND	64	64
Pentathiepane (20.85)	ND	79	79
Unknown (21.25)	ND	72	72
Total		**8310**	**9222**
Total Aromatics		**1192**	**2009**

Sample HH-13-02 (Lab #: BO-07-203-07)

Volatile Organics
None Detected

Non-Target Volatile Organics
None Detected

Semivolatile Organics					
Di-n-butylphthalate	6J	6 JB	6 JB	negate	1
Non-Target Semivolatile Organics					
7-Oxabicyclo[4,1,0]heptane (7.26)	6J	22 B	22 B	negate	1
2-Cyclohexane -1-one (8.76)	ND	8 B	8	*Not found in blank	
Unknown (13.30)	ND	44	44		
10-Demethylsqualene (31.19)	ND	7	7		

Sample RS-US-02 (Lab #: BO-07-203-08)

Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics					
Di-n-butylphthalate	6J	3 JB	3 JB	negate	1
Bis(2-Ethylhexyl)Phthalate	1J	2 JB	2 JB	negate	1
Non-Target Semivolatile Organics					
7-Oxabicyclo[4,1,0]heptane (7.28)	6J	10 B	10 B	negate	1
10-Demethylsqualene (31.20)	ND	10	10		

Sample RG-MS-02 (Lab #: BO-07-203-9)

Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics					
Di-n-butylphthalate	6J	4 JB	4 JB	negate	1
Bis(2-Ethylhexyl)Phthalate	1J	1 JB	1 JB	negate	1
Non-Target Semivolatile Organics					
7-Oxabicyclo[4,1,0]heptane (7.29)	6J	9 B	9 B	negate	1

Sample RG-DS-02 (Lab #: BO-07-203-10)

Volatile Organics					
None Detected					

report were illegible.

Sample MW-9S-02 (Lab #: BO-07-204-03)

Volatile Organics
None Detected

Non-Target Volatile Organics
None Detected

Semivolatile Organics

Di-n-Butylphthalate	Not Rv'd	4 JB	
bis(2-ethylhexyl)phthalate	Not Rv'd	1 JB	

Non-Target Semivolatile Organics

4-Methyl-2-Pentanone		0	16 A
7-oxabicyclo[4,1,0]heptane (7.21)	Not Rv'd	11 JB	11 JB
Unknown (16.62)	Not Rv'd	4.2 J	4.2 J
Total		15.2	15.2

Sample MW-9D-02 (Lab #: BO-07-204-04)

Volatile Organics

Acetone	Not Rv'd	4 J	4 J
Benzene	Not Rv'd	17	17
Toluene	Not Rv'd	19	19
Ethylbenzene	Not Rv'd	7	6
Xylenes	Not Rv'd	55	55

Non-Target Volatile Organics
None Detected

Semivolatile Organics

2-Methylphenol	Not Rv'd	2 J	2 J
Naphthalene	Not Rv'd	2 J	2 J
2-Methylnaphthalene	Not Rv'd	2 J	2 J
Di-n-butylphthalate	Not Rv'd	6 JB	6 JB
Bis(2-ethylhexyl)phthalate	Not Rv'd	2 JB	2 JB

Non-Target Semivolatile Organics

4-methyl-2-pentanone (4.94)	Not Rv'd	30 JB	30 JB
7-oxabicyclo[4,1,0]heptane (7.20)	Not Rv'd	39 JB	39 JB
Benzenethiol (9.33)	Not Rv'd	17 J	17 J
Benzene methanethiol (11.37)	Not Rv'd	23 J	23 J
Unknown (12.38)	Not Rv'd	15 J	15 J
Unknown (12.58)	Not Rv'd	16 J	16 J

PRELIMINARY REPORT

Unknown (12.92)	Not Rv'd	17 J	17 J
C3-Phenol (14.75)	Not Rv'd	43 J	43 J
C4-Phenol (15.00)	Not Rv'd	16 J	16 J
Unknown (15.28)	Not Rv'd	30 J	30 J
C3-Phenol (15.37)	Not Rv'd	28 J	28 J
C4-Phenol (15.59)	Not Rv'd	11 J	11 J
Unknown (15.76)	Not Rv'd	25 J	25 J
C5-Benzene (15.91)	Not Rv'd	14 J	14 J
1-Butyl-4-methoxybenzene (15.98)	Not Rv'd	13 J	13 J
Unknown (16.50)	Not Rv'd	28 J	28 J
Unknown (16.61)	Not Rv'd	24 J	24 J
Unknown (16.73)	Not Rv'd	16 J	16 J
Unknown (18.75)	Not Rv'd	12 J	12 J
Diphenyldisulfide (22.24)	Not Rv'd	77 J	77 J
Unknown (23.16)	Not Rv'd	160 J	160 J
Disulfide, bis-1,4-methylphenol (23.8	Not Rv'd	100 J	100 J
Disulfide, bis-1,4-methylphenol (24.0	Not Rv'd	17 J	17 J
Unknown (31.11)	Not Rv'd	16 J	16 J
Total		**787**	**787**
Total Aromatics		**14**	**14**
Total Phenolics		**98**	**98**

Sample HW-7-02 (Lab #: B0-07-204-05)

Volatile Organics	(Diluted 2x, Benzene determined fron 5x dilution))		
Acetone	100U	6 J	6
Benzene	5U	**340 D**	**380**
Benzene - duplicate vial	5U	**5 U**	**5 U**
Toluene	5U	3 J	3
Ethylbenzene	5U	6 J	3
Xylenes	5U	12	12
Non-Target Volatile Organics			
C4-Alcohol (9.49)	ND	14 J	14 J
Cyclohexane (11.58)	ND	48 J	48 J
Methyl Cyclopentane (12.17)	ND	22 J	22 J
Unknown (12.86)	ND	14 J	14 J
Unknown (15.61)	ND	12 J	12 J
Unknown (17.32)	ND	16 J	16 J
Unknown (20.54)	ND	12 J	12 J
Unknown (26.59)	ND	16 J	16 J
Total		**154**	**154**
Total Alkanes		**70**	**70**
Semivolatile Organics			
Fluorene	Not Rv'd	2 J	2 J
Phenanthrene	Not Rv'd	2 J	2 J

PRELIMINARY REPORT

Di-n-butylphthalate	Not Rv'd	5 JB	5 JB
Bis(2-ethylhexyl)phthalate	Not Rv'd	1 JB	1 JB
Non-Target Semivolatile Organics			
4-Methyl-2-Pentanone (4.94)	Not Rv'd	0	20 A
Unknown (5.88)	Not Rv'd	17 J	17 J
7-oxabicyclo[4,1,0]heptane (7.21)	Not Rv'd	17 JB	17 JB
2-Cyclohexen-1-one (8.71)	Not Rv'd	9 JB	9 JB
Unknown (11.19)	Not Rv'd	18 J	18 J
1,1-Sulfonylbisethane (11.79)	Not Rv'd	33 J	33 J
Unknown (12.00)	Not Rv'd	7 J	*
Unknown (12.12)	Not Rv'd	25 J	*
Unknown (12.58)	Not Rv'd	24 J	*
Camphor (12.68)	Not Rv'd	13 J	*
C4-Benzene (12.76)	Not Rv'd	8 J	*
1,2,3,4-tetrahydronaphthalene (12.95)	Not Rv'd	12 J	*
Unknown (13.17)	Not Rv'd	18 J	18
C13-Alkane (13.65)	Not Rv'd	13 J	13
Unknown (13.92)	Not Rv'd	23 J	23
Unknown Substituted Phenol (14.28)	Not Rv'd	10 J	10
Unknown (14.38)	Not Rv'd	16 J	16
Methylnaphthalene (15.40)	Not Rv'd	21 J	21
Unknown (15.72)	Not Rv'd	35 J	35
C4-Phenol (15.88)	Not Rv'd	16 J	16
Dimethyl Naphthalene (16.99)	Not Rv'd	0	43
Unknown Alkane (17.32)	Not Rv'd	32 J	32
*C3-Naphthalene + Unk. (18.52)	Not Rv'd	20 J	20
Unknown Alkane (19.74)	Not Rv'd	35 J	35
C19-Alkane (20.44)	Not Rv'd	55 J	*
* Values have not been verified.			
Total		477	477
Total Aromatics		61	84
Total Alkanes		152	185
Total Phenolics		16	16

Sample HW-8-02 (Lab #: B0-07-204-08)

Volatile Organics			
Benzene	5U	18,000	18,000
Toluene	5U	2,600	2,600
Ethylbenzene	5U	1,500	1,500
Xylene	5U	7,900	7,900
Non-Target Volatile Organics			
C3-Benzene (27.24)	5U	1,900 J	1,900 J
Semivolatile Organics			

PRELIMINARY REPORT

Phenol	Not Rv'd	110	108
2-Methylphenol	Not Rv'd	110	106
2,4-Dimethylphenol	Not Rv'd	99	98
Naphthalene	Not Rv'd	210	208
2-Methylnaphthalene	Not Rv'd	130	133
Fluorene	Not Rv'd	2 J	2 J
Phenanthrene	Not Rv'd	5 J	5 J
Di-n-butylphthalate	Not Rv'd	6 JB	5 JB
Pyrene	Not Rv'd	2 J	2 J
Non-Target Semivolatile Organics			
Cyclic Alkane (4.48)	Not Rv'd	0	1,500
Methylbenzene (6.11)	Not Rv'd	0	690 *
Unknown (6.57)	Not Rv'd	200	*
Substituted Benzene (8.04)	Not Rv'd	0	700 *
Dimethyl Benzene (8.29)	Not Rv'd	0	1,700 *
Dimethyl Benzene (8.74)	Not Rv'd	0	1,100
C3-Benzene (9.88)	Not Rv'd	150	*
C3-Benzene (10.08)	Not Rv'd	680	*
C3-Benzene (10.19)	Not Rv'd	300	*
C3-Benzene (10.41)	Not Rv'd	240	*
C3-Benzene (11.25)	Not Rv'd	310	*
2,3-dihydro-1H-indene (11.51)	Not Rv'd	420	*
Unknown (11.64)	Not Rv'd	610	*
C4-Benzene (12.24)	Not Rv'd	160	*
C2-Phenol (12.79)	Not Rv'd	290	*
Unknown (13.24)	Not Rv'd	340	*
C3-Phenol (14.92)	Not Rv'd	150	*
Tridecane (15.76)	Not Rv'd	210	*
Methylnaphthalene (16.25)	Not Rv'd	180	*
Tetradecane (17.22)	Not Rv'd	480	*
C2-Naphth. & Unknown (17.61)	Not Rv'd	0	330 *
Unknown Alkane (18.11)	Not Rv'd	180	*
Unknown (18.22)	Not Rv'd	130	*
Pentadecane (18.61)	Not Rv'd	210	*
Unknown (18.89)	Not Rv'd	230	*
Total		**5,470**	**11,490**
Total Aromatics		**2,440**	**6,960**
Total Alkanes		**1,080**	**2,580**
Total Phenolics		**440**	**440**

Sample MW-10-02 (Lab #: B0-07-204-09)

*The lab noted that this sample contained a layer of free-floating product. Sample results may be highly variable.

Volatile Organics			
Acetone	100U	14 J	14 J

PRELIMINARY REPORT

Benzene	5U	44	44
Toluene	5U	14	14
Ethylbenzene	5U	12	12
Xylene	5U	150	150
Non-Target Volatile Organics			
Unknown (9.59)	ND	6 J	6 J
Cyclohexane (11.72)	ND	14 J	14 J
Tetrahydrothiophene (13.00)	ND	14 J	14 J
Unknown (17.45)	ND	5 J	5 J
Unknown (18.42)	ND	6 J	6 J
Unknown (19.20)	ND	6 J	6 J
Unknown (20.53)	ND	13 J	13 J
Unknown (24.53)	ND	9 J	9 J
Unknown (26.38)	ND	37 J	37 J
Total		**110**	**110**
Total Alkanes		**14**	**14**

Semivolatile Organics

* All base neutral surrogates were less than the acceptable limit. The area of the last internal standard was also low. These compounds may be underestimated or undetected.

2,4-Dimethylphenol	Not Rv'd	4 J	4 J
Naphthalene	Not Rv'd	2 J	2 J
2-Methylnaphthalene	Not Rv'd	5 J	5 J
Dibenzofuran	Not Rv'd	0	2 J
Fluorene	Not Rv'd	3 J	3 J
Phenanthrene	Not Rv'd	10	10
Di-n-butylphthalate	Not Rv'd	0	1 JB
Pyrene	Not Rv'd	5 J	5 J
Non-Target Semivolatile Organics			
4-Methyl-2-pentanol (5.96)	Not Rv'd	15 J	15 J
Unknown (13.17)	Not Rv'd	16 J	16 J
Unknown Alkane (13.68)	Not Rv'd	11 J	11 J
Dihydrodimethyl-1H-indene (14.32)	Not Rv'd	15 J	15 J
C13-Alkane (14.39)	Not Rv'd	17 J	17 J
Unknown (14.91)	Not Rv'd	13 J	13 J
Unknown (15.10)	Not Rv'd	12 J	12 J
Unknown Alkane (15.32)	Not Rv'd	19 J	19 J
Unknown (15.65)	Not Rv'd	32 J	32 J
Methylnaphthalene (16.21)	Not Rv'd	21 J	21 J
Unknown (16.79)	Not Rv'd	85 J	85 J
Unknown Alkane (16.88)	Not Rv'd	25 J	25 J
Dimethylnaphthalene (17.60)	Not Rv'd	43 J	43 J
Dimethylnaphthalene (17.83)	Not Rv'd	52 J	52 J
Unknown (17.95)	Not Rv'd	32 J	32 J
Unknown Alkane (18.10)	Not Rv'd	66 J	66 J

C2-Naphthalene + Unk Alkane (18.35)	Not Rv'd	36 J	36 J
C3-Naphthalene (18.99)	Not Rv'd	50 J	50 J
Unknown (19.32)	Not Rv'd	31 J	31 J
Substituted Naphthalene (19.60)	Not Rv'd	0 J	45 J
Unknown Alkane (20.53)	Not Rv'd	43 J	43 J
Unknown Alkane (21.23)	Not Rv'd	38 J	38 J
Unknown Alkane (22.44)	Not Rv'd	24 J	24 J
Unknown (29.11)	Not Rv'd	33 J	33 J
Total		729	774
Total Aromatics		181	226
Total Alkanes		243	243

PRELIMINARY REPORT

Sample MH-11-02 (Lab #: B0-07-204-10)

Volatile Organics	(Undiluted, Benzene diluted x)		
Acetone	100U	9 J	9
1,2-Dichloroethane	5U	9	9
2-Butanone	100U		2 J
Benzene	5U	840 D	
Benzene - Duplicate Vial		5 U	
1,1,2,2-Tetrachloroethane	5U	2 J	2
Toluene	5U	2 J	2
Xylene	5U	8	8 J
Non-Target Volatile Organics			
Methyl butane (10.00)	Not Rv'd	8 J	8 J
Cyclohexane (11.70)	Not Rv'd	42 J	42 J
Methyl Cyclopentane (12.29)	Not Rv'd	23 J	23 J
Unknown (12.94)	Not Rv'd	6 J	6 J
Unknown (15.73)	Not Rv'd	14 J	14 J
Unknown (17.44)	Not Rv'd	14 J	14 J
Unknown (18.41)	Not Rv'd	8 J	8 J
Unknown (19.18)	Not Rv'd	9 J	9 J
Unknown (20.23)	Not Rv'd	7 J	7 J
Unknown (20.66)	Not Rv'd	12 J	13 J
Unknown (21.24)	Not Rv'd	10 J	10 J
Dihydro indene (26.90)	Not Rv'd	44 J	44 J
Total		197	198
Total Aromatics		44	44
Total Alkanes		73	73
Semivolatile Organics	(Diluted 10x)		
2-Methylnaphthalene	Not Rv'd	9 J	
Di-n-Butyl Phthalate	Not Rv'd	7 J	
Non-Target Semivolatile Organics			
Cyclohexane (4.47)	Not Rv'd	0	131

PRELIMINARY REPORT

Unknown (11.47)	Not Rv'd	160	160
Unknown (12.62)	Not Rv'd	48	48
C4-Benzene (12.88)	Not Rv'd	51	51
Unknown (13.15)	Not Rv'd	70	70
Diethylcyclohexane (14.92)	Not Rv'd	66	66
Unknown (15.29)	Not Rv'd	53	53
Unknown (16.49)	Not Rv'd	46	46
Unknown (16.63)	Not Rv'd	79	79
Dimethylcyclopentene (16.84)	Not Rv'd	59	59
Unknown (17.13)	Not Rv'd	49	49
(trimethylphenyl)-2-propanone(17.46)	Not Rv'd	100	100
C2-Naphthalene (17.79)	Not Rv'd	54	54
Unknown (18.03)	Not Rv'd	190	190
Unknown (18.14)	Not Rv'd	50	50
Unknown (18.35)	Not Rv'd	49	49
Unknown (18.82)	Not Rv'd	110	110
Unknown (19.12)	Not Rv'd	110	110
Unknown (19.35)	Not Rv'd	120	120
Unknown (19.67)	Not Rv'd	0	110
Unknown (19.78)	Not Rv'd	41	41
Unknown (20.30)	Not Rv'd	81	81
Unknown (20.38)	Not Rv'd	100	100
Unknown (20.52)	Not Rv'd	400	400
Unknown (20.62)	Not Rv'd	89	89
Total		2,175	2,416
Total Aromatics		105	105
Total Alkanes		66	197

Sample MW-6S-02 (Lab #: BO-07-204-11)

Volatile Organics			
Benzene	5U	370	370
Toluene	5U	19 J	19 J
Ethylbenzene	5U	110	110
Xylene	5U	1,600	1,600
Non-Target Volatile Organics			
Methyl Cyclopentane (12.21)	ND	110	110
Unknown (17.33)	ND	60	60
Dihydro indene (26.67)	ND	390	390
C3-Benzene (27.32)	ND	710	710
Total		1,270	1,270
Total Aromatics		1,100	1,100
Total Alkanes		110	110
Semivolatile Organics	(Diluted 20X, surrogates diluted out)		
2,4-Dimethylphenol	Not Rv'd	540	540

PRELIMINARY REPORT

Naphthalene	Not Rv'd	98 J	100 J
2-Methylnaphthalene	Not Rv'd	250	252
Acenaphthene	Not Rv'd	51 J	51 J
Fluorene	Not Rv'd	150 J	150 J
Phenanthrene	Not Rv'd	490	487
Anthracene	Not Rv'd	75 J	75 J
Pyrene	Not Rv'd	210	208
Non-Target Semivolatile Organics			
Cyclohexane (4.44)	Not Rv'd	0	? Not quantified
Dimethyl Benzene (8.17)	Not Rv'd	0	580 J
Unknown (10.15)	Not Rv'd	740	740
C3-Benzene (10.66)	Not Rv'd	1,600	1,570
Dimethyl-2-Cyclopetnen-1-one (11.48)	Not Rv'd	1,100	1,070
Unknown Alk. + Unk. Benzene (13.57)	Not Rv'd	670	670
C2-Phenol (13.77)	Not Rv'd	390	390
C2-Phenol (13.98)	Not Rv'd	440	440
Unknown Alkane (14.41)	Not Rv'd	870	870
Unknown (14.91)	Not Rv'd	810	810
Methyltridecane (15.34)	Not Rv'd	700	700
Methylnaphthalene (16.25)	Not Rv'd	1,400	1,430
Unknown (16.51)	Not Rv'd	700	700
Unknown (16.89)	Not Rv'd	520	520
C2-Naphthalene (17.63)	Not Rv'd	780	780
C2-Naphthalene (17.85)	Not Rv'd	1,100	1,090
C2-Naphthalene (17.91)	Not Rv'd	990	990
Unknown Alkane (18.11)	Not Rv'd	1,500	1,470
C3-Naphthalene (19.00)	Not Rv'd	450	450
Unknown Alk. + C3-Naph. (19.60)	Not Rv'd	880	890
Trimethylnaphthalene	Not Rv'd	0	770
Unknown Alkane (20.54)	Not Rv'd	1,400	1,350
Unknown Alkane (21.24)	Not Rv'd	890	890
Unknown (21.68)	Not Rv'd	390	390
Unknown Alkane (21.79)	Not Rv'd	380	330
Total		**18,700**	**19,940**
Total Aromatics		**6,320**	**7,210**
Total Alkanes		**5,740**	**5,660**
Total Phenolics		**830**	**830**

Summary Data Table
Rexene

TCL Volatile and Semivolatile Organics
Water Samples Received 7/20/90
IT Project #: EO-07-205

Sample / Analyte	Method Blank Conc. ppb	Lab. Reported Conc. ppb	QA Validation Reported Conc. Decision	Data Validatio	Footnotes
Sample MW-12-02 (Lab #: EO-07-205-01)					
Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics					
Di-n-ButylPhthalate	6J	4 JB	4 JB	negate	1
Non-Target Semivolatile Organics					
7-Oxabicycloheptane (7.25)	6J	27 B	27 B	negate	1
2-Cyclohexenone (8.75)	ND	10	10		
Unknown (13.79)	ND	74	74		
Unknown (14.50)	ND	19	19		
Total		103	103		
Sample MW-6S-02-D (Lab #: EO-07-205-02)					
Volatile Organics	(Diluted 10x)				
Benzene	5U	440	440		
Toluene	5U	25 J	25 J		
Ethylbenzene	5U	450	45.3		
Xylene	5U	1,800	1,800		
Non-Target Volatile Organics					
Methyl Cyclopentane (12.17)	ND	110	110		
Unknown (15.62)	ND	0	60		
Unknown Alkane (17.33)	ND	70	70		
Dihydroindene (26.63)	ND	370	370		
C3-Benzene (27.33)	ND	700	700		
Total		1,250	1,310		

	Total Aromatics		**1,070**	**1,070**	
	Total Alkanes		**180**	**180**	
	Semivolatile Organics	(Diluted 5x)			
	2,4-Dimethylphenol	10U	590	590	
	Naphthalene	10U	12 J	12 J	
	2-Methylnaphthalene	10U	27 J	27 J	
	Di-n-ButylPhthalate	6J	4 JB	4 JB	negate 1
	Non-Target Semivolatile Organics				
	2,3-Dimethyl-2,3-Butanediol (7.26)	ND	210	210	
	C3-Benzene (9.31)	ND	150	150	
	Unknown (9.53)	ND	590	590	
	C3-Benzene (9.64)	ND	150	150	
	Unknown (9.99)	ND	180	180	
	Unknown (10.12)	ND	390	390	
	C3-Benzene (10.45)	ND	260	260	
*	**2,3-Dimethyl-2-cyclopentanone (10.77)**	ND	**9,980**	**980**	* Lab Math Error
	Unknown (11.06)	ND	220	220	
	Unknown (11.11)	ND	180	190	
	2-Cyclopentanone, trimethyl (11.18)	ND	280	280	
	Unknown (11.67)	ND	320	320	
	Unknown (11.89)	ND	140	140	
	C4-Benzene (12.21)	ND	230	230	
	Unknown (13.79)	ND	330	330	
	Unknown (14.32)	ND	180	180	
	Unknown (14.53)	ND	240	240	
	2,3-Dihydro-1H-Indenone (14.90)	ND	280	280	
	Substituted Benzene (15.21)	ND	0	170	
	2,3-Dihydro-3-methyl-1H-Indenone	ND	170	450	
	Unknown (15.70)	ND	140	140	
	Unknown (16.47)	ND	210	210	
	Unknown (17.36)	ND	210	210	
	Total		**15,040**	**6,500**	
	Total Aromatics		**1,240**	**1,690**	

PRELIMINARY REPORT

Summary Data Table
Rexene

TCL Volatile and Semivolatile Organics
Water Samples
IT Project #: BO-07-204

Sample / Analyte	Method Blank Conc. ppb	Lab. Reported Conc. ppb	QA Validation Reported Conc. Decision	Data Validatio	Footnotes
Trip Blank (Lab #: BO-07-204-01)					
Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Sample MW6D-02 (Lab #: BO-07-204-02)					
Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics					
Di-n-Butylphthalate	Not Rv'd	5 JB	5 JB		
bis(2-ethylhexyl)phthalate	Not Rv'd	1 JB	1 JB		
Non-Target Semivolatile Organics					
4-Methyl-2-Pentanone (4.95)	Not Rv'd	27 BJ	*		
Unknown (7.21)	Not Rv'd	46 BJ	*		
2-Cyclohexen-1-one (8.70)	Not Rv'd	13 BJ	*		
Unknown (13.74)	Not Rv'd	25 J	*		
Unknown Alkane (30.35)	Not Rv'd	9 J	*		
Unknown Alkane (26.41)	Not Rv'd	5 J	*		
Unknown Alkane (33.75)	Not Rv'd	8 J	*		
Unknown (10.51)	Not Rv'd	4 J	*		
Total		137	?		
Total Alkanes		22	?		

* The copies of the non-target spectra included with the

Non-Target Volatile Organics
None Detected

Semivolatile Organics (Undiluted)			
Butylbenzylphthalate	NR	ND	1
Bis(2-Ethylhexyl)Phthalate	NR	ND	4
Total		**ND**	5

Non-Target Semivolatile Organics

Unknown (31.10)	NR	7	7
Total		7	7

Sample MW-1-01 (Lab #: BO-04-160-01)

Volatile Organics (Undiluted)
None Detected

Non-Target Volatile Organics
None Detected

Semivolatile Organics					
Bis(2-Ethylhexyl)Phthalate	1.03J	ND	3	Negate	1

Non-Target Semivolatile Organics

Methyl Benzene (5.33)	Not R'd	6 B	6 B
C2 Benzene (7.39)	Not R'd	4	4
Unknown (15.83)	Not R'd	10 B	10 B
Unknown (28.01)	Not R'd	4	4
Unknown (30.89)	Not R'd	5 B	5 B
Total			
Total Aromatics			

Sample MW-2-01 (Lab #: BO-04-180-01)

Volatile Organics			
Acetone	NR	ND	5
1,2-Dichloroeethane	NR	ND	1
1,1,2-Trichloroethane	NR	ND	2
Bromoform	NR	ND	1
Total		**ND**	9

Non-Target Volatile Organics
None Detected

Semivolatile Organics
None Detected

* Two acid surrogates out, not repeated.

Non-Target Semivolatile Organics

Unknown (4.66)	NR	6	6
Unknown (7.27)	NR	12	12
2-Cyclohexene-1-one (8.73)	NR	6	6
Unknown (13.78)	NR	31	31
Unknown (14.51)	NR	7	7
Total		62	62

Sample MW-3D-01 (Lab #: BO-04-161-02)

Volatile Organics

Methylene Chloride	NR	ND	3
Acetone	NR	ND	97
Toluene	NR	ND	3
Xylene	NR	ND	7
Total		ND	111

Non-Target Volatile Organics
None Detected

Semivolatile Organics
None Detected

Non-Target Semivolatile Organics

Unknown (7.11)	NR	19	19
Unknown (7.72)	NR	6	6
2 Cyclohexane-1-one (8.59)	NR	7	7
Unknown (13.65)	NR	29	29
Unknown Acid Ester (15.82)	NR	24	24
Unknown (16.12)	NR	6	6
Unknown (31.28)	NR	4	4
Total		95	95

Sample MW-4-01 (Lab #: BO-04-180-02)

Volatile Organics

Benzene	NR	1,700	1,600
Toluene	NR	ND	10
Xylene	NR	81	80
Total		1,781	1,690

Non-Target Volatile Organics	(Diluted 5x)		(1st internal standard used)
Cyclopentene (10.60)	NR	35	35
C5-Alkane (11.41)	NR	35	35
Pentane (12.53)	NR	40	40
Common Hydrocarbon (12.86)	NR	40	40
Cyclohexane (13.23)	NR	130	130
Methylcyclopentane (13.73)	NR	170 ?	170
Cyclohexene (14.24)	NR	68 ?	68
Methylcyclopentene (15.13)	NR	70 ?	70
Dimethylcyclopentene (18.88)	NR	46 ?	46
Total		**634**	**634**
Total Alkanes		**634**	**634**

Semivolatile Organics	(Diluted 2.5x)		
Phenol	NR	36	36
Nitrobenzene	NR	ND	46
2,4-Dimethylphenol	NR	ND	11
Benzoic Acid	NR	ND	13
Naphthalene	NR	100	105
2-Methylnaphthalene	NR	92	95
2,4-Dinitrophenol	NR	ND	32
4-Nitrophenol	NR	ND	9
Diethylphthalate	NR	ND	23
Total		**228**	**370**

Non-Target Semivolatile Organics	(Diluted 5x)		
Unknown (5.90)	NR	88	88
Unknown (10.05)	NR	50	50
Unknown (10.15)	NR	45	45
2,3-Dimethyl-2-cyclopentene (10.77)	NR	130	130
Methoxyphenol (11.20)	NR	100	100
Unknown (11.92)	NR	130	130
C2-Phenol (12.01)	NR	110	110
C4-Benzene (12.19)	NR	33	33
Unknown (12.44)	NR	180	180
C4-Benzene (12.83)	NR	40	40
1,2,3,4-Tetrahydronaphth (13.01)	NR	50	50
C2- Phenol (13.63)	NR	35	35
Unknown (13.94)	NR	50	50
C3-Phenol (14.15)	NR	70	70
Unknown (14.50)	NR	38	38
C3-Phenol (14.63)	NR	58	58
C4-Phenol (14.80)	NR	23	23
Unknown (14.99)	NR	70	70
C4-Phenol (15.04)	NR	43	43
Unknown (15.28)	NR	28	28
Unknown (15.41)	NR	23	23
Methylnaphthalene (15.46)	NR	50	50

Unknown (15.73)	NR	43	43
Unknown (16.07)	NR	200	200
Unknown (17.35)	NR	120	120
Total		1,807	1,807
Total Acids		439	439
Total Aromatics		173	173
Total Alkanes		130	130

Sample MW-5-01 (Lab #: B0-04-180-03)

Volatile Organics			
Benzene	NR	12,000	11,000
Toluene	NR	700	600
Ethylbenzene	NR	910	900
Xylene	NR	1,300	1,200
Total		14,910	13,700

Non-Target Volatile Organics (Diluted 20x)			
C8 Alkane (11.37)	NR	240	240
Pentane (12.53)	NR	140	140
Cyclohexane (13.19)	NR	280	280
Methyl Cyclohexane (13.69)	NR	200	200
Total		860	860
Total Alkanes		860	860

Semivolatile Organics (Diluted 2.5x)			
Phenol	NR	75	74
2-Methylphenol	NR	ND	13
4-Methylphenol	NR	ND	13
Nitrobenzene	NR	ND	4
2,4-Dimethylphenol	NR	ND	10
Benzoic Acid	NR	ND	31
Naphthalene	NR	86	85
4-Chloro-3-methylphenol	NR	ND	6
2-Methylnaphthalene	NR	44	43
4-Nitrophenol	NR	ND	62
Diethylphthalate	NR	ND	4
4-Nitroanaline	NR	ND	12
Bis(2-ethylhexyl)phthalate	NR	ND	3
Total		205	360

Non-Target Semivolatile Organics			
Cl-Benzene (5.45)	NR	130	130
Unknown (6.16)	NR	130	130
Cl-Benzene (7.35)	NR	300	300
Cl-Benzene (7.53)	NR	300	300
Cl-Benzene (8.00)	NR	180	180

C3-Benzene (9.37)	NR	120	120
C3-Benzene (9.97)	NR	170	170
C3-Benzene (10.52)	NR	68	68
Unknown (10.97)	NR	200	200
1,3,4-Trithiolane (11.92)	NR	850	850
Unknown (12.44)	NR	68	68
Unknown (13.14)	NR	53	53
Unknown (15.39)	NR	120	120
Methylnaphthalene (15.47)	NR	100	100
Unknown (17.30)	NR	80	80
Unknown (17.44)	NR	230	230
Unknown (17.68)	NR	100	100
Unknown (18.12)	NR	190	190
Unknown (18.38)	NR	60	60
Unknown (18.51)	NR	220	220
Unknown (18.77)	NR	33	33
Unknown (19.53)	NR	33	33
Unknown (19.71)	NR	38	38
Unknown (20.52)	NR	110	110
1,3,5,7-Tetrathiocane (21.06)	NR	330	330
Total		**4,213**	**4,213**
Total Aromatics		**1,300**	**1,300**

Sample MW-6S-01 (Lab #: B0-04-160-08)

(Diluted 10x)

Volatile Organics			
Methylene Chloride	NR	ND	50
Acetone	NR	ND	140
Benzene	NR	340	340
Toluene	NR	ND	20
Xylene	NR	1600	1570
Total		**1,940**	**2,120**
Volatile Non-Target Organics			
C3 Benzene (16.69)	NR	690	690
C3 Benzene (17.22)	NR	410	410
C3 Benzene (17.51)	NR	100	100
C3 Benzene (18.51)	NR	590	590
2,3 Dihydro 1-H Indene (19.15)	NR	480	480
C4 Benzene (19.55)	NR	100	100
C4 Benzene (19.86)	NR	130	130
C4 Benzene (20.07)	NR	190	190
1-Methyl 1-2,3 Dihydro Ind(20.39)	NR	150	150
C4 Benzene (20.82)	NR	180	180
C4 Benzene (21.02)	NR	180	180
2,3-Dihydro 4 Methyl-Indene (21.79)	NR	70	70
C4-Benzene (22.00)	NR	130	130

[illegible]-Dihydro 4 methyl-Indene (22.16)	NR	230	230
[illegible]-trahydronaphthalene (22.66)	NR	50	50
[illegible]rodimethylindene (22.92)	NR	90	90
[illegible]ene (23.25)	NR	50	50
Total		3,820	3,820

Semivolatile Organics	Check surrogate area??		
N-Nitrosodimethylamine —	NR	ND	1
Bis(2-Chloroisopropyl)ether)	NR	ND	1
2,4-Dimethylphenol	NR	340	340
4-Nitrotoluene —	NR	ND	13
Naphthalene	NR	45	46
2-Nitrotoluene —	NR	ND	12
2-Methylnaphthalene	NR	22	22
Diphenylhydrazine —	NR	ND	2
Di-n-Butylphthalate	NR	ND	2
Bis(2-Ethylhexyl)Phthalate	NR	23	23
Total		430	462

Non-Target Semivolatile Organics			
Unknown Alcohol (7.36)	NR	28	28
C3-Benzene (7.61)	NR	84	84
C3-Benzene (8.08)	NR	84	84
C3-Benzene (9.45)	NR	67	67
Unknown (9.56)	NR	150	150
Unknown (10.12)	NR	140	140
Trimethyl Benzene Isomer (10.60)	NR	55	55
Unknown (10.86)	NR	140	140
Unknown (11.18)	NR	45	45
Trimethylcyclopentanone (11.29)	NR	27	27
Dimethyl Phenol (12.10)	NR	88	88
C4-Benzene (12.28)	NR	46	46
C4-Benzene (12.35)	NR	40	40
Ethyl Phenol (12.58)	NR	34	34
Substituted Indene (12.89)	NR	44	44
C3-Phenol (13.29)	NR	78	78
Unknown (13.78)	NR	75	75
2,3-Dihydro-1H-inden-1-one (15.01)	NR	40	40
Unknown (15.59)	NR	53	53
Unknown (16.09)	NR	28	28
Unknown (25.49)	NR	24	24
Unknown (27.22)	NR	45	45
Unknown (30.87)	NR	31	31
Unknown (32.59)	NR	57	57
Unknown (37.93)	NR	57	57
Total		1,560	1,560

Sample MW-6D-01 (Lab #: B0-04-160-07)

Volatile Organics			
Methylene Chloride	NR	ND	3
Carbon Disulfide	NR	ND	-
Benzene	NR	ND	2
Ethylbenzene	NR	ND	1
Total		**ND**	**13**
Non-Target Volatile Organics			
None Detected			
Semivolatile Organics			
4-Chloroanaline	NR	ND	1
Non-Target Semivolatile Organics			
Unknown (7.13)	NR	13	13
Unknown (13.65)	NR	22	22
2-Methylpropanoic acid (15.84)	NR	20 B	20
Unknown (16.13)	NR	6	6
Total		**61**	**61**

Sample MW-7-01 (Lab #: B0-04-160-05)

Volatile Organics			
Xylene	NR	ND	2
Non-Target Volatile Organics			
Cyclohexane (13.17)	NR	17	17
Methyl Cyclopentane (13.68)	NR	5	5
Unknown (14.33)	NR	2	2
Unknown (15.11)	NR	2	2
Unknown (15.53)	NR	4	4
Unknown (18.83)	NR	7	7
Unknown (20.57)	NR	9	9
Unknown (21.66)	NR	4	4
Unknown (22.28)	NR	7	7
Total		**57**	**57**
Semivolatile Organics			
bis(2-chloroisopropyl)ether	NR	ND	1
Nitrobenzene	NR	ND	1
Isophrone	NR	ND	2
4-Chloroanaline	NR	ND	1
2-Nitroanaline	NR	ND	3
4-Nitrophenol	NR	ND	5
Fluorene	NR	ND	2
4-Nitroanaline	NR	ND	1

1,2-Diphenylhydrazine	NR	ND	2
Phenanthrene	NR	ND	1
Anthracene	NR	ND	1
Total		ND	20

Non-Target Semivolatile Organics

Unknown (5.78)	NR	27	27
2,3-dimethyl 1,2,3-butanediol (7.1	NR	17	17
Unknown (7.87)	NR	18	18
Unknown (9.35)	NR	23	23
C3-Benzene (9.83)	NR	49	49
Unknown (9.89)	NR	58	58
Unknown (10.03)	NR	14	14
3,5-dimethyl-2-cyclopenteno (10.66)	NR	37	37
Unknown (11.10)	NR	31	31
Unknown (11.66)	NR	26	26
2,6-dimethyl piperidine (11.72)	NR	32	32
Unknown (11.95)	NR	100	100
C4-Benzene (12.07)	NR	18	18
Unknown (12.15)	NR	16	16
Unknown (12.45)	NR	170	170
Unknown (13.04)	NR	66	66
Unknown (13.16)	NR	17	17
alpha-Terpineol (13.39)	NR	110	110
Unknown (13.80)	NR	110	110
Unknown (14.01)	NR	25	25
Unknown (14.25)	NR	74	74
Unknown (14.49)	NR	25	25
Unknown (15.15)	NR	46	46
C4-Phenol (15.37)	NR	60	60
C4-Phenol (15.81)	NR	41	41
Total		1210	1210

Sample MW-8-01 (Lab #: B0-04-160-06)

Volatile Organics

Methylene Chloride	NR	ND	54
1,2-Dichloroethane	NR	ND	636
4-Methyl-2-Pentanone	NR	ND	40
Benzene	NR	26,000	26,100
Toluene	NR	1,700	1,700
Xylene	NR	5,400	5,400
Total		33,100	33,930

Non-Target Volatile Organics (Diluted 10x)

C3-Benzene (16.58)	NR	120	120
C3-Benzene (17.50)	NR	160	160

Dihydro Indene (19.13)	NR	60	60
Total		**340**	**340**
Semivolatile Organics			
N-Nitrosodimethylamine —	NR	ND	4
Phenol	NR	160	164
2-Chlorophenol	NR	ND	1
2-Methylphenol	NR	120	122
Bis(2-Chloroisopropyl)ether	NR	ND	1
4-Methylphenol	NR	41	41
N-Nitrosodi-n-propylamine	NR	ND	16
2,4-Dimethylphenol	NR	290	286
Naphthalene	NR	150	151
2-Chloroanaline	NR	ND	1
2-Methylnaphthalene	NR	55	55
2,4-Dinitrophenol	NR	ND	1
4-Nitrophenol	NR	ND	62
Diethylphthalate	NR	ND	9
Fluorene	NR	ND	3
Diphenylhydrazine —?	NR	ND	1
Phenanthrene	NR	ND	3
Anthracene	NR	ND	3
Bis 2-ethylhexyl(Phthalate	NR	ND	1
Total		**816**	**925**
Non-Target Semivolatile Organics			
Toluene (5.33)	NR	560 B?	560
Unknown (5.81)	NR	190	190
Unknown (6.95)	NR	44	44
C3-Benzene (7.23)	NR	330	330
Unknown (7.46)	NR	370	370
C3-Benzene (7.91)	NR	360	360
Cis-trans 2,3-dimethylcyclopent(8.6	NR	67	67
C3-Benzene (9.26)	NR	220	220
C3-Benzene (9.38)	NR	120	120
C3-Benzene (9.59)	NR	130	130
C3-Benzene (9.90)	NR	230	230
C3-Benzene (10.43)	NR	94	94
2,3-dihydro-1H-indene (10.67)	NR	120	120
Unknown (10.90)	NR	610	610
Unknown (11.90)	NR	42	42
Unknown (11.97)	NR	52	52
C2-Phenol (12.03)	NR	79	79
C4-Benzene (12.17)	NR	47	47
Unknown (12.44)	NR	120	120
C3-Phenol (13.08)	NR	60	60
Unknown (13.20)	NR	69	69
Unknown (13.46)	NR	71	71

2-Phenol (13.62)	NR	63	63
Unknown (14.17)	NR	52	52
Unknown (14.64)	NR	66	66
Total		4,166	4,166

Sample MW-9S-01 (Lab #: B0-04-161-03)

Volatile Organics			
Methylene Chloride	NR	ND	4
Acetone	NR	ND	61
Total		**ND**	65
Non-Target Volatile Organics			
None Detected			
Semivolatile Organics			
Benzoic Acid	NR	ND	2
2,4-Dinitrophenol	NR	ND	1
Total		**ND**	3
Non-Target Semivolatile Organics			
Unknown Acid Ester (15.84)	NR	24	24
Unknown (16.13)	NR	6	6
Unknown (16.52)	NR	5	5
Total		35	35

Sample MW-9S-01-D (Lab #: B0-04-161-01)

Volatile Organics			
Methylene Chloride	NR	ND	3
Acetone	NR	110	107
Total		**110**	110
Non-Target Volatile Organics			
Not Detected			
Semivolatile Organics			
Benzoic Acid	NR	ND	3
2,4-Dinitrophenol	NR	ND	2
Di-n-Butyl Phthalate	NR	ND	1
Bis(2-Ethylhexyl)Phthalate	NR	130	130
Total		**130**	136
Non-Target Semivolatile Organics			
Unknown (7.11)	NR	4	4
Unknown Acid Ester (15.84)	NR	25	25
Unknown (16.13)	NR	8	8

Unknown (16.51)	NR	5	5
Unknown (21.20)	NR	5	5
Total		47	47

Sample MW-9D-01 (Lab #: B0-04-160-02)

Volatile Organics			
Benzene	NR	21	21
Tetrachloroethene	NR	ND	2
Toluene	NR	20	20
Ethylbenzene	NR	7	7
Xylene	NR	46	46
Total		94	96
Non-Target Volatile Organics			
Unknown (15.70)	NR	12	12
Unknown (23.22)	NR	4	4
Total		16	16
Semivolatile Organics			
2-Methylphenol	NR	ND	1
Bis(2-chloroisopropyl)ether	NR	ND	2
Nitrobenzene	NR	ND	2
Benzoic Acid	NR	ND	4
2-Nitroanaline	NR	ND	2
Dimethylphthalate	NR	ND	2
2,4-Dinitrophenol	NR	ND	73
Di-n-Butylphthalate	NR	ND	1
Total		ND	97
Non-Target Semivolatile Organics			
C2-Benzene (7.87)	NR	26	26
Benzenethiol (9.27)	NR	42	42
2-Methylbenzenethiol (11.31)	NR	46	46
Unknown (12.29)	NR	23	23
Unknown (12.48)	NR	16	16
Unknown (12.89)	NR	30	30
C3-Phenol (13.43)	NR	10	10
C3-Phenol (14.67)	NR	48	48
C4-Phenol (14.91)	NR	16	16
Unknown (15.20)	NR	34	34
C3-Phenol (15.31)	NR	40	40
C4-Phenol (15.69)	NR	34	34
C5-Benzene (15.84)	NR	17	17
C5-Phenol (15.90)	NR	18	18
Unknown (16.16)	NR	14	14
Unknown (16.43)	NR	27	27

Unknown (16.54)	NR	25	25
Unknown (16.66)	NR	16	16
Unknown (16.79)	NR	10	10
Unknown (16.96)	NR	11	11
Unknown (17.49)	NR	12	12
Unknown (18.27)	NR	27	27
Diphenyldisulfide (22.14)	NR	29	29
Unknown (23.03)	NR	55	55
Unknown (23.72) not included	NR	35 *	Not included
Total		661	661

Sample MW-10-01 (Lab #: B0-04-180-04)

Volatile Organics			
1,1-Dichloroethane	NR	ND	2
Benzene	NR	13	13
Trans 1,3-Dichloropropene	NR	ND	21
Toluene	NR	ND	4
Ethylbenzene	NR	5.7	6
Xylene	NR	28	28
Total		46.7	74
Non-Target Volatile Organics			
Cyclohexane (13.18)	NR	12	12
Semivolatile Organics	(Undiluted)		
Nitrobenzene	NR	ND	2
Isophrone	NR	ND	1
2-Chloronaphthalene	NR	ND	2
4-Nitrophenol	NR	ND	6
Total		ND	11
Non-Target Semivolatile Organics			
Unknown (5.91)	NR	14	14
3,3-Dimethyl-2,3-Butanediol (7.27)	NR	9	9
Unknown (7.99)	NR	8	8
Unknown (9.45)	NR	52	52
Unknown (10.00)	NR	19	19
Unknown (10.37)	NR	5	5
Unknown (10.76)	NR	10	10
Unknown (11.06)	NR	18	18
Trimethylcyclopentenone (11.20)	NR	12	12
Unknown (11.83)	NR	5	5
Unknown (11.97)	NR	23	23
Unknown (12.09)	NR	6	6
Unknown (12.18)	NR	9	9
Unknown (12.48)	NR	58	58

Unknown (13.05)		NR	7	7
Unknown (13.57)		NR	11	11
Unknown (14.05)		NR	6	6
Unknown (14.27)		NR	15	15
Unknown (14.47)		NR	-	-
1,4-Benzene (15.21)		NR	14	14
Unknown (15.26)		NR	12	12
Unknown (15.64)		NR	6	6
Unknown (15.86)		NR	18	18
Unknown (16.68)		NR	23	23
Unknown (31.12)		NR	8	8
	Total		375	375

Sample MW-11-01 (Lab #: B0-04-180-05)

Volatile Organics	(Diluted 200x)			
Acetone		NR	ND	34
1,1-Dichloroethane		NR	12	12
Bromodichloromethane		NR	ND	1
Benzene		NR	2800	2800
trans-1,3-Dichloropropene		NR	ND	5
1,1,2,2-Tetrachloroethane		NR	ND	4
Toluene		NR	ND	4
Xylene		NR	ND	5
	Total		2812	2865
Non-Target Volatile Organics				
C8-Alkane (11.39)		NR	18	18
Cyclohexane (13.21)		NR	82	82
Unknown (19.83)		NR	13	13
Unknown (21.69)		NR	15	15
Unknown (22.28)		NR	39	39
Unknown (25.88)		NR	19	19
2,3-Dihydro-1H-Indene (30.50)		NR	29	29
	Total		215	215
Semivolatile Organics	(Diluted 2.5x)			
Phenol		NR	ND	52
2-Methylnaphthalene		NR	ND	13
4-Nitrophenol		NR	ND	62
4-Nitroanaline		NR	ND	11
	Total		ND	138
Non-Target Semivolatile Organics				
2,3-Dimethyl-2-Cyclopent (10.77)		NR	110	110
Unknown (11.91)		NR	35	35

2-Phenol (12.00)	NR	28	28
Unknown (12.43)	NR	40	40
Unknown (15.99)	NR	23	23
Unknown (16.09)	NR	39	39
Unknown (16.39)	NR	30	30
Unknown (16.69)	NR	60	60
Unknown (17.30)	NR	200	200
Unknown (17.40)	NR	30	30
Unknown (17.65)	NR	75	75
Unknown (18.08)	NR	95	95
Unknown (18.37)	NR	93	93
Unknown (18.45)	NR	50	50
Unknown (18.50)	NR	63	63
Unknown (18.62)	NR	110	110
Unknown (18.93)	NR	120	120
Unknown (19.33)	NR	53	53
Unknown (19.39)	NR	23	23
Unknown (19.54)	NR	60	60
Unknown (19.75)	NR	190	190
Unknown (19.88)	NR	180	180
Unknown (20.44)	NR	28	28
Unknown (20.53)	NR	58	58
Unknown (21.04)	NR	90	*
Total		**1874**	**1784**

Sample MW-12-01 (Lab #: B0-04-160-04)

Volatile Organics			
Methylene Chloride	NR	ND	3
Non-Target Volatile Organics			
Unknown (20.69)	NR	9	9
Semivolatile Organics			
Di-n-Butylphthalate	NR	ND	2
Bis(2-Ethylhexyl)Phthalate	NR	ND	2
Non-Target Semivolatile Organics			
Methyl Benzene (5.32)	NR	6 B	6
7-Oxabicyclo[4.1.0]heptane (7.13)	NR	12	12
C2-Benzene (7.39)	NR	7	7
2-Cyclohexen-1-one (8.62)	NR	6	6
Unknown (13.65)	NR	20	20
Unknown (14.38)	NR	5	5
Unknown Acid Ester (15.84)	NR	5 B	5
Total		**61**	**?**

Sample MW-13-01 (Lab #: B0-04180-06)

Volatile Organics
None Detected

Non-Target Volatile Organics
None Detected

Semivolatile Organics
None Detected

Non-Target Semivolatile Organics

Unknown (13.79)	NR	14	14
10-Demethylsqualene (31.11)	NR	11	11
Total		25	25

Sample MW-35-01 (Lab #: B0-04-160-03)

Volatile Organics

Methylene Chloride	NR	NR	3

Non-Target Volatile Organics
None Detected

Semivolatile Organics

Di-n-Butylphthalate	NR	ND	2
Butylbenzylphthalate	NR	ND	2
Bis(2-Ethylhexyl)Phthalate	NR	ND	3
Total		ND	7

Non-Target Semivolatile Organics

Methyl Benzene (5.33)	Not Rv'd	5 B	?
Unknown Acid Ester (15.83)	Not Rv'd	6 B	?
Unknown (30.89)	Not Rv'd	5 B	?

Sample S. Stern (Lab #: B0-04-180-07)

Volatile Organics
None Detected

Non-Target Volatile Organics
None Detected

Semivolatile Organics (Diluted 2.5X)

Benzoic Acid	NR	ND	3
Bis(2-ethylhexyl)Phthalate	NR	ND	1

Non-Target Semivolatile Organics

Unknown (17.35)	NR	5	5
Unknown Alkane (19.7[illegible])	NR	10	10
Unknown Alkane (20.[illegible])	NR	20	20
Unknown (22.59)	NR	10	10
Unknown (25.59)	NR	48	48
Unknown (36.49)	NR	93	93
Total		**186**	**186**

Summary Data Table
Rexene

PRELIMINARY REPORT

TCL Volatile & Semivolatile Organics
Water Samples

Sample / Analyte	Method Blank Conc. ppb	Lab. Reported Conc. ppb	QA Validation Reported Conc. Decision	Data Validatio	Footnotes
Sample RG-MS-01 (Lab #: BO-04-181-01)					
Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics		(Diluted 2x)			
None Detected					
Non-Target Semivolatile Organics					
None Detected					
Sample RG-DS-01 (Lab #: BO-04-181-02)					
Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics					
None Detected		(Undiluted)			
Non-Target Semivolatile Organics					
None Detected					
Sample RG-US-01 (Lab #: BO-04-180-08)					
Volatile Organics					
None Detected					

Aqueous

Sample ~~S. Stern~~ (Lab #: B0-04-180-07)

Volatile Organics
None Detected

Non-Target Volatile Organics
None Detected

Semivolatile Organics	(Diluted 2.5X)		
Benzoic Acid	NR	ND	3
Bis(2-ethylhexyl)Phthalate	NR	ND	1

Non-Target Semivolatile Organics			
Unknown (17.35)	NR	5	5
Unknown Alkane (19.76)	NR	10	10
Unknown Alkane (20.46)	NR	20	20
Unknown (22.59)	NR	10	10
Unknown (25.59)	NR	48	48
Unknown (36.49)	NR	93	93
Total		**186**	**186**

PRELIMINARY REPORT

Summary Data Table
Rexene

TCL Semivolatile Organics
Soil Samples

Sample / Analyte	Method Blank Conc. ppb	Lab. Reported Conc. ppb	QA Validation Reported Conc. Decision	Data Validation	Footnotes
Sample B-5 (Lab #: BO-04-168-06)					
(% Solids = 82%)					
Semivolatile Organics					
O-Nitrotoluene	Not Rvd	ND	600		
Naphthalene	Not Rvd	2,500	3,000		
M-Nitrotoluene	Not Rvd	ND	400		
4-Chloroanaline	Not Rvd	ND	400		
2-Methylnaphthalene	Not Rvd	7,200	8,400		
4-Nitrophenol	Not Rvd	ND	200		
Dibenzofuran	Not Rvd	ND	200		
2,4-Dinitrotoluene	Not Rvd	ND	300		
Fluorene	Not Rvd	ND	200		
Phenanthrene	Not Rvd	ND	200		
Anthracene	Not Rvd	ND	200		
Butylbenzylphthalate	Not Rvd	ND	300		
Bis(2-ethylhexyl)Phthalate	Not Rvd	ND	200		
Total		**9700**	**14600**		
Non-Target Semivolatile Organics		Different Internal Standards used			
C11-Alkane (11.91)	68	15,000	13,600		
C12-Alkane (12.84)	12	9,000	2,400		
C12-Alkane (12.99)	17	12,000	3,400		
C12-Alkane (13.11)	17	12,000	3,400		
C12-Alkane (13.60)	38	24,000	7,600		
C13-Alkane (13.83)	48	35,000	9,600		
Unknown (14.31)	22	15,000	4,400		
C13-Alkane (14.45)	?	15,000	Not Inc.		
C13-Alkane (14.52)	12	8,400	2,400		
C13-Alkane (14.59)	41	12,000	8,200		
C13-Alkane (14.71)	?	9,500	Not Inc.		
C14-Alkane (14.75)	41	29,000	8,200		
Unknown (14.98)	14	9,900	2,800		
C13-Alkane (15.16)	39	39,000	7,800		
C14-Alkane (15.43)	18	12,000	3,600		

Methylnaphthalene (15.57)	19	13,000	3,800
Unknown (15.89)	88	17,000	17,700
C14-Alkane (16.19)	54	11,000	10,800
C14-Alkane (16.62)	140	29,000	28,100
C2-Naphthalene (17.14)	40	8,300	8,000
C16-Alkane (17.48)	100	21,000	20,100
C16-Alkane (19.26)	47	9,800	9,400
C18-Hydrocarbon (19.88)	53	11,000	10,600
C19-Hydrocarbon (20.58)	63	13,000	12,600
Total		**389900**	?
Total Aromatics		**21300**	?
Total		**302700**	?

Sample B-9 (Lab #: BO-04-168-01)

Semivolatile Organics	**30 grams extracted, diluted 2x)**		
Nitrobenzene	TBRvd	ND	100
Naphthalene	TBRvd	1,500	1,800
M-Nitrotoluene	TBRvd	ND	100
4-Chloroanaline	TBRvd	ND	100
2-Methylnaphthalene	TBRvd	3,500	4,200
Acenaphthylene	TBRvd	ND	100
4-Nitrophenol	TBRvd	ND	500
Dibenzofuran	TBRvd	ND	300
2,4-Dinitrotoluene	TBRvd	ND	400
Fluorene	TBRvd	ND	400
Phenanthrene	TBRvd	930	1,100
Anthracene	TBRvd	ND	1,100
Di-n-Butyl Phthalate	TBRvd	ND	200
Fluoranthene	TBRvd	ND	100
Pyrene	TBRvd	830	900
Butylbenzylphthalate	TBRvd	ND	200
Benzo(a)Anthracene	TBRvd	ND	400
Bis(2-ethylhexyl)Phthalate	TBRvd	950	1,100
Chrysene	TBRvd	ND	400
Di-n-Octyl Phthalate	TBRvd	ND	300
Benzo(a)Pyrene	TBRvd	ND	600
Benzo(g,h,i)Perylene	TBRvd	ND	100
Total		**7710**	**14500**

Non-Target Semivolatile Organics * Original quant reports hard to read - crossed out

C11-Alkane (11.93)	TBRvd	7,200	7,900
C12-Alkane (13.00)	TBRvd	1,900	1,800
C12-Alkane (13.12)	TBRvd	1,900	1,800
C12 Alkane (13.61)	TBRvd	3,900	4,300
C13-Alkane (13.83)	TBRvd	4,300	4,600
Hexylcyclohexane (14.31)	TBRvd	2,100	2,300

C13-Alkane (14.46)	TBRvd	1,700	1,900
C14 Alkane (14.75)	TBRvd	5,100	1,600
C13-Alkane (15.17)	TBRvd	5,400	5,900
C14-Alkane (15.44)	TBRvd	1,700	1,800
Methyl Naphthalene (15.57)	TBRvd	1,800	2,200
Unknown (15.90)	TBRvd	1,300	1,400
C14-Alkane (16.64)	TBRvd	2,400	2,700
C16-Alkane (17.51)	TBRvd	2,400	3,000
C16-Alkane (19.33)	TBRvd	2,800	2,900
C18-Alkane (19.95)	TBRvd	2,300	2,400
C17-Alkane (20.57)	TBRvd	2,300	2,500
C19-Alkane (20.66)	TBRvd	2,800	3,000
C18-Alkane (21.74)	TBRvd	2,200	2,400
Unknown (22.78)	TBRvd	1,200	1,200
C19-Alkane (22.87)	TBRvd	2,200	2,400
C21-Alkane (24.93)	TBRvd	2,100	2,300
C22-Alkane (25.89)	TBRvd	3,100	3,300
Unknown Alkane (29.35)	TBRvd	2,900	3,200
Total		**67,000**	**59,100**
Total Aromatics		**1,800**	**2,200**
Total Alkanes		**64,000**	**65,400**

Sample B-13 (Lab #: BO-04-168-02)

Semivolatile Organics			
Nitrobenzene	TBRvd	ND	130
Isophrone	TBRvd	ND	1,980
O-Nitrotoluene	TBRvd	ND	30
Naphthalene	TBRvd	1,200	1,270
2-Methylnaphthalene	TBRvd	2,600	2,850
Acenaphthalene	TBRvd	ND	60
Acenaphthene	TBRvd	ND	50
4-Nitrophenol	TBRvd	ND	100
Dibenzofuran	TBRvd	ND	160
2,4-Dinitrotoluene	TBRvd	ND	120
Fluorene	TBRvd	ND	150
4,6-Dinitro-2-methylphenol	TBRvd	ND	60
N-Nitrosodiphenylamine	TBRvd	ND	100
Phenanthrene	TBRvd	ND	150
Anthracene	TBRvd	ND	150
Butylbenzylphthalate	TBRvd	ND	250
Total		**3,800**	**7,610**
Non-Target Semivolatile Organics		Values cannot be confirmed	
Decahydro-2-methylnaphth. (12.25)	TBRvd	2,700	880
C12-Alkane (12.41)	TBRvd	1,700	440
Unknown (12.56)	TBRvd	2,700	880

C12-Alkane (12.87)	TBRvd	2,300	620	
C4-Benzene (12.95)	TBRvd	1,700	440	
C12-Alkane (13.02)	TBRvd	2,400	660	
C12-Alkane (13.15)	TBRvd	2,800	730	
Unknown (13.23)	TBRvd	1,900	470	
C13-Alkane (13.88)	TBRvd	5,900	1,570	
Unknown (14.15)	TBRvd	2,800	730	
C6-Cyclohexane (14.35)	TBRvd	4,100	1,100	
C13-Alkane (14.50)	TBRvd	3,600	950	
C14-Alkane (14.83)	TBRvd	7,400	1,980	
Unknown (15.04)	TBRvd	2,100	550	
C14-Alkane (15.49)	TBRvd	2,900	770	N
Methyl Naphthalene (15.63)	TBRvd	3,100	Not Inc.	N
Unknown (15.94)	TBRvd	4,000	Not Inc.	
C14-Alkane (16.06)	TBRvd	1,800	3,660	
C14-Alkane (16.24)	TBRvd	2,200	4,400	
C15-Alkane (16.71)	TBRvd	1,900	4,030	
Unknown (17.18)	TBRvd	2,100	4,400	
C2-Naphthalene (17.53)	TBRvd	2,100	4,400	
C18-Alkane (19.91)	TBRvd	4,700	8,060	
C18-Alkane (20.61)	TBRvd	6,700	1,460	
Total		**75,600**	?	
Total Aromatics		**7,900**	?	
Total Alkanes		**50,400**	?	

Sample B-22-2 (Lab #: BO-04-168-03)
(% Solids = 94%)

Semivolatile Organics				
Naphthalene	TBRvd	13,000	13,800	
4-Chloroanaline	TBRvd	ND	500	
2-Methylnaphthalene	TBRvd	18,000	18,500	
4-Nitrophenol	TBRvd	ND	200	
Dibenzofuran	TBRvd	ND	300	
2,4-Dinitrotoluene	TBRvd	ND	500	
Fluorene	TBRvd	ND	400	
N-Nitrosodiphenylamine	TBRvd	ND	200	
Phenanthrene	TBRvd	ND	400	
Anthracene	TBRvd	ND	400	
Pyrene	TBRvd	ND	200	
Butylbenzylphthalate	TBRvd	ND	400	
Total		**31,000**	**35,800**	
Non-Target Semivolatile Organics				
C2-Benzene (7.62)	TBRvd	9,300	8,900	
C3-Benzene (9.47)	TBRvd	21,000	21,000	
C3-Benzene (9.60)	TBRvd	10,000	10,000	

C3-Benzene (10.10)	TBRvd	25,000	24,500
C4-Benzene (10.64)	TBRvd	11,000	10,500
2,3-Dihydro-1H-Indene (10.88)	TBRvd	8,500	8,200
C4-Benzene (11.14)	TBRvd	12,000	11,500
C4-Benzene (11.26)	TBRvd	26,000	24,500
Unknown (11.64)	TBRvd	8,500	8,200
C11-Alkane (11.95)	TBRvd	10,000	9,800
C4-Benzene (12.40)	TBRvd	6,400	6,100
Unknown (12.95)	TBRvd	5,900	5,700
Unknown (13.14)	TBRvd	4,500	4,300
C12-Alkane (13.63)	TBRvd	5,700	5,600
C13-Alkane (13.84)	TBRvd	7,600	7,300
Unknown (14.33)	TBRvd	5,400	5,200
C14-Alkane (14.77)	TBRvd	11,000	10,500
C13-Alkane (15.19)	TBRvd	12,000	11,200
Methyl Naphthalene (15.59)	TBRvd	5,200	5,000
Unknown (15.91)	TBRvd	4,200	4,000
C14-Alkane (16.65)	TBRvd	9,600	9,300
C16-Alkane (17.50)	TBRvd	6,400	6,100
C18-Alkane (19.90)	TBRvd	4,500	4,300
C19-Alkane (20.60)	TBRvd	6,900	6,600
Total		**236,600**	**228,300**
Total Aromatics		**134,400**	**130,200**
Total Alkanes		**73,700**	**70,700**

Sample C-TP-8-S (Lab #: BO-04-032-01)
(% Solids = 93%)

Semivolatile Organics	DIlution Factor = 36x)		
Naphthalene	NR	ND	2,900
4-Chloroanaline	NR	ND	1,400
2-Methylnaphthalene	NR	24,000	25,300
Acenaphthene	NR	ND	3,200
Dibenzofuran	NR	ND	5,200
2,4-Dinitrotoluene	NR	ND	11,200
Fluorene	NR	ND	6,700
4,6-Dinitro-2-methylphenol	NR	ND	1,700
Phenanthrene	NR	19,000	19,800
Anthracene	NR	ND	6,100
Fluoranthene	NR	ND	2,500
Pyrene	NR	18,000	18,800
Benzidine	NR	ND	1,800
Benzo(a)Anthracene	NR	ND	4,400
Bis(2-ethylhexyl)Phthalate	NR	ND	3,000
Chrysene	NR	ND	5,500
Di-n-OctylPhthalate	NR	ND	2,100
Benzo(a)Pyrene	NR	ND	1,600

Total		**61,000**	**123,200**
Non-Target Semivolatile Organics			
Dodecane (14.67)	NR	19,000	19,100
Cycloalkane (15.49)	NR	19,000	19,100
C2-Octane (15.83)	NR	37,000	37,000
Tridecane (16.25)	NR	28,000	28,100
C14 Alkane (16.54)	NR	21,000	20,400
1-Methyl Naphthalene (16.97)	NR	27,000	26,800
Unknown (17.09)	NR	30,000	29,300
Unknown Alkane (17.33)	NR	18,000	17,800
C14 Alkane (17.42)	NR	75,000	74,000
C15 Alkane (17.80)	NR	37,000	37,000
C2-Naphthalene (18.58)	NR	39,000	38,300
C2-Alkane (18.64)	NR	100,000	102,100
C16 Alkane (18.90)	NR	37,000	37,000
C16 Alkane (19.14)	NR	44,000	43,400
C3-Naphthalene (20.11)	NR	28,000	28,100
Methyl Ethyl Naphthalene (20.35)	NR	36,000	35,700
Unknown Alkane (20.47)	NR	25,000	24,200
Unknown Alkane (21.09)	NR	120,000	122,600
Unknown (21.38)	NR	25,000	24,200
Unknown (21.81)	NR	55,000	54,900
Unknown Alkane (22.25)	NR	30,000	29,300
Unknown Alkane (23.03)	NR	170,000	166,000
Unknown Alkane (23.95)	NR	32,000	31,900
Unknown Alkane (24.02)	NR	31,000	30,600
Unknown Alkane (25.09)	NR	41,000	40,800
Total		**1,124,000**	**1,117,700**
Total Aromatics		**130,000**	**128,900**
Total Alkanes		**840,000**	**837,000**

Sample D-TP-51 (Lab #: BO-04-196-05)
(% Solids = 77%)

Semivolatile Organics			
Nitrobenzene	Not Rv'd	ND	4,400
Isophrone	Not Rv'd	ND	1,300
Naphthalene	Not Rv'd	26,000	33,000
4-Chloroanaline	Not Rv'd	ND	3,400
2-Methylnaphthalene	Not Rv'd	75,000	96,000
2-Chloronaphthalene	Not Rv'd	ND	2,000
Dibenzofuran	Not Rv'd	ND	3,300
2,3-Dinitrotoluene	Not Rv'd	ND	4,200
Fluorene	Not Rv'd	ND	2,200
Phenanthrene	Not Rv'd	ND	2,000
Anthracene	Not Rv'd	ND	2,000

Butylbenzylphthalate	Not Rv'd	ND	2,500
Total		**101,000**	**156,300**
Non-Target Semivolatle Organics			
2-Methyl Decahydronaphth. (12.14)	Not Rv'd	100,000	100,200
C12-Alkane (12.28)	Not Rv'd	75,000	74,500
Unknown (12.44)	Not Rv'd	100,000	99,000
C12-Alkane (12.74)	Not Rv'd	82,000	81,000
C14-Benzene (12.82)	Not Rv'd	78,000	77,100
C12-Alkane (12.89)	Not Rv'd	100,000	100,200
C12-Alkane (13.01)	Not Rv'd	104,000	102,800
C13-Alkane (13.73)	Not Rv'd	190,000	192,800
Unknown (13.99)	Not Rv'd	55,000	54,000
C7-Cyclohexane (14.20)	Not Rv'd	130,000	128,500
Unknown (14.35)	Not Rv'd	110,000	111,800
C13-Alkane (14.42)	Not Rv'd	56,000	55,200
C13-Alkane (14.50)	Not Rv'd	64,000	56,500
C14-Alkane (14.66)	Not Rv'd	250,000	244,200
Unknown (14.89)	Not Rv'd	64,000	63,000
C14-Alkane (15.33)	Not Rv'd	79,000	78,400
1-Methylnaphthalene (15.46)	Not Rv'd	86,000	84,800
Unknown (15.79)	Not Rv'd	120,000	115,700
C14-Hydrocarbon (15.91)	Not Rv'd	49,000	48,800
C14-Hydrocarbon (16.10)	Not Rv'd	73,000	72,000
C2-Naphthalene (16.81)	Not Rv'd	48,000	47,500
C2-Naphthalene (17.03)	Not Rv'd	84,000	83,500
C16-Alkane (17.37)	Not Rv'd	130,000	128,500
C18-Alkane (19.77)	Not Rv'd	71,000	25,400
Unknown Alkane (20.46)	Not Rv'd	51,000	50,100
Total		**2,349,000**	**2,275,500**
Total Aromatics		**396,000**	**393,100**
Total Alkanes		**1,504,000**	**1,438,900**

Sample R-TP-9 (Lab #: BO-04-032-02)
(% Solids = 71%)

Semivolatile Organics	(Diluted 1.5x)		
O-Nitrotoluene	NR	ND	2,700
Naphthalene	NR	ND	5,900
4-Chloroanaline	NR	ND	3,100
2-Methylnaphthalene	NR	23,000	29,500
2,4-Dinitrophenol	NR	ND	2,300
4-Nitrophenol	NR	ND	4,500
Dibenzofuran	NR	ND	2,400
2,4-Dinitrotoluene	NR	ND	2,000
Fluorene	NR	ND	3,700
N-Nitrosodiphenylamine	NR	ND	3,800

Phenanthrene	NR	ND	9,600
Pyrene	NR	ND	3,900
Total		**23,000**	**73,400**
Non-Target Semivolatile Compounds			
Unknown Alkane (13.47)	NR	21,000	20,300
Methyl Decahydronaphthalene (13.78)	NR	30,000	28,400
Unknown Alkane (14.67)	NR	23,000	22,300
Unknown (15.30)	NR	23,000	22,300
Unknown Cycloalkane (15.49)	NR	49,000	46,700
C13-Alkane (15.69)	NR	27,000	26,400
C14-Alkane (15.84)	NR	68,000	65,000
C14-Alkane (16.54)	NR	30,000	28,400
1-Methyl Naphthalene (16.97)	NR	25,000	24,400
Unknown Cycloalkane (17.09)	NR	38,000	36,600
C15 Alkane (17.41)	NR	87,000	83,400
C15-Alkane (17.80)	NR	44,000	42,700
C2-Naphthalene (18.33)	NR	25,000	24,400
C2-Naphthalene (18.57)	NR	40,000	38,600
C16-Alkane (18.63)	NR	110,000	105,700
Substituted Naphthalene (18.89)	NR	38,000	36,600
C17-Alkane (19.86)	NR	25,000	24,400
C17 Alkane (20.02)	NR	55,000	52,800
C3-Naphthalene (20.34)	NR	27,000	26,400
C18 Alkane (21.08)	NR	85,000	81,300
C19-Alkane (21.78)	NR	99,000	95,600
C20 Alkane (23.00)	NR	87,000	83,400
Total		**1,056,000**	**1,016,100**
Total Aromatics		**185,000**	**178,800**
Total Alkanes		**810,000**	**778,400**

Sample E-TP-15 (Lab #: BO-04-088-03)
(% Solids = 76%)

Semivolatile Organics	(30 grams extracted, 50x dilution)		
Nitrobenzene	NR	ND	15,000
Isophrone	NR	ND	5,000
Naphthalene	NR	25,000	32,000
M-Nitrotoluene	NR	ND	4,000
4-Chloroanaline	NR	ND	8,000
2-Methylnaphthalene	NR	120,000	154,000
2,4,6-Tribromophenol	NR	ND	6,000
Total		**145,000**	**224,000**
Non-Target Semivolatile Organics			
C11-Alkane (10.54)	NR	85,000	82,000
Unknown (11.28)	NR	150,000	143,000

C11-Alkane (11.92)	NR	92,000	21,000 *
decahydro-methylnaphthalene (12.56)	NR	300,000	67,000 *
Unknown (12.65)	NR	97,000	21,000 *
C12-Alkane (13.01)	NR	94,000	21,000 *
C12-Alkane (13.12)	NR	220,000	48,000 *
decahydro-dimethylnaphthal. (13.22)	NR	120,000	25,000 *
C13-Alkane (13.85)	NR	390,000	88,000 *
Unknown (14.12)	NR	90,000	21,000 *
C6-Cyclohexane (14.32)	NR	250,000	57,000 *
Unknown (14.46)	NR	210,000	48,000 *
Unknown Alkane (14.54)	NR	110,000	25,000 *
Unknown (14.72)	NR	120,000	27,000 *
C14-Alkane (14.76)	NR	320,000	74,000 *
1,2,3,4-Tetrahydro-methylnaphthl(14.8	NR	79,000	19,000 *
Unknown (14.99)	NR	100,000	23,000 *
Unknown (15.08)	NR	84,000	19,000 *
C13-Alkane (15.15)	NR	99,000	23,000 *
C14-Alkane (15.44)	NR	130,000	31,000 *
Methyl naphthalene isomer (15.57)	NR	105,000	25,000 *
Unknown (15.89)	NR	200,000	198,000
C14-Alkane (16.01)	NR	86,000	84,000
C14-Alkane (16.19)	NR	100,000	99,000
Unknown Alkane (17.47)	NR	89,000	86,000
Total		**3,720,000**	**1,375,000**
Total Aromatics		**604,000**	**136,000**
Total Alkanes		**2,065,000**	**739,000**

Sample E-TP-21 (Lab #: BO-04-088-01)
(% Solids = 74%)

Semivolatile Organics	(30 Grams extracted, 50x dilution)		
Nitrobenzene	NR	ND	11,000
Naphthalene	NR	ND	46,000
M-Nitrotoluene	NR	ND	6,000
2-Methylnaphthalene	NR	118,000	150,000
Dibenzofuran	NR	ND	2,000
2,4-Dinitrotoluene	NR	ND	3,000
Fluorene	NR	ND	3,000
Phenanthrene	NR	ND	3,000
Anthracene	NR	ND	3,000
Total		**118,000**	**227,000**

Non-Target Semivolatile Organics	**TIC calculations cannot be confirmed)**		
C10-Alkane (10.12)	NR	88,000	186,000
C11-Alkane (11.91)	NR	140,000	296,000
C12-Alkane (12.39)	NR	120,000	253,000
Decahydro-2-methyl naphthal(12.55)	NR	170,000	359,000

C12-Alkane (12.86)	NR	130,000	275,000
C4-Benzene (12.94)	NR	110,000	232,000
C12-Alkane (13.00)	NR	160,000	338,000
C12-Alkane (13.12)	NR	170,000	359,000
C13-Alkane (13.84)	NR	320,000	676,000
C7-Cyclohexane (14.11)	NR	88,000	186,000
C6-Cyclohexane (14.31)	NR	223,000	465,000
C13-Alkane (14.46)	NR	91,000	86,000
C13-Alkane (14.54)	NR	100,000	211,000
C13-Alkane (14.61)	NR	110,000	232,000
C11-Alkane (14.77)	NR	440,000	930,000
Unknown (15.00)	NR	95,000	200,000
C14-Alkane (15.43)	NR	120,000	253,000
Methyl Naphthalene isomer (15.58)	NR	140,000	296,000
C6 Cyclohexane (15.89)	NR	190,000	401,000
C8-Alkane (16.02)	NR	88,000	186,000
C12-Alkane (16.20)	NR	110,000	232,000
C2-Naphthalene (17.14)	NR	86,000	181,000
C15-Alkane (17.48)	NR	120,000	253,000
C18-Alkane (19.88)	NR	120,000	253,000
C19-Alkane (20.57)	NR	120,000	253,000
Total		**3,649,000**	?
Total Aromatics		**506,000**	?
Total Alkanes		**3,048,000**	?

Sample E-TP-22-1 (Lab #: B0-04-088-04)
(% Solids = 71% Check this)

Semivolatile Organics	(2 grams to 10 ml, then 5ul to 1 ml)		
Naphthalene	NR	ND	Dilutions cannot be followed
2-Methylnaphthalene	NR	87,000	22,000
2-Chloronaphthalene	NR	ND	3,000
Acenaphthene	NR	ND	1,000
Dibenzofuran	NR	ND	1,000
2,4-Dinitrotoluene	NR	ND	3,000
Fluorene	NR	ND	2,000
Phenanthrene	NR	ND	12,000
Anthracene	NR	ND	2,000
Pyrene	NR	45,000	11,000
Benzo(a)Anthracene	NR	ND	3,000
Chrysene	NR	ND	4,000
Total		**132,000**	?

Semivolatile Organic Compounds			
C11-Alkane (11.65)	NR	72000	12,000
Unknown (12.59)	NR	62000	
C12-Alkane (13.31)	NR	130000	

C13-Alkane (13.54)	NR	73000	
C6-Cyclohexane (14.01)	NR	52000	
C14-Alkane (14.46)	NR	120000	
C13-Alkane (14.87)	NR	120000	
Unknown (15.69)	NR	53000	
C14-Alkane (16.34)	NR	120000	
1,2,3,4-Tetrahydro-dimethylnaph(16.40	NR	59000	
C2-Naphthalene (16.59)	NR	72000	
C2-Naphthalene (16.81)	NR	88000	
C2-Naphthalene (16.87)	NR	54000	
C20-Alkane (17.20)	NR	82000	
C3-Naphthalene (18.77)	NR	56000	
Unknown Alkane (19.62)	NR	150000	
C17 Alkane (20.23)	NR	93000	
Alkane (20.32)	NR	240000	
Dibenzothiophene (21.20)	NR	77000	
Unknown Alkane (23.56)	NR	130000	
Unknown (23.99)	NR	79000	
Unknown Alkane (24.56)	NR	73000	
Unknown Alkane (25.52)	NR	140000	
Unknown Alkane (27.33)	NR	120000	
Unknown Alkane (28.16)	NR	110000	
Total		**2,425,000**	?
Total Aromatics		**406,000**	?
Total Alkanes		**1,743,000**	?

Sample E-TP-25 (Lab #: BO-04-088-02)

(% Solids = 70%)

Original Values were changed on the quant reports - Reason for this is not yet known

Semivolatile Organics	(30 grams extracted, 10X dilution)		
Nirtobenzene	NR	ND	1,000
Naphthalene	NR	ND	13,000
4-Chloroanaline	NR	ND	3,000
2-Methylnaphthalene	NR	**9,500 ?**	41,000
2,4,6-Trichlorophenol	NR	ND	0
2,4,5-Trichlorophenol	NR	ND	0
2-Nitroanaline	NR	ND	0
Acenaphthylene	NR	ND	0
Acenaphthene	NR	ND	1,000
2,5-Dinitrophenol	NR	ND	2,000
4-Nitrophenol	NR	ND	1,000
Dibenzofuran	NR	ND	4,000
2,4-Dinitrotoluene	NR	ND	7,000
Fluorene	NR	ND	3,000
N-Nitrosodiphenylamine	NR	ND	2,000
2,4,6-Tribromophenol	NR	ND	9,000
Phenanthrene	NR	4,200	5,000

Anthracene	NR	ND	1,000
Pyrene	NR	ND	2,000
Butylbenzylphthalate	NR	ND	1,000
Benzo(a)Pyrene	NR	ND	1,000
Total		**13,700**	?

Non-Target Semivolatle Organics		(4th Internal Standard used)	
C3-Benzene (10.70)	NR	36,000	20,000
C10-Alkane (11.25)	NR	60,000	33,000
C11-Alkane (13.10)	NR	100,000	56,000
C12-Alkane (13.57)	NR	41,000	20,000
Unknown (13.89)	NR	49,000	25,000
C10-Alkane (14.03)	NR	44,000	23,000
Unknown (14.31)	NR	40,000	20,000
C12-Alkane (14.81)	NR	110,000	60,000
Uknown (15.43)	NR	45,000	23,000
C6-Cyclohexane (15.61)	NR	82,000	42,000
C13-Alkane (15.82)	NR	54,000	27,000
C14-Alkane (15.97)	NR	100,000	55,000
C13-Alkane (16.39)	NR	52,000	26,000
C14-Alkane (16.67)	NR	46,000	24,000
Unknown (17.21)	NR	49,000	25,000
C14-Alkane (17.34)	NR	47,000	28,000
C15-Alkane (17.56)	NR	97,000	56,000
C15-Alkane (17.93)	NR	59,000	34,000
C16-Alkane (18.77)	NR	89,000	55,000
Unknown (19.02)	NR	47,000	28,000
Unknown (20.15)	NR	38,000	22,000
C3-Naphthalene (20.22)	NR	41,000	24,000
C18-Alkane (21.20)	NR	73,000	43,000
C19-Alkane (21.90)	NR	83,000	84,000
C20-Alkane (23.13)	NR	77,000	79,000
Total		**1,559,000**	?
Total Aromatics		**77,000**	?
Total Alkanes		**1,162,000**	?

Sample E-TP-29 (Lab #: BO-04-1686-04)
(% Solids = 80%)

Semivolatile Organics			
Naphthalene	Nor Rvd	ND	2,000
2-Methylnaphthalene	Nor Rvd	16,000	19,000
Acenaphthene	Nor Rvd	ND	1,000
Dibenzofuran	Nor Rvd	ND	1,000
Fluorene	Nor Rvd	ND	5,000
N-Nitrosodiphenylamine	Nor Rvd	ND	4,000
Phenanthrene	Nor Rvd	22,000	27,000

Anthracene	Nor Rvd	ND	5,000
Fluoranthene	Nor Rvd	ND	2,000
Pyrene	Nor Rvd	15,000	18,000
Benzo(a)Anthracene	Nor Rvd	ND	1,000
Chrysene	Nor Rvd	ND	1,000
Benzo(b)Fluoranthene	Nor Rvd	ND	1,000
Benzo(k)Fluoranthene	Nor Rvd	ND	1,000
Benzo(a)Pyrene	Nor Rvd	ND	2,000
Benzo(g,h,i)Perylene	Nor Rvd	ND	1,000
Total		**53,000**	**91,000**
Non-Target Semivolatile Organics			
C14-Alkane (14.72)	Nt Rvd	24,000	23,000
C13-Alkane (15.13)	Nt Rvd	33,000	33,000
C14-Alkane (16.60)	Nt Rvd	30,000	29,000
C2-Naphthalene (17.14)	Nt Rvd	14,000	14,000
C16-Alkane (17.47)	Nt Rvd	25,000	24,000
C3-Naphthalene (18.89)	Nt Rvd	12,000	11,000
C16-Alkane (19.28)	Nt Rvd	26,000	26,000
C18-Alkane (19.88)	Nt Rvd	24,000	23,000
C17-Alkane (20.50)	Nt Rvd	60,000	58,000
C19-Alkane (20.58)	Nt Rvd	41,000	40,000
C18-Alkane (21.67)	Nt Rvd	53,000	51,000
Unknown (22.72)	Nt Rvd	33,000	Not Incld.
C19-Alkane (22.78)	Nt Rvd	68,000	66,000
Phenyl-1H-Indene (23.26)	Nt Rvd	28,000	27,000
C20-Alkane (23.84)	Nt Rvd	70,000	69,000
C21-Alkane (28.85)	Nt Rvd	74,000	72,000
C22-Alkane (25.80)	Nt Rvd	45,000	43,000
C23-Alkane (26.73)	Nt Rvd	50,000	49,000
C24-Alkane (27.61)	Nt Rvd	48,000	47,000
C25-Alkane (28.45)	Nt Rvd	61,000	60,000
C25-Alkane (29.27)	Nt Rvd	48,000	46,000
C27-Alkane (30.06)	Nt Rvd	35,000	34,000
C28-Alkane (30.90)	Nt Rvd	40,000	39,000
C29-Alkane (31.80)	Nt Rvd	46,000	45,000
Unknown Alkane (33.94)	Nt Rvd	34,000	33,000
Total		**1,022,000**	**962,000**
Total Aromatics		**54,000**	**52,000**
Total Alkanes		**935,000**	**910,000**

Sample E-TP-31 (Lab #: B0-04-168-05)

Semivolatile Organics			
Nitrobenzene	Nt Rvd	ND	900
Isophrone	Nt Rvd	ND	4,200
2,4-Dimethylphenol	Nt Rvd	2,300	2,800

O-Nitrotoluene	Nt Rvd	ND	900
Naphthalene	Nt Rvd	2,800	3,400
M-Nitrotoluene	Nt Rvd	ND	400
4-Chloroanaline	Nt Rvd	ND	400
2-Methylnaphthalene	Nt Rvd	8,200	10,200
4-Nitrophenol	Nt Rvd	ND	500
Dibenzofuran	Nt Rvd	ND	300
2,4-Dinitrotoluene	Nt Rvd	ND	500
Fluorene	Nt Rvd	ND	200
4-Nitroanaline	Nt Rvd	ND	300
Butylbenzylphthalate	Nt Rvd	ND	500
Total		**13,300**	**25,500**

Non-Target Semivolatile Organics (Different Internal Standards Used)

C11-Alkane (11.92)	Nt Rvd	24,000	9,700
C12-Alkane (12.39)	Nt Rvd	9,400	3,800
Unknown (12.55)	Nt Rvd	13,000	5,200
C12-Alkane (13.00)	Nt Rvd	12,000	5,000
C12-Alkane (13.12)	Nt Rvd	13,000	5,000
C12-Alkane (13.61)	Nt Rvd	20,000	8,400
C13-Alkane (13.83)	Nt Rvd	28,000	11,600
C14-Alkane (14.12)	Nt Rvd	7,900	Not Inc.
C6-Cyclohexane (14.32)	Nt Rvd	15,000	8,000
C13-Alkane (14.47)	Nt Rvd	16,000	8,200
2,3-Dihydromethyl-1H-Indene (14.55)	Nt Rvd	7,200	3,800
Unknown Alkane (14.61)	Nt Rvd	9,200	4,600
C14-Alkane (14.78)	Nt Rvd	38,000	19,200
Unknown (15.01)	Nt Rvd	12,000	6,100
C13-Alkane (15.19)	Nt Rvd	25,000	12,900
C14-Alkane (15.46)	Nt Rvd	12,000	6,100
Methylnaphthalene (15.59)	Nt Rvd	12,000	5,900
Unknown (15.91)	Nt Rvd	8,200	8,000
Unknown (16.05)	Nt Rvd	7,100	6,900
Unknown (16.23)	Nt Rvd	9,200	9,000
Unknown (16.65)	Nt Rvd	19,000	19,000
C16-Alkane (17.51)	Nt Rvd	20,000	Not Inc.
C18-Alkane (19.89)	Nt Rvd	9,400	Not Inc.
Unknown Alkane (20.58)	Nt Rvd	14,000	Not Inc.
Total		**360,600**	**?**
Total Aromatics		**19,200**	**?**
Total Alkanes		**257,900**	**?**

Sample F-TP-39 (Lab #: BO-04-196-01)
(% Solids = 77%)

Semivolatile Organics

O-Nitrotoluene	330U	ND	4,100

Naphthalene		330U	12,000	15,800	
2-Methylnaphthalene		330U	89,000	113,900	
Acenaphthalyene		330U	ND	2,300	
Acenaphthene		330U	ND	4,800	
4-Nitrophenol		330U	ND	4,900	
Dibenzofuran		330U	ND	6,700	
2,4-Dinitrotoluene		330U	ND	7,800	
Fluorene		330U	ND	8,000	
Phenanthrene		330U	ND	10,000	
Anthracene		330U	ND	9,900	
Pyrene		330U	ND	1,600	
Butylbenzylphthalate		360	ND	1,300	negate 1
	Total		**101,000**	**191,100**	

Non-Target Semivolatile Organics			(Values were changed on the spectra??) Values do not a
C13-Hydrocarbon (13.69)	Not Rv'd	120,000	119,500
Cycloalkane (14.18)	Not Rv'd	100,000	99,000
Unknown (14.33)	Not Rv'd	68,000	66,800
C13-Hydrocarbon (14.48)	Not Rv'd	Not Incld.	56,500
C14-Hydrocarbon (14.63)	Not Rv'd	220,000	218,500
Unknown (14.87)	Not Rv'd	58,000	77,100
C14-Hydrocarbon (15.31)	Not Rv'd	78,000	97,700
1-Methylnaphthalene (15.45)	Not Rv'd	99,000	97,700
Cycloalkane (15.77)	Not Rv'd	130,000	128,500
C14-Hydrocarbon (15.90)	Not Rv'd	65,000	64,200
C14-Hydrocarbon (15.97)	Not Rv'd	61,000	60,400
C14-Hydrocarbon (16.08)	Not Rv'd	88,000	87,400
C2-Naphthalene (16.65)	Not Rv'd	87,000	56,500
C2-Naphthalene (16.81)	Not Rv'd	120,000	122,100
C2-Naphthalene (17.04)	Not Rv'd	140,000	141,400
C2-Naphthalene (17.09)	Not Rv'd	82,000	106,700
Unknown (17.15)	Not Rv'd	81,000	79,700
Unknown (17.26)	Not Rv'd	86,000	84,800
C16-Hydrocarbon (17.37)	Not Rv'd	220,000	218,500
C3-Naphthalene (18.56)	Not Rv'd	57,000	56,500
C18-Hydrocarbon (19.79)	Not Rv'd	220,000	218,500
Unknown (20.23)	Not Rv'd	55,000	54,000
C19-Hydrocarbon (20.48)	Not Rv'd	230,000	231,400
Unknown (20.92)	Not Rv'd	53,000	52,700
Unknown (22.58)	Not Rv'd	74,000	73,200
Total		**2,592,000**	**2,669,300**
Total Aromatics		**585,000**	**580,900**
Total Alkanes		**1,532,000**	**1,543,600**

Sample F-TP-40 (Lab #: B0-04-196-02)
(% Solids = 0.78)

Semivolatile Organics	(Dilution = 10 with 0.33??)		
Isophrone	Not Rv'd	ND	2,600
Naphthalene	Not Rv'd	14,000	17,700
M-Nitrotoluene	Not Rv'd	ND	2,000
2-Methylnaphthalene	Not Rv'd	47,000	60,400
Acenaphthylene	Not Rv'd	ND	500
Acenaphthene	Not Rv'd	ND	500
4-Nitrophenol	Not Rv'd	ND	1,200
Dibenzofuran	Not Rv'd	ND	1,100
2,4-Dinitrotoluene	Not Rv'd	ND	1,400
Fluorene	Not Rv'd	ND	1,300
N-Nitrosodiphynalanine	Not Rv'd	ND	800
Phenanthrene	Not Rv'd	ND	1,800
Anthracene	Not Rv'd	ND	1,700
Pyrene	Not Rv'd	ND	500
Total		**61,000**	**93,500**
Non-Target Semivolatile Organics			
Decahydro-2-methyl naphth. (12.14)	Not Rv'd	48,000	47,800
C12-Hydrocarbon (12.29)	Not Rv'd	23,000	22,800
Methyl decahydronaphthalene (12.45)	Not Rv'd	50,000	49,900
Branched Alkane (12.74)	Not Rv'd	21,000	20,700
Unknown (13.01)	Not Rv'd	31,000	31,300
Unknown (13.10)	Not Rv'd	29,000	29,100
C13-Hydrocarbon (13.74)	Not Rv'd	57,000	57,900
Unknown (14.01)	Not Rv'd	18,000	17,700
C6-Cyclohexane (14.21)	Not Rv'd	50,000	49,900
Unknown Alkane (14.36)	Not Rv'd	37,000	38,500
Unknown (14.44)	Not Rv'd	16,000	16,000
C14 Hydrocarbon (14.67)	Not Rv'd	80,000	80,300
Unknown (14.89)	Not Rv'd	21,000	21,100
C14 Hydrocarbon (15.34)	Not Rv'd	26,000	25,800
1-Methyl Naphthalene (15.47)	Not Rv'd	31,000	30,800
Unknown (15.79)	Not Rv'd	40,000	39,700
C14-Hydrocarbon (15.91)	Not Rv'd	20,000	19,400
Unknown (16.09)	Not Rv'd	21,000	21,100
C15-Hydrocarbon (16.57)	Not Rv'd	18,000	18,100
C2 Naphthalene (16.65)	Not Rv'd	19,000	18,600
C2 Naphthalene (16.83)	Not Rv'd	24,000	illegible
C2 Naphthalene (17.04)	Not Rv'd	24,000	23,600
C16-Hydrocarbon (17.37)	Not Rv'd	38,000	38,000
C18-Hydrocarbon (19.76)	Not Rv'd	25,000	24,500
C19-Hydrocarbon (20.46)	Not Rv'd	26,000	25,800
Total		**793,000**	**768,400**
Total Aromatics		**196,000**	**170,700**
Total Alkanes		**421,000**	**421,700**

Sample F-TP-48 (Lab #: BO-04-196-3)

(% Solids = 77%)

Semivolatile Organics			
O-Nitrotoluene	Not Rv'd	ND	2,000
Naphthalene	Not Rv'd	12,000	15,700
2-Methylnaphthalene	Not Rv'd	22,000	27,700
2-Chloronaphthalene	Not Rv'd	ND	1,900
2,4-Dinitrotoluene	Not Rv'd	ND	1,800
Fluorene	Not Rv'd	ND	4,100
N-Nitrosodiphenylamine	Not Rv'd	ND	5,300
Phenanthrene	Not Rv'd	17,000	22,000
Anthracene	Not Rv'd	ND	3,400
Pyrene	Not Rv'd	ND	6,400
Total		**51,000**	**90,300**
Non-Target Semivolatile Organics			
C2-Benzene (7.35)	Not Rv'd	36,000	36,000
C2-Benzene (7.50)	Not Rv'd	27,000	27,000
Nonane (8.07)	Not Rv'd	29,000	28,200
C3-Benzene (9.35)	Not Rv'd	30,000	29,500
C3-Benzene (9.93)	Not Rv'd	69,000	68,100
Decane (10.00)	Not Rv'd	31,000	30,800
Undecane (11.79)	Not Rv'd	34,000	33,400
C4-Benzene (12.24)	Not Rv'd	16,000	15,400
C13-Alkane (13.68)	Not Rv'd	16,000	15,400
C14-Alkane (14.60)	Not Rv'd	22,000	21,800
C13-Alkane (15.00)	Not Rv'd	23,000	23,100
1-Methyl Naphthalene (15.41)	Not Rv'd	14,000	14,100
Tetradecane (16.46)	Not Rv'd	27,000	27,000
C2-Naphthalene (16.77)	Not Rv'd	19,000	19,200
C2-Naphthalene (16.99)	Not Rv'd	22,000	21,800
Unknown Alkane (17.34)	Not Rv'd	38,000	37,200
C3-Naphthalene (18.51)	Not Rv'd	19,000	19,200
C3-Naphthalene (18.77)	Not Rv'd	36,000	36,000
Unknown (18.97)	Not Rv'd	17,000	16,700
Unknown Alkane (19.75)	Not Rv'd	60,000	59,100
Unknown Alkane (20.44)	Not Rv'd	52,000	51,400
Unknown (20.88)	Not Rv'd	22,000	21,800
Unknown Aromatic (21.13)	Not Rv'd	22,000	21,800
Unknown Aromatic (22.56)	Not Rv'd	27,000	27,000
1-Phenyl-1H-Indene (23.09)	Not Rv'd	27,000	29,500
Total		**735,000**	**730,500**
Total Aromatics		**364,000**	**364,600**
Total Alkanes		**332,000**	**327,400**

Sample F-TP-50 (Lab #: BO-04-196-04)

(% Solids = 78%)

Semivolatile Organics					
Naphthalene	Not Rv'd	ND	6,500		
2-Methylnaphthalene	Not Rv'd	47,000	59,600		
Acenaphthylene	Not Rv'd	ND	1,500		
Acenaphthene	Not Rv'd	ND	3,400		
4-Nitrophenol	Not Rv'd	ND	5,200		
Dibenzofuran	Not Rv'd	ND	2,400		
2,4-Dinitrotoluene	Not Rv'd	ND	3,000		
Fluorene	Not Rv'd	ND	4,700		
Phenanthrene	Not Rv'd	ND	10,000		
Anthracene	Not Rv'd	ND	1,500		
Pyrene	Not Rv'd	ND	2,300		
Butylbenzylphthalate	351	ND	2,100	negate	1
Bis(2-Ethylhexyl)Phthalate	34	ND	1,600	negate	1
Total		**47,000**	**103,800**		
Non-Target Semivolatile Organics					
C13-Alkane (13.69)	Not Rv'd	33,000	33,000		
Cycloalkane (14.18)	Not Rv'd	29,000	29,100		
C14-Alkane (14.61)	Not Rv'd	64,000	63,400		
Unknown (14.86)	Not Rv'd	19,000	19,000		
Unknown (14.95)	Not Rv'd	23,000	22,800		
C14-Alkane (15.30)	Not Rv'd	27,000	26,600		
1-Methyl-Naphthalene (15.44)	Not Rv'd	31,000	30,400		
2-3-dihydro-trimethyl-1H-indene (15.6	Not Rv'd	23,000	22,800		
C7-Cyclohexane (15.77)	Not Rv'd	47,000	46,900		
Unknown (15.89)	Not Rv'd	19,000	19,000		
C14-Alkane (15.97)	Not Rv'd	22,000	21,500		
Unknown (16.08)	Not Rv'd	32,000	31,700		
C2-Naphthalene (16.64)	Not Rv'd	26,000	25,300		
C2-Naphthalene (16.81)	Not Rv'd	60,000	59,600		
C2-Naphthalene (17.03)	Not Rv'd	59,000	58,300		
C2-Naphthalene (17.08)	Not Rv'd	44,000	43,100		
C8-Cyclohexane (17.25)	Not Rv'd	27,000	26,600		
Unknown (17.31)	Not Rv'd	19,000	19,000		
C16-Alkane (17.37)	Not Rv'd	74,000	73,600		
C3-Naphthalene (18.18)	Not Rv'd	23,000	22,800		
C3-Naphthalene (18.55)	Not Rv'd	28,000	27,900		
Unknown (18.99)	Not Rv'd	19,000	19,000		
C18 Alkane (19.77)	Not Rv'd	63,000	62,100		
C19 Alkane (20.47)	Not Rv'd	53,000	52,000		
Unknown Alkane (22.58)	Not Rv'd	17,000	16,500		
Total		**881,000**	**872,000**		
Total Aromatics		**294,000**	**290,200**		
Total Alkanes		**456,000**	**451,300**		

Sample F-TP-58 (Lab #: BO-04-234-03)
(% Solids = 74)

Semivolatile Orqanics	(30 grams of sample extracted, 10x dilution)		
N-Nitroso-di-n-propylamine	NR	ND	800
Naphthalene	NR	68,000	9,100
M-Nitrotoluene	NR	ND	1,000
4-Chloroanaline	NR	ND	500
2-Methylnaphthalene	NR	13,000	17,800
Acenaphthene	NR	ND	500
2,4-Dinitrophenol	NR	ND	600
4-Nitrophenol	NR	ND	400
Dibenzofuran	NR	ND	1,400
2,4-Dinitrotoluene	NR	ND	2,500
Fluorene	NR	ND	2,100
4,6-Dinitro-2-methylphenol	NR	ND	600
N-Nitrosodiphenylamine	NR	ND	2,100
Phenanthrene	NR	3,500	4,700
Anthracene	NR	ND	800
Pyrene	NR	ND	2,800
Benzo(a)Anthracene	NR	ND	500
Chrysene	NR	ND	500
Total		**84,500**	**48,700**
Non-Target Semivolatile Organics			
Dimethyl Nonane (10.69)	NR	16,000	15,600
Unknown (11.08)	NR	18,000	17,800
Undecane (11.77)	NR	13,000	13,300
Unknown Alkane (12.24)	NR	14,000	13,800
C4-Benzene (12.77)	NR	17,000	16,900
Methyl Undecane	NR	12,000	12,000
C13-Alkane (13.67)	NR	29,000	28,500
Unknown (14.65)	NR	21,000	20,500
C13-Alkane (14.37)	NR	11,000	11,100
Unknown Alkane (14.59)	NR	39,000	39,200
Unknown (14.83)	NR	12,000	12,000
Tetradecane (15.27)	NR	13,000	13,300
Methylnaphthalene (15.41)	NR	17,000	17,300
Unknown (15.73)	NR	28,000	28,000
C14-Alkane (16.04)	NR	22,000	22,200
Pentadecane (16.51)	NR	17,000	16,900
C2-Naphthalene (16.61)	NR	18,000	18,200
DimethylNaphthalene (16.78)	NR	19,000	18,700
Dimethylnaphthalene (17.00)	NR	22,000	21,800
Unknown Alkane (17.33)	NR	35,000	35,200
C3-Naphthalene (18.53)	NR	19,000	19,100
C3-Pentadecane (19.75)	NR	53,000	53,500

C4-Pentadecane (20.45)	NR	56,000	53,500
Unknown (22.55)	NR	24,000	23,600
Total		**545,000**	**542,000**
Total Aromatics		**112,000**	**112,000**
Total Alkanes		**348,000**	**345,900**

Sample G-TP-66 (Lab #: B0-04-234-05)
(% Solids = 81%)

Semivolatile Organics	(30 grams of sample extracted, 10x dilution)		
Naphthalene	NR	12,000	14,000
M-Nitrotoluene	NR	ND	1,000
4-Chloroanaline	NR	ND	800
2-Methylnaphthalene	NR	32,000	40,000
Acenaphthylene	NR	ND	1,000
Acenaphthene	NR	ND	1,700
2,4-Dinitrophenol	NR	ND	800
4-Nitrophenol	NR	ND	600
Dibenzofuran	NR	ND	3,700
Fluorene	NR	4,900	5,800
4,6-Dinitro-2-methyl-phenol	NR	ND	500
2,4,6-Tribromophenol	NR	ND	5,800
Phenanthrene	NR	10,000	12,800
Anthracene	NR	ND	2,400
Fluoranthene	NR	ND	600
Pyrene	NR	4,200	5,200
3,3'-Dichlorobenzidine	NR	ND	400
Benzo(a)Anthracene	NR	ND	900
Chrysene	NR	ND	1,100
Total		**63,100**	**99,100**
Non-Target Semivolatile Organics			
Hydroxy-methyl-pentanone (6.94)	77	31,000	31,300 A
C3-Benzene (9.17)	73	30,000	29,700
Methyl Decane (10.43)	58	24,000	23,600
Unknown (10.74)	72	29,000	29,300
Unknown Alkane (12.27)	54	22,000	22,000
Unknown (12.43)	58	24,000	23,600
C4-Benzene (12.81)	63	26,000	25,600
Methyl Dedecane (13.71)	130	53,000	52,900
Unknown (14.18)	97	40,000	39,500
Unknown (14.34)	63	26,000	25,600
Unknown Alkane (14.64)	180	73,000	73,300
Unknown (14.88)	58	24,000	23,600
Unknown Alkane (15.32)	61	25,000	24,800
Methyl Naphthalene (15.47)	110	45,000	44,800
Unknown (15.78)	94	38,000	38,200

Unknown Alkane (16.09)	69	28,000	28,100
Ethyl Naphthalene (16.67)	50	20,000	20,300
Dimethyl Naphthalene (16.85)	100	41,000	40,700
Dimethyl Naphthalene (17.06)	120	49,000	48,800
Unknown Alkane (17.39)	175	71,000	71,200
C3-Naphthalene (18.59)	63	26,000	25,600
C3-Naphthalene (18.80)	88	36,000	35,800
Unknown Alkane (19.81)	170	69,000	69,200
Unknown Alkane (20.52)	156	76,000	63,500
Unknown Alkane (22.62)	104	42,000	42,300
Total		**968,000**	**953,300**
Total Aromatics		**273,000**	**271,300**
Total Alkanes		**483,000**	**470,900**

Sample G-TP-68 (Lab #: BO-04-234-05)

(% Solids = 85%)

*All Acid surrogates out - sample reanalyzed at an 100x dilution, surrogates OK. 10x reported.

Semivolatile Organics	(30 grams of sample extracted, 10x dilution)		
Nitrobenzene	NR	ND	1,500
O-Nitrotoluene	NR	ND	500
Naphthalene	NR	3,400	4,000
2-Methylnaphthalene	NR	14,000	16,400
Acenaphthylene	NR	ND	400
Acenaphthene	NR	ND	1,000
2,4-Dinitrophenol	NR	ND	1,200
4-Nitrophenol	NR	ND	1,000
Dibenzofuran	NR	ND	1,000
2,4-Dinitrotoluene	NR	ND	5,400
2,6-Dinitrotoluene	NR	ND	2,200
Fluorene	NR	ND	3,400
4,6-Dinitro-2-methylphenol	NR	ND	5,700
Phenanthrene	NR	10,000	11,800
Anthracene	NR	ND	2,000
Di-n-Butylphthalate	NR	ND	1,400
Fluoranthene	NR	ND	700
Pyrene	NR	5,400	6,300
Benzo(a)Anthracene	NR	ND	1,900
Bis(2-Ethylhexyl)Phthalate	NR	ND	500
Chrysene	NR	ND	1,900
Benzo(a)Pyrene	NR	ND	1,200
Benzo(g,h,i)Perylene	NR	ND	500
Total		**32,800**	**71,900**

Non-Target Semivolatile Organics	**(30 grams of sample extracted, 100x dilution)**		
C3-Alkane (13.66)	NR	59,000	58,000
C7-Cyclohexane (13.94)	NR	24,000	23,000
C7-Cyclohexane (14.14)	NR	35,000	34,000

C7-Cyclohexane (14.29)	NR	31,000	31,000
C14-Hydrocarbon (14.58)	NR	89,000	89,000
Unknown (14.82)	NR	27,000	27,000
Unknown Alkane (15.26)	NR	27,000	27,000
1-Methyl Naphthalene (15.40)	NR	27,000	27,000
C8-Cyclohexane (15.73)	NR	47,000	46,000
Unknown (15.84)	NR	27,000	Not Inc.
Unknown (16.04)	NR	39,000	38,000
Unknown (16.42)	NR	31,000	31,000
C2-Naphthalene (16.98)	NR	27,000	27,000
C16-Alkane (17.31)	NR	100,000	100,000
Unknown (17.58)	NR	27,000	27,000
Unknown (18.00)	NR	42,000	42,000
Unknown Alkane (18.53)	NR	39,000	38,000
Unknown Alkane (18.69)	NR	31,000	31,000
Unknown Alkane (19.73)	NR	120,000	116,000
Unknown (20.18)	NR	47,000	46,000
Unknown Alkane (20.43)	NR	210,000	217,000
Unknown Alkane (20.98)	NR	35,000	34,000
Unknown Alkane (22.55)	NR	110,000	112,000
Unknown Cyclic Compound (23.66)	NR	35,000	34,000
Unknown Cyclic Compound (24.45)	NR	51,000	50,000
Total		**1,337,000**	**1,305,000**
Total Aromatics		**54,000**	**54,000**
Total Alkanes		**1,043,000**	**1,040,000**

Sample G-TP-68-1 (Lab #: BO-04-234-06)

Semivolatile Organics			
Nitrobenzene	NR	ND	1,000
O-Nitrotoluene	NR	ND	2,000
Naphthalene	NR	8,600	11,000
M-Nitrotoluene	NR	ND	4,000
4-Chloroanaline	NR	ND	1,000
2-Methylnaphthalene	NR	ND	41,000
Acenaphthene	NR	ND	1,000
Acenaphthene	NR	ND	1,000
2,4-Dinitrophenol	NR	ND	900
4-Nitrophenol	NR	ND	1,000
Dibenzofuran	NR	3,600	4,000
2,4-Dinitrotoluene	NR	ND	6,000
2,6-Dinitrotoluene	NR	ND	6,000
Fluorene	NR	3,300	4,000
Phenanthrene	NR	5,900	8,000
Anthracene	NR	ND	1,000
Pyrene	NR	ND	2,000
Benzidine	NR	ND	1,000

Benzo(a)Anthracene	NR	ND	800
Chrysene	NR	ND	800
Total		**21,400**	**97,500**
Non-Target Semivolatile Organics			
C12-Alkane (12.26)	NR	22,000	22,100
Unknown (12.41)	NR	26,000	25,700
C12-Alkane (12.72)	NR	19,000	19,400
C4-Benzene (12.80)	NR	23,000	23,900
C12-Alkane (12.99)	NR	25,000	24,800
Unknown (13.52)	NR	21,000	20,300
C13-Hydrocarbon (13.72)	NR	88,000	85,800
C6-Cyclohexane (14.19)	NR	58,000	58,700
C13-Hydrocarbon (14.34)	NR	55,000	54,200
Unknown (14.42)	NR	27,000	28,000
C14-Alkane (14.65)	NR	110,000	113,000
Unknown (14.87)	NR	37,000	37,000
C14-Hydrocarbon (15.33)	NR	44,000	44,300
1-Methyl-Naphthalene (15.46)	NR	49,000	49,700
Unknown (15.78)	NR	58,000	63,200
C14-Hydrocarbon (15.91)	NR	30,000	29,800
Unknown (16.10)	NR	37,000	36,600
C2-Naphthalene (16.85)	NR	40,000	39,700
Unknown (17.05)	NR	33,000	33,000
Unknown (17.39)	NR	34,000	33,900
C3-Naphthalene (18.58)	NR	27,000	28,000
C18-Alkane (19.78)	NR	140,000	140,100
C-19 Alkane (20.48)	NR	180,000	185,300
Unknown (22.58)	NR	89,000	90,400
Total		**1,272,000**	**1,286,900**
Total Aromatics		**139,000**	**141,300**
Total Alkanes		**771,000**	**777,500**

Sample G-TP-80 (Lab #: BO-04-234-01)
(% Solids = 81%)

Semivolatile Organics	(Dilution not clear)		
2-Methylnaphthalene	NR	ND	?
4-Nitrophenol	NR	ND	?
Dibenzofuran	NR	ND	?
2,4-Dinitrotoluene	NR	ND	?
Fluorene	NR	ND	?
4,6-Dinitro-2-methylphenol	NR	ND	?
2,4,6-Tribromophenol	NR	ND	?
Phenanthrene	NR	ND	?
Anthracene	NR	ND	?
Di-n-ButylPhthalate	NR	ND	?

Pyrene	NR	ND	?
Butylbenzylphthalate	NR	ND	?
Benzo(a)Anthracene	NR	ND	?
Chrysene	NR	ND	?
Di-n-Octyl Phthalate	NR	ND	?
Benzo(a)Pyrene	NR	ND	?
Total		**ND**	?

Non-Target Semivolatile Organics	(diluted 1.7x)		
C13-Alkane (13.66)	NR	32,000	?
Unknown (14.29)	NR	17,000	?
C14-Alkane (14.57)	NR	52,000	?
C13-Alkane (14.98)	NR	17,000	?
Unknown Alkane (15.26)	NR	23,000	?
1-Methylnaphthalene (15.41)	NR	23,000	?
Unknown Cyclohexane (15.72)	NR	30,000	?
Unknown (16.04)	NR	21,000	?
C2-Naphthalene (16.98)	NR	30,000	?
C16-Hydrocarbon (17.32)	NR	69,000	?
Unknown Alkane (18.54)	NR	23,000	?
Unknown Alkane (18.69)	NR	17,000	?
C18-Alkane (19.74)	NR	88,000	?
C19-Alkane (20.43)	NR	140,000	?
Unknown (20.88)	NR	23,000	?
Unknown Alkane (22.55)	NR	53,000	?
Unknown (23.52)	NR	28,000	?
Unknown (23.67)	NR	21,000	?
Unknown (24.46)	NR	14,000	?
Unknown (25.01)	NR	12,000	?
Unknown Hydrocarbon (26.00)	NR	23,000	?
Unknown (28.29)	NR	36,000	?
Total		**792,000**	?
Total Aromatics		**53,000**	?
Total Alkanes		**567,000**	?

Sample H-TP-81 (Lab #: BO-04-234-02) **Sample H-T**

(% Solids = 78%)

Semivolatile Organics	(1 gram of sample extracted, 5X dilution)		
Naphthalene	NR	ND	18,000
2-Methylnaphthalene	NR	62,000	78,000
2-Chloronaphthalene	NR	ND	9,000
Dibenzofuran	NR	ND	6,000
2,4-Dinitrotoluene	NR	ND	9,000
Fluorene	NR	ND	9,000
N-Nitrosodiphenylamine	NR	ND	7,000
Phenanthrene	NR	ND	19,000

Anthracene	NR	ND	19,000
Pyrene	NR	ND	11,000
Benzidine	NR	ND	30,000
Total		**62,000**	**215,000**
Semivolatile Non-Target Organics			
Undecane (11.76)	NR	170,000	165,000
2,6-Dimethyl-Undecane (13.65)	NR	290,000	291,000
Unknown (14.13)	NR	190,000	184,000
C13-Alkane (14.36)	NR	120,000	120,000
C13-Alkane (14.42)	NR	120,000	120,000
C14-Alkane (14.57)	NR	460,000	456,000
Unknown (14.81)	NR	120,000	120,000
Unknown Alkane (14.98)	NR	290,000	291,000
Unknown Alkane (15.25)	NR	150,000	152,000
Methyl Naphthalene (15.40)	NR	200,000	196,000
Unknown (15.72)	NR	170,000	165,000
Unknown Alkane (16.03)	NR	130,000	114,000
Unknown Alkane (16.44)	NR	160,000	158,000
2,3-Dimethyl Naphthalene (16.75)	NR	90,000	88,000
Substituted Naphthalene (16.97)	NR	110,000	107,000
Unknown Alkane (17.31)	NR	260,000	253,000
Hexadecane (19.11)	NR	96,000	95,000
Unknown Alkane (19.72)	NR	210,000	203,000
Unknown Alkane (20.41)	NR	200,000	196,000
Unknown Alkane (22.54)	NR	83,000	82,000
Unknown Alkane (23.66)	NR	83,000	82,000
Unknown Alkane (25.62)	NR	77,000	76,000
Unknown Alkane (26.55)	NR	83,000	82,000
Unknown Alkane (27.42)	NR	83,000	82,000
Unknown Alkane (28.72)	NR	100,000	101,000
Total		**4,045,000**	**3,979,000**
Total		**400,000**	**391,000**
Total		**3,005,000**	**2,961,000**

Sample CUL-1-2 (Lab #: BO-04-108-03)
(% Solids = 76%)

Semivolatile Organics	(Undiluted) - Also Run 5x - See Final Report		
Phenanthrene	NR	NR	200
Anthracene	NR	NR	200
Pyrene	NR	NR	300
Butylbenzylphthalate	NR	NR	900
Benzo(a)Anthracene	NR	NR	700
Chrysene	NR	NR	1,000
Benzo(b)Fluoranthene	NR	NR	700
Benzo(k)Fluoranthene	NR	NR	800

Benzo(a)Pyrene	NR	NR	900
Dibenzo(a,h)Anthracene	NR	NR	500
Benzo(g,h,i)Perylene	NR	NR	500
Total		**NR**	**6,700**
Non-Target Semivolatile Organics		(Dilution = .17)	
Unknown (6.33)	NR	2,500	2,300
Unknown (9.08)	NR	1,600	1,400
Unknown (9.74)	NR	6,300	5,900
Unknown (10.82)	NR	4,300	4,000
Sulfur (23.6)	NR	160,000 NI	0
C18-Alkane (28.15)	NR	2,000	1,000
Unknown (29.55)	NR	1,900	1,000
Unknown Alkane (29.75)	NR	2,300	1,200
Unknown Acid Ester (30.16)	NR	0	1,200
Unknown Alkane (31.41)	NR	6,300	5,900
C16-Alkane (33.40)	NR	4,000	3,800
Unknown Acid Ester (33.93)	NR	2,500	2,300
Total		**33,700**	**30,000**
Total Alkanes		**14,600**	**11,900**

Sample CUL-2-1 (Lab #: B0-04-108-04)
(% Solids = 75%)

Semivolatile Organics			
Benzoic Acid	NR	ND	100
Butylbenzylphthalate	NR	580	830
Bis(2-Ethylhexyl)Phthalate	NR	ND	240
Non-Target Semivolatile Organics			
Unknown (6.36)	NR	2300	2,450
Unknown (8.58)	NR	880	940
Unknown (8.91)	NR	1,100	1,130
Unknown (9.78)	NR	4,800	5,180
Unknown (10.04)	NR	530	560
Unknown Ketone (10.90)	NR	5,700	6,120
Unknown (25.89)	NR	220	230
Unknown (27.61)	NR	220	230
Unknown Acid Ester (28.07)	NR	350	370
Unknown Acid Ester (29.55)	NR	480	510
Unknown Acid Ester (29.64)	NR	350	370
Unknown (29.77)	NR	620	660
Unknown Acid Ester (30.17)	NR	1,200	1,320
Unknown Acid Ester (30.92)	NR	440	470
Unknown Acid Ester (31.15)	NR	840	890
Unknown Acid Ester (31.30)	NR	310	330
Unknown Alkane (31.42)	NR	1,800	1,880

Unknown Acid Ester (31.90)	NR	2,200	2,350
Unknown Acid Ester (33.01)	NR	260	280
Unknown Alkane (33.42)	NR	1,300	1,410
Unknown Acid Ester (33.96)	NR	1,400	1,460
Unknown Acid Ester (35.43)	NR	310	330
Unknown (36.02)	NR	310	330
Unknown (36.71)	NR	260	280
Total		**28,180**	
Total Aromatics		**? Check for blank contamination**	
Total Alkanes			

Sample CUL-3-1 (Lab #: B0-04-108-05)
(% Solids = 73%)

Semivolatile Organics			
Benzoic Acid	NR	ND	120
Butylbenzylphthalate	NR	640	880
Bis(2-Ethylhexyl)Phthalate	NR	ND	200
Total		**640**	**1,200**
Non-Target Semivolatle Organics			
Unknown (6.39)	NR	2,300	2,300
Unknown (8.57)	NR	860	850
Unknown (8.91)	NR	630	630
Unknown (9.09)	NR	720	720
Unknown (9.80)	NR	7,700	7,680
Unknown (10.04)	NR	450	450
Unknown (10.90)	NR	4,500	4,520
Unknown (27.61)	NR	410	400
Unknown Acid Ester (28.06)	NR	360	360
Unknown (28.17)	NR	360	360
Unknown Acid Ester (29.57)	NR	450	450
Unknown Acid Ester (29.64)	NR	320	310
Unknown Alkane (29.76)	NR	860	850
Unknown Acid Ester (30.17)	NR	1,300	1,260
Unknown (30.57)	NR	540	540
Unknown Acid Ester (30.92)	NR	500	490
Unknown Acid Ester (31.16)	NR	810	810
Unknown (31.29)	NR	360	360
Unknown Alkane (31.43)	NR	2,600	2,570
Unknown Alkane (33.42)	NR	800	1,760
Unknown Acid Ester (33.96)	NR	1,600	1,580
Unknown (35.42)	NR	360	360
Unknown (36.04)	NR	360	310
Unknown (36.70)	NR	320	360
Total		**29470**	**1,030**
Total Aromatics		**?**	**Check for Blank Contamination**

Total Alkanes		**?**	

Sample CUL-3-2 (Lab #: B0-04-108-06)
(% Solids = 74%)

Semivolatile Organics			
Benzoic Acid	NR	ND	50
Diphenylhydrazine	NR	ND	130
Phenanthrene	NR	ND	50
Anthracene	NR	ND	50
Fluoranthene	NR	ND	70
Pyrene	NR	ND	110
Butylbenzylphthalate	NR	990	1,330
Benzo(a)Anthracene	NR	ND	80
Bis(2-Ethylhexyl)Phthalate	NR	540	720
Chrysene	NR	ND	200
Di-n-OctylPhthalate	NR	ND	80
Benzo(b)Fluoranthene	NR	ND	150
Benzo(k)Fluoranthene	NR	ND	190
Benzo(a)Pyrene	NR	ND	90
Total		**1,530**	**3,300**
Non-Target Semivolatile Organics			
Unknown (6.35)	NR	1,700	**750**
Unknown (8.57)	NR	620	620
Unknown (8.90)	NR	360	350
Unknown (9.08)	NR	1,000	1,020
Unknown (9.78)	NR	4,200	4,190
Unknown (10.87)	NR	2,200	2,220
C8-Phenol (19.28)	NR	1,200	1,150
Unknown Alkane (20.34)	NR	400	400
Unknown (22.47)	NR	220	220
Unknown (23.46)	NR	710	710
Sulfur (23.6)	NR	52,000	**2,310**
Unknown (24.37)	NR	270	260
Unknown-Alkane (24.60)	NR	400	400
Unknown (24.91)	NR	220	220
Unknown (25.55)	NR	490	490
Unknown (25.92)	NR	800	800
Unknown Acid Ester (28.09)	NR	620	620
Unknown (28.21)	NR	940	930
Unknown Phthalate Ester (29.60)	NR	760	750
Unknown (29.81)	NR	800	800
Unknown Acid Ester (30.22)	NR	2,000	1,960
Unknown Alkane (31.47)	NR	1,800	1,780
Unknown (33.48)	NR	980	980
Unknown Acid Ester (34.01)	NR	1,900	1,870

Total		**76,590**	**25,800**
Total		**Check for blank contamination**	
Total			

Sample CUL-4-1 (Lab #: BO-04-108-01)
(% Solids = 76%)

Semivolatile Organics	30g to 1ml, then 5x)		
Phenanthrene		NR	ND	670
Anthracene		NR	ND	670
Fluoranthene		NR	ND	1,220
Butylbenzylphthalate		NR	ND	1,770
Benzo(a)Anthracene		NR	ND	500
Bis(2-Ethylhexyl)Phthalate		NR	ND	410
Chrysene		NR	ND	520
Benzo(a)Pyrene		NR	ND	250
	Total		**ND**	**6,010**
Non-Target Semivolatile Organics				
Unknown (6.34)		NR	2,900 ?	2,820
Unknown (8.59)		NR	160,000	1,080
Unknown (9.10)		NR	1,100	1,080
Unknown (9.75)		NR	1,100	6,290
Unknown (10.82)		NR	6,500	3,690
Sulfur (23.4)		NR	75,000	Not Included
Unknown Acid Ester (29.56)		NR	3,800	1,080
Unknown Acid Ester (30.18)		NR	1,100	2,820
Unknown Acid Ester (31.15)		NR	3,100	3,030
Unknown Acid Ester (31.30)		NR	1,100	1,080
Unknown Alkane (31.40)		NR	1,600	1,510
Unknown Acid Ester (31.90)		NR	4,900	4,770
Unknown Acid Ester (32.99)		NR	890	860
Unknown Acid Ester (33.07)		NR	1,600	1,510
Unknown Alkane (33.40)		NR	1,300	1,300
Unknown Acid Ester (33.94)		NR	3,300	3,250
Unknown (36.00)		NR	1,300	1,300
Unknown Acid Ester (36.70)		NR	1,300	1,300
	Total		**271,890**	

Check for Blank Contamination

Sample MW-5-SS-04 (Lab #: BO-04-032-03) ??CHECK
(% Solids = 80%)

Semivolatile Organics	Dilution Factor = 1.5)		
O-Nitrotoluene		NR	ND	4,100

Naphthalene	NR	ND	4,300
2-Methylnaphthalene	NR	18,000	21,600
4-Nitrophenol	NR	ND	2,500
Butylbenzylphthalate	NR	ND	3,200
Total		**18,000**	**35,700**
Semivolatile Non-Target Compounds			
Undecane (12.97)	NR	45,000	0
Substituted Alkane (13.47)	NR	24,000	24,100
Methyl Decahydronaphthalene (13.78)	NR	34,000	33,400
Unknown Alkane (13.92)	NR	24,000	24,100
Unknown Alkane (14.07)	NR	17,000	16,700
Unknown (14.19)	NR	21,000	20,400
Unknown Cycloalkane (14.59)	NR	15,000	14,800
Dodecane (14.67)	NR	49,000	48,200
C6 Benzene (15.30)	NR	26,000	25,900
Unknown Cycloalkane (15.49)	NR	53,000	51,900
C13-Alkane (15.62)	NR	17,000	16,700
C13-Alkane (15.69)	NR	34,000	33,400
C14-Alkane (15.83)	NR	69,000	68,600
Tetrahydromethylnaphthalene (16.14)	NR	13,000	12,900
C14-Alkane (16.43)	NR	15,000	14,800
C14-Alkane (16.53)	NR	24,000	24,100
1 Methyl Naphthalene (16.97)	NR	17,000	16,700
Unknown (17.09)	NR	26,000	25,900
Unknown Alkane (17.20)	NR	17,000	16,700
C15-Alkane (17.40)	NR	62,000	61,200
Unknown (17.79)	NR	17,000	16,700
C16-Alkane (18.61)	NR	53,000	51,900
Total		**672,000**	**619,100**
Total Aromatics		**90,000**	**88,900**
Total		**525,000**	**474,600**

Sample MW-10-SS-06 (Lab #: BO-04-234-07)
(% Solids = 76%)

Semivolatile Organics	**(30 grams of sample extracted, 10x dilution)**		
O-Nitrotoluene	NR	ND	400
Naphthalene	NR	ND	4,000
M-Nitrotoluene	NR	ND	500
2-Methylnaphthalene	NR	14,000	19,200
2-Chloronaphthalene	NR	ND	2,700
Acenaphthylene	NR	ND	500
Acenaphtene	NR	ND	700
4-Nitrophenol	NR	ND	800
Dibenzofuran	NR	ND	2,000
2,4-Dinitrotoluene	NR	ND	2,900

2,6-Dinitrotoluene	NR	ND	2,600
Fluorene	NR	ND	2,800
Phenanthrene	NR	4,500	6,100
Anthracene	NR	ND	1,000
Pyrene	NR	3,300	4,400
3,3'-Dichlorobenzidine	NR	ND	900
Chrysene	NR	ND	1,300
Benzo(k)Fluoranthene	NR	ND	400
Total		**21,800**	**53,200**
Non-Target Semivolatile Organics			
Unknown Alkane (12.62)	NR	14000	14,900
C13-Alkane (13.59)	NR	25000	26,200
Unknown (13.84)	NR	14000	14,900
Unknown (14.06)	NR	22000	22,600
Unknown Alkane (14.22)	NR	20000	20,700
Unknown Alkane (14.52)	NR	43000	44,700
Unknown (14.74)	NR	10000	10,300
Unknown Alkane (15.21)	NR	13000	13,100
Unknown (15.34)	NR	10000	10,300
Unknown (15.45)	NR	11000	11,300
Unknown (15.65)	NR	26000	27,100
Unknown Alkane(16.08)	NR	18000	18,500
Unknown (16.36)	NR	10000	10,800
Unknown (16.45)	NR	18000	18,500
Dimethyl Naphthalene (16.87)	NR	22000	22,600
C8-Cyclohexane (17.13)	NR	13000	14,000
Unknown (17.25)	NR	11000	11,700
C8-Naphthalene (18.39)	NR	11000	11,700
Unknown Alkane (18.48)	NR	18000	18,900
C3-Naphthalene (18.63)	NR	26000	26,600
Unknown Alkane (19.68)	NR	25000	25,700
Unknown Alkane (20.38)	NR	47000	48,800
Unknown Alkane (20.82)	NR	10000	10,800
Unknown (24.39)	NR	18000	18,900
Total		**455,000**	**473,600**
Total Aromatics		**59,000**	**60,900**
Total Alkanes		**246,000**	**256,300**

Sample HW-11-SS-10 (Lab #: B0-04-234-08)
(% Solids = 75%)

Semivolatile Organics	**(30 grams of sample extracted, 5x dilution)**		
Naphthalene	NR	ND	1,000
2-Methylnaphthalene	NR	2,500	3,100
2-Chloronaphthalene	NR	ND	500
Acenaphthylene	NR	ND	300

Acenaphthene	NR	ND	600
4-Nitrophenol	NR	ND	600
Dibenzofuran	NR	ND	1,100
2,4-Dinitrotoluene	NR	ND	1,900
2,6-Dinitrotoluene	NR	ND	1,200
Fluorene	NR	ND	1,900
Phenanthrene	NR	3,600	4,600
Anthracene	NR	ND	1,000
Fluoranthene	NR	ND	300
Pyrene	NR	1,800	2,300
Benzo(a)Anthracene	NR	ND	400
Chrysene	NR	ND	400
Total		**7,900**	**21,200**
Non-Target Semivolatile Organics			
Unknown (9.67)	NR	10,000	9,600
Unknown Alkane (14.21)	NR	4,800	4,600
Unknown Alkane (14.51)	NR	12,000	11,800
Methyl Naphthalene (15.27)	NR	5,800	6,600
Unknown Cyclic Hydrocarbon (15.64)	NR	8,600	8,300
Unknown (16.07)	NR	5,400	5,200
Dimethyl Naphthalene (16.64)	NR	11,000	10,300
Ethyl Naphthalene (16.87)	NR	16,000	15,800
Unknown (17.13)	NR	7,700	7,400
Unknown Alkane (17.51)	NR	5,200	5,000
Unknown (17.89)	NR	4,800	4,600
C3-Naphthalene (18.39)	NR	5,400	5,200
Unknown (18.48)	NR	6,800	6,600
C3-Naphthalene (18.63)	NR	16,000	15,100
Methyl Naphthalene (18.83)	NR	6,800	6,600
Unknown (19.62)	NR	6,800	6,600
Unknown Alkane (19.68)	NR	14,000	13,800
Unknown (19.92)	NR	5,700	5,500
Unknown Alkane (20.38)	NR	25,000	24,200
Unknown (20.66)	NR	5,000	4,800
Unknown Alkane (20.82)	NR	5,700	5,500
Unknown Alkane (22.49)	NR	5,000	4,800
Unknown (23.76)	NR	7,900	7,700
Unknown (24.39)	NR	6,300	6,100
Total		**207,700**	**201,700**
Total Aromatics		**55,200**	**53,000**
Total Alkanes		**80,300**	**78,000**

PRELIMINARY REPORT

Summary Data Table
Rexene

TCL Volatile Organics
Soil Samples

Sample / Analyte	Method Blank Conc. ppb	Lab. Reported Conc. ppb	QA Validation Reported Conc. Decision	Data Validation	Footnotes
Sample A-TP-65 (Lab #: BO-04-172-06) (% Solids = 72%)					
Volatile Organics	(Diluted 125x)				
Methylene Chloride	NR	ND	600		
Xylene	NR	ND	500		
Total		**ND**	**1,100**		
Non-Target Volatile Organics					
Unknown (11.72)	NR	NR	1,600		
Unknown (14.08)	NR	NR	1,000		
Unknown (15.55)	NR	2,400	2,400		
Unknown (16.71)	NR	1,400	1,400		
C3-Benzene (17.56)	NR	1,600	1,600		
Unknown (17.75)	NR	NR	1,000		
C4-Benzene (18.29)	NR	1,000	1,000		
Unknown (18.85)	NR	NR	1,400		
C4-Benzene (19.08)	NR	3,400	3,100		
C4-Benzene (19.90)	NR	1,400	1,400		
C4-Benzene (20.14)	NR	5,600	5,600		
Unknown (20.48)	NR	1,900	1,900		
Unknown (20.72)	NR	2,600	2,600		
C4-Benzene (21.07)	NR	1,400	1,400		
Unknown (21.35)	NR	NR	1,000		
Unknown (21.51)	NR	1,900	1,900		
Unknown (21.90)	NR	2,100	2,100		
C5-Benzene (22.99)	NR	6,100	6,100		
Methyl Naphthalene (26.16)	NR	4,500	4,500		
Methyl Naphthalene (26.71)	NR	2,100	2,100		
C2-Naphthalene (28.53)	NR	2,400	2,400		
C2-Naphthalene (29.06)	NR	3,500	3,500		
Total		**45,300**	**51,000**		
Total Aromatics		**33,000**	**32,700**		

Rexene Soil Volatile Organics

Sample C-TP-4 (Lab #: BO-03-277-1)
(% Solids = 75%)

Volatile Organics	(Diluted 625x)		
Methylene Chloride	NR	ND	7,300
Acetone	NR	ND	1,281,700
Benzene	NR	11,000	14,700
4-Methyl-2-Pentanone	NR	ND	130,900
2-Hexanone	NR	ND	18,000
Ethylbenzene	NR	57,000	75,500
Xylene	NR	94,000	125,800
Total		**162,000**	**1,653,900**
Non-Target Volatile Organics			
Pentane (2.05)	NR	8,300	8,300
Hexane (3.83)	NR	17,000	16,700
Methyl Cyclopentane (4.89)	NR	17,000	17,500
Unknown Alkane (5.69)	NR	11,000	10,800
Unknown Hydrocarbon (6.08)	NR	6,700	6,700
Unknown Hydrocarbon (6.66)	NR	22,000	22,500
Unknown / [Methylcyclohexane] (7.90)	NR	38,000	38,300
Methyl Heptane (8.91)	NR	49,000	49,200
Methyl Heptane (9.20)	NR	44,000	44,200
Dimethylcyclohexane isomer (9.62)	NR	21,000	20,800
Ethylcyclohexane (11.55)	NR	18,000	18,300
Unknown (11.93)	NR	6,700	6,700
Unknown Alkane (12.09)	NR	17,000	17,500
Unknown Alkane (12.34)	NR	14,000	14,200
Unknown Alkane (15.07)	NR	5,000	5,000
C3-Benzene (15.34)	NR	10,000	10,000
C3-Benzene (16.19)	NR	20,000	20,000
C3-Benzene (18.39)	NR	10,000	10,000
C4-Benzene (18.92)	NR	27,000	26,700
C4-Benzene (19.72)	NR	10,000	10,000
C4-Benzene (19.93)	NR	10,000	10,000
Methyl Indane (20.27)	NR	5,800	5,800
C4-Benzene (20.71)	NR	8,300	8,300
C4-Benzene (20.90)	NR	6,700	6,700
C5-Benzene (22.80)	NR	6,700	6,700
Total		**409,200**	**410,900**
Total Aromatics		**114,500**	**114,200**
Total Alkanes		**288,000**	**290,000**

Rexene Soil Volatile Organics

Sample E-TP-20 (Lab #: BO-04-008-1)
(% Solids = 74%)

Volatile Organics	(Diluted 2500X)		
Methylene Chloride	NR	ND	24,200
Benzene	NR	15000	19,600
4-Methyl-2-Pentanone	NR	ND	173,200
Ethylbenzene	NR	ND	33,600
Total		**15,000**	**250,600**
Non-Target Volatile Organics			
Hexane (3.84)	NR	41,000	40,500
Methyl - Cyclopentene (6.68)	NR	55,000	54,100
MethylCyclohexane (7.94)	NR	120,000	121,600
Dimethyl Hexane (8.91)	NR	74,000	74,300
Dimethyl Hexane (9.65)	NR	78,000	77,700
Ethylcyclohexane (11.58)	NR	100,000	101,400
Propylcyclohexane (14.65)	NR	64,000	64,200
Tetramethylcyclohexane (15.36)	NR	51,000	67,600
Naphthalene Compound (18.66)	NR	68,000	67,600
Aromatic Compound C-9 (20.00)	NR	130,000	125,000
Indene Compound (20.30)	NR	54,000	54,100
Unknown Hydrocarbon (20.54)	NR	57,000	57,400
C5-Benzene (21.21)	NR	30,000	30,400
Indene Compound (21.46)	NR	78,000	77,700
Indene Compound (21.72)	NR	61,000	43,900
Tetramethyl Benzene (21.91)	NR	68,000	67,600
Unknown (22.24)	NR	44,000	43,900
Substituted Naphthalene (22.54)	NR	100,000	101,400
Dihydo Dimethyl Indene (22.83)	NR	150,000	148,600
Aromatic (24.98)	NR	NR	118,200
Dihydrotromethylindene (25.37)	NR	57,000	57,400
Methyl Naphthalene (26.01)	NR	150,000	148,600
Methyl Naphthalene (26.54)	NR	74,000	54,100
Dimethylnaphthalene (28.38)	NR	78,000	77,700
Dimethylnaphthalene (28.88)	NR	78,000	77,700
Total		**1,860,000**	**1,952,700**
Total Aromatics		**1,176,000**	**1,131,800**
Total Alkanes		**640,000**	**658,800**

Sample E-TP-22 (Lab #: BO-04-008-02)
(% Solids = 73%)

Volatile Organics	(Diluted 2500x)		
Methylene Chloride	NR	ND	24,500
Benzene	NR	12,000	15,700
4-Methyl-2-Pentanone	NR	ND	217,900

Ethylbenzene	NR	ND	30,100
Xylene	NR	ND	119,900
Total		**12,000**	**408,100**
Non-Target Volatile Organics			
Unknown (6.69)	NR	55,000	54,800
Unknown (7.91)	NR	86,000	85,600
C8 Alkane (8.91)	NR	68,000	68,500
Dimethyl Cyclohexane (9.63)	NR	65,000	65,100
Cyclo Hydrocarbon (11.53)	NR	65,000	65,100
C3-Benzene (16.20)	NR	31,000	30,800
C3-Benzene (16.46)	NR	68,000	68,500
C3-Benzene (17.39)	NR	58,000	58,200
C4-Benzene (18.92)	NR	41,000	41,100
C4-Benzene (19.74)	NR	34,000	34,200
Naphthalene Compound (19.98)	NR	62,000	61,600
Naphthalene Compound (20.53)	NR	41,000	41,100
Indene Compound (21.47)	NR	65,000	65,100
Indene Compound (21.71)	NR	45,000	44,500
C4-Benzene (21.90)	NR	72,000	71,900
Tetrahydro Naphthalene (22.55)	NR	48,000	47,900
Indene Compound (22.84)	NR	82,000	82,200
Naphthalene (23.45)	NR	48,000	47,900
Tetrahydro methyl naphthalene (24.96)	NR	41,000	41,100
Methyl Naphthalene (26.00)	NR	82,000	82,200
Dimethyl Naphthalene (28.36)	NR	44,000	44,500
Dimethyl Naphthalene (28.90)	NR	51,000	51,400
Total		**1,252,000**	**1,253,300**
Total Aromatics		**913,000**	**914,200**
Total Alkanes		**294,000**	**294,600**

Sample E-TP-27 (Lab #: BO-04-008-03)
(% Solids = 73%)

Volatile Organics	(Diluted 2500x)		
Methylene Chloride	NR	ND	25,700
Benzene	NR	ND	11,900
4-Methyl-2-Pentanone	NR	ND	101,200
Ethylbenzene	NR	14,000	18,300
Xylene	NR	ND	15,200
Total		**14,000**	**172,300**
Non-Target Volatile Organics			
Unknown (6.68)	NR	NR	61,600
Unknown Hydrocarbon (7.92)	NR	92,000	92,500
C8 Alkane (8.90)	NR	88,000	68,500
Unknown Hydrocarbon (9.20)	NR	45,000	44,500

Dimethyl-Cyclo Alkane (9.62)	NR	72,000	71,900
Ethyl Cyclohexane (11.55)	NR	92,000	92,500
C9 Alkane (12.34)	NR	27,000	27,400
Cyclohydrocarbon (15.37)	NR	48,000	47,900
Aromatic (Propyl Benzene) (16.20)	NR	38,000	37,700
Decahydro Naphthalene (18.67)	NR	41,000	41,100
C4 Benzene (19.97)	NR	89,000	65,100
Indene Compound (20.29)	NR	34,000	34,200
Naphthalene Compound (20.54)	NR	38,000	37,700
Indene Compound (21.45)	NR	45,000	Not Included
Unknown Aromatic (21.71)	NR	31,000	Not Included
C4-Benzene (21.91)	NR	48,000	Not Included
Tetrahydronaphthalene (22.55)	NR	38,000	Not Included
Indene Compound (22.82)	NR	68,000	Not Included
Unknown (24.97)	NR	41,000	Not Included
Methyl Naphthalene (26.00)	NR	55,000	Not Included
Dimethyl naphthalene (28.37)	NR	38,000	Not Included
Dimethylnaphthalene (28.87)	NR	41,000	Not Included
Total		**1,109,000**	**NR**
Total Aromatics		**604,000**	**NR**
Total Alkanes		**464,000**	**NR**

Sample E-TP-32 (Lab #: BO-04-109-01)
(% Solids = 76%)

Volatile Organics	(Diluted 250x, Xylenes from 2500 dilution)		
Chloromethane	NR	ND	1,900
Vinyl Chloride	NR	ND	1,500
Acetone	NR	ND	2,234,000
Chloroform	NR	ND	3,200
Benzene	NR	28,000	36,800
4-Methyl-2-Pentanone	NR	ND	13,700
2-Hexanone	NR	ND	52,600
Toluene	NR	10,000	13,400
Ethylbenzene	NR	35,000	45,800
Xylene	NR	140,000	196,000
Total		**213,000**	**2,598,900**

Non-Target Volatile Organics	(Diluted 250x)		
C6-Alkane (3.41)	NR	22,000	22,400
Hexane (3.86)	NR	45,000	45,400
Methyl Cyclopentane (4.95)	NR	43,000	42,800
Unknown (5.77)	NR	13,000	13,200
Unknown (6.72)	NR	49,000	49,300
Unknown (8.09)	NR	18,000	18,100
C8-Alkane (8.99)	NR	17,000	17,400
Unknown (10.12)	NR	18,000	17,800

C2-Cyclohexane (11.68)	NR	64,000	65,800
C3-Benzene (15.45)	NR	23,000	23,000
C3-Benzene (16.29)	NR	22,000	22,000
C4-Benzene (18.21)	NR	19,000	19,400
C3-Benzene (18.47)	NR	28,000	27,600
C4-Benzene (19.00)	NR	39,000	39,500
C4-Benzene (19.81)	NR	30,000	29,600
C4-Benzene (20.03)	NR	26,000	26,000
2,3-Dihydromethyl-1H-Indene (20.36)	NR	21,000	20,700
C4-Benzene (20.78)	NR	26,000	26,300
C4-Benzene (20.99)	NR	19,000	6,300
Unknown (21.52)	NR	28,000	28,000
C4-Benzene (21.97)	NR	17,000	17,400
1,2,3,4-Tetrahydronaphthalene (22.60)	NR	24,000	24,300
2,3-Dihydro-dimethyl-1H-Indene(22.89)	NR	33,000	32,900
1,2,3,4-Tetrahydromethylnaphth (25.02)	NR	21,000	21,400
Methylnaphthalene (26.59)	NR	13,000	13,500
Total		**678,000**	**670,100**
Total Aromatics		**361,000**	**349,900**
Total Alkanes		**289,000**	**292,200**

Sample Sample E-TP-34 (Lab #: BO-04-109-02)
(% Solids = 74%)

Volatile Organics	(Diluted 250x)		
Acetone	NR	ND	467,900
Benzene	NR	4,800	6,500
Vinyl Acetate	NR	ND	1,600
4-Methyl-2-Pentanone	NR	ND	4,800
2-Hexanone	NR	ND	3,100
Toluene	NR	1,400	1,900
Ethylbenzene	NR	13,000	18,100
Xylene	NR	15,000	20,100
Total		**34,200**	**524,000**
Non-Target Volatile Organics			
C6-Alkane (3.87)	NR	6,400	6,400
Methyl Cyclopentane (4.97)	NR	6,100	6,100
Unknown (5.77)	NR	3,400	3,400
Unknown (6.77)	NR	12,000	12,500
Unknown (8.04)	NR	14,000	13,900
C8-Alkane (8.99)	NR	15,000	15,200
C8-Alkane (9.28)	NR	9,800	9,800
Unknown (10.10)	NR	8,400	8,400
C2-Cyclohexane (11.68)	NR	13,000	13,200
C9-Alkane (12.45)	NR	2,700	2,700
C3-Benzene (15.45)	NR	5,400	5,400

C3-Benzene (16.29)	NR	4,700	4,700
C3-Benzene (16.56)	NR	6,400	6,400
C3-Benzene (17.46)	NR	4,400	4,400
Unknown (18.72)	NR	2,400	2,400
Unknown (18.99)	NR	3,400	3,400
C4-Benzene (20.03)	NR	5,100	5,100
2,3-Dihydro-methyl-1H-Indene (20.35)	NR	2,700	2,700
Unknown (21.51)	NR	3,700	3,700
1,2,3,4-tetrahydronaphthalene (22.61)	NR	2,700	2,700
Unknown (22.88)	NR	5,100	5,100
1,2,3,4-Tetrahydromethylnaphth(25.01)	NR	2,200	2,700
Methylnaphthalene (26.06)	NR	4,700	4,700
C2-Naphthalene (28.42)	NR	2,400	2,400
C2-Methylnaphthalene (28.93)	NR	2,700	2,700
Total		**148,800**	**150,100**
Total Aromatics		**43,400**	**43,900**
Total Alkanes		**53,000**	**53,400**

Sample E-TP-38 (Lab #: B0-04-120-01)
(% Solids = 73%)

Volatile Organics	(Diluted 250x)		
Methylene Chloride	NR	ND	0
Acetone (Not found on other dilution)	NR	ND	0
1,2-Dichloroethane	NR	ND	1,600
Benzene	NR	2,800	**498,600**
4-Methyl-2-Pentanone	NR	ND	33,100
Ethyl Methacrylate??? (10.60)	NR	ND	[994,000]
2-Hexanone	NR	ND	9,800
Tetrachloroethene	NR	ND	59,300
Toluene	NR	ND	**5,200**
Ethlybenzene	NR	3,000	**3,800**
Xylene	NR	9,000	**0**
Total		**14,800**	**611,400**

Non-Target Volatile Organics	(500x dilution)		
Dimethyl Pentene (5.73)	NR	96,000 B?	37,000
Unknown (6.56)	NR	36,000	41,000
Methyl Hexene (7.41)	NR	140,000 B	95,800
Dimethyl hexene (8.67)	NR	140,000 B	75,400
Dimethyl Hexene (9.26)	NR	210,000 B	95,800
Unknown (10.61)	NR	36,000	89,000
Unknown (11.64)	NR	49,000	75,400
C3-Benzene (17.49)	NR	12,000	**171,200**
Unknown (18.78)	NR	9,600	63,600
C4-Benzene (19.84)	NR	11,000	**65,800**
C4-Benzene (20.07)	NR	27,000	**102,800**

2,3-Dihydro-methyl-1H-Indene (20.41)	NR	16,000	27,400
Unknown (20.67)	NR	13,000	150,600
C4 Benzene (21.02)	NR	11,000	**109,600**
Unknown (21.55)	NR	23,000	65,800
2,3-Dihydro-methyl-1H-Indene (21.81)	NR	9,600	46,600
C4-Benzene (22.04)	NR	16,000	**44,600**
Tetrahydronaphthalene (22.67)	NR	22,000	33,600
2,3-Dihydro-dimethyl-1H-Indene(22.92)	NR	37,000	33,600
Unknown (25.07)	NR	32,000	78,000
Unknown (25.46)	NR	18,000	31,600
Methylnaphthalene (26.12)	NR	42,000	54,800
Methylnaphthalene (26.65)	NR	17,000	33,600
Dimethylnaphthalene (28.47)	NR	22,000	42,400
Dimethylnaphthalene (29.00)	NR	25,000	0
Total		**1,070,200**	**1,665,000**
Total Aromatics		**251,600**	**738,600**
Total Alkanes		**586,000**	**304,000**

Sample F-TP-61 (Lab #: BO-04-172-05)
(% Solids = 76%)

Volatile Organics	(Diluted 125x)		
Methylene Chloride	NR	ND	700
Acetone	NR	ND	241,300
Benzene	NR	12,000	**16,000**
Vinyl Acetate	NR	ND	500
4-Methyl-2-Pentanone	NR	ND	4,700
2-Hexanone	NR	ND	28,600
Ethylbenzene	NR	1,900	**2,500**
Xylene	NR	1,400	**1,800**
Total		**15,300**	**296,100**

Non-Target Volatile Organics	(Only the 2nd internal standard appears to have been used)		
Methylcyclpoentane (5.06)	NR	14,000	14,200
Unknown (5.88)	NR	8,900	8,900
Unknown (6.24)	NR	9,900	9,900
Unknown (6.85)	NR	23,000	23,200
Unknown (8.14)	NR	18,000	18,200
C8-Alkane (9.12)	NR	23,000	23,200
C8-Alkane (9.41)	NR	21,000	21,500
C2-Cyclohexane (9.83)	NR	18,000	18,200
C2-Cyclohexane (11.78)	NR	41,000	41,400
C9-Alkane (12.57)	NR	15,000	15,400
C3-Benzene (15.55)	NR	16,000	**15,900**
C3-Benzene (16.40)	NR	25,000	**24,800**
C3-Benzene (17.27)	NR	6,600	**6,600**
Unknown (19.24)	NR	36,000	36,400

C4-Benzene (20.14)		NR	26,000	26,500
2,3-Dihydro-1-methyl-1H-Indene (20.47)		NR	16,000	15,900
C4-Benzene (20.92)		NR	11,000	11,200
Unknown (21.64)		NR	11,000	10,700
2,3-Dihydro-methyl-1H-Indene (21.87)		NR	8,100	8,100
C4-Benzene (22.10)		NR	8,100	8,100
2,3-Dihydro-dimethyl-1H-Indene (23.00)		NR	19,000	18,900
2,3-Dihydro-trimethyl-1H-Indene (25.54)		NR	7,600	7,600
Methylnaphthalene (26.18)		NR	13,000	13,200
C2-Naphthalene (28.56)		NR	8,100	8,100
C2-Naphthalene (29.07)		NR	10,000	10,200
	Total		**413,300**	**416,300**
	Total Aromatics		**174,500**	**175,100**
	Total Alkanes		**132,000**	**133,900**

Sample F-TP-42 (Lab #: B0-04-120-02)
(% Solids = 71%)

Volatile Organics		(Diluted 250x)		
Methylene Chloride		NR	ND	2,400
Acetone		NR	ND	283,300
Benzene		NR	ND	1,600
4-Methyl-2-Pentanone		NR	ND	42,900
EthylMethacrylate (10.57)		NR	ND	155,300
2-Hexanone		NR	ND	1,600
Toluene		NR	ND	400
Ethylbenzene		NR	4,000	5,600
Xylene		NR	5,000	7,000
	Total		**9,000**	**500,100**
Non-Target Volatile Organics				
Pentane (2.06)		NR	3,900	3,900
Unknown (3.87)		NR	3,200	3,200
Dimethyl Butane (4.39)		NR	1,800	1,800
Methyl Cyclopentane (4.95)		NR	4,900	4,900
Unknown (5.74)		NR	4,900	4,900
Unknown (6.72)		NR	3,900	3,900
Unknown (7.37)		NR	7,400	7,400
Unknown (8.00)		NR	5,300	5,300
Dimethyl Hexene (8.62)		NR	4,200	4,200
Unknown (8.99)		NR	4,600	4,600
C3-Benzene (15.45)		NR	3,200	3,200
Unknown (16.29)		NR	3,500	3,500
Unknown (17.69)		NR	1,100	1,100 < 10% ??
Unknown (18.22)		NR	1,400	1,400 < 10% ??
Unknown (19.01)		NR	3,900	3,900
C3-Benzene (19.82)		NR	2,500	2,500

C4-Benzene (20.03)		NR	2,800	2,800	
2,3-Dihydro-1-methyl-1H-Indene (20.37)		NR	2,500	2,500	
Unknown (20.98)		NR	1,400	1,400	< 10% ??
Unknown (21.51)		NR	2,100	2,100	
Unknown (21.77)		NR	1,800	1,800	
Unknown (22.89)		NR	3,900	3,900	
Unknown (26.60)		NR	1,100	1,100	< 10% ??
Dimethyl Naphthalene (28.44)		NR	2,800	2,800	
Dimethyl Naphthalene (28.94)		NR	3,500	3,500	
	Total		**81,600**	**81,600**	
	Total		**17,300**	**17,300**	
	Total		**14,800**	**14,800**	

Sample F-TP-45 (Lab #: BO-04-120-03)
(% Solids = 79%)

Volatile Organics		(Diluted 250x)		
Methylene Chloride		NR	ND	1,600
Acetone		NR	ND	contamination
Benzene		NR	19,000	**26,700**
2-Chloroethyl Vinyl Ether		NR	ND	400
Vinyl Acetate		NR	ND	8,000
4-Methyl-2-Pentanone		NR	ND	8,100
2-Hexanone (11.27)		NR	ND	166,500
Toluene		NR	ND	**300**
Ethylbenzene		NR	120,000	**159,900**
Xylene		NR	ND	**16,300**
	Total		**139,000**	**387,800**
Non-Target Volatile Organics				
Hexane (3.88)		NR	6,300	6,800
Methyl Cyclopentane (4.98)		NR	6,600	7,200
Unknown (5.78)		NR	5,700	6,200
Unknown (6.75)		NR	10,000	11,000
Unknown (8.12)		NR	6,000	6,500
Dimethyl Hexane (9.02)		NR	35,000	37,700
Dimethyl Heptane (9.29)		NR	35,000	37,700
Unkown (9.73)		NR	16,000	17,500
Unknown (10.13)		NR	16,000	17,100
Ethyl Cyclohexane (11.68)		NR	10,000	11,000
Methyl Octane (12.21)		NR	12,000	13,000
Methyl Octane (12.47)		NR	6,700	7,200
C3-Benzene (15.46)		NR	5,400	**5,800**
C3-Benzene (16.30)		NR	11,000	**12,300**
Unknown (16.58)		NR	2,500	2,700
C3-Benzene (17.19)		NR	4,400	**4,800**
Unknown (19.12)		NR	18,000	19,900

C4-Benzene (20.03)	NR	11,000	11,600
2,3 Dihydro-1-Methyl-1H-Indene(20.37)	NR	4,400	4,800
C4-Benzene (20.82)	NR	4,100	4,500
2,3 Dihydro-1-Methyl-1H-Indene(21.75)	NR	3,200	3,400
2,3 Dihydro-1-Methyl-1H-Indene(22.14)	NR	2,200	2,400
Unknown (22.88)	NR	4,400	4,800
Naphthalene (23.53)	NR	2,200	2,400
Unknown (26.06)	NR	2,200	2,400
Total		**240,300**	**260,700**
Total Aromatics		**47,900**	**52,000**
Total Alkanes		**111,600**	**120,600**

Sample F-TP-48 (Lab #: B0-04-120-04)
(% Solids = 77%)

Volatile Organics	(Diluted 250x,	Hexanone and benzene diluted 2500x)	
Chloromethane	NR	ND	1,100
1,2-Dichloroethane	NR	ND	1,700
1,1,1-Trichloroethane	NR	ND	500
Benzene	NR	59,000	**76,900**
2-Butanone	NR	ND	4,800
Vinyl Acetate	NR	ND	21,900
4-Methyl-2-Pentanone	NR	ND	10,400
2-Hexanone	NR	ND	44,000
Toluene	NR	ND	**1,300**
Ethylbenzene	NR	130,000	**174,900**
Xylene	NR	120,000	**157,800**
Total		**723,000**	**944,000**

Non-Target Volatile Organics	(Diluted 2500x)		
Methyl Cyclopentane (5.06)	NR	200,000	201,300
Unknown (5.87)	NR	94,000	94,200
Unknown (6.24)	NR	110,000	113,600
Unknown (6.83)	NR	220,000	217,500
Unknown (8.10)	NR	100,000	103,900
Dimethyl Hexane (9.13)	NR	120,000	116,900
Methyl Heptane (9.42)	NR	110,000	110,400
Dimethyl Cyclohexane (9.84)	NR	49,000	48,700
Ethyl Cyclohexane (11.79)	NR	87,000	282,500
Methyl Octane (12.34)	NR	83,000	269,500
Methyl Octane (12.59)	NR	57,000	185,100
C3-Benzene (15.57)	NR	46,000	**149,400**
C3-Benzene (16.42)	NR	100,000	**324,700**
C3-Benzene (16.68)	NR	130,000	**422,100**
C3-Benzene (17.31)	NR	51,000	**165,600**
C3-Benzene (17.60)	NR	250,000	**811,700**
Unknown (19.24)	NR	190,000	616,900

C4-Benzene (19.93)	NR	71,000	230,500
C4-Benzene (20.14)	NR	66,000	214,300
2,3-Dihydro-1-Methyl-1H-Indene (20.48)	NR	36,000	116,900
C4-Benzene (20.95)	NR	41,000	133,100
C4-Benzene (21.13)	NR	51,000	165,600
Unknown (23.03)	NR	46,000	149,400
Methylnaphthalene (26.20)	NR	30,000	97,400
Unknown (29.10)	NR	30,000	97,400
Total		**2,368,000**	**5,438,600 ?**
Total Aromatics		**872,000**	**2,831,300**
Total Alkanes		**706,000**	**1,214,400**

Sample F-TP-51 (Lab #: BO-04-120-05)
(% Solids = 77%)

Volatile Organics	(Diluted 250x)		
Methylene Chloride	NR	ND	1,600
Acetone	NR	ND	1,022,700
Benzene	NR	1,700	2,300
4-Methyl-2-Pentanone	NR	ND	50,300
2-Hexanone	NR	ND	31,300
Ethylbenzene	NR	ND	28,800
Xylene	NR	22,000	25,000 ?
Total		**4,530,700**	**12,467,800**
Non-Target Volatile Organics			
Methyl Cyclopentane (4.99)	NR	11,000	5,500
Unknown (6.78)	NR	19,000	9,100
Unknown (8.05)	NR	12,000	12,000
Dimethyl Hexane (9.00)	NR	13,000	13,000
Unknown (9.29)	NR	14,000	14,300
Unknown (9.72)	NR	17,000	16,600
Ethyl Cyclohexane (11.69)	NR	40,000	16,600
C3-Benzene (15.46)	NR	17,000	6,800
C3-Benzene (16.31)	NR	14,000	5,800
Unknown (19.16)	NR	42,000	17,500
C4-Benzene (20.04)	NR	35,000	14,300
2,3-Dihydro-1-methyl-1H-Indene (20.37)	NR	24,000	10,100
C4-Benzene (21.00)	NR	11,000	4,500
Unknown (21.26)	NR	13,000	5,200
Unknown (21.52)	NR	28,000	12,000
Unknown (21.78)	NR	17,000	6,800
C4-Benzene (21.98)	NR	24,000	10,100
Tetrahydronaphthalene (22.62)	NR	26,000	11,000
Unknown (22.89)	NR	56,000	23,100
Unknown (25.04)	NR	35,000	14,600
2,3-Dihydro-1-trimethyl-1H-Indene(25.41)	NR	18,000	7,500

Methyl Naphthalene (26.08)	NR	46,000	19,500
Methyl Naphthalene (26.61)	NR	21,000	8,800
Dimethyl Naphthalene (28.44)	NR	20,000	8,400
Dimethyl Naphthalene (28.95)	NR	23,000	9,100
Total		**596,000**	**?**
Total Aromatics		**279,000**	**?**
Total Alkanes		**64,000**	**?**

Sample F-TP-52 (Lab #: BO-04-120-06)
(% Solids = 77%)

Methylene Chloride	NR	ND	1,600
Benzene	NR	4,000	**5,100**
4-Methyl-2-Pentanone	NR	ND	3,000
2-Hexanone	NR	ND	2,400
Ethylbenzene	NR	13,000	**16,700**
Total		**17,000**	**28,800**
Non-Target Volatile Organics			
Methyl Cyclopentane (4.98)	NR	7,800	7,800
Unknown (6.73)	NR	8,100	8,100
Unknown (8.05)	NR	11,000	10,700
Dimethyl Hexane (9.00)	NR	8,800	8,800
Methyl Heptane (9.29)	NR	8,100	8,100
Ethyl Hexane (11.69)	NR	14,000	14,000
C3-Benzene (15.46)	NR	6,200	**6,200**
C3-Benzene (16.31)	NR	5,800	**5,800**
Unknown (18.74)	NR	4,900	4,900
C4-Benzene (20.05)	NR	12,000	**12,000**
2,3-Dihydro-1-methyl-1H-Indene (20.37)	NR	7,100	7,100
Unknown (20.63)	NR	5,200	5,200
Unknown (21.26)	NR	3,600	3,600
Unknown (21.53)	NR	7,100	7,100
Unknown (21.78)	NR	3,900	3,900
C4-Benzene (21.99)	NR	9,700	**9,700**
Tetrahydronaphthalene (22.62)	NR	8,800	8,800
2,3-Dihydro-dimethyl-1H-Indene(22.89)	NR	15,000	14,900
Unknown (24.07)	NR	7,800	7,800
Unknown (25.04)	NR	11,000	11,000
2,3-Dihydro-trimethyl-1H-Indene(25.43)	NR	5,500	5,500
Methylnaphthtalene (26.07)	NR	13,000	13,300
Methylnaphthalene (26.60)	NR	6,200	6,200
Dimethylnaphthalene (28.43)	NR	6,800	6,800
Dimethylnaphthalene (28.95)	NR	7,800	7,800
Total		**205,200**	**205,100**
Total Aromatics		**103,900**	**104,100**
Total		**41,500**	**41,200**

Sample F-TP-53 (Lab #: B0-04-120-07)
(Solids = 76%)

Volatile Organics	(Diluted 250x)		
Methylene Chloride	NR	ND	1,900
Benzene	NR	10,000	**13,700**
Vinyl Acetate	NR	ND	1,400
4-Methyl-2-Pentanone	NR	ND	5,400
2-Hexanone	NR	ND	29,300
Ethylbenzene	NR	ND	**1,300**
Total		**10,000**	**53,000**
Non-Target Volatile Organics			
Methyl Cyclopentane (4.97)	NR	36,000	36,200
Unknown (6.74)	NR	56,000	55,900
Unknown (8.07)	NR	11,000	10,500
Dimethylhexane (8.99)	NR	17,000	16,800
Methylheptane (9.28)	NR	12,000	12,500
Dimethyl Cyclohexane (9.73)	NR	15,000	15,100
Ethylcyclohexane (11.70)	NR	15,000	15,500
C3-Benzene (15.45)	NR	8,300	Not Incld.
C3-Benzene (16.31)	NR	10,000	**10,200**
Unknown (18.76)	NR	5,300	5,300
C4-Benzene (20.05)	NR	20,000	**20,100**
2,3-Dihydro-methyl-1H-Indene (20.37)	NR	13,000	13,500
Unknown (20.63)	NR	8,900	8,900
C4-Benzene (20.82)	NR	12,000	**11,500**
Unknown (21.53)	NR	7,800	7,900
Unknown (21.77)	NR	5,900	5,900
C4-Benzene (21.98)	NR	12,000	**12,500**
Tetrahydronaphthalene (22.61)	NR	11,000	11,200
2,3,-Dihydro-dimethyl-1H-Indene(22.90)	NR	18,000	18,100
Unknown (25.04)	NR	12,000	11,800
2,3-Dihydro-trimethyl-1H-Indene(25.42)	NR	5,600	5,600
Methylnaphthalene (26.07)	NR	17,000	16,800
Methylnaphthalene (26.60)	NR	6,600	6,600
Dimethylnaphthalene (28.43)	NR	5,300	5,300
Dimethyl Naphthalene (28.94)	NR	4,900	4,900
Total		**345,600**	**338,600**
Total Aromatics		**143,700**	**143,700**
Total Alkanes		**111,000**	**111,200**

Rexene Soil Volatile Organics

Sample F-TP-54 (Lab #: BO-04-120-08)
(% Solids = 79%)

Volatile Organics	(Diluted 250x)		
Methylene Chloride	NR	ND	1,700
1,2-Dichloroethane	NR	ND	1,800
Benzene	NR	14,000	**17,900**
Vinyl Acetate	NR	ND	2,300
4-Methyl-2-Pentanone	NR	ND	39,500
2-Hexanone	NR	ND	55,300
Ethylbenzene	NR	2,700	**3,400**
Xylene	NR	ND	**3,000**
Total		**16,700**	**124,900**
Non-Target Volatile Organics			
Methyl Pentane (3.12)	NR	3,500	3,500
Hexane (3.90)	NR	6,600	6,600
Methylcyclopentane (4.98)	NR	7,900	7,900
Unknown (5.80)	NR	5,700	5,700
Unknown (6.75)	NR	11,000	11,400
Unknown (8.07)	NR	11,000	10,800
Methyl Heptane (9.02)	NR	27,000	26,900
Methyl Heptane (9.30)	NR	25,000	25,000
Unknown (9.73)	NR	13,000	12,700
Unknown (10.13)	NR	7,600	7,600
Ethylcyclohexane (11.68)	NR	17,000	17,400
Methyl Octane (12.21)	NR	17,000	16,800
Methyl Octane (12.47)	NR	9,200	9,200
C3-Benzene (15.47)	NR	9,500	**9,500**
C3-Benzene (16.32)	NR	16,000	**15,800**
C4-Benzene (17.72)	NR	3,500	**3,500**
Unknown (19.14)	NR	21,000	20,600
C4-Benzene (20.05)	NR	18,000	**18,400**
2,3-Dihydro-methyl-1H-Indene (20.38)	NR	8,200	8,200
C4-Benzene (20.82)	NR	9,800	**9,800**
2,3-Dihydro-methyl-1H-Indene (21.77)	NR	5,100	5,100
C4-Benzene (21.98)	NR	5,400	**5,400**
Tetrahydronaphthalene (22.63)	NR	4,700	4,700
2,3-Dihydro-dimethyl-1H-Indene(22.90)	NR	11,000	10,800
Naphthalene (23.53)	NR	4,700	4,700
Total		**278,400**	**278,000**
Total Aromatics		**95,900**	**95,900**
Total Alkanes		**113,200**	**113,300**

Rexene Soil Volatile Organics

Sample F-TP-61 (Lab #: BO-04-172-05)

(% Solids = 76%)

Volatile Organics	(Diluted 125x)		
Methylene Chloride	NR	ND	700
Acetone	NR	ND	241,300
Benzene	NR	12,000	**16,000**
Vinyl Acetate	NR	ND	500
4-Methyl-2-Pentanone	NR	ND	4,700
2-Hexanone	NR	ND	28,600
Ethylbenzene	NR	1,900	**2,500**
Xylene	NR	1,400	**1,800**
Total		**15,300**	**296,100**

Non-Target Volatile Organics	(Only the 2nd internal standard appears to have been used)		
Methylcyclpoentane (5.06)	NR	14,000	14,200
Unknown (5.88)	NR	8,900	8,900
Unknown (6.24)	NR	9,900	9,900
Unknown (6.85)	NR	23,000	23,200
Unknown (8.14)	NR	18,000	18,200
C8-Alkane (9.12)	NR	23,000	23,200
C8-Alkane (9.41)	NR	21,000	21,500
C2-Cyclohexane (9.83)	NR	18,000	18,200
C2-Cyclohexane (11.78)	NR	41,000	41,400
C9-Alkane (12.57)	NR	15,000	15,400
C3-Benzene (15.55)	NR	16,000	**15,900**
C3-Benzene (16.40)	NR	25,000	**24,800**
C3-Benzene (17.27)	NR	6,600	**6,600**
Unknown (19.24)	NR	36,000	36,400
C4-Benzene (20.14)	NR	26,000	**26,500**
2,3-Dihydro-1-methyl-1H-Indene (20.47)	NR	16,000	15,900
C4-Benzene (20.92)	NR	11,000	**11,200**
Unknown (21.64)	NR	11,000	10,700
2,3-Dihydro-methyl-1H-Indene (21.87)	NR	8,100	8,100
C4-Benzene (22.10)	NR	8,100	**8,100**
2,3-Dihydro-dimethyl-1H-Indene (23.00)	NR	19,000	18,900
2,3-Dihydro-trimethyl-1H-Indene (25.54)	NR	7,600	7,600
Methylnaphthalene (26.18)	NR	13,000	13,200
C2-Naphthalene (28.56)	NR	8,100	8,100
C2-Naphthalene (29.07)	NR	10,000	10,200
Total		**413,300**	**416,300**
Total Aromatics		**174,500**	**175,100**
Total Alkanes		**132,000**	**133,900**

Rexene Soil Volatile Organics

Sample F-TP-91 (Lab #: BO-04176-01)
(Solids = 97%)

Volatile Organics	(Undiluted)		
Methylene Chloride	NR	ND	6
Acetone	NR	ND	6
Total		**ND**	**12**

Non-Target Volatile Organics			
None Detected			
Total		**ND**	**ND**

Sample G-TP-68 (Lab #: BO-04-172-07)
(% Solids = 85%)

Volatile Organics	(Diluted 125x)		
Methylene Chloride	NR	ND	400
Benzene	NR	ND	**200**
4-Methyl-2-Pentanone	NR	ND	3,100
2-Hexanone	NR	ND	2,700
Total		**ND**	**6,400**

Non-Target Volatile Organics	(2nd internal standard used)		
Unknown (6.82)	NR	10,000	10,000
(E)-4,4-Dimethyl-2-Pentene (8.09)	NR	19,000	19,200
C2-Cyclohexane (9.81)	NR	18,000	17,700
C2-Cyclohexane (11.76)	NR	46,000	46,500
C3-Cyclohexane (14.10)	NR	8,100	8,100
C3-Benzene (15.55)	NR	19,000	**17,700**
C3-Benzene (16.38)	NR	11,000	**11,100**
Unknown (17.98)	NR	7,500	7,500
Unknown (18.85)	NR	8,700	8,700
C4-Benzene (19.11)	NR	8,700	**8,700**
C4-Benzene (20.12)	NR	29,000	**29,600**
2,3-Dihydro-1-methyl-1H-Indene (20.46)	NR	26,000	26,600
C4-Benzene (20.90)	NR	32,000	**32,600**
Unknown (21.35)	NR	9,300	9,300
C5-Benzene (21.63)	NR	16,000	**16,300**
Unknown (21.87)	NR	14,000	13,300
C4-Benzene (22.08)	NR	23,000	**22,600**
1,2,3,4-Tetrahydronaphthalene (22.71)	NR	10,000	10,500
2,3-Dihydro-dimethyl-1H-Indene (23.00)	NR	29,000	29,600
C5-Benzene (24.16)	NR	17,000	**16,800**
2,3-Dihydro-trimethyl-1H-Indene (25.52)	NR	11,000	11,100
Methylnaphthalene (26.18)	NR	29,000	29,600
Methylnaphthalene (26.71)	NR	16,000	16,300
C2-Naphthalene (28.54)	NR	15,000	15,100

C2-Naphthalene (29.06)	NR	21,000	20,700
Total		**453,300**	**455,200**
Total Aromatics		**312,700**	**314,900**
Total Alkanes		**91,100**	**91,500**

Sample G-TP-70 (Lab #: BO-04-172-01)
(% Solids = 92%)

Volatile Organics	(Diluted 125x)		
Methylene Chloride	NR	ND	2,000
Acetone	NR	ND	6,600
2-Butanone	NR	ND	5,500
Iso-Butyl Alcohol	NR	ND	32,800
Benzene	NR	ND	**1,900**
1,1,2,2-Tetrachloroethane	NR	ND	2,100
Toluene	NR	8,200	**8,900**
Ethylbenzene	NR	10,000	**10,800**
Xylene	NR	19,000	**21,000**
Total		**37,200**	**91,600**
Non-Target Volatile Organics			
Unknown (13.19)	NR	4,100	4,100
Unknown (21.71)	NR	Not Rptd	4,100
Unknown (22.25)	NR	8,900	8,900
Unknown (23.53)	NR	Not Rptd	4,100
Unknown (24.08)	NR	8,300	8,200
Unknown (27.64)	NR	13,000	13,600
Total		**34,300**	**43,000**

Sample G-TP-77 (Lab #: BO-04-172-02)
(% Solids = 75%)

Volatile Organics	(Diluted 125x)		
Methylene Chloride	NR	NR	500
Benzene	NR	NR	500
4-Methyl-2-Pentanone	NR	NR	5,400
Toluene	NR	NR	200
Ethylbenzene	NR	2,400	**3,200**
Xylene	NR	6,000	**8,000**
Total		**8,400**	**17,800**
Non-Target Volatile Organics			
C2-Cyclohexane (11.77)	NR	5,100	5,000
Unknown Subst. Benzene (15.53)	NR	2,700	**2,600**
C3-Benzene (16.64)	NR	7,500	**7,500**
C3-Benzene (17.56)	NR	6,100	**6,200**

C3-Benzene (18.56)	NR	2,100	2,100
C4-Benzene (19.09)	NR	4,800	4,800
C4-Benzene (19.90)	NR	5,200	5,200
C4-Benzene (20.11)	NR	3,500	3,500
2,3-Dihydro-1-methyl-1H-Indene (20.45)	NR	3,900	3,800
C4-Benzene (20.83)	NR	4,000	4,000
C4-Benzene (21.07)	NR	2,900	3,000
C5-Benzene (21.35)	NR	2,100	2,100
Unknown (21.54)	NR	2,100	2,100
Unknown (21.87)	NR	2,700	2,600
C4-Benzene (22.07)	NR	3,300	3,300
Unknown (22.72)	NR	2,400	2,300
2,3-Dihydro-dimethyl-1H-Indene (22.98)	NR	11,000	10,500
Naphthalene (23.61)	NR	4,300	4,300
Unknown (24.96)	NR	2,000	2,000
2,3-Dihydro-trimethyl-1H-Indene (25.51)	NR	6,100	6,200
Methylnaphthalene (26.17)	NR	16,000	16,600
Methylnaphthalene (26.71)	NR	7,200	7,200
C2-Naphthalene (28.37)	NR	5,500	5,500
C2-Methylnaphthalene (28.55)	NR	9,300	9,400
C2-Methylnaphthalene (29.06)	NR	15,000	14,600
Total		**136,800**	**136,400**
Total Aromatics		**127,600**	**127,400**

Sample G-TP-80 (Lab #: B0-04-172-03)

Volatile Organics	(Diluted 125x)		
Methylene Chloride	NR	ND	300
Ethylbenzene	NR	ND	300
Xylene	NR	ND	700
Total		**ND**	**1,300**
Non-Target Volatile Organics			
Unknown Alkane (19.09)	NR	1,100	1,000
C4-Benzene (20.12)	NR	2,000	2,000
Unknown (20.47)	NR	1,700	1,700
Unknown (21.34)	NR	1,100	1,000
Unknown (21.86)	NR	2,000	1,000
2,3-Dihydro-dimethyl-1H-Indene (22.99)	NR	3,800	3,800
C2-Naphthalene (28.54)	NR	5,200	5,200
Unknown (29.03)	NR	2,000	2,000
Total		**18,900**	**17,700**
Total Aromatics		**11,000**	**11,000**

Sample G-TP-81 (Lab #: BO-04-172-04)

Volatile Organics	(Diluted 620x)		
Methylene Chloride	NR	ND	2,600
1,2-Dichloroethane	NR	ND	1,200
2-Butanone	NR	ND	4,900
Iso-Butyl Alcohol	NR	ND	282,900
Benzene	NR	6,300	**7,500**
1,1,2,2-Tetrachloroethane	NR	ND	1,800
Toluene	NR	13,000	**16,000**
Ethylbenzene	NR	38,000	**45,300**
Xylene	NR	65,000	**77,600**
Total		**122,300**	**439,800**

Non-Target Volatile Organics	(1st Internal standard used for all compounds)		
Unknown (11.40)	NR	NR	5,300
Cyclohexane (13.18)	NR	22,000	22,000
Methylcyclopentane (13.68)	NR	16,000	15,900
C6-Alkane (15.15)	NR	9,800	3,900
C6-Alkane (16.55)	NR	17,000	9,800
Unknown (18.83)	NR	57,000	56,900
Unknown (19.14)	NR	13,000	13,600
Unknown (20.35)	NR	8,300	8,300
Unknown (21.70)	NR	29,000	29,600
Unknown (22.21)	NR	40,000	40,200
Unknown (24.11)	NR	46,000	45,500
Unknown (26.98)	NR	17,000	16,600
C3-Benzene (27.72)	NR	136,000	**136,600**
Unknown (30.36)	NR	35,000	34,900
Total		**446,100**	**439,100**
Total Aromatics		**136,000**	**136,600**
Total Alkanes		**64,800**	**51,600**

Sample MW-3-SS-06 (Lab #: BO-04-176-10)

(% Solids = 79%)

Volatile Organics	(Undiluted)		
Methylene Chloride	NR	ND	13
Acetone	NR	ND	7
Total		**ND**	**20**

Non-Target Volatile Organics

None Detected

Total		**ND**	**ND**

Rexene Soil Volatile Organics

Sample HW-6-SS-06 (Lab #: BO-04-176-09)

(% Solids = 80%)

Volatile Organics	(Diluted 125x)		
Methylene Chloride	NR	ND	1,200
Acetone	NR	ND	700
1,1,2,2-Tetrachloroethane	NR	ND	1,500
Ethylbenzene	NR	940	1,200
Xylene	NR	6,200	7,700
Total		**7,140**	**12,300**
Non-Target Volatile Organics			
Dimethyl Cyclopentane (13.99)	NR	1,100	1,100
Unknown Alkane (15.10)	NR	1,600	1,600
Unknown (15.62)	NR	3,000	3,000
Unknown (17.36)	NR	7,700	7,700
Unknown (17.68)	NR	3,400	3,400
Unknown (19.07)	NR	2,200	2,200
Unknown (20.10)	NR	3,000	3,000
Unknown (20.66)	NR	6,600	6,600
Unknown (21.53)	NR	1,300	1,300
Unknown (22.08)	NR	7,800	7,800
C9-Alkane (24.59)	NR	3,900	3,900
C9-Alkane (24.94)	NR	4,200	4,200
Unknown Alkane (25.58)	NR	3,400	3,600
C3-Benzene (26.57)	NR	2,300	2,300
C3-Benzene (27.37)	NR	12,000	12,000
Total		**63,500**	**63,700**
Total Aromatics		**14,300**	**14,300**
Total Alkanes		**14,200**	**14,400**

PRELIMINARY REPORT

Summary Data Table
Rexene

TCL Volatile and Semivolatile Organics
Soil Samples Received 7/23/90
IT Project #: BO-07-206

Sample / Analyte	Method Blank Conc. ppb	Lab. Reported Conc. ppb	QA Validation Reported Conc. Decision	Data Validatio	Footnotes
Sample C-TP-1-2 (Lab #: BO-08-07-206-01)					
(% Solids = 70%)					
Volatile Organics					
None Detected					
Non-Target Volatile Organics					
None Detected					
Semivolatile Organics	(30 grams, undiluted)				
bis(2-chloroisopropyl ether	Not Rv'd		56 J		
2-Nitrophenol	Not Rv'd		182 J		
Naphthalene	Not Rv'd		87 J		
2-Methylnaphthalene	Not Rv'd		48 J		
Acenaphthene	Not Rv'd		34 J		
Acenaphthene	Not Rv'd		39 J		
Dibenzofuran	Not Rv'd		45 J		
Fluorene	Not Rv'd	86 J	87 J		
Phenanthrene	Not Rv'd	30 J	81 J		
Di-n-Butyl Phthalate	Not Rv'd	260 JB	263 JB		
Bis(2-ethylhexyl)Phthalate	Not Rv'd	62 JB	63 JB		
Non-Target Semivolatile Organics					
4-Methyl-2-Pentanone	Not Rv'd	0	1,500 A		
Unknown (5.88)	Not Rv'd	1,200	1,200		
Unknown (10.70)	Not Rv'd	1,100	1,100		
Fenchone (11.66)	Not Rv'd	2,800	2,900		
1,1-sulfonylbisethane (11.76)	Not Rv'd	1,600	1,600		
Unknown (11.85)	Not Rv'd	980	1,000		
Unknown (12.06)	Not Rv'd	1,600	*		
Unknown (12.53)	Not Rv'd	1,600	*		
Unknown (12.68)	Not Rv'd	4,200	*		
Unknown (13.12)	Not Rv'd	1,700	*		
Unknown (13.53)	Not Rv'd	1,300	1,300		

PRELIMINARY REPORT

Unknown Phthalate (31.20)	Not Rv'd	280 Z	310 Z
Unknown Phthalate (31.32)	Not Rv'd	300 Z	340 Z
Unknown Phthalate (31.44)	Not Rv'd	190 Z	210 Z
Total		**11,180**	**12,520**
		(Phthales and aldols not included)	

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Sample #-TP-3-2 (Lab #: BO-08-07-206-03)
(% Solids = 81%)

Volatile Organics			
Benzene	Not Rv'd	940 JB	900 JB
1,1,2,2-Tetrachloroethane	Not Rv'd	0	11,400
Ethylbenzene	Not Rv'd	44,000	44,600
Xylenes	Not Rv'd	6,000	9,200
Non-Target Volatile Organics	**Values cannot be confirmed , the lab may have used a a different internal standard - lab not contacted**		
Cyclohexane (12.09)	Not Rv'd	14,000	14,300
Methylcyclopentane (12.68)	Not Rv'd	13,000	1,900
Unknown (13.22)	Not Rv'd	1,700	0
Unknown (14.15)	Not Rv'd	7,700	0
Unknown (15.59)	Not Rv'd	15,000	2,200
Unknown (16.09)	Not Rv'd	23,000	3,400
Unknown (18.19)	Not Rv'd	27,000	5,300
Unknown(19.63)	Not Rv'd	41,000	8,100
Unknown (21.10)	Not Rv'd	48,000	9,300
Total		**190,400**	**?**
Total Alkanes		**27,000**	**?**
Semivolatile Organics			
Naphthalene	Not Rv'd	16,000 J	16,000 J
2-Methylnaphthalene	Not Rv'd	50,000 JB	49,000 JB
Dibenzofuran	Not Rv'd	3,300 J	3,300 J
Phenathrene	Not Rv'd	2,100 J	2,000 J
Di-n-Butyl Phthalate	Not Rv'd	7,000 J	6,900 J
Non-Target Semivolatile Organics			
Unknown Alkane (12.26)	Not Rv'd	24,000	23,200
2-Methyldecalin (12.39)	Not Rv'd	28,000	27,400
C12-Alkane (12.70)	Not Rv'd	29,000	28,900
C12 Alkane & C4-Benzene (12.79)	Not Rv'd	29,000	28,100
C12-Alkane (12.86)	Not Rv'd	30,000	29,400
C12-Alkane (12.98)	Not Rv'd	31,000	30,800
C13-Alkane (13.69)	Not Rv'd	90,000	88,300
Unknown (13.95)	Not Rv'd	37,000	36,300
Hexyl Cyclohexane (14.16)	Not Rv'd	56,000	55,000

PRELIMINARY REPORT

Unknown (14.32)	Not Rv'd	47,000	46,600
C13-Alkane (14.39)	Not Rv'd	28,000	27,100
C13-Alkane (14.46)	Not Rv'd	26,000	25,700
C14-Alkane (14.61)	Not Rv'd	120,000	114,700
Unknown (14.84)	Not Rv'd	28,000	27,600
C14-Alkane (15.29)	Not Rv'd	33,000	32,800
Methyl Naphthalene (15.42)	Not Rv'd	54,000	53,000
Unknown (15.75)	Not Rv'd	81,000	79,700
C14-Alkane (16.06)	Not Rv'd	52,000	51,300
C15-Alkane (16.53)	Not Rv'd	48,000	46,600
Dimethylnaphthalene isomer (16.78)	Not Rv'd	37,000	36,500
Dimethylnaphthalene isomer (17.00)	Not Rv'd	0	63,900
C16-Alkane (17.35)	Not Rv'd	100,000	101,100
C16-Alkane (18.72)	Not Rv'd	45,000	44,600
C18-Alkane (19.76)	Not Rv'd	68,000	67,100
C19-Alkane (20.46)	Not Rv'd	46,000	45,900
Total		**1,167,000**	**1,211,600**
Total Aromatics		**91,000**	**89,500**
Total Alkanes		**826,000**	**812,500**

Sample E-TP-4-2 (Lab #: BO-08-07-206-04)
(% Solids = 79%)

Volatile Organics	**Surrogates out - sample was reanalyzed**		
2-Butanone	Not Rv'd	0	2,100
Vinyl Acetate	Not Rv'd	0	6,400
Benzene	Not Rv'd	3,100	3,100
1,1,2,2-Tetrachloroethane	Not Rv'd	0	2,800
Toluene	Not Rv'd	0	100
Ethylbenzene	Not Rv'd	8,300	4,800
Xylene	Not Rv'd	0	1,700
Non-Target Volatile Organics			
Cyclohexane (12.09)	Not Rv'd	18,000	17,500
Methylcyclopentane (12.63)	Not Rv'd	**15,000**	**1,400**
Unknown (14.14)	Not Rv'd	5,000	0
Hexane (15.54)	Not Rv'd	**13,000**	**1,300**
Unknown (16.08)	Not Rv'd	**4,000**	**1,600**
Unknown (18.18)	Not Rv'd	1,800	1,800
Unknown (18.80)	Not Rv'd	2,200	2,200
Unknown (19.58)	Not Rv'd	3,200	3,200
Unknown (21.09)	Not Rv'd	3,400	3,300
Unknown (22.69)	Not Rv'd	1,100	1,100
Unknown (24.08)	Not Rv'd	3,800	3,800
Total		**70,500**	**37,200**
Total Alkanes		**46,000**	**20,200**

PRELIMINARY REPORT

Semivolatile Organics			
Naphthalene	Not Rv'd	40,000	41,000
2-Methylnaphthalene	Not Rv'd	150,000	153,000
Non-Target Semivolatile Organics		TIC's were quantitated against a different internal s	
Decane (9.99)	Not Rv'd	52,000	*
C11-Alkane (10.42)	Not Rv'd	54,000	*
Decahydronaphthalane (11.10)	Not Rv'd	55,000	*
Decahydro-2-methyl-naphthalene (12.11	Not Rv'd	130,000	*
C-13 Alkane (12.27)	Not Rv'd	51,000	*
Decahydromethylnaphthalene (12.42)	Not Rv'd	130,000	*
C12-Alkane (12.73)	Not Rv'd	82,000	*
C4-Benzene (12.81)	Not Rv'd	65,000	*
C12-Alkane (12.89)	Not Rv'd	83,000	*
C12-Alkane (13.00)	Not Rv'd	100,000	*
Decahydromethylnaphthalene (13.08)	Not Rv'd	66,000	*
C13-Alkane (13.73)	Not Rv'd	290,000	*
Unknown (13.98)	Not Rv'd	57,000	*
Hexyl Cyclohexane (14.19)	Not Rv'd	190,000	*
C13-Alkane (14.33)	Not Rv'd	140,000	*
C13-Alkane (14.42)	Not Rv'd	67,000	*
C13-Alkane (14.48)	Not Rv'd	61,000	*
C14-Alkane (14.65)	Not Rv'd	320,000	*
Unknown (14.86)	Not Rv'd	56,000	*
C14-Alkane (15.31)	Not Rv'd	73,000	*
Methyl Naphthalene (14.50)	Not Rv'd	0	37,000 *
Unknown (15.76)	Not Rv'd	140,000	*
C12-Alkane (16.08)	Not Rv'd	74,000	*
Dimethylnaphthalene (17.01)	Not Rv'd	65,000	*
C16-Alkane (17.35)	Not Rv'd	91,000	*
Total		**2,492,000**	
Total Aromatics		**511,000**	
Total Alkanes		**1,728,000**	

Sample E-TP-5-2 (Lab #: BO-08-07-206-05)
(% Solids = 72%)

Volatile Organics			
2-Butanone	Not Rv'd	0	22,300
Benzene	Not Rv'd	1,300	1,400
1,1,2,2-Tetrachloroethane	Not Rv'd	0	3,000
Ethylbenzene	Not Rv'd	8,000	8,300
Xylene	Not Rv'd	5,300	5,500
Non-Target Volatile Organics			
Methylbutane (10.47)	Not Rv'd	2,900	3,000
Cyclohexane (12.22)	Not Rv'd	13,000	13,100

PRELIMINARY REPORT

Methylcyclopentane (12.80)	Not Rv'd	15,000	2,500
Unknown (13.69)	Not Rv'd	1,300	0
Methylpentane (14.31)	Not Rv'd	7,300	1,200
Unknown (14.46)	Not Rv'd	1,100	0
Hexane (15.70)	Not Rv'd	17,000	2,600
Unknown (16.25)	Not Rv'd	4,300	2,500
Methylhexane (18.34)	Not Rv'd	1,700	1,800
Unknown (18.92)	Not Rv'd	1,500	1,600
Unknown (20.86)	Not Rv'd	1,900	1,900
Unknown (21.25)	Not Rv'd	4,200	4,400
Unknown (22.92)	Not Rv'd	2,600	2,600
Unknown (24.39)	Not Rv'd	4,200	4,400
Unknown (28.39)	Not Rv'd	1,400	1,400
Total		**79,400**	?
Total Alkanes		**56,900**	?

Semivolatile Organics			
Diethylphthalate	Not Rv'd	30 J	30 J
Di-n-Butylphthalate	Not Rv'd	160 JB	160 JB
Butylbenzylphthalate	Not Rv'd	28 JB	30 JB
Bis(2-Ethylhexyl)Phthalate	Not Rv'd	210 JB	210 JB
Non-Target Semivolatile Organics			
Unknown (6.48)	Not Rv'd	530	530
Unknown (6.71)	Not Rv'd	2,700	2,440
4-hydroxy-4-methyl-2-pentanone (7.21)	Not Rv'd	50,000 B	50,410 AB
Unknown Alkane (7.34)	Not Rv'd	190	190
Unknown (8.44)	Not Rv'd	640	650
Unknown Alkane (8.70)	Not Rv'd	430	430
Unknown (9.04)	Not Rv'd	1,300	1,270
Unknown (9.94)	Not Rv'd	2,100	2,160
Unknown (10.17)	Not Rv'd	5,500	560
Unknown (11.10)	Not Rv'd	4,900	4,950
Unknown (11.98)	Not Rv'd	1,430	430
Unknown (20.99)	Not Rv'd	290	290
Bis(2-methylpropyl)ester (22.40)	Not Rv'd	280 B	290
Octadecenol (24.44)	Not Rv'd	1,200	1,170
Dioctylester (27.50)	Not Rv'd	240	250
Unknown Phthalate (30.41)	Not Rv'd	220	220
Unknown Phthalate (30.71)	Not Rv'd	330	330
Unknown Phthalate (31.33)	Not Rv'd	220	210
Unknown (33.68)	Not Rv'd	470	480
Total		**22,970**	**17,260**
Total Alkanes		**620**	**620**

Sample E-TP-6-2 (Lab #: BO-08-07-206-06)
(% Solids = 72%)

PRELIMINARY REPORT

Volatile Organics	Values reported from a different dilution Data from this was not included in the report.		
Benzene	Not Rv'd	1,500 B	?
Ethylbenzene	Not Rv'd	4,100	?
Xylene	Not Rv'd	3,100	?
Non-Target Volatile Organics			
Cyclohexane (12.10)	Not Rv'd		
Unknown (12.68)	Not Rv'd	1,000	?
Unknown (15.04)	Not Rv'd	510	?
Unknown (17.92)	Not Rv'd	1,400	?
Unknown (21.18)	Not Rv'd	65,000	?
Total		**67,910**	
Semivolatile Organics			
Naphthalene	Not Rv'd	14,000 J	14,000
2-Methylnaphthalene	Not Rv'd	55,000	54,000
Non-Target Semivolatile Organics			
C11-Alkane (11.78)	Not Rv'd	47,000	47,000
Decahydromethylnaphthalene (12.09)	Not Rv'd	24,000	23,000
C12-Alkane (12.25)	Not Rv'd	22,000	22,000
Methyldecalin (12.39)	Not Rv'd	29,000	29,000
C12-Alkane (12.71)	Not Rv'd	25,000	24,000
C4-Benzene & Unknown Alkane (12.79)	Not Rv'd	24,000	24,000
C12-Alkane (12.85)	Not Rv'd	32,000	32,000
C12-Alkane (12.97)	Not Rv'd	29,000	29,000
Unknown (13.27)	Not Rv'd	15,000	15,000
C13-Alkane (13.68)	Not Rv'd	91,000	90,000
Unnkown (13.95)	Not Rv'd	28,000	28,000
Hexyl cyclohexane (14.16)	Not Rv'd	51,000	51,000
Unknown (14.31)	Not Rv'd	36,000	36,000
C13-Alkane (14.45)	Not Rv'd	23,000	23,000
C14-Alkane (14.60)	Not Rv'd	96,000	95,000
Methyl Tridecane (14.83)	Not Rv'd	18,000	17,000
Tridecane (15.01)	Not Rv'd	70,000	69,000
C14-Alkane (15.28)	Not Rv'd	24,000	24,000
Methyl Naphthalene (15.41)	Not Rv'd	28,000	28,000
Unknown (15.75)	Not Rv'd	49,000	49,000
Substituted Alkane (15.95)	Not Rv'd	0	22,000
Unknown Alkane (16.05)	Not Rv'd	27,000	27,000
Tetradecane (16.46)	Not Rv'd	30,000	29,000
Dimethylnaphthalene (16.78)	Not Rv'd	21,000	21,000
Unknown Alkane (17.34)	Not Rv'd	50,000	50,000
Total		**889,000**	**904,000**
Total Aromatics		**73,000**	**72,000**
Total Alkanes		**605,000**	**651,000**

PRELIMINARY REPORT

Sample D-TP-7-2 (Lab #: B0-08-07-206-07)
(% Solids = 80%)

Volatile Organics			
Acetone	Not Rv'd	900 J	900 J
2-Butanone	Not Rv'd	9,300 J	9,200 J
Benzene	Not Rv'd	2,100 B	2,000 B
1,1,2,2-Tetrachloroethane	Not Rv'd	0	9,900
Ethylbenzene	Not Rv'd	1,400	1,300
Non-Target Volatile Organics	**The lab quantitations are not clear.**		
Methyl Butane (10.35)	Not Rv'd	1,100 J	1,100 J
Methylcyclopentane (12.64)	Not Rv'd	39,000 J	3,000 J
Unknown (13.53)	Not Rv'd	2,200 J	0 J
Methylpentane (14.15)	Not Rv'd	12,000 J	900 J
Unknown (15.55)	Not Rv'd	14,000 J	1,100 J
Unknown (16.10)	Not Rv'd	36,000 J	2,800 J
Unknown (18.19)	Not Rv'd	22,000 J	3,500 J
Unknown (19.40)	Not Rv'd	6,700 J	1,100 J
Unknown (19.75)	Not Rv'd	3,600 J	0 J
Unknown (21.07)	Not Rv'd	15,000 J	2,400 J
Total		**151,600**	?
Total Alkanes		**52,100**	?
Semivolatile Organics			
Naphthalene	Not Rv'd	21,000 J	21,000
2-Methylnaphthlane	Not Rv'd	92,000	91,000
Non-Target Semivolatile Organics	**The lab used a different internal standard**		
C11-Alkane (10.41)	Not Rv'd	38,000	38,000
C11-Alkane (10.71)	Not Rv'd	38,000	38,000
Unknown (11.09)	Not Rv'd	91,000	*
C11-Alkane (11.79)	Not Rv'd	65,000	*
Methyl Decalin (12.10)	Not Rv'd	73,000	*
C12-Alkane (12.26)	Not Rv'd	45,000	*
Methyl Decalin (12.39)	Not Rv'd	83,000	*
C12-Alkane (12.72)	Not Rv'd	63,000	*
C4-Benzene (12.79)	Not Rv'd	63,000	*
C12-Alkane (12.86)	Not Rv'd	68,000	*
C12-Alkane (12.98)	Not Rv'd	73,000	*
C13-Alkane (13.70)	Not Rv'd	23,000	*
Butyltrimethylcyclohexane (13.96)	Not Rv'd	68,000	*
Hexylcyclohexane or isomer (14.16)	Not Rv'd	130,000	*
Unknown (14.32)	Not Rv'd	93,000	*
C13-Alkane (14.39)	Not Rv'd	48,000	*
C13-Alkane (14.47)	Not Rv'd	48,000	*

PRELIMINARY REPORT

C14-Alkane (14.62)	Not Rv'd	240,000	*
Unknown (14.84)	Not Rv'd	48,000	*
C14-Alkane (15.29)	Not Rv'd	53,000	*
Unknown (15.74)	Not Rv'd	91,000	*
Unknown Alkane (16.06)	Not Rv'd	50,000	*
Dimethyl Naphthalene (16.99)	Not Rv'd	46,000	*
Unknown Alkane (17.34)	Not Rv'd	69,000	*
Total		**1,707,000**	**?**
Total Aromatics		**109,000**	**?**
Total Alkanes		**1,119,000**	**?**

Sample E-TP-8-2 (Lab #: BO-08-07-206-08)
(% Solids = 71%)

Volatile Organics	**1 Volatile Surrogate high!**		
****Data from sample -11 TCL compounds in report. TIC's OK**			
Acetone	Not Rv'd	410 JB	?
2-Butanone	Not Rv'd	4,700	?
1,1,1-Trichloroethane	Not Rv'd	10 J	?
Non-Target Volatile Organics	**Quantitations not clear**		
Methyl Butane (10.32)	Not Rv'd	70	*
Methyl Cyclpentane (12.61)	Not Rv'd	290	*
Methyl Pentane (14.12)	Not Rv'd	170	*
Unknown (14.35)	Not Rv'd	240	*
Unknown (15.52)	Not Rv'd	130	*
Unknown (16.06)	Not Rv'd	360	*
Unknown (17.15)	Not Rv'd	53	*
Unknown (17.71)	Not Rv'd	690	*
Unknown (18.81)	Not Rv'd	460	*
Unknown (19.32)	Not Rv'd	180	*
Unknown (19.51)	Not Rv'd	170	*
Unknown (20.60)	Not Rv'd	300	*
C3-Cyclohexane (21.03)	Not Rv'd	1,000	*
Unknown (21.57)	Not Rv'd	620	*
C3-Cyclohexane (22.04)	Not Rv'd	450	*
Unknown (22.66)	Not Rv'd	830	*
Unkown Hydrocarbon (23.36)	Not Rv'd	610	*
Unknown (23.94)	Not Rv'd	1,800	*
Unknown (24.92)	Not Rv'd	370	*
Total		**8,793**	**?**
Total Alkanes		**1,980**	**?**
Semivolatile Organics			
Naphthalene	Not Rv'd	7,600 J	8,000
2-Methylnaphthalene	Not Rv'd	32,000	32,000

PRELIMINARY REPORT

Non-Target Semivolatile Organics			
C11-Alkane (10.40)	Not Rv'd	31,000	*
Decahydronaphthalene (11.09)	Not Rv'd	25,000	*
Decahydro-2-methyl-naphth. (12.09)	Not Rv'd	36,000	*
C12-Alkane (12.25)	Not Rv'd	24,000	*
Decahydro-2-methyl-naphth. (12.39)	Not Rv'd	46,000	*
C12-Alkane (12.71)	Not Rv'd	24,000	*
C4-Benzene (12.79)	Not Rv'd	25,000	*
Unknown (12.97)	Not Rv'd	33,000	*
Unknown (13.26)	Not Rv'd	23,000	*
C13-Alkane (13.68)	Not Rv'd	120,000	*
Unknown (13.95)	Not Rv'd	45,000	*
Hexylcyclohexane (14.16)	Not Rv'd	76,000	*
Unknown (14.30)	Not Rv'd	65,000	*
C13-Alkane (14.39)	Not Rv'd	37,000	*
C13-Alkane (14.45)	Not Rv'd	24,000	*
C14-Alkane (14.61)	Not Rv'd	160,000	*
Unknown (14.83)	Not Rv'd	35,000	*
C14-Alkane (15.28)	Not Rv'd	43,000	*
Methylnaphthalene (15.41)	Not Rv'd	62,000	*
Methylpentylcyclohexane (15.74)	Not Rv'd	42,000	*
Unknown (16.05)	Not Rv'd	28,000	*
C15-Alkane (16.53)	Not Rv'd	19,000	*
Dimethylnaphthalene (16.78)	Not Rv'd	18,000	*
Unknown (17.33)	Not Rv'd	45,000	*
Total		**1,086,000**	?
Total Aromatics		**212,000**	?
Total Alkanes		**558,000**	?

F

Sample E-TP-9-2 (Lab #: BO-08-07-206-09)
(% Solids = 78%)

Volatile Organics ** Sample Mislabeld on quant report.			
2-Butanone	Not Rv'd	0	26,100
Benzene	Not Rv'd	35,000 B	35,600
1,1,2,2-Tetrachloroethane	Not Rv'd	0	50,100
Ethylbenzene	Not Rv'd	160,000	111,400
Xylene	Not Rv'd	0	2,600

Non-Target Volatile Organics	Quantitations of non-target compounds are not clear.		
Cyclohexane (12.09)	Not Rv'd	110,000	114,700
Methylcyclohepentane (12.68)	Not Rv'd	130,000	*
Unknown (14.15)	Not Rv'd	42,000	*
Hexane (15.59)	Not Rv'd	230,000	*
Unknown (16.09)	Not Rv'd	120,000	*
Unknown (18.19)	Not Rv'd	170,000	*

PRELIMINARY REPORT

Unknown (19.47)	Not Rv'd	39,000	*
Unknown (20.29)	Not Rv'd	39,000	*
Unknown (21.96)	Not Rv'd	110,000	*
Unknown (22.74)	Not Rv'd	90,000	*
Total		**1,080,000**	
Total Alkanes		**470,000**	

Semivolatile Organics			
Naphthalene	Not Rv'd	1,100	1,100
2-Methylnaphthalene	Not Rv'd	3,600	3,600
Fluorene	Not Rv'd	120 J	120
Phenanthrene	Not Rv'd	140 J	140
Di-n-Butylphthalate	Not Rv'd	92 JB	90
Butylbenzylphthalate	Not Rv'd	24 JB	20
Bis(2-ethylhexyl)Phthalate	Not Rv'd	90 JB	90

Non-Target Semivolatile Organics	**Quantitations of non-target compounds are not clear.**		
Unknown (6.82)	Not Rv'd	1,100	*
4-Hydroxy-2-Methyl-Pentanone (7.29)	Not Rv'd	28,000 B	*
Unknown (9.97)	Not Rv'd	1,200	*
Unknown (11.05)	Not Rv'd	990	*
undecane (11.82)	Not Rv'd	1,200	*
C4-Benzene (12.82)	Not Rv'd	1,400	*
Unknown (13.01)	Not Rv'd	750	*
C13-Alkane (13.72)	Not Rv'd	2,000	*
Methylpentylcyclohexane/isomer (14.2)	Not Rv'd	1,600	*
Unknown (14.35)	Not Rv'd	1,200	*
C13-Alkane (14.43)	Not Rv'd	730	*
C13-Alkane (14.50)	Not Rv'd	1,000	*
C14-Alkane (14.66)	Not Rv'd	3,600	*
C13-Alkane (15.07)	Not Rv'd	2,700	*
Unknown (15.14)	Not Rv'd	1,200	*
C14-Alkane (15.23)	Not Rv'd	800	*
C14-Alkane (15.33)	Not Rv'd	900	*
Unknown (15.78)	Not Rv'd	2,000	*
Unknown (16.10)	Not Rv'd	1,200	*
Dimethylnaphthalene (16.82)	Not Rv'd	1,000	*
Dimethylnaphthalene Isomer (17.04)	Not Rv'd	1,900	*
Unknown Alkane (17.38)	Not Rv'd	2,700	*
Unknown Akane (19.80)	Not Rv'd	2,100	*
C19-Alkane (20.48)	Not Rv'd	2,600	*
Total		**35,870**	?
Total Aromatics		**4,300**	?
Total Alkanes		**20,730**	?

Sample E-PP-10-2 (Lab #: BO-08-07-206-10)
(%Solids = 75%)

PRELIMINARY REPORT

Volatile Organics			
Methylene Chloride	Not Rv'd	3,500 B	3,500 B
Benzene	Not Rv'd	19,000	18,700
1,1,2,2-Tetrachloroethane	Not Rv'd	0	20,200
Ethylbenzene	Not Rv'd	92,000	92,700
Xylene	Not Rv'd	120,000	120,200
Non-Target Volatile Organics	**Quantitations of non-target compounds are not clear.**		
Cyclohexane (12.09)	Not Rv'd	39,000	*
Methyl Cyclopentane (12.64)	Not Rv'd	51,000	*
Unknown (14.15)	Not Rv'd	18,000	*
Hexane (15.55)	Not Rv'd	15,000	*
Unknown (18.19)	Not Rv'd	21,000	*
Unknown (19.43)	Not Rv'd	6,500	*
Unknown (22.73)	Not Rv'd	17,000	*
Total		**167,500**	?
Total Alkanes		**105,000**	?
Semivolatile Organics	**All Surrogates out**		
Naphthalene	Not Rv'd	53,000 J	53,900
2-Methylnaphthalene	Not Rv'd	73,000 J	73,700
Non-Target Semivolatile Organics			
4-Hydroxy-4-methyl-2-pentanone (7.63)	Not Rv'd	1,100,000 B	1,062,300
C3-Benzene (9.88)	Not Rv'd	99,000	99,900
C3-Benzene (10.07)	Not Rv'd	120,000	123,200
Unknown (10.51)	Not Rv'd	130,000	128,800
C3-Benzene (10.67)	Not Rv'd	640,000	649,400
C3-Benzene (11.22)	Not Rv'd	110,000	107,700
C4-Benzene (11.81)	Not Rv'd	110,000	112,100
Unknown (11.99)	Not Rv'd	99,000	99,900
Undecane (12.90)	Not Rv'd	270,000	273,100
C4-Benzene (12.90)	Not Rv'd	77,000	77,700
C4-Benzene (12.98)	Not Rv'd	100,000	102,100
2,3-Dihydro-methyl-1H-Indene (13.34)	Not Rv'd	55,000	55,500
Unknown (13.54)	Not Rv'd	150,000	146,500
C13-Alkane (14.40)	Not Rv'd	81,000	82,100
Unknown Alkane (15.33)	Not Rv'd	79,000	79,900
C13-Alkane (15.74)	Not Rv'd	98,000	98,800
1-Methyl Naphthalene (16.21)	Not Rv'd	97,000	97,700
Unknown Hydrocarbon (16.89)	Not Rv'd	66,000	66,600
C14-hydrocarbn (17.21)	Not Rv'd	73,000	73,300
Unknown Alkane (18.09)	Not Rv'd	75,000	75,500
Unknown Alkane (20.51)	Not Rv'd	83,000	83,300
Unknown Alkane (21.21)	Not Rv'd	59,000	59,900
Unknown Alkane (22.43)	Not Rv'd	54,000	54,400
Total		**2,725,000**	**2,747,400**

PRELIMINARY REPORT

Total Aromatics	**1,408,000**	**1,425,300**
Total Alkanes	**799,000**	**807,000**

3

Sample E-TP-11-2 (Lab #: B0-08-07-206-11)
(% Solids = 76%)

Volatile Organics	**Raw data mixed up with Sample E-TP-8**		
Acetone	Not Rv'd	68 J	63
Carbon Disulfide	Not Rv'd	16 J	16
2-Butanone	Not Rv'd	0	51
Benzene	Not Rv'd	43 B	42
1,1,2,2-Tetrachloroethane	Not Rv'd	0	158
Toluene	Not Rv'd	0	32
Ethylbenzene	Not Rv'd	300	316
Xylene	Not Rv'd	210	347
Non-Target Volatile Organics	*** A different internal standard was used**		
Unknown (19.79)	Not Rv'd	1,300	*
Unknown (17.77)	Not Rv'd	510	*
Unknown (19.05)	Not Rv'd	3,300	*
Unknown (20.99)	Not Rv'd	6,400	*
Unknown (22.86)	Not Rv'd	1,400	*
Unknown (24.06)	Not Rv'd	1,800	*
Total		**14,710**	?
Semivolatile Organics			
Naphthalene	Not Rv'd	6,500 J	6,500 J
2-Methylnaphthalene	Not Rv'd	20,000 J	19,900 J
Fluorene	Not Rv'd	4,600 J	4,700 J
Phenanthrene	Not Rv'd	12,000	11,800
Anthracene	Not Rv'd	3,200 J	3,300 J
Pyrene	Not Rv'd	6,300 J	6,400 J
Non-Target Semivolatile Organics			
C11-Alkane (10.41)	Not Rv'd	57,000	57,800
C11-Alkane (10.70)	Not Rv'd	59,000	59,700
C12-Alkane (12.25)	Not Rv'd	24,000	24,200
Decahydro-2-methylnaphthalene (12.39)	Not Rv'd	30,000	30,200
C13-Alkane (13.67)	Not Rv'd	73,000	73,600
Unknown (13.94)	Not Rv'd	36,000	36,500
Hexacyclohexane (14.14)	Not Rv'd	44,000	45,000
Unknown (14.30)	Not Rv'd	36,000	36,500
C13-Alkane (14.59)	Not Rv'd	94,000	94,600
Unknown (14.82)	Not Rv'd	29,000	29,700
C14-Alkane (15.27)	Not Rv'd	30,000	30,000
Methylnaphthalene (15.41)	Not Rv'd	51,000	52,100
Unknown (15.74)	Not Rv'd	60,000	60,700

PRELIMINARY REPORT

	Unknown (16.05)	Not Rv'd	40,000	40,000
	Unknown Alkane (16.52)	Not Rv'd	40,000	40,000
	C2-Naphthalene (16.61)	Not Rv'd	38,000	38,400
	C2-Naphthalene (16.77)	Not Rv'd	51,000	51,300
	C2-Naphthalene (16.99)	Not Rv'd	82,000	83,100
	C2-Naphthalene (17.05)	Not Rv'd	34,000	34,200
	C16-Alkane (17.34)	Not Rv'd	100,000	104,900
	Trimethyl Naphthalene (18.52)	Not Rv'd	0	35,000
	C3-Naphthalene (18.73)	Not Rv'd	64,000	64,400
	Unknown Alkane (19.75)	Not Rv'd	79,000	79,900
	C15-Alkane (20.45)	Not Rv'd	39,000	39,700
	Methyldibenzothiophene (22.58)	Not Rv'd	21,000	21,000
	Total		**1,211,000**	**1,262,500**
	Total Aromatics		**371,000**	**388,700**
	Total Alkanes		**639,000**	**649,400**

Sample G-TP-12-2 (Lab #: BO-08-07-206-12)
(% Solids = 81%)

Volatile Organics

Methylene Chloride	Not Rv'd	3,700 B	3,700
2-Butanone	Not Rv'd		124,400
Benzene	Not Rv'd	53,000	54,000
1,1,2,2-Tetrachloroethane	Not Rv'd		66,600
Ethylbenzene	Not Rv'd	79,000 D	data not included
Xylene	Not Rv'd	96,000	99,100

Non-Target Volatile Organics

*** Laboratory reported no TIC's were found - many spectra were included**

*	2-Methyl Butane (10.34)	Not Rv'd	ND	17,400
*	Methyl Cyclopentane (12.66)	Not Rv'd	ND	13,700
*	3-Methyl Pentane (14.13)	Not Rv'd	ND	6,200
*	Hexane (15.57)	Not Rv'd	ND	9,300
*	Unknown (16.07)	Not Rv'd	ND	12,400
*	Unknown (18.17)	Not Rv'd	ND	10,600
*	Unknown Ester (19.41)	Not Rv'd	ND	7,500
*	3-Ethyl-Thiophene (20.66)	Not Rv'd	ND	10,000
*	Unknown (21.09)	Not Rv'd	ND	10,000
	Total		**ND**	**97,100**
	Total Alkanes		**ND**	**46,600**

Semivolatile Organics

Phenol	Not Rv'd	1,500 J	1,550 J
Naphthalene	Not Rv'd	11,000	11,140
2-Methylnaphthalene	Not Rv'd	17,000	17,800
Dibenzofuran	Not Rv'd	500 J	530 J

PRELIMINARY REPORT

Fluorene	Not Rv'd	570 J	600 J
Phenanthrene	Not Rv'd	1,100 J	1,170 J
Anthracene	Not Rv'd	190 J	200 J
Di-n-Butylphthalate	Not Rv'd	210 JB	220 JB
Pyrene	Not Rv'd	410 J	430 J
Bis (2-Ethylhexyl)Phthalate	Not Rv'd	230 JB	240 JB
Non-Target Semivolatile Organics			
4-Hydroxyl-4-methyl-2-pentanone (7.08	Not Rv'd	64,000 B	68,150 AB
Propylbenzene (9.14)	Not Rv'd	6,300	6,640
C3-Benzene (9.33)	Not Rv'd	9,100	9,570
C3-Benzene (9.96)	Not Rv'd	23,000	24,420
Decane (10.00)	Not Rv'd	8,700	9,210
C3-Benzene (10.48)	Not Rv'd	6,900	7,330
2,3-Dihydro-1H-Indene (10.72)	Not Rv'd	7,000	7,350
C3-Benzene (11.08)	Not Rv'd	13,000	13,830
C3-Benzene (11.28)	Not Rv'd	5,500	5,840
C4-Benzene (11.46)	Not Rv'd	11,000	11,460
C11-Alkane (11.80)	Not Rv'd	12,000	12,830
C4-Benzene (12.24)	Not Rv'd	7,800	8,210
C4-Benzene (12.80)	Not Rv'd	14,000	14,320
Unknown (12.97)	Not Rv'd	5,200	5,530
C12-Alkane (13.47)	Not Rv'd	9,200	9,750
C13-Alkane (13.69)	Not Rv'd	8,200	8,660
Unknown (14.16)	Not Rv'd	5,700	6,020
C14-Alkane (14.61)	Not Rv'd	9,500	10,080
C13-Alkane (15.02)	Not Rv'd	6,700	7,060
Methylnaphthalene (15.42)	Not Rv'd	6,400	6,730
C14-Alkane (16.47)	Not Rv'd	0	6,080
C2-Naphthalene (17.00)	Not Rv'd	6,500	6,880
C16-Alkane (17.35)	Not Rv'd	7,100	7,500
Unknown Alkane (19.76)	Not Rv'd	7,400	7,840
C19-Alkane (20.45)	Not Rv'd	6,000	6,300
Total		**202,200**	**219,440**
Total Aromatics		**116,500**	**122,580**
Total Alkanes		**66,100**	**76,100**

Sample G-TP-13-2 (Lab #: MO-08-07-206-13)
(% Solids = 78%)

Volatile Organics			
Acetone	Not Rv'd	31 J	31 J

Non-Target Volatile Organics
None Detected

Semivolatile Organics

PRELIMINARY REPORT

** Sample only analyzed on medium level. Was not repeated on low level.
None Detected

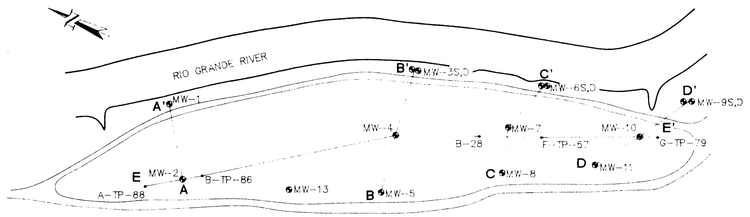
Non-Target Semivolatile Organics
None Detected

Sample G-TP-15-2 (Lab #: B0-08-07-206-14)
(% Solids = 84%)

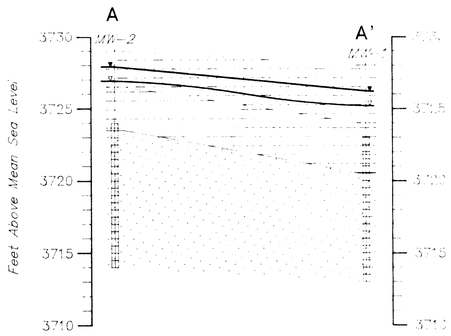
Volatile Organics	2 surrogates out - check to see if rerun		
Acetone	Not Rv'd	210	211
Carbon Disulfide	Not Rv'd	21 J	21
2-Butanone	Not Rv'd	0	109
Benzene	Not Rv'd	49 J	49
1,1,2,2-Tetrachloroethane	Not Rv'd	0	12
Ethylbenzene	Not Rv'd	63 B	63
Xylene	Not Rv'd	95	94
Non-Target Volatile Organics	* Different internal standard probably used.		
1,1,2-trichlorotrifluoroethane (10.58	Not Rv'd	30	*
Cyclohexane (12.09)	Not Rv'd	130	*
Unknown (12.67)	Not Rv'd	140	*
Unknown (14.19)	Not Rv'd	62	*
Unknown (15.58)	Not Rv'd	110	*
Unknown (16.13)	Not Rv'd	200	*
Unknown (17.82)	Not Rv'd	660	*
Unknown (19.62)	Not Rv'd	33	*
Unknown (20.32)	Not Rv'd	420	*
Unknown (20.71)	Not Rv'd	1,000	*
Unknown (21.10)	Not Rv'd	2,300	*
Unknown (22.14)	Not Rv'd	370	*
Unknown (22.69)	Not Rv'd	510	*
Unknown (24.16)	Not Rv'd	2,600	*
Unknown (25.45)	Not Rv'd	2,800	*
Total		11,365	?
Total Alkanes		130	?
Semivolatile Organics			
2-Methylnaphthalene	Not Rv'd	12,000 J	12,000
Fluorene	Not Rv'd	2,400 J	2,000
Phenanthrene	Not Rv'd	2,400 J	2,000
Non-Target Semivolatile Organics			
***Different Internal standards were used**			
C13-Alkane (13.68)	Not Rv'd	89,000	*
Unknown (13.95)	Not Rv'd	49,000	*
Hexycyclohexane (14.15)	Not Rv'd	51,000	*

PRELIMINARY REPORT

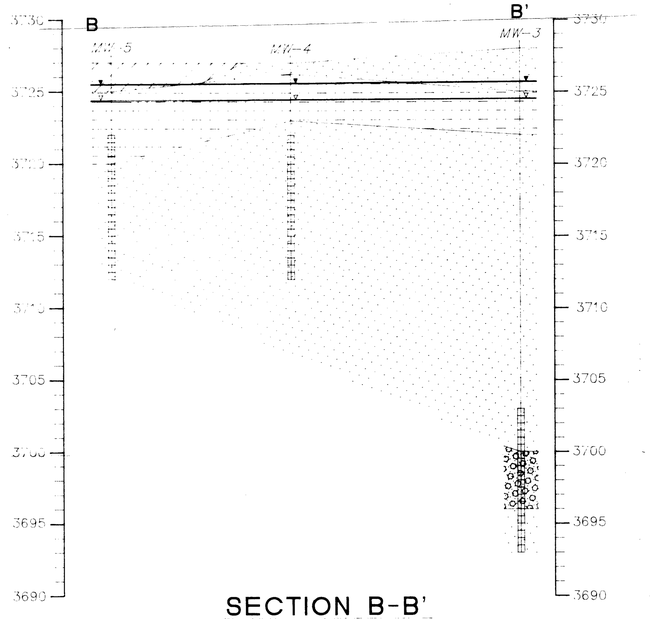
Unknown (14.31)	Not Rv'd	63,000	*
C14-Alkane (14.63)	Not Rv'd	130,000	*
Tridecane (15.01)	Not Rv'd	100,000	*
C14-Alkane (15.28)	Not Rv'd	45,000	*
Unknown (15.75)	Not Rv'd	58,000	*
C14-Alkane (16.48)	Not Rv'd	140,000	*
C2-Naphthalene (16.99)	Not Rv'd	47,000	*
Unknown Alkane (18.73)	Not Rv'd	73,000	*
Hexadecane (19.16)	Not Rv'd	100,000	*
Unknown Alkane (19.77)	Not Rv'd	130,000	*
Heptadecane (20.39)	Not Rv'd	150,000	*
Unknown Alkane (20.47)	Not Rv'd	190,000	*
Octadecane (21.56)	Not Rv'd	100,000	*
Nonadecane (22.67)	Not Rv'd	120,000	*
Eicosane (23.73)	Not Rv'd	120,000	*
n-C21-Alkane (24.74)	Not Rv'd	95,000	*
n-C22-Alkane (25.70)	Not Rv'd	89,000	*
Unknown Alkane (27.51)	Not Rv'd	78,000	*
Unknown Alkane (28.36)	Not Rv'd	99,000	*
Unknown Alkane (29.13)	Not Rv'd	70,000	*
Unknown Alkane (29.98)	Not Rv'd	67,000	*
Total		**2,253,000**	**?**
Total Aromatics		**47,000**	**?**
Total Alkanes		**2,036,000**	**?**



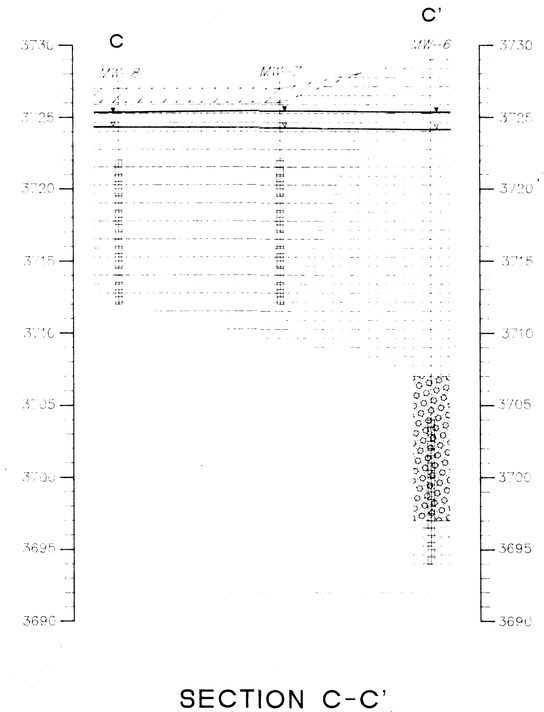
LOCATION MAP
NTS



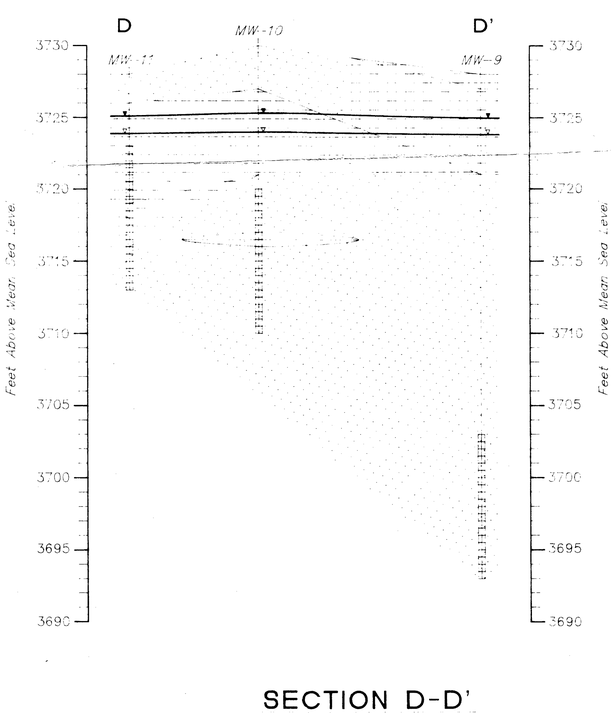
SECTION A-A'



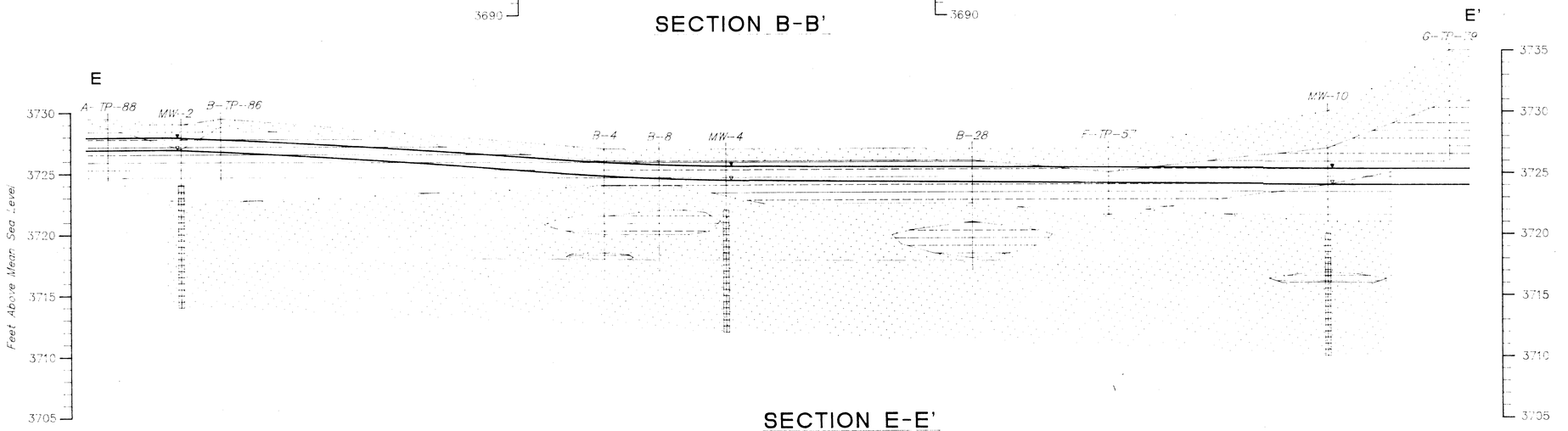
SECTION B-B'



SECTION C-C'



SECTION D-D'



SECTION E-E'

LEGEND

- Clay
- Silty, Sandy Clay
- Very Fine Sand
- Silty, Clayey Very Fine Sand
- Fine Sand With Gravel
- Fill
- Water Level Elevation July, 1990
- Water Level Elevation April, 1990

SCALE:
Vert: 1"=5'
Horiz: 1"=100'

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85 FOREST AVENUE LOCUST VALLEY, N.Y. 11560
8000 EXCELSIOR DRIVE MADISON, WI. 53717

DATE SEPTEMBER, 1990 | DRAWN BY MJD
DWG 604-95 | APPROVED BY MJM

TITLE – GEOLOGIC CROSS SECTIONS OF OLD BRICKLAND REFINERY

PROJECT – OLD BRICKLAND REFINERY SITE SUNLAND PARK, NEW MEXICO

II-1

RG-US-01

MW-12

MW-1

TEXAS
NEW MEXICO

RIO GRANDE RIVER

A

MISCELLANEOUS
DIRT PILES

B

C

D

E

F

G

MW-2

MW-13

MW-4

MW-5

MW-8

MW-10

MW-11

MW-3S

MW-3D
(ND)

MW-6S

MW-6D
(7.13)

MW-9S

MW-9D

RG-MS-01

RG-DS-01

Approximate Extent
Of Study Area

3730
3735
3740
3745
3750
3755
3760
3765
3770
3775
3800
3825
3850
3875

N

SCALE 1"=100'
CONTOUR INTERVAL : 5'

LEGEND

SAMPLE LOCATION:
CONCENTRATION OF VOC's (mg/kg) IN SOIL SAMPLE.

3700 — LAND SURFACE ELEVATION

CONCRETE SLAB/PAD – BLDG FOUNDATION

ROAD GRADED AND DRAINED

ACTIVE RAILROADS

WALL – MASONRY

SIGN

POST

FENCE – CHAINLINK

INTERMITTENT STREAM

POLE

MONITORING WELL

MONITORING WELL w/CONCENTRATION OF VOLATILE ORGANIC COMPOUNDS (mg/kg) IN SELECT SOIL SAMPLES

RIVER SAMPLING LOCATION

STORM WATER OUTFALL WITH A DITCH

NOTE

VOC's Results Are The Sum Of The Total BTEX And Total Non-Target Compounds Shown On Tables

eder associates, consulting engineers p. c.
85 FOREST AVENUE LOCUST VALLEY, N.Y. 11560
8000 EXCELSIOR DRIVE MADISON, WI. 53717
315 W.HURON STREET ANN ARBOUR, MI. 48104

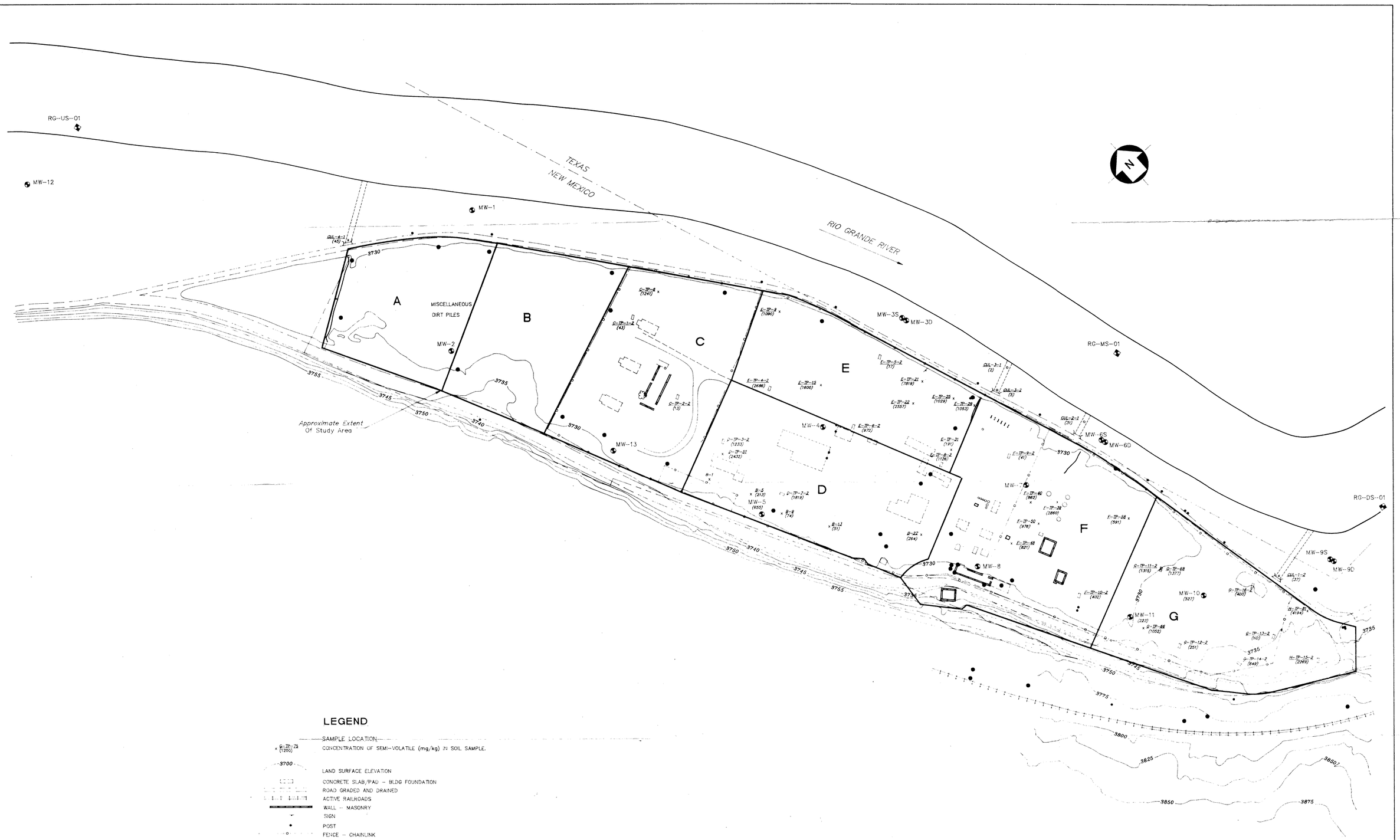
DATE SEPTEMBER, 1990 | DRAWN BY JIK

DWG 604-9V | APPROVED BY MJM

TITLE –
CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN SELECT SOIL SAMPLES

PROJECT –
OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

11-2



LEGEND

——SAMPLE LOCATION——	
G-TP-7S (1200)	CONCENTRATION OF SEMI-VOLATILE (mg/kg) IN SOIL SAMPLE.
3700	LAND SURFACE ELEVATION
	CONCRETE SLAB/PAD – BLDG FOUNDATION
	ROAD GRADED AND DRAINED
	ACTIVE RAILROADS
	WALL – MASONRY
	SIGN
	POST
	FENCE – CHAINLINK
	INTERMITTENT STREAM
	POLE
	MONITORING WELL
MW-5 (1200)	MONITORING WELL w/CONCENTRATION OF SEMI-VOLATILE COMPOUNDS (mg/kg) IN SOIL SAMPLE
	RIVER SAMPLING LOCATION
	STORM WATER OUTFALL WITH A DITCH

100 0 100 200

SCALE 1"= 100'
CONTOUR INTERVAL : 5'

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85 FOREST AVENUE LOCUST VALLEY, N.Y. 11560
6000 EXCELSIOR DRIVE MADISON, WI. 53717
315 W.HURON STREET ANN ARBOUR, MI. 48104

DATE SEPTEMBER, 1990 | DRAWN BY JIK
DWG 604-9U | APPROVED BY MJM

TITLE –
CONCENTRATIONS OF SEMI-VOLATILE ORGANIC COMPOUNDS IN SELECT SOIL SAMPLES

PROJECT –
OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

II-3

RG-US-01

MW-12

MW-1

TEXAS
NEW MEXICO

RIO GRANDE RIVER

RG-MS-01

RG-DS-01

MW-3S MW-3D

MW-6S MW-6D

MW-9S MW-9D

MW-2

MW-13

MW-4

MW-5

MW-7

MW-8

MW-10

MW-11

A

MISCELLANEOUS
DIRT PILES

B

C

D

E

F

G

CISTERN

Approximate Extent
Of Study Area

3730 3735 3740 3745 3750 3755 3775 3800 3825 3850 3875

LEGEND

- 3700 — LAND SURFACE ELEVATION
- CONCRETE SLAB/PAD - BLDG FOUNDATION
- ROAD GRADED AND DRAINED
- ACTIVE RAILROADS
- WALL - MASONRY
- POST
- FENCE - CHAINLINK
- INTERMITTENT STREAM
- POLE
- MONITORING WELL
- TEST PIT
- TEST BORING
- HAND AUGER BORING
- SURFACE SAMPLING LOCATIONS
- RIVER SAMPLING LOCATION
- STORM WATER OUTFALL WITH A DITCH

OIL AND GREASE CONCENTRATIONS

- Up To 1000 mg/kg
- 1000 To 10,000 mg/kg
- 10,000 To 20,000 mg/kg
- 20,000 To 60,000 mg/kg
- Over 100,000 mg/kg

100 0 100 200

SCALE 1" = 100'
CONTOUR INTERVAL : 5'

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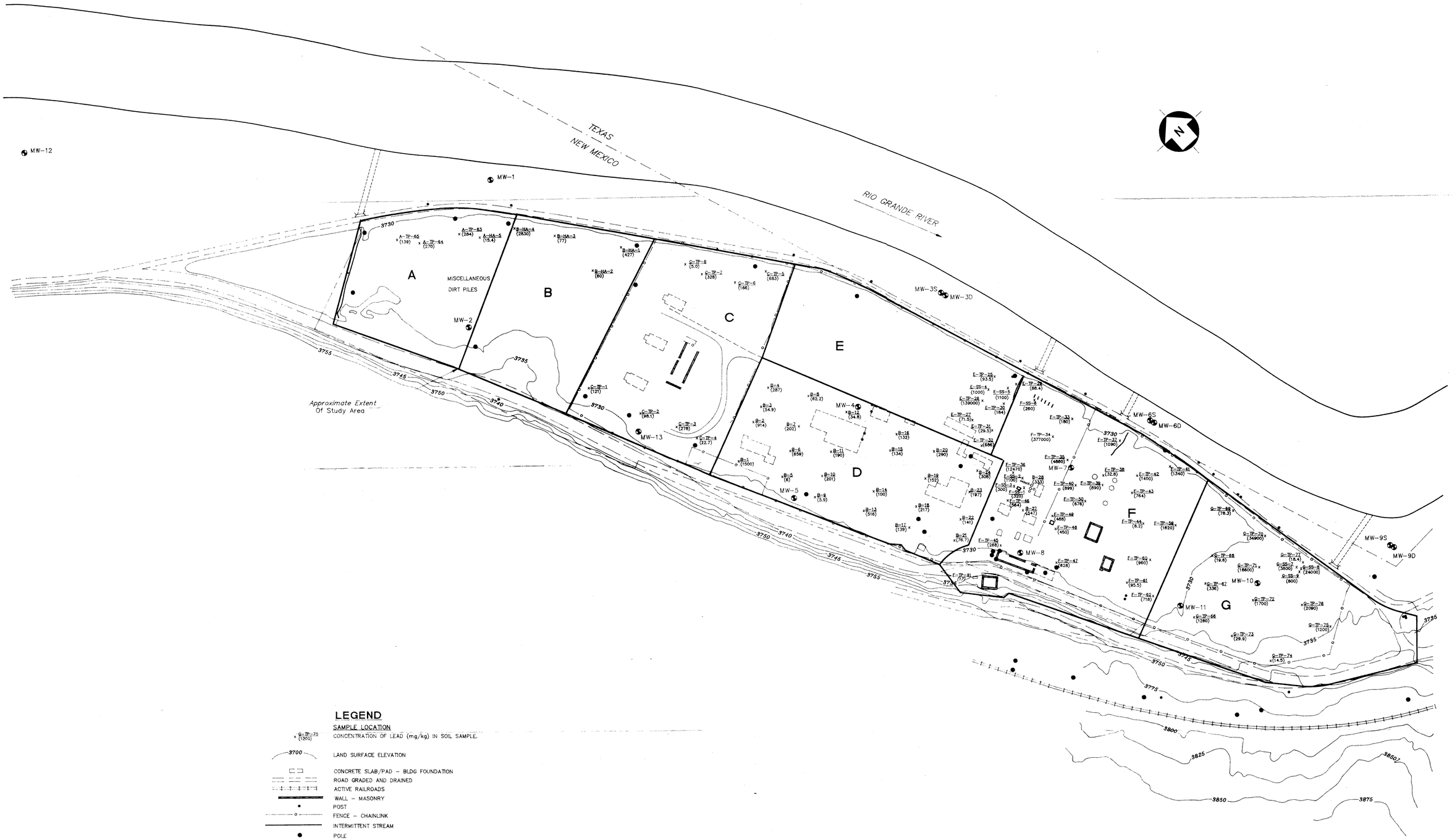
85 FOREST AVENUE LOCUST VALLEY, N.Y. 11560
8000 EXCELSIOR DRIVE MADISON, WI. 53717
315 W.HURON STREET ANN ARBOUR, MI. 48104

DATE SEPTEMBER, 1990 | DRAWN BY JIK
DWG 604-9T | APPROVED BY M.J.M

TITLE -
RESULTS OF OIL AND GREASE ANALYSIS
FROM SOIL SAMPLES IN TEST PITS & BORINGS

PROJECT -
OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

H-4



LEGEND

SAMPLE LOCATION

CONCENTRATION OF LEAD (mg/kg) IN SOIL SAMPLE.

LAND SURFACE ELEVATION

CONCRETE SLAB/PAD – BLDG FOUNDATION

ROAD GRADED AND DRAINED

ACTIVE RAILROADS

WALL – MASONRY

POST

FENCE – CHAINLINK

INTERMITTENT STREAM

POLE

MONITORING WELL

STORM WATER OUTFALL WITH A DITCH

100 0 100 200

SCALE 1" = 100'

CONTOUR INTERVAL : 5'

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85 FOREST AVENUE LOCUST VALLEY, N.Y. 11560
8000 EXCELSIOR DRIVE MADISON, WI. 53717
315 WJHURON STREET ANN ARBOUR, MI. 48104

DATE SEPTEMBER, 1990 | DRAWN BY MJD

DWG 604-9P | APPROVED BY MJM

TITLE – CONCENTRATIONS OF LEAD IN SELECT SOIL SAMPLES

PROJECT – OLD BRICKLAND REFINERY SITE SUNLAND PARK, NEW MEXICO

E-5

RG-US-01

MW-12

MW-1

TEXAS
NEW MEXICO

RIO GRANDE RIVER

RG-MS-01

RG-DS-01

MW-3S MW-3D

MW-6S MW-6D

MW-9S MW-9D

MW-2

MW-13

MW-4

MW-5

MW-7

MW-8

MW-10

MW-11

A

B

C

D

E

F

G

MISCELLANEOUS
DIRT PILES

CISTERN

Approximate Extent
Of Study Area

3730 3735 3740 3745 3750 3755 3775 3800 3825 3850 3875

LEGEND

SAMPLE LOCATION
CONCENTRATION OF COPPER (mg/kg) IN SOIL SAMPLE.

LAND SURFACE ELEVATION

CONCRETE SLAB/PAD – BLDG FOUNDATION

ROAD GRADED AND DRAINED

ACTIVE RAILROADS

WALL – MASONRY

POST

FENCE – CHAINLINK

INTERMITTENT STREAM

POLE

MONITORING WELL

STORM WATER OUTFALL WITH A DITCH

100 0 100 200

SCALE 1"= 100'
CONTOUR INTERVAL : 5'

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85 FOREST AVENUE LOCUST VALLEY, N.Y. 11560
8000 EXCELSIOR DRIVE MADISON, WI. 53717
315 W.HURON STREET ANN ARBOUR, MI. 48104

DATE SEPTEMBER, 1990 | DRAWN BY JIK
DWG 604-9R | APPROVED BY MJM

TITLE –
CONCENTRATIONS OF COPPER IN SELECTED SOIL SAMPLES

PROJECT –
OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

K-6

TEXAS
NEW MEXICO

RIO GRANDE RIVER

A
MISCELLANEOUS DIRT PILES
B
C
D
E
F
G

MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-8 MW-9 MW-10 MW-11 MW-12 MW-13 MW-14 MW-15

RG-125-01 RG-125-02 RG-125-03 RG-125-04

3730 3735 3740 3745 3750 3755 3775 3800 3825 3850 3875

Approximate extent of dust area

LEGEND

SAMPLE LOCATION;
CONCENTRATION, of ARSENIC (mg/kg) in SOIL SAMPLE.

3700 LAND SURFACE ELEVATION;

CONCRETE SLAB/PAD - BLDG FOUNDATION

ROAD GRADED AND DRAINED

ACTIVE RAILROADS

WALL - MASONRY

SIGN

TREE

POST

FENCE - CHAINLINK

INTERMITTENT STREAM

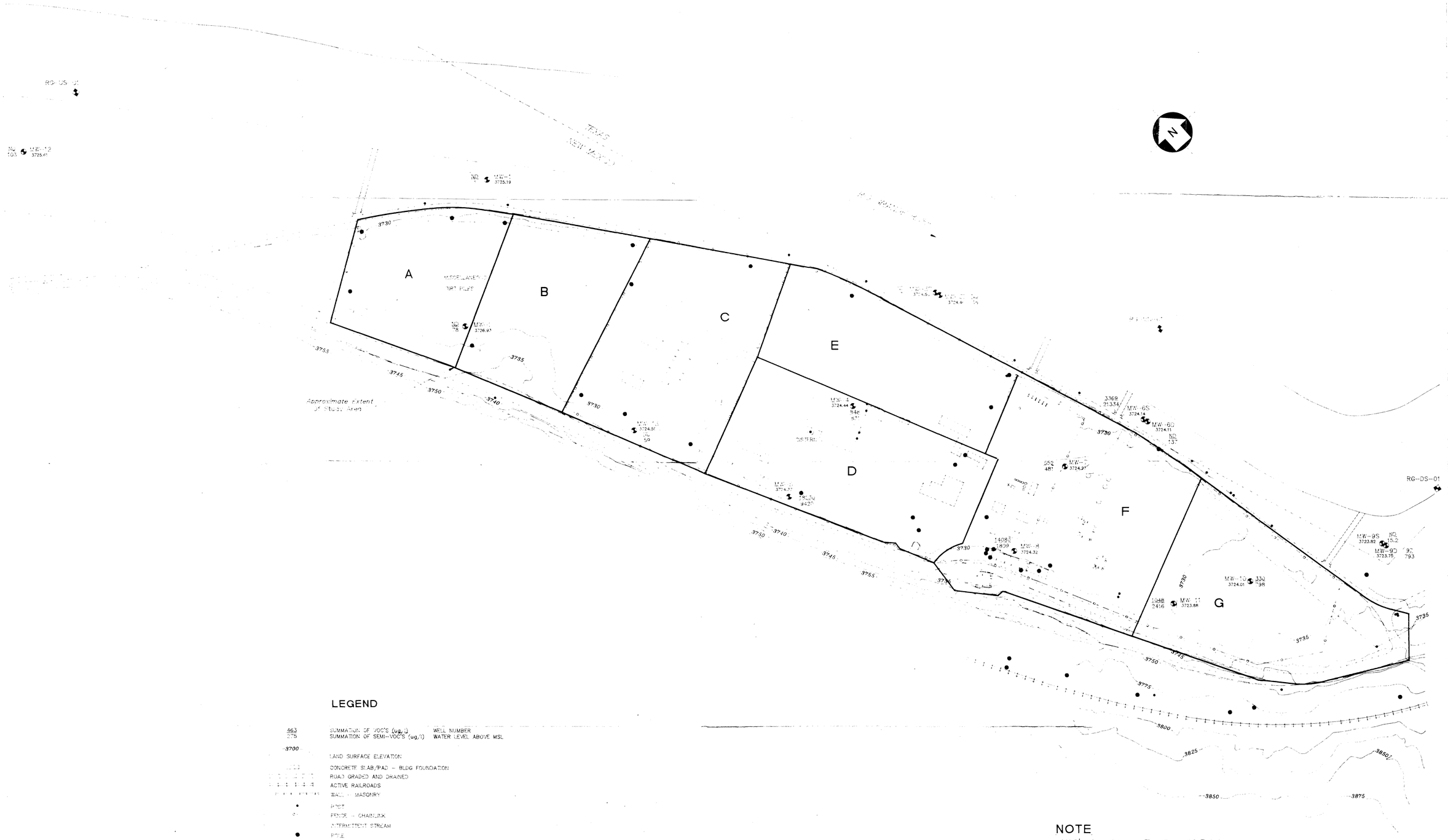
POLE

MONITORING WELL

STORM WATER OUTFALL WITH A DITCH

100 0 100 200
SCALE: 1" = 100'
CONTOUR INTERVAL = 5'

eder associates, consulting engineers p. c. 85 FOREST AVENUE LOCUST VALLEY, N.Y. 11560 6500 EXCELSIOR DRIVE MADISON, WI. 53717 315 WHITNEY STREET ANN ARBOUR, MI. 48104	DATE SEPTEMBER, 1990	DRAWN BY JK	
	DWG 634-90	APPROVED BY MJM	
TITLE CONCENTRATIONS OF ARSENIC IN SELECTED SOIL SAMPLES	PROJECT OLD BRICKLAND REFINERY SITE SUNLAND PARK, NEW MEXICO		II-7



LEGEND

463 / 275	SUMMATION OF VOC'S (ug/l) / SUMMATION OF SEMI-VOC'S (ug/l) — WELL NUMBER / WATER LEVEL ABOVE MSL
3700	LAND SURFACE ELEVATION
	CONCRETE SLAB/PAD - BLDG FOUNDATION
	ROAD GRADED AND DRAINED
	ACTIVE RAILROADS
	WALL - MASONRY
	FENCE - CHAINLINK
	INTERMITTENT STREAM
	POLE
	MONITORING WELL
	TEST PIT
	TEST BORING
	HAND AUGER BORING
	SURFACE SAMPLING LOCATIONS
	CISTERN SAMPLING LOCATION
	RIVER SAMPLING LOCATION
	STORM WATER OUTFALL WITH A DITCH

100 0 100 200

SCALE 1" = 100'
CONTOUR INTERVAL = 5'

NOTE

VOC's Results Are The Sum Of Total Purgeable Aromatics And Total Non-Target Compounds While SVOC's Results Are The Sum Of Total Target And Total Non-Target Compounds, Shown On Tables.

eder associates, consulting engineers P. C.
85 FOREST AVENUE LOCUST VALLEY, N.Y. 11560
5000 EXCELSIOR DRIVE MADISON, WI. 53717
315 W.HURON STREET ANN ARBOUR, MI. 48104

DATE SEPTEMBER, 1990 | DRAWN BY JIK
DWG 604-9E | APPROVED BY MJM

TITLE --
RESULTS OF VOLATILE AND SEMI-VOLATILE COMPOUNDS IN GROUNDWATER, JULY, 1990

PROJECT --
OLD BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO

II-8