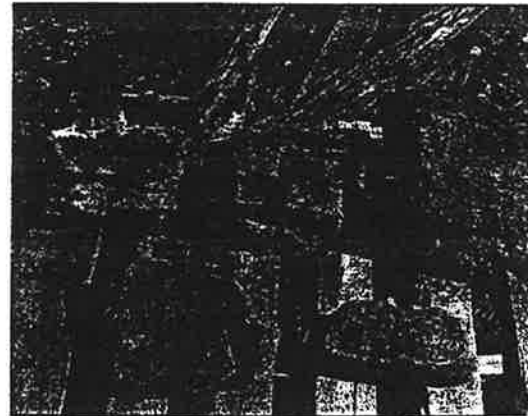
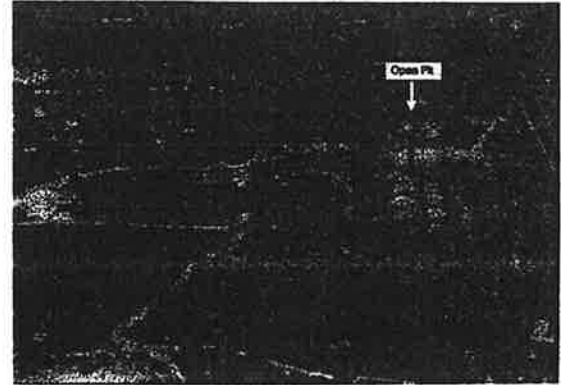


Subsurface Soil Investigation East Street Extended Frederick, MD

Frederick County, Maryland



Prepared For:

Maryland State Highway Administration
2323 West Joppa Road
Brooklandville, MD 21022
Account No. FR255 A22
Contract No. BCS 96-02A



July 11, 2001

Prepared By:

KCI Technologies, Inc.
10 North Park Drive
Hunt Valley, MD 21030
KCI Project No. 0197114-I

Subsurface Soil Investigation
East Street Extended
Frederick, Maryland 21701

SHA Contract No.: BCS 96-02A
Account No: FR 255A22
KCI Job Order No.: 01-97114-I

Prepared for:
Maryland State Highway Administration
Engineering Geology Division
2323 West Joppa Road
Brooklandville, Maryland 21022

Prepared by:
KCI Technologies, Inc.
10 North Park Drive
Hunt Valley, Maryland 21030
Phone: (410) 316-7800

July 11, 2001

EXECUTIVE SUMMARY

KCI Technologies, Inc. (KCI) was retained by the Maryland State Highway Administration (SHA) to conduct health and safety monitoring and sampling at the proposed East Street extension in Frederick, Maryland (Subject Site). The assignment consisted of the implementation of health and safety protocols and monitoring during drilling operations associated with the collection of subsurface samples from a former dumpsite. The drilling activities were conducted at the location of a former dump, in support of the construction of the proposed East Street extension in Frederick, Maryland, which will be constructed across portions of the dump. The drilling activity was conducted on March 3, 9, 10, 11 and 14, 2001. The study was limited to the areas of proposed construction activities. The purpose of the work was to identify the presence or absence of contamination associated with past landfilling activities in the vicinity of the proposed construction.

Based on the sampling results, it appears that there are concentrations of TPH and several metals in soil that exceed RBCs and MDE cleanup standards at all boring locations. There were no detections of PAHs above screening criteria. The TCLP analysis indicated that the soil is non-hazardous. However, due to elevated levels of total lead, there is the potential presence of hazardous materials on site. Based on the review of the data, it appears that former dumping activities have adversely impacted the environment in the proposed SHA construction area. KCI recommends the following actions for the partial take area:

- A risk assessment should be conducted addressing potential receptors, especially construction workers, to determine the appropriate levels of personal protective equipment (PPE) during construction.
- It is KCI's understanding that a storm drain will be constructed beneath the road extension to depths reaching twenty (20) feet below ground surface. Based upon a conversation with MDE (Johnson, 2001), MDE allows contaminated, and even hazardous, materials to be placed back into the excavation from which it originated. MDE will require that leftover material be disposed of properly. KCI recommends that MSHA acquire a site specific letter from MDE stating that MSHA is not liable for any potential contamination issues resulting from the disposition of the contaminated materials. During construction, KCI recommends segregation of excavated materials by sampling. The most hazardous contaminated materials may be placed back into the excavation, leaving relatively non-hazardous non-contaminated materials to be disposed.

- Develop a site specific Health and Safety Plan for construction workers. The HASP should identify and address risks to construction workers from soil containing petroleum related contaminants and metals. The HASP shall address environmental monitoring, personal protective equipment (PPE) and the precautionary/remedial measures that will be implemented to provide safety and protection of human health and the environment. The HASP shall be written in conformance with the guidelines established by the USEPA, U.S. Occupational Safety and Health Administration (OSHA), and all other governing agencies having such jurisdiction.

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6.0 Conclusions and Recommendations..... 5

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Appendix A Soil Sample Log Sheets

Appendix B Analytical Results and Chain-of-Custody Forms

1.0 INTRODUCTION

KCI Technologies, Inc. (KCI) was retained by the Maryland State Highway Administration (SHA) to conduct health and safety monitoring and sampling at the proposed East Street extension in Frederick, Maryland (Subject Site). The assignment consisted of the implementation of health and safety protocols and monitoring during drilling operations associated with the collection of subsurface samples from a former dumpsite.

The drilling activities were conducted at the location of a former dump, in support of the construction of the proposed East Street extension in Frederick, Maryland, which will be constructed across portions of the dump (see Figure 1). The drilling activity was conducted on March 3, 9, 10, 11 and 14, 2001. The study was limited to the areas of proposed construction activities, as noted on maps provided by SHA (Figure 2). The purpose of the work was to identify the presence or absence of contamination associated with past landfilling activities in the vicinity of the proposed construction. The project consisted of the following tasks:

Health and Safety Monitoring – The continuous monitoring for combustible gases and volatile organic compounds while borings were being drilled by a MSHA drill crew.

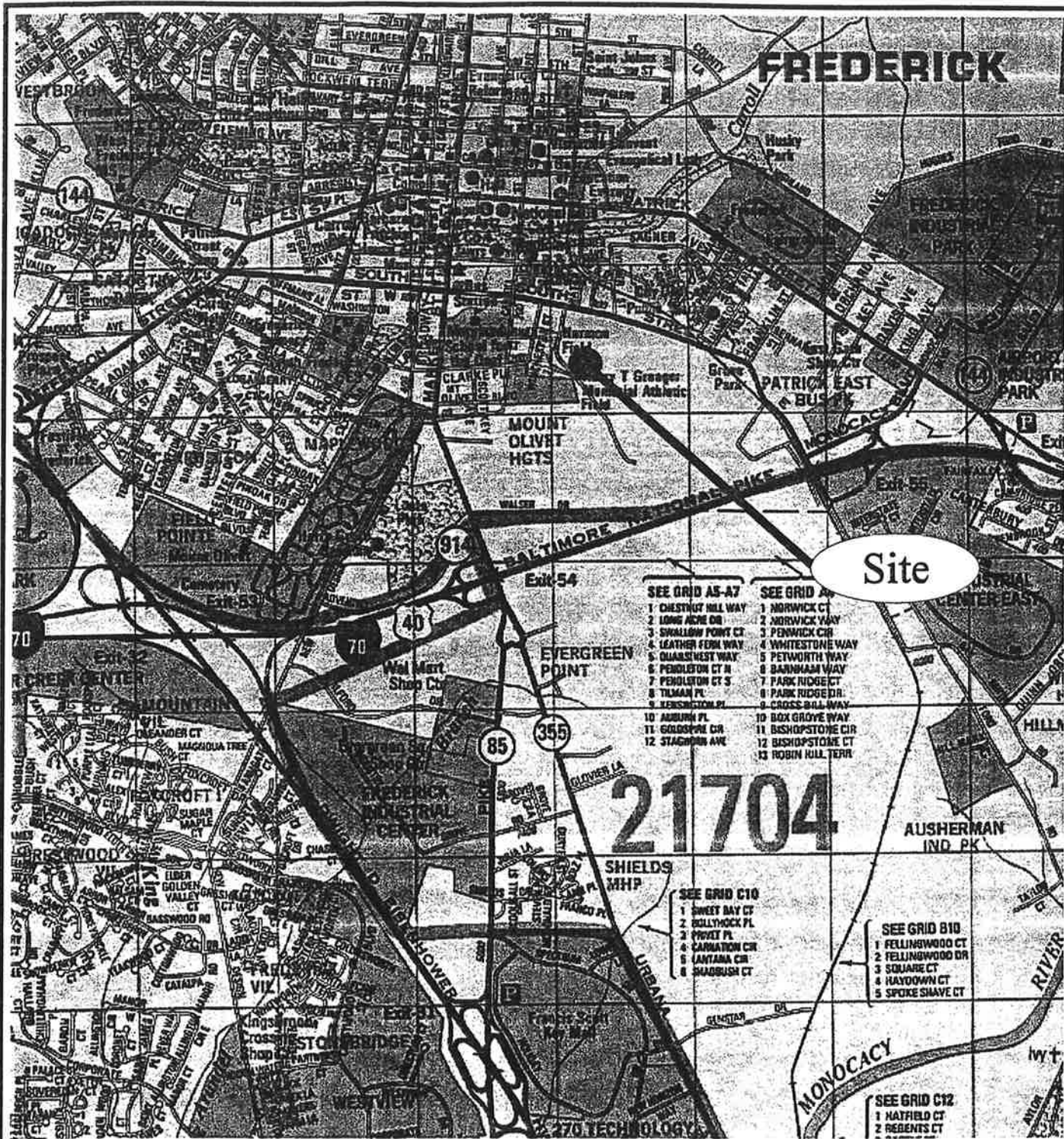
Subsurface Soil Investigation - The collection of subsurface soil samples from areas associated with the former dumpsite.

2.0 SITE BACKGROUND


The dump originated in “clay pits” where the Frederick Brick Works had excavated clay for the purpose of making bricks. Coal ash from the brick kilns was then placed back into the excavations. In addition, the City of Frederick reportedly dumped municipal waste in the clay pits under an informal agreement with the Frederick Brick Works. The dump was reportedly in operation from the late 1890s through 1947.

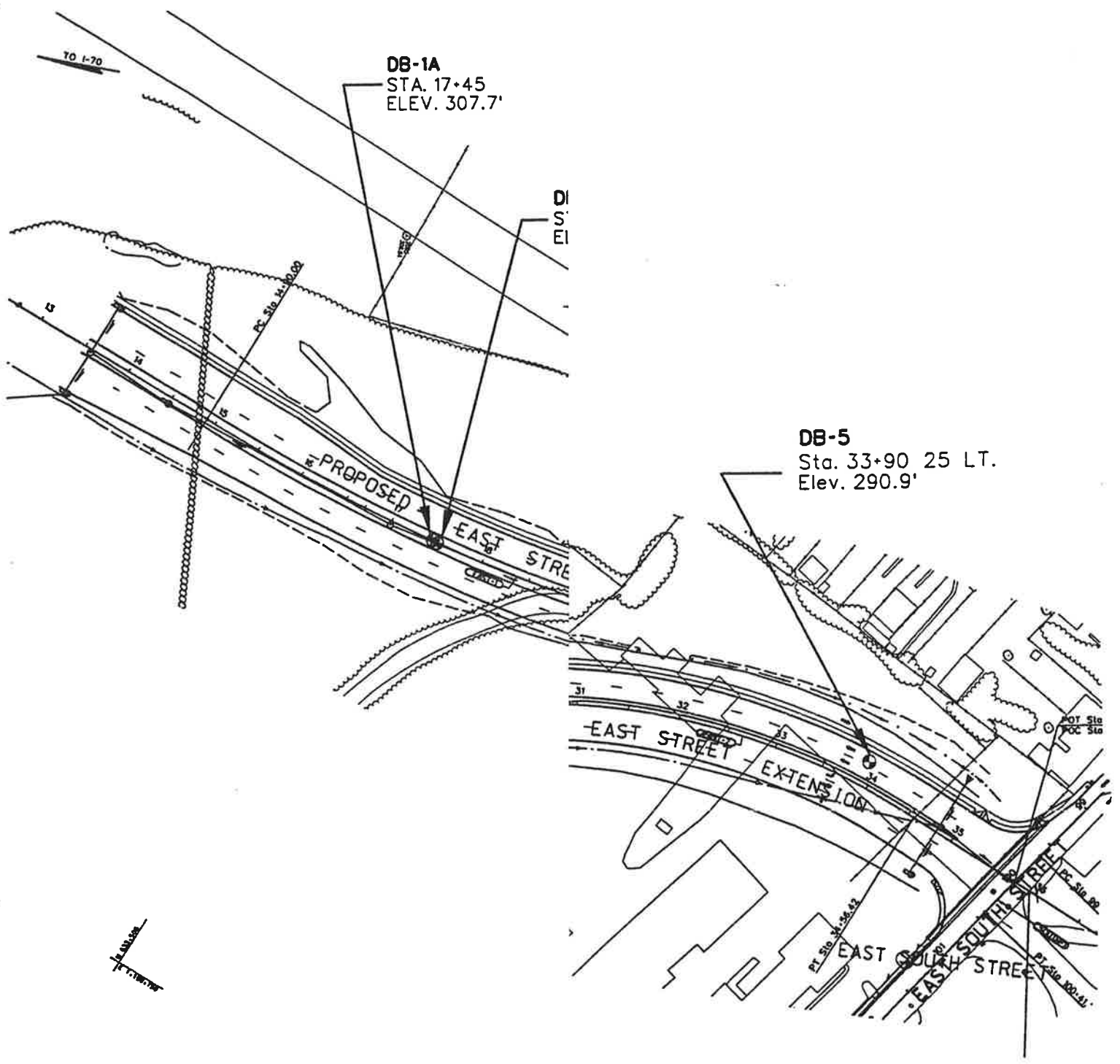
3.0 HEALTH AND SAFETY MONITORING

Air monitoring was conducted at each location prior to the start of drilling activity using a combustible gas indicator (CGI) and a photoionization detector (PID) to determine levels of contamination at the boring locations and in the general area. In addition, each boring location was monitored at two (2) foot intervals during the advancement of the drill auger up until the auger hit refusal at competent



ADC Street Map Book "Frederick County, Maryland"

Subsurface Soil Investigation East Street Extended Frederick, Maryland	
Figure 1 Site Vicinity Map	
Date: July 2001	KCI Job No: 0197114.I
Scale: 1" = 2000'	North 



DEPARTMENT OF TRANSPORTATION STATE ADMINISTRATION AERIAL AND RESEARCH GEOLOGY DIVISION 1001 JOPPA ROAD ANNAPOLIS, MD 21022	Figure - 2 Subsurface Soil Investigation Site Map with Boring Locations East Street Extended Frederick, Maryland		
	SCALE: NTS	DATE: JULY, 2001	DRAWN BY: GLJ

rock. During the course of the drilling activity all readings from the CGI and PID remained at background levels. No apparent hazardous gaseous material was encountered during the project's duration.

4.0 SUBSURFACE SOIL INVESTIGATION

Four (4) subsurface soil samples were collected to assess the impact of past landfilling activities on the quality of the subsurface soil. Samples were analyzed for polynuclear aromatic hydrocarbons (PAH), Resource Conservation and Recovery Act (RCRA) metals, total petroleum hydrocarbons (TPH), and toxicity characteristic leaching procedure (TCLP) metals. The subsurface soil samples were collected from borings DB-1 through DB-4 installed by an MSHA drill crew. One composite subsurface soil sample was collected from each boring location. As directed by MSHA, a sample was not collected from boring DB-5.

Headspace analysis was performed at two-foot sample intervals using a photo ionization detector (PID) meter. Quality control samples proposed for this project include one (1) rinsate blank, and one (1) blind duplicate (DB-6). Sampling apparatus, including the Geoprobe tip, spoons, and bowls were decontaminated after each sample collection with alconox, de-ionized water, and tap water. Samples were analyzed as presented in the following table. The complete data package is presented in Appendix B.

Analyte Group	Soil - USEPA Method
PAHs	8270
RCRA Metals	6010
TPH	418.1
TCLP Metals	1311 Extraction Procedure

5.0 RESULTS

5.1 Subsurface Soil Screening Criteria

Soil data were screened against United States Environmental Protection Agency (USEPA) Region III Risk-Based Concentrations (RBC) for chemicals in soils in residential and industrial land use areas, and The State of Maryland Department of the Environment (MDE) Cleanup Standards for Soils. The soil screening levels were used for comparison purposes for soil contaminant concentrations in this report. RBC values are not intended to serve as guidelines for remedial action levels; they are used as a

preliminary indication of potential human health risks. In cases where materials are not considered very toxic, the RBC values may be high.

5.2 Sampling Data Analyses

The subsurface soil sample results are presented in Table 2. TPH concentrations were below all applicable standards except for DB-1 and DB-3 where only State of Maryland residential cleanup standards (230 ppm) were exceeded. Only one PAH, pyrene (0.44 ppm) was detected in boring DB-2 below all applicable standards. TCLP results indicate that the materials within these borings are non-hazardous, however, total metals results for lead indicate that there is the potential that some of the material within the landfill may be hazardous for lead. Total metals lead results for several borings are well above the 20:1 dilution factor for hazardous materials. Total metals concentrations of arsenic, lead, and mercury exceeded residential and industrial RBCs as well as State of Maryland cleanup standards for soil. Arsenic exceeded both RBC and MDE standards in DB-1 (15 ppm), DB-2 (14 ppm), DB-3 (4.0 ppm), and DB-4 (16 ppm). State of Maryland standards were exceeded for lead in borings DB-1 (1,800 ppm), DB-2 (710 ppm), and DB-4 (750 ppm) and for mercury in DB-1 (6.3 ppm), DB-3 (0.56 ppm), and DB-4 (0.49 ppm).

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the sampling results, it appears that there are concentrations of TPH and several metals in soil that exceed RBCs and MDE cleanup standards at all boring locations. There were no detections of PAHs above screening criteria. The TCLP analysis indicated that the soil is non-hazardous. However, due to elevated levels of total lead, there is the potential presence of hazardous materials on site. Based on the review of the data, it appears that former dumping activities have adversely impacted the environment in the proposed SHA construction area. KCI recommends the following actions for the partial take area:

- A risk assessment should be conducted addressing potential receptors, especially construction workers, to determine appropriate levels of PPE during construction.
- It is KCI's understanding that a storm drain will be constructed beneath the road extension to depths reaching twenty (20) feet below ground surface. Based upon a conversation with MDE (Johnson, 2001), MDE allows contaminated, and even hazardous, materials to be placed back into the excavation from which it originated. MDE will require that leftover material be disposed of properly. KCI recommends that MSHA acquire a site specific letter from MDE stating that MSHA is not liable for any potential contamination issues resulting from the disposition of the contaminated materials. During construction, KCI recommends segregation

	-3	DB-4	DB-6 ¹¹	RB-1
Sample Number	11'	0' - 10.5'	4' - 11'	Rinsate
Sample Depth (feet)	2001	5/9/2001	5/10/2001	5/9/2001
Sample Collection Date	10	10:15	9:50	10:00
Sample Collection Time				
TPH (418.1)	m	ppm	ppm	ppm
Units	0	120	350	ND
Total Petroleum Hydrocarbons				
Polynuclear Aromatic Hydrocarbons (8270C)	b	ppb	ppb	ppb
Units	0	ND	ND	ND
Pyrene				
TCLP Metals (1311/6010B)	m	ppm	ppm	ppm
Units	0	ND	ND	ND
Arsenic	0	ND	ND	ND
Barium	0	ND	ND	ND
Cadmium	0	ND	ND	ND
Chromium	0	ND	2.2	ND
Lead	0	ND	ND	ND
Selenium	0	ND	ND	ND
Silver				
TCLP Mercury (1311/7471A)				
Units	0	ND	ND	ND
Mercury				
Total Metals (6010B)	m	ppm	ppm	ppm
Units	0	16	4.7	ND
Arsenic	4	470	86	ND
Barium	21	0.65	0.40	ND
Cadmium ⁸	6	18	19	ND
Chromium ⁹	9	750	190	ND
Lead	D	1.6	0.34	ND
Selenium	15	0.45	0.17	ND
Silver				
Total Mercury (7471A)	m	ppm	ppm	ppm
Units	56	0.49	0.39	ND
Mercury ¹⁰				

Shading indicates contaminant levels above RI
A "-" indicates no information is available.

ND = Non-Detect

NA = Not Analyzed

(1) = Risk-Based Concentrations for Resident

(2) = Risk-Based Concentrations for Industrial

(3) = Maryland Standard for the Protection of

(4) = State of Maryland Department of the Env

(5) = State of Maryland Department of the Env

(6) = Toxicity Characteristic Leaching Proced

(7) = MDE Guideline for TPH, is based on gas

(8) = RBCs and CSS Based on Cadmium in V

(9) = RBCs and CSS Based on Chromium III

(10) = RBCs and CSS based on Mercuric Chl

(11) = DB-6 is a duplicate of DB-3

of excavated materials by sampling. The most hazardous contaminated materials may be placed back into the excavation, leaving relatively non-hazardous non-contaminated materials to be disposed.

- Develop a site specific Health and Safety Plan for construction workers. The HASP should identify and address risks to construction workers from soil containing petroleum related contaminants and metals. The HASP shall address environmental monitoring, personal protective equipment (PPE) and the precautionary/remedial measures that will be implemented to provide safety and protection of human health and the environment. The HASP shall be written in conformance with the guidelines established by the USEPA, U.S. Occupational Safety and Health Administration (OSHA), and all other governing agencies having such jurisdiction.

7.0 REFERENCES

- JMA, 1998. *Cultural Resources Assessment for the East Street Extended Project, 9th Street to I-70/Walser Drive, City and County of Frederick, Maryland*, prepared by John Milner Associates, Inc. (JMA) for Rummel, Klepper & Kahl (RKK), 1998.
- Johnson, 2001. *Conversation with Rick Johnson of the Maryland Department of the Environment Hazardous Waste Division*. July 2, 2001.
- MGS, 1968. *Geologic Map of Maryland*, prepared by Maryland Geological Survey.
- MDE, 2000. *State of Maryland Department of the Environment - Cleanup Standards for Soil and Groundwater, Interim Final Guidance*. December 2000.
- USEPA, 1999. *Risk-Based Concentration Table*, prepared by the United States Environmental Protection Agency, Region III, 1999.

ATTACHMENT A
Soil Sample Log Sheets



SAMPLE LOG SHEET

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other _____

Page 1 of 1

By DET

Project Site Name East Street Extension

Project Site Number 0197114-I

Source Location Boring DB-1

Sample Method: <u>Spoon & Jar</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled:	<u>0-2</u>	<u>10:00</u>	
Sample Date & Time: <u>5/14/01</u>	<u>4-6</u>	<u>10:05</u>	
	<u>6-8</u>	<u>10:08</u>	
	<u>8-10</u>	<u>10:12</u>	
Sampled By:	<u>10-12</u>	<u>10:18</u>	
Signatures:			
Type of Sample <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input checked="" type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
	<u>Brown</u>	<u>Moist medium to</u>	
Analysis:	Description of Sample Location		
		Organic	Inorganic
	Date Shipped		
	Time Shipped		
	Lab		
	Volume		



SAMPLE LOG SHEET

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other _____

Page 1 of 1

By TEM

Project Site Name EAST STREET EXTENDED

Project Site Number 0197114-I

Source Location BORING DB-2

Sample Method: 500m + Jan Depth Sampled: 0.0' to 12.0' Sample Date & Time: 5/11/01 0930 Sampled By: TEM Signatures: Type of Sample <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input checked="" type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite Analysis: PAHs (8270) RCRA 8 Metals (6010 + 7471) TPH (418.1) TCLP Metals (1311)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">Composite Sample Data</th> </tr> <tr> <th>Sample</th> <th>Time</th> <th>Color / Description</th> </tr> </thead> <tbody> <tr> <td>0.0' - 2.0'</td> <td>0900</td> <td>Damp to moist very stiff L</td> </tr> <tr> <td>2.0' - 4.0'</td> <td>0905</td> <td>med. stiff brown SILT +</td> </tr> <tr> <td>4.0' - 6.0'</td> <td>0910</td> <td>ashes, trace wood + coal</td> </tr> <tr> <td>6.0' - 8.0'</td> <td>0915</td> <td> </td> </tr> <tr> <td>8.0' - 10.0'</td> <td>0920</td> <td> </td> </tr> <tr> <td>10.0' - 12.0'</td> <td>0925</td> <td>↓</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Sample Data</th> </tr> <tr> <th>Color</th> <th>Description: (Sand, Clay, Dry, Moist, Wet, etc.)</th> </tr> </thead> <tbody> <tr> <td>Brown</td> <td>Damp to moist very stiff to med. stiff SILT w/ ash</td> </tr> </tbody> </table> Description of Sample Location 	Composite Sample Data			Sample	Time	Color / Description	0.0' - 2.0'	0900	Damp to moist very stiff L	2.0' - 4.0'	0905	med. stiff brown SILT +	4.0' - 6.0'	0910	ashes, trace wood + coal	6.0' - 8.0'	0915		8.0' - 10.0'	0920		10.0' - 12.0'	0925	↓	Sample Data		Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	Brown	Damp to moist very stiff to med. stiff SILT w/ ash
Composite Sample Data																															
Sample	Time	Color / Description																													
0.0' - 2.0'	0900	Damp to moist very stiff L																													
2.0' - 4.0'	0905	med. stiff brown SILT +																													
4.0' - 6.0'	0910	ashes, trace wood + coal																													
6.0' - 8.0'	0915																														
8.0' - 10.0'	0920																														
10.0' - 12.0'	0925	↓																													
Sample Data																															
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)																														
Brown	Damp to moist very stiff to med. stiff SILT w/ ash																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Organic</th> <th>Inorganic</th> </tr> </thead> <tbody> <tr> <td>Date Shipped</td> <td></td> <td></td> </tr> <tr> <td>Time Shipped</td> <td></td> <td></td> </tr> <tr> <td>Lab</td> <td></td> <td></td> </tr> <tr> <td>Volume</td> <td></td> <td></td> </tr> </tbody> </table>		Organic	Inorganic	Date Shipped			Time Shipped			Lab			Volume																		
	Organic	Inorganic																													
Date Shipped																															
Time Shipped																															
Lab																															
Volume																															



SAMPLE LOG SHEET

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other _____


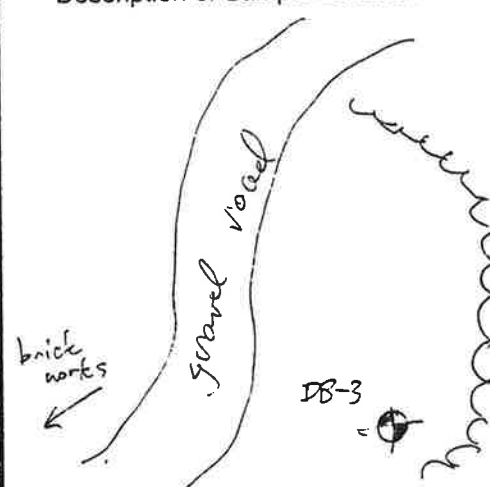
Page 1 of 1

By TEM

Project Site Name EAST STREET EXTENDED

Project Site Number 0197114-I

Source Location BORING DB-3

Sample Method: <u>5' boom + jar</u>	Composite Sample Data		
Depth Sampled: <u>4.0' - 11.0'</u>	Sample	Time	Color / Description
Sample Date & Time: <u>5/10/01 0940</u>	<u>4.0' - 6.0'</u>	<u>0905</u>	<u>Moist, med. stiff to stiff</u>
Sampled By: <u>TEM</u>	<u>6.0' - 8.0'</u>	<u>0910</u>	<u>brown SILT w/ ashes</u>
Signatures: 	<u>8.0' - 10.0'</u>	<u>0920</u>	<u>glass fragments rock</u>
Type of Sample <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input checked="" type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite	<u>10.0' - 11.0'</u>	<u>0930</u>	<u>fragments</u>
Sample Data			
Color		Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
<u>Brown</u>		<u>Moist, med. to stiff, brown SILT w/ ashes fragments</u>	
Description of Sample Location			
			
Analysis: <u>PAHs (8270)</u> <u>Pb, Cd & Metals (6010 + 2471)</u> <u>TPH (418.1)</u> <u>TC, P Metals (1311)</u>		Organic	Inorganic
Duplicate Sample taken of DB-3 ; <u>DB-6</u>		Date Shipped	
		Time Shipped	
		Lab	
		Volume	



SAMPLE LOG SHEET

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other _____


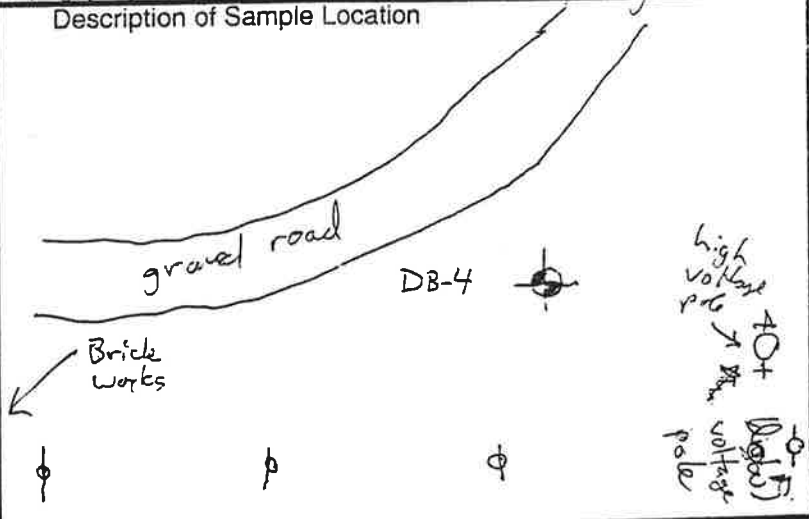
Page 1 of 1

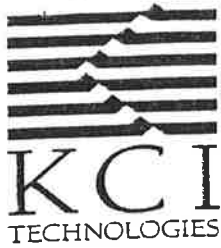
By TEM

Project Site Name EAST STREET EXTENDED

Project Site Number 0197114-I

Source Location BORING DB-4

Sample Method: <u>spoon + jar</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: <u>0' - 10.5'</u>	<u>0.0' - 1.5'</u>	<u>0940</u>	<u>Fine soil</u>
Sample Date & Time: <u>5/9/01 10:15 am</u>	<u>0.5' - 2.0'</u>	<u>0945</u>	<u>Moist soft brown SILT and</u>
	<u>2.0' - 4.0'</u>	<u>0950</u>	<u>ashy brick fragments rock</u>
Sampled By: <u>TEM</u>	<u>4.0' - 6.0'</u>	<u>0955</u>	<u>fragments</u>
	<u>6.0' - 8.0'</u>	<u>1000</u>	
Signatures: 	<u>8.0' - 10.0'</u>	<u>1005</u>	↓
	<u>10.0' - 10.5'</u>	<u>1010</u>	
Type of Sample			
<input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input checked="" type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
	<u>Brown</u>	<u>Moist, soft brown SILT and ashy brick fragments</u>	
Analysis:	Description of Sample Location		
<u>PAHs (8270)</u>	 <p style="text-align: center;">gravel road</p> <p style="text-align: center;">DB-4</p> <p style="text-align: center;">Brick works</p> <p style="text-align: right;">high voltage pole</p> <p style="text-align: right;">40' + (8005) voltage pole</p>		
<u>RCRA 8 Metals (6010 + 7471)</u>			
<u>TPH (418.1)</u>			
<u>TCLP Metals (1311)</u>			
	Organic	Inorganic	
Date Shipped			
Time Shipped			
Lab			
Volume			



SAMPLE LOG SHEET

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other _____

Page 1 of 1

By DET

Project Site Name East St. Extension

Project Site Number 0197114-I

Source Location Boring DB-5

Sample Method: <u>520m + jar</u>	Composite Sample Data		
Depth Sampled: <u>18' - 20'</u>	Sample	Time	Color / Description
Sample Date & Time: <u>5/2/01</u>			
Sampled By: <u>DET</u>			
Signatures:			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite	Sample Data		
Analysis:	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
		Description of Sample Location	
		Organic	Inorganic
	Date Shipped		
	Time Shipped		
	Lab		
	Volume		

ATTACHMENT B
Analytical Results and Chain-of-Custody Forms

Gascoyne Laboratories, Inc.



Baltimore, MD 21224

(410) 633-1800

FAX NO.
(410) 633-5443

REPORT OF ANALYSIS

www.gascoyne.com

KCI Technologies
10 North Park Dr.
Hunt Valley, MD 21030
Attn: Douglas Talaber

Page 1

Report No. 0105189

This report of analysis contains test results for samples received at Gascoyne Laboratories, Inc on 05/14/2001 .

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Chain of Custody [Attachment]

This Report of Analysis Contains 4 Pages plus Attachment(s)

Final report reviewed by: James H. Newman
James H. Newman, Laboratory Director

5/30/01
Report issue date

Gascoyne Laboratories, Inc. laboratory accreditations: Maryland 109, Delaware MD015, Virginia 00152, New Jersey 60637, Pennsylvania 68-339, New York 11158, A2LA 410.01, AIHA 100491 and US Army Corps of Engineers.

Please see reverse side for explanation of terms and other information.

Gascoyne Laboratories, Inc.

Baltimore, MD 21224

(410) 633-1800

FAX NO.
(410) 633-5443

www.gascoyne.com

REPORT OF ANALYSIS

Sample Summary

Page 2

Client: KCI Technologies
Project: East St. Ext
Report No: 0105189
Date Received: 05/14/2001

Client Sample ID	Lab Sample ID	Collection Date	Collection Time
DB-1; comp	0105189-001	05/14/2001	10:20

Gascoyne Laboratories, Inc.

Baltimore, MD 21224

(410) 633-1800

FAX NO.
(410) 633-5443

www.gascoyne.com

REPORT OF ANALYSIS

Test Results

Page 3

Client: KCI Technologies
Report No: 0105189
Project: East St. Ext
Matrix: SOIL

Client Sample ID: DB-1; comp
Lab ID: 0105189-001
Collection Date: 05/14/2001 10:20

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
----------	--------------	-----------------	-------	--------------------

MERCURY, TOTAL (EPA 7471A) Analyst: JLS
Prep. Method: NA Prep. Date: NA Prep Analyst NA
Mercury 6.3 0.34 mg/Kg-dry 05/14/2001 23:12

METALS, TOTAL (EPA 6020) Analyst: PRM
Prep. Method: EPA 3050B Prep. Date: 05/23/2001 3:28:29 PM Prep Analyst JAW
Arsenic 15 0.23 mg/Kg-dry 05/24/2001 14:23
Barium 450 12 mg/Kg-dry 05/25/2001 17:57
Cadmium 0.46 0.023 mg/Kg-dry 05/24/2001 14:23
Chromium 14 0.12 mg/Kg-dry 05/24/2001 14:23
Lead 1,800 12 mg/Kg-dry 05/25/2001 17:57
Selenium 1.9 0.23 mg/Kg-dry 05/24/2001 14:23
Silver 0.32 0.046 mg/Kg-dry 05/24/2001 14:23

POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS/PNAS) (EPA 8270C) Analyst: MYD
Prep. Method: EPA 3550B Prep. Date: 05/14/2001 5:00:00 PM Prep Analyst RLD
Naphthalene < 370 370 µg/Kg-dry 05/15/2001 23:18
Acenaphthylene < 370 370 µg/Kg-dry 05/15/2001 23:18
Acenaphthene < 370 370 µg/Kg-dry 05/15/2001 23:18
Fluorene < 370 370 µg/Kg-dry 05/15/2001 23:18
Phenanthrene < 370 370 µg/Kg-dry 05/15/2001 23:18
Anthracene < 370 370 µg/Kg-dry 05/15/2001 23:18
Fluoranthene < 370 370 µg/Kg-dry 05/15/2001 23:18
Pyrene < 370 370 µg/Kg-dry 05/15/2001 23:18
Benz(a)anthracene < 370 370 µg/Kg-dry 05/15/2001 23:18
Chrysene < 370 370 µg/Kg-dry 05/15/2001 23:18
Benzo(b)fluoranthene < 370 370 µg/Kg-dry 05/15/2001 23:18
Benzo(k)fluoranthene < 370 370 µg/Kg-dry 05/15/2001 23:18
Benzo(a)pyrene < 370 370 µg/Kg-dry 05/15/2001 23:18
Indeno(1,2,3-cd)pyrene < 370 370 µg/Kg-dry 05/15/2001 23:18
Dibenz(a,h)anthracene < 370 370 µg/Kg-dry 05/15/2001 23:18



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REPORT OF ANALYSIS

Test Results

Page 4

Client: KCI Technologies	Client Sample ID: DB-1; comp
Report No: 0105189	Lab ID: 0105189-001
Project: East St. Ext	Collection Date: 05/14/2001 10:20
Matrix: SOIL	

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
Benzo(g,h,i)perylene	< 370	370	µg/Kg-dry	05/15/2001 23:18
Analyst: MRC				
MOISTURE CONTENT (DRIED AT 105°C)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst <u>NA</u>	
PMOIST	11	0.050	wt%	05/14/2001 10:38
Analyst: JLS				
TCLP MERCURY (HG) (EPA 7470A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst <u>NA</u>	
Mercury	< 0.010	0.010	mg/L -TC	05/23/2001 18:22
Analyst: APS				
TCLP METALS (EPA 6010B)				
Prep. Method: <u>EPA 3010A</u>	Prep. Date: <u>05/22/2001 3:40:00 PM</u>		Prep Analyst <u>JAW</u>	
Arsenic	< 0.50	0.50	mg/L -TC	05/23/2001 16:46
Barium	< 5.0	5.0	mg/L -TC	05/23/2001 16:46
Cadmium	< 0.050	0.050	mg/L -TC	05/23/2001 16:46
Chromium	< 0.10	0.10	mg/L -TC	05/23/2001 16:46
Lead	< 0.50	0.50	mg/L -TC	05/23/2001 16:46
Selenium	< 0.50	0.50	mg/L -TC	05/23/2001 16:46
Silver	< 0.050	0.050	mg/L -TC	05/23/2001 16:46
Analyst: BAB				
TOTAL PETROLEUM HYDROCARBONS (TPH) (EPA 418.1M)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst <u>NA</u>	
Petroleum Hydrocarbons	240	10	mg/Kg	05/16/2001 9:40

SAMPLE SUBMITTAL CHAIN-OF-CUSTODY

GASCOYNE LABORATORIES, INC.

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SAMPLE TYPE CODES			
Field Blank	FB	Sludge	DW
Soil	SO	Trip Blank	GW
Oil(s)	OL	Waste- Liquid	SW
Paint Chips	PC	Waste- Solid	WW
Wipes	WP		
		SL	
		TB	
		L	
		S	

Test Results to:

Company: East Transportation
Contact: Ken Palmer
Phone No.: (410) 311-7371
FAX No.: (410) 311-7371

Sample Site/Project: East
Sampler/MDOE #: 1101
Client's P.O. #: 1101

RESULTS NEEDED BY: ROUTINE PRIORITY* BY: _____

LAB USE ONLY	SAMPLE TYPE USE CODES ABOVE if applicable	SAMPLE IDENTIFICATION (Keep brief. Approx. 15 Characters Max)	SAMPLE COLLECTED		DATE	NUMBER OF CONTAINERS
			DATE	TIME		
LIENS NO.	50	1101	11/21	10:00	11/21	1

Total Number of Containers	
Relinquished By (signature): _____	Printed Name/Affiliation: _____
Relinquished By (signature): _____	Printed Name/Affiliation: _____
Relinquished By (signature): _____	Printed Name/Affiliation: _____
Relinquished By (signature): _____	Printed Name/Affiliation: _____

Data Package Required 1 2 3

Received By (signature): _____	Printed Name/Affiliation: _____	Date: _____ Time: _____
Received By (signature): _____	Printed Name/Affiliation: _____	Date: _____ Time: _____
Received By (signature): _____	Printed Name/Affiliation: _____	Date: _____ Time: _____
Received By (signature): _____	Printed Name/Affiliation: _____	Date: _____ Time: _____

LAB USE ONLY	
Report #	D105184
Temp. Bik.	4.0
Cooler #	33
PUC #	

TESTS REQUIRED	COMMENTS (i.e. methods, detection limits, etc.)

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REPORT OF ANALYSIS



Page 1

KCI Technologies
10 North Park Dr.
Hunt Valley, MD 21030
Attn: Tris Madden

Report No. 0105167

This report of analysis contains test results for samples received at Gascoyne Laboratories, Inc on 05/11/2001 .

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Chain of Custody [Attachment]

This Report of Analysis Contains 4 Pages plus Attachment(s)

Final report reviewed by: James H. Newman, Laboratory Director

6/4/01
Report issue date

Gascoyne Laboratories, Inc. laboratory accreditations: Maryland 109, Delaware MD015, Virginia 00152, New Jersey 60637, Pennsylvania 68-339, New York 11158, A2LA 410.01, AIHA 100491 and US Army Corps of Engineers.

Please see reverse side for explanation of terms and other information.

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REPORT OF ANALYSIS

Sample Summary

Page 2

Client: KCI Technologies
Project: East St.Ext.
Report No: 0105167
Date Received: 05/11/2001

Client Sample ID	Lab Sample ID	Collection Date	Collection Time
DB-2; comp	0105167-001	05/11/2001	9:30

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REPORT OF ANALYSIS

Test Results

Page 3

Client: KCI Technologies	Client Sample ID: DB-2; comp
Report No: 0105167	Lab ID: 0105167-001
Project: East St.Ext.	Collection Date: 05/11/2001 9:30
Matrix: SOIL	

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
MERCURY, TOTAL (EPA 7471A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst <u>NA</u>	Analyst: JLS
Mercury	0.28	0.036	mg/Kg-dry	06/01/2001 21:22
METALS, TOTAL (EPA 6020)				
Prep. Method: <u>EPA 3050B</u>	Prep. Date: <u>05/22/2001 4:05:00 PM</u>		Prep Analyst <u>CMK</u>	Analyst: PRM
Arsenic	14	0.22	mg/Kg-dry	05/22/2001 13:13
Barium	370	4.4	mg/Kg-dry	05/30/2001 17:05
Cadmium	2.1	0.022	mg/Kg-dry	05/22/2001 13:13
Chromium	18	0.11	mg/Kg-dry	05/22/2001 13:13
Lead	710	4.4	mg/Kg-dry	05/30/2001 17:05
Selenium	1.1	0.22	mg/Kg-dry	05/22/2001 13:13
Silver	2.1	0.044	mg/Kg-dry	05/22/2001 13:13
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS/PNAS) (EPA 8270C)				
Prep. Method: <u>EPA 3550B</u>	Prep. Date: <u>05/14/2001 5:00:00 PM</u>		Prep Analyst <u>RLD</u>	Analyst: MYD
Naphthalene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Acenaphthylene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Acenaphthene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Fluorene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Phenanthrene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Anthracene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Fluoranthene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Pyrene	440	390	µg/Kg-dry	05/16/2001 23:18
Benz(a)anthracene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Chrysene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Benzo(b)fluoranthene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Benzo(k)fluoranthene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Benzo(a)pyrene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Indeno(1,2,3-cd)pyrene	< 390	390	µg/Kg-dry	05/16/2001 23:18
Dibenz(a,h)anthracene	< 390	390	µg/Kg-dry	05/16/2001 23:18

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REPORT OF ANALYSIS

Test Results

Page 4

Client:	KCI Technologies	Client Sample ID:	DB-2; comp
Report No:	0105167	Lab ID:	0105167-001
Project:	East St.Ext.	Collection Date:	05/11/2001 9:30
Matrix:	SOIL		

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
Benzo(g,h,i)perylene	< 390	390	µg/Kg-dry	05/16/2001 23:18
MOISTURE CONTENT (DRIED AT 105°C)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: RED
PMOIST	16	0.050	wt%	05/12/2001 16:01
TCLP MERCURY (HG) (EPA 7470A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: JLS
Mercury	< 0.010	0.010	mg/L -TC	05/23/2001 18:01
TCLP METALS (EPA 6010B)				
Prep. Method: <u>EPA 3010A</u>	Prep. Date: <u>05/22/2001 3:40:00 PM</u>		Prep Analyst	<u>JAW</u> Analyst: APS
Arsenic	< 0.50	0.50	mg/L -TC	05/23/2001 16:21
Barium	< 5.0	5.0	mg/L -TC	05/23/2001 16:21
Cadmium	< 0.050	0.050	mg/L -TC	05/23/2001 16:21
Chromium	< 0.10	0.10	mg/L -TC	05/23/2001 16:21
Lead	< 0.50	0.50	mg/L -TC	05/23/2001 16:21
Selenium	< 0.50	0.50	mg/L -TC	05/23/2001 16:21
Silver	< 0.050	0.050	mg/L -TC	05/23/2001 16:21
TOTAL PETROLEUM HYDROCARBONS (TPH) (EPA 418.1M)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: BAB
Petroleum Hydrocarbons	230	10	mg/Kg	05/16/2001 9:40



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REPORT OF ANALYSIS

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TCLP

Toxicity Characteristic Leaching Procedure

METALS	Regulatory limits mg/L	HERBICIDES/ PESTICIDES	Regulatory limits mg/L
Arsenic (As)	5.0	2,4-D	10.0
Barium (Ba)	100.0	2,4,5-TP (Silvex)	1.0
Cadmium (Cd)	1.0	Chlordane	0.03
Chromium (Cr)	5.0	Endrin	0.02
Lead (Pb)	5.0	Heptachlor and Epoxide	0.008
Mercury (Hg)	0.2	Lindane	0.4
Selenium (Se)	1.0	Methoxychlor	10.0
Silver (Ag)	5.0	Toxaphene	0.5

SEMI-VOLATILES	Regulatory limits mg/L	VOLATILES	Regulatory limits mg/L
Total Cresols (ortho, para & meta)	200.0	Benzene	0.50
2,4-Dinitrotoluene	0.13	Carbon Tetrachloride	0.50
Hexachloro-1,3-butadiene	0.5	Chlorobenzene	100.0
Hexachlorobenzene	0.13	Chloroform	6.0
Hexachloroethane	3.0	1,2-Dichloroethene	0.50
Nitrobenzene	2.0	1,1-Dichloroethene	0.70
Pentachlorophenol	100.0	Methyl Ethyl Ketone	200.0
2,4,5-Trichlorophenol	400.0	Tetrachloroethene	0.7
2,4,6-Trichlorophenol	2.0	Trichloroethene	0.5
Pyridine	5.0	Vinyl Chloride	0.20
1,4-Dichlorobenzene	7.5		

SAMPLE SUBMITTAL CHAIN-OF-CUSTODY

SAMPLE TYPE CODES	
Field Blank	FB
Sludge	SL
Soil	SO
Trip Blank	TB
Oil(s)	OL
Paint Chips	PC
Wipes	WP
Drinking Water	DW
Ground Water	GW
Surface Water	SW
Waste Water	WW

GASCOYNE LABORATORIES, INC.
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LAB USE ONLY
 Report # 0105167
 Temp. Blk. 0.7
 Cooler # 107
 PUC # _____

Test Results to:
 Company: K.C.I. TECHNOLOGIES
 Contact: TRIS MADDEN
 Phone No.: (410) 316-7928
 FAX No.: (410) 316-7435

Sample Site/Project: REAST ST. EX.
 Sampler/MDOE #: TRM
 Client's P.O. #: _____

RESULTS NEEDED BY: ROUTINE PRIORITY* BY: _____

LAB USE ONLY	SAMPLE TYPE USE CODES ABOVE	SAMPLE IDENTIFICATION (Keep brief Approx. 15 Characters Max)	SAMPLE COLLECTED		DATE	TIME	DAY	DATE	NUMBER OF CONTAINERS	COMMENTS (i.e. methods, detection limits, etc.)
			DATE	TIME						
	SO DB-2		5/11/05	09:30	X				4	

TESTS REQUIRED

PAHS (27) (DEC 2) SHM X
 PCBs (27) (DEC 2) SHM X
 TRU (MR. 1) (TRU) HPL X
 TSP (MR. 1) (TRU) HPL X
 (TRU) (TRU) HPL X

Total Number of Containers 4

Relinquished By (signature):	Date:	Time:	Printed Name/Affiliation:
<i>Tris Madden</i>	5/11/05	11:05	TRISTRAM MADDEN/KEI
<i>Tris Madden</i>	5/11/05	11:05	TRISTRAM MADDEN/KEI
<i>Tris Madden</i>	5/11/05	11:20	TRISTRAM MADDEN/KEI
<i>Tris Madden</i>	5/11/05	11:20	TRISTRAM MADDEN/KEI

Data Package Required 1 2 3

Received By (signature):	Date:	Time:	Printed Name/Affiliation:
<i>Tris Madden</i>	5/11/05	11:05	TRISTRAM MADDEN/KEI
<i>Tris Madden</i>	5/11/05	11:05	TRISTRAM MADDEN/KEI
<i>Tris Madden</i>	5/11/05	11:20	TRISTRAM MADDEN/KEI
<i>Tris Madden</i>	5/11/05	11:20	TRISTRAM MADDEN/KEI

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REPORT OF ANALYSIS



KCI Technologies
10 North Park Dr.
Hunt Valley, MD 21030
Attn: Tris Madden

Page 1

Report No. 0105149

This report of analysis contains test results for samples received at Gascoyne Laboratories, Inc on 05/10/2001 .

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Chain of Custody [Attachment]

This Report of Analysis Contains 6 Pages plus Attachment(s)

Final report reviewed by: James H. Newman 5/29/01
James H. Newman, Laboratory Director Report issue date

Gascoyne Laboratories, Inc. laboratory accreditations: Maryland 109, Delaware MD015, Virginia 00152, New Jersey 60637, Pennsylvania 68-339, New York 11158, A2LA 410.01, AIHA 100491 and US Army Corps of Engineers.

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REPORT OF ANALYSIS

Sample Summary

Page 2

Client: KCI Technologies
Project: East Street Ext.
Report No: 0105149
Date Received: 05/10/2001

Client Sample ID	Lab Sample ID	Collection Date	Collection Time
DB-3; comp	0105149-001	05/10/2001	9:40
DB-6; comp	0105149-002	05/10/2001	9:50

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REPORT OF ANALYSIS

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Test Results

Page 3

Client: KCI Technologies	Client Sample ID: DB-3; comp
Report No: 0105149	Lab ID: 0105149-001
Project: East Street Ext.	Collection Date: 05/10/2001 9:40
Matrix: SOIL	

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
MERCURY, TOTAL (EPA 7471A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst <u>NA</u>	Analyst: JLS
Mercury	0.56	0.036	mg/Kg-dry	05/14/2001 22:44
METALS, TOTAL (EPA 6020)				
Prep. Method: <u>EPA 3050B</u>	Prep. Date: <u>05/22/2001 4:05:00 PM</u>		Prep Analyst <u>CMK</u>	Analyst: PRM
Arsenic	4.0	0.25	mg/Kg-dry	05/22/2001 13:04
Barium	94	0.25	mg/Kg-dry	05/22/2001 13:04
Cadmium	0.21	0.025	mg/Kg-dry	05/22/2001 13:04
Chromium	16	0.12	mg/Kg-dry	05/22/2001 13:04
Lead	99	0.25	mg/Kg-dry	05/22/2001 13:04
Selenium	< 0.25	0.25	mg/Kg-dry	05/22/2001 13:04
Silver	0.15	0.050	mg/Kg-dry	05/22/2001 13:04
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS/PNAS) (EPA 8270C)				
Prep. Method: <u>EPA 3550B</u>	Prep. Date: <u>05/14/2001 5:00:00 PM</u>		Prep Analyst <u>RLD</u>	Analyst: MYD
Naphthalene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Acenaphthylene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Acenaphthene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Fluorene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Phenanthrene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Anthracene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Fluoranthene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Pyrene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Benz(a)anthracene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Chrysene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Benzo(b)fluoranthene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Benzo(k)fluoranthene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Benzo(a)pyrene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Indeno(1,2,3-cd)pyrene	< 400	400	µg/Kg-dry	05/16/2001 20:41
Dibenz(a,h)anthracene	< 400	400	µg/Kg-dry	05/16/2001 20:41

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REPORT OF ANALYSIS

Test Results

Page 4

Client:	KCI Technologies	Client Sample ID:	DB-3; comp
Report No:	0105149	Lab ID:	0105149-001
Project:	East Street Ext.	Collection Date:	05/10/2001 9:40
Matrix:	SOIL		

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
Benzo(g,h,i)perylene	< 400	400	µg/Kg-dry	05/16/2001 20:41
MOISTURE CONTENT (DRIED AT 105°C)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: MRC
PMOIST	17	0.050	wt%	05/10/2001 17:14
TCLP MERCURY (HG) (EPA 7470A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: JLS
Mercury	< 0.010	0.010	mg/L -TC	05/23/2001 17:48
TCLP METALS (EPA 6010B)				
Prep. Method: <u>EPA 3010A</u>	Prep. Date: <u>05/22/2001 3:40:00 PM</u>		Prep Analyst	<u>JAW</u> Analyst: APS
Arsenic	< 0.50	0.50	mg/L -TC	05/23/2001 15:57
Barium	< 5.0	5.0	mg/L -TC	05/23/2001 15:57
Cadmium	< 0.050	0.050	mg/L -TC	05/23/2001 15:57
Chromium	< 0.10	0.10	mg/L -TC	05/23/2001 15:57
Lead	< 0.50	0.50	mg/L -TC	05/23/2001 15:57
Selenium	< 0.50	0.50	mg/L -TC	05/23/2001 15:57
Silver	< 0.050	0.050	mg/L -TC	05/23/2001 15:57
TOTAL PETROLEUM HYDROCARBONS (TPH) (EPA 418.1M)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: BAB
Petroleum Hydrocarbons	570	10	mg/Kg	05/16/2001 9:40



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REPORT OF ANALYSIS

Test Results

Page 5

Client: KCI Technologies
Report No: 0105149
Project: East Street Ext.
Matrix: SOIL

Client Sample ID: DB-6; comp
Lab ID: 0105149-002
Collection Date: 05/10/2001 9:50

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
MERCURY, TOTAL (EPA 7471A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst <u>NA</u>	Analyst: JLS
Mercury	0.39	0.035	mg/Kg-dry	05/14/2001 22:47
METALS, TOTAL (EPA 6020)				
Prep. Method: <u>EPA 3050B</u>	Prep. Date: <u>05/22/2001 4:05:00 PM</u>		Prep Analyst <u>CMK</u>	Analyst: PRM
Arsenic	4.7	0.22	mg/Kg-dry	05/22/2001 13:09
Barium	86	0.22	mg/Kg-dry	05/22/2001 13:09
Cadmium	0.40	0.022	mg/Kg-dry	05/22/2001 13:09
Chromium	19	0.11	mg/Kg-dry	05/22/2001 13:09
Lead	190	0.22	mg/Kg-dry	05/22/2001 13:09
Selenium	0.34	0.22	mg/Kg-dry	05/22/2001 13:09
Silver	0.17	0.043	mg/Kg-dry	05/22/2001 13:09
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS/PNAS) (EPA 8270C)				
Prep. Method: <u>EPA 3550B</u>	Prep. Date: <u>05/14/2001 5:00:00 PM</u>		Prep Analyst <u>RLD</u>	Analyst: MYD
Naphthalene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Acenaphthylene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Acenaphthene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Fluorene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Phenanthrene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Anthracene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Fluoranthene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Pyrene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Benzo(a)anthracene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Chrysene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Benzo(b)fluoranthene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Benzo(k)fluoranthene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Benzo(a)pyrene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Indeno(1,2,3-cd)pyrene	< 390	390	µg/Kg-dry	05/16/2001 21:20
Dibenz(a,h)anthracene	< 390	390	µg/Kg-dry	05/16/2001 21:20

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REPORT OF ANALYSIS

Test Results

Page 6

Client: KCI Technologies
Report No: 0105149
Project: East Street Ext.
Matrix: SOIL

Client Sample ID: DB-6; comp
Lab ID: 0105149-002
Collection Date: 05/10/2001 9:50

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
Benzo(g,h,i)perylene	< 390	390	µg/Kg-dry	05/16/2001 21:20
MOISTURE CONTENT (DRIED AT 105°C)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: MRC
PMOIST	15	0.050	wt%	05/10/2001 17:14
TCLP MERCURY (HG) (EPA 7470A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: JLS
Mercury	< 0.010	0.010	mg/L -TC	05/23/2001 17:42
TCLP METALS (EPA 6010B)				
Prep. Method: <u>EPA 3010A</u>	Prep. Date: <u>05/22/2001 3:40:00 PM</u>		Prep Analyst	<u>JAW</u> Analyst: APS
Arsenic	< 0.50	0.50	mg/L -TC	05/23/2001 15:57
Barium	< 5.0	5.0	mg/L -TC	05/23/2001 15:57
Cadmium	< 0.050	0.050	mg/L -TC	05/23/2001 15:57
Chromium	< 0.10	0.10	mg/L -TC	05/23/2001 15:57
Lead	2.2	0.50	mg/L -TC	05/23/2001 15:57
Selenium	< 0.50	0.50	mg/L -TC	05/23/2001 15:57
Silver	< 0.050	0.050	mg/L -TC	05/23/2001 15:57
TOTAL PETROLEUM HYDROCARBONS (TPH) (EPA 418.1M)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: BAB
Petroleum Hydrocarbons	350	10	mg/Kg	05/16/2001 9:40

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REPORT OF ANALYSIS



KCI Technologies
10 North Park Dr.
Hunt Valley, MD 21030
Attn: Tris Madden

Page 1

Report No. 0105134

This report of analysis contains test results for samples received at Gascoyne Laboratories, Inc on 05/09/2001 .

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Field Report [Attachment]
- Chain of Custody [Attachment]

This Report of Analysis Contains 6 Pages plus Attachment(s)

Final report reviewed by: James H. Newman 5/30/01
James H. Newman, Laboratory Director Report issue date

Gascoyne Laboratories, Inc. laboratory accreditations: Maryland 109, Delaware MD015, Virginia 00152, New Jersey 60637, Pennsylvania 68-339, New York 11158, A2LA 410.01, AIHA 100491 and US Army Corps of Engineers.

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REPORT OF ANALYSIS

Sample Summary

Page 2

Client: KCI Technologies
Project: East Street Extended
Report No: 0105134
Date Received: 05/09/2001

Client Sample ID	Lab Sample ID	Collection Date	Collection Time
DB-4; comp	0105134-001	05/09/2001	10:15
RB-1; grab	0105134-002	05/09/2001	10:00

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REPORT OF ANALYSIS

Test Results

Page 3

Client: KCI Technologies **Client Sample ID:** DB-4; comp
Report No: 0105134 **Lab ID:** 0105134-001
Project: East Street Extended **Collection Date:** 05/09/2001 10:15
Matrix: SOIL

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
MERCURY, TOTAL (EPA 7471A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst <u>NA</u>	Analyst: JLS
Mercury	0.49	0.039	mg/Kg-dry	05/14/2001 22:41
METALS, TOTAL (EPA 6020)				
Prep. Method: <u>EPA 3050B</u>	Prep. Date: <u>05/23/2001 3:28:29 PM</u>		Prep Analyst <u>JAW</u>	Analyst: PRM
Arsenic	16	0.25	mg/Kg-dry	05/24/2001 13:27
Barium	470	5.0	mg/Kg-dry	05/25/2001 17:49
Cadmium	0.65	0.025	mg/Kg-dry	05/24/2001 13:27
Chromium	18	0.12	mg/Kg-dry	05/24/2001 13:27
Lead	750	5.0	mg/Kg-dry	05/25/2001 17:49
Selenium	1.6	0.25	mg/Kg-dry	05/24/2001 13:27
Silver	0.45	0.050	mg/Kg-dry	05/24/2001 13:27
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS/PNAS) (EPA 8270C)				
Prep. Method: <u>EPA 3550B</u>	Prep. Date: <u>05/09/2001 2:30:00 PM</u>		Prep Analyst <u>WAR</u>	Analyst: MYD
Naphthalene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Acenaphthylene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Acenaphthene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Fluorene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Phenanthrene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Anthracene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Fluoranthene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Pyrene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Benz(a)anthracene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Chrysene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Benzo(b)fluoranthene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Benzo(k)fluoranthene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Benzo(a)pyrene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Indeno(1,2,3-cd)pyrene	< 430	430	µg/Kg-dry	05/10/2001 20:19
Dibenz(a,h)anthracene	< 430	430	µg/Kg-dry	05/10/2001 20:19

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REPORT OF ANALYSIS

Test Results

Page 4

Client:	KCI Technologies	Client Sample ID:	DB-4; comp
Report No:	0105134	Lab ID:	0105134-001
Project:	East Street Extended	Collection Date:	05/09/2001 10:15
Matrix:	SOIL		

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
Benzo(g,h,i)perylene	< 430	430	µg/Kg-dry	05/10/2001 20:19
MOISTURE CONTENT (DRIED AT 105°C)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: DLS
PMOIST	24	0.050	wt%	05/09/2001 19:42
TCLP MERCURY (HG) (EPA 7470A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: JLS
Mercury	< 0.010	0.010	mg/L -TC	05/23/2001 17:29
TCLP METALS (EPA 6010B)				
Prep. Method: <u>EPA 3010A</u>	Prep. Date: <u>05/22/2001 3:40:00 PM</u>		Prep Analyst	<u>JAW</u> Analyst: APS
Arsenic	< 0.50	0.50	mg/L -TC	05/23/2001 15:24
Barium	< 5.0	5.0	mg/L -TC	05/23/2001 15:24
Cadmium	< 0.050	0.050	mg/L -TC	05/23/2001 15:24
Chromium	< 0.10	0.10	mg/L -TC	05/23/2001 15:24
Lead	< 0.50	0.50	mg/L -TC	05/23/2001 15:24
Selenium	< 0.50	0.50	mg/L -TC	05/23/2001 15:24
Silver	< 0.050	0.050	mg/L -TC	05/23/2001 15:24
TOTAL PETROLEUM HYDROCARBONS (TPH) (EPA 418.1M)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: BAB
Petroleum Hydrocarbons	120	10	mg/Kg	05/16/2001 9:40

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REPORT OF ANALYSIS

Test Results

Page 5

Client: KCI Technologies

Client Sample ID: RB-1; grab

Report No: 0105134

Lab ID: 0105134-002

Project: East Street Extended

Collection Date: 05/09/2001 10:00

Matrix: WATER

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
MERCURY, TOTAL (EPA 7470A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst <u>NA</u>	Analyst: JLS
Mercury	< 0.00020	0.00020	mg/L	05/17/2001 20:53
METALS, TOTAL (EPA 6020)				
Prep. Method: <u>EPA 3010A</u>	Prep. Date: <u>05/10/2001 11:13:00 AM</u>		Prep Analyst <u>CMK</u>	Analyst: PRM
Arsenic	< 0.0050	0.0050	mg/L	05/11/2001 14:26
Barium	< 0.0050	0.0050	mg/L	05/11/2001 14:26
Cadmium	< 0.00050	0.00050	mg/L	05/11/2001 14:26
Chromium	< 0.0025	0.0025	mg/L	05/11/2001 14:26
Lead	< 0.0050	0.0050	mg/L	05/11/2001 14:26
Selenium	< 0.0050	0.0050	mg/L	05/11/2001 14:26
Silver	< 0.0010	0.0010	mg/L	05/11/2001 14:26
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS/PNAS) (EPA 8270C)				
Prep. Method: <u>EPA 3510C</u>	Prep. Date: <u>05/15/2001 3:00:00 PM</u>		Prep Analyst <u>WAR</u>	Analyst: MYD
Naphthalene	< 11	11	ug/L	05/16/2001 16:46
Acenaphthylene	< 11	11	ug/L	05/16/2001 16:46
Acenaphthene	< 11	11	ug/L	05/16/2001 16:46
Fluorene	< 11	11	ug/L	05/16/2001 16:46
Phenanthrene	< 11	11	ug/L	05/16/2001 16:46
Anthracene	< 11	11	ug/L	05/16/2001 16:46
Fluoranthene	< 11	11	ug/L	05/16/2001 16:46
Pyrene	< 11	11	ug/L	05/16/2001 16:46
Benz(a)anthracene	< 11	11	ug/L	05/16/2001 16:46
Chrysene	< 11	11	ug/L	05/16/2001 16:46
Benzo(b)fluoranthene	< 11	11	ug/L	05/16/2001 16:46
Benzo(k)fluoranthene	< 11	11	ug/L	05/16/2001 16:46
Benzo(a)pyrene	< 11	11	ug/L	05/16/2001 16:46
Indeno(1,2,3-cd)pyrene	< 11	11	ug/L	05/16/2001 16:46
Dibenz(a,h)anthracene	< 11	11	ug/L	05/16/2001 16:46

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REPORT OF ANALYSIS

Test Results

Page 6

Client:	KCI Technologies	Client Sample ID:	RB-1; grab
Report No:	0105134	Lab ID:	0105134-002
Project:	East Street Extended	Collection Date:	05/09/2001 10:00
Matrix:	WATER		

Analyses	Test Results	Reporting Limit	Units	Date/Time Analyzed
Benzo(g,h,i)perylene	< 11	11	ug/L	05/16/2001 16:46
TCLP MERCURY (HG) (EPA 7470A)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: JLS
Mercury	< 0.010	0.010	mg/L -TC	05/23/2001 17:54
TCLP METALS (EPA 6010B)				
Prep. Method: <u>EPA 3010A</u>	Prep. Date: <u>05/22/2001 3:40:00 PM</u>		Prep Analyst	<u>JAW</u> Analyst: APS
Arsenic	< 0.50	0.50	mg/L -TC	05/23/2001 17:33
Barium	< 5.0	5.0	mg/L -TC	05/23/2001 17:33
Cadmium	< 0.050	0.050	mg/L -TC	05/23/2001 17:33
Chromium	< 0.10	0.10	mg/L -TC	05/23/2001 17:33
Lead	< 0.50	0.50	mg/L -TC	05/23/2001 17:33
Selenium	< 0.50	0.50	mg/L -TC	05/23/2001 17:33
Silver	< 0.050	0.050	mg/L -TC	05/23/2001 17:33
TOTAL PETROLEUM HYDROCARBONS (TPH) (EPA 418.1)				
Prep. Method: <u>NA</u>	Prep. Date: <u>NA</u>		Prep Analyst	<u>NA</u> Analyst: BAB
Petroleum Hydrocarbons	< 2.0	2.0	mg/L	05/09/2001 14:30

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REPORT OF ANALYSIS



TCLP

Toxicity Characteristic Leaching Procedure

METALS	Regulatory limits mg/L	HERBICIDES/ PESTICIDES	Regulatory limits mg/L
Arsenic (As)	5.0	2,4-D	10.0
Barium (Ba)	100.0	2,4,5-TP (Silvex)	1.0
Cadmium (Cd)	1.0	Chlordane	0.03
Chromium (Cr)	5.0	Endrin	0.02
Lead (Pb)	5.0	Heptachlor and Epoxide	0.008
Mercury (Hg)	0.2	Lindane	0.4
Selenium (Se)	1.0	Methoxychlor	10.0
Silver (Ag)	5.0	Toxaphene	0.5

SEMI-VOLATILES	Regulatory limits mg/L	VOLATILES	Regulatory limits mg/L
Total Cresols (ortho, para & meta)	200.0	Benzene ¹	0.50
2,4-Dinitrotoluene	0.13	Carbon Tetrachloride	0.50
Hexachloro-1,3-butadiene	0.5	Chlorobenzene	100.0
Hexachlorobenzene	0.13	Chloroform	6.0
Hexachloroethane	3.0	1,2-Dichloroethene	0.50
Nitrobenzene	2.0	1,1-Dichloroethene	0.70
Pentachlorophenol	100.0	Methyl Ethyl Ketone	200.0
2,4,5-Trichlorophenol	400.0	Tetrachloroethene	0.7
2,4,6-Trichlorophenol	2.0	Trichloroethene	0.5
Pyridine	5.0	Vinyl Chloride	0.20
1,4-Dichlorobenzene	7.5		

